

**WILLIAM
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ROBINSON**

WOMAN. HER SEX AND
LOVE LIFE

William Josephus Robinson
Woman. Her Sex and Love Life

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William J. Robinson

Woman / Her Sex and Love Life

THE CREATION OF WOMAN

This old Oriental legend is so exquisitely charming, so superior to the Biblical narrative of the creation of woman, that it deserves to be reproduced in *Woman: Her Sex and Love Life*. There are several variants of this legend, but I reproduce it as it appeared in the first issue of *The Critic and Guide*, January, 1903.

At the beginning of time, Twashtri—the Vulcan of Hindu mythology—created the world. But when he wished to create a woman, he found that he had employed all his materials in the creation of man. There did not remain one solid element. Then Twashtri, perplexed, fell into a profound meditation from which he aroused himself and proceeded as follows:

He took the roundness of the moon, the undulations of the serpent, the entwinement of clinging plants, the trembling of the grass, the slenderness of the rose-vine and the velvet of the flower, the lightness of the leaf and the glance of the fawn, the gaiety of the sun's rays and tears of the mist, the inconstancy of the wind and the timidity of the hare, the vanity of the peacock and the softness of the down on the throat of the swallow, the hardness of the diamond, the sweet flavor of honey and the cruelty of the tiger, the warmth of fire, the chill of snow, the chatter of the jay and the cooing of the turtle dove.

He combined all these and formed a woman. Then he made a present of her to man. Eight days later the man came to Twashtri, and said: "My Lord, the creature you gave me poisons my existence. She chatters without rest, she takes all my time, she laments for nothing at all, and is always ill; take her back;" and Twashtri took the woman back.

But eight days later the man came again to the god and said: "My Lord, my life is very solitary since I returned this creature. I remember she danced before me, singing. I recall how she glanced at me from the corner of her eye, how she played with me, clung to me. Give her back to me," and Twashtri returned the woman to him. Three days only passed and Twashtri saw the man coming to him again. "My Lord," said he, "I do not understand exactly how it is, but I am sure that the woman causes me more annoyance than pleasure. I beg you to relieve me of her."

But Twashtri cried: "Go your way and do the best you can." And the man cried: "I cannot live with her!" "Neither can you live without her!" replied Twashtri.

And the man went away sorrowful, murmuring: "Woe is me, I can neither live with nor without her."

PREFACE

In the first chapter of this book I have shown, I believe convincingly, why sex knowledge is even more important for women than it is for men. I have examined carefully the books that have been written for girls and women, and I know that it is not bias, nor carping criticism, but strict honesty that forces me to say that I have not found one satisfactory girl's or woman's sex book. There are some excellent books for girls and women on general hygiene; but on sex hygiene, on the general manifestations of the sex instinct, on sex ethics—none. I have attempted to write such a book. Whether I have succeeded—fully, partially or not at all—is not for me to say, though I have my suspicions. But this I know: in writing this book I have been strictly honest with myself, from first page to last. Whether everything I have written is the truth, I do not know. But at least I believe that it is—or I would not have written it. And I can solemnly say that the book is free from any cant, hypocrisy, falsehood, exaggeration or compromise, nor has any attempt been made in any chapter to conciliate the stupid, the ignorant, the pervert, or the sexless.

As in all my other books I have used plain, honest English. Not any plainer than necessary, but plain enough to avoid obscurity and misconception.

Science and art are both necessary to human happiness. This is not the place to discuss the relative importance of the two. And, while I have no patience with art-for-art's-sake, I recognize that the scientist can not be put into a narrow channel and ordered to go into a certain definite direction. Scientific investigations which seemed aimless and useless have sometimes led to highly important results, and I would not disparage science for its own sake. It has its uses. Nevertheless I personally have no use for it. To me everything must have a direct human purpose, a definite human application. When the cup of human life is so overflowing with woe and pain and misery, it seems to me a narrow dilettanteism or downright charlatanism to devote one's self to petty or bizarre problems which can have no relation to human happiness, and to prate of self-satisfaction and self-expression. One can have all the self-expression one wants while doing useful work.

And working for humanity does not exclude a healthy hedonism; not the narrow Cyrenaic, but an enlightened altruistic hedonism. And in writing this book I have kept the human problem constantly before my eyes. It was not my ambition merely to impart interesting facts: my concern was the practical application of these facts, their relation to human happiness.

If this book should be instrumental, as I confidently trust it will, in destroying some medieval superstitions, in dissipating some hampering and cramping errors, in instilling some hope in the hearts of the hopeless, in bringing a little joy into the homes of the joyless, in increasing in however slight a degree the sum total of human happiness, its mission shall have been gloriously fulfilled.

For this is the mission of the book: to increase the sum total of human happiness.

W.J.R.

12 Mount Morris Park W.,
New York City.
Jan. 1, 1917.

CONTENTS

Chapter One

THE PARAMOUNT NEED OF SEX KNOWLEDGE FOR GIRLS AND WOMEN

Why Sex Knowledge is of Paramount Importance to Girls and Women—
Reasons Why a Misstep in a Girl Has More Serious Consequences than a Misstep in
a Boy—The Place Love Occupies in Woman's Life—Woman's Physical Disabilities.

All are agreed—I mean all who are capable of thinking and have given the subject some thought—that for the welfare of the race and for his own physical and mental welfare it is important that the boy be given some sex instruction. All are not agreed as to the character of the instruction, its extent, the age at which it should be begun and as to who the teacher should be—the father, the family physician, the school teacher or a specially prepared book—but as to the necessity of sex knowledge for the boy there is now substantial agreement—among the conservatives as well as among the radicals.

No such agreement exists concerning sex knowledge for the girl. Many still are the men and women—and not among the conservatives only—who are strongly opposed to girls receiving any instruction in sex matters. Some say that such instruction—except a few hygienic rules about menstruation—is unnecessary, because the sex instinct awakens in girls comparatively late, and it is time enough for them to learn about such matters after they are married. Others fear that sex knowledge would destroy the mystery and romance of sex, and would rob our maidens of their greatest charms—modesty and innocence. Still others fear that sex instruction would tend to awaken the sex instinct in our girls prematurely; would direct their thoughts to matters about which they would not think otherwise; and they argue that the warnings about venereal disease, prostitution, etc., which are an integral part of sex instruction, tend to create a cynical, inimical attitude towards the male sex, which may even result in hypochondriac ideas and antagonism to marriage.

I do not deny that there is a grain of truth in all the above objections. Sex instruction does cause *some* girls to think of sex matters earlier than they otherwise would, and some girls have been made bitter and hypochondriac, and disgusted with the male sex. But it would not be difficult to demonstrate that it was not sex instruction *per se* that was responsible for these deplorable results; it was the *wrong* kind of instruction that was to blame—it was the wrong emphasis, the lurid exaggerations that caused the mischief, and not the truth. In other words, it is not sex information, it is sex misinformation, that is pernicious. And, of course, to this everybody will agree: rather than false information, better no information at all.

But if the information to be imparted be sane, honest and truthful, without exaggerating the evils and without laying undue emphasis on the dark shadows of our sex life, then the results can be only beneficent. And the task I have put before myself in this book is to give our girls and women sane, square and honest information about their sex organs and sex nature, information absolutely free from luridness, on the one hand, and maudlin sentimentality, on the other. The female sex is in need of such information, much more so than is the male sex. Yes, if boys, as is now universally agreed, are in need of sex instruction, then girls are much more in need of it. Why? For several important reasons.

The first reason why sex instruction is even more important for girls than it is for boys is because a misstep in a girl has much more disastrous consequences than it has in a boy. The disastrous results of a misstep in a boy are only physical in character; the results of the *same* misstep in a girl may be physical, moral, social and economic. To speak more plainly. If a boy, through ignorance, rashly indulges in illicit sexual relations, the worst consequence to him may be infection with a venereal

disease. But he is not considered immoral, he is not despised, he is not ostracized, he does not lose his social standing in the slightest degree, and when he is cured of his venereal disease he has no difficulty in getting married. He does not even have to conceal his past sexual history from his wife. But if a girl makes a misstep the consequences to her are terrible indeed; it may not only cost her her health and social standing, she may have to pay with her very life. She runs the risk of venereal infection the same as the boy does, but in addition she runs the risk of becoming pregnant, which in our present social system is a catastrophe indeed. To save herself from the disgrace of an illegitimate child she may have an abortion produced; the abortion may have no bad results, but it may, if performed bunglingly, leave her an invalid for life, or it may kill her outright. If she is so unfortunate as to be unable to get anybody to produce an abortion, she gives birth to an illegitimate child, which she is forced in most cases to put away in an institution of some sort where she hopes and prays it may die soon—and, in general, it does. If it does not die, she has for the rest of her life a Damocles' sword hanging over her head, and she is in constant terror lest her sin be found out. She does not permit herself to look for a mate, but if she does get married, the specter of her antemrimonial experience is constantly before her eyes. After years and years of married life, the husband may divorce her if he finds out that she had "sinned" before she knew him. And unless the husband is a broad-minded man and loves her truly and unless she made a clean breast of everything to him before marriage, her life is continuous torture. But even if the girl escaped pregnancy, the mere finding out that she had an illicit experience deprives her of social standing, or makes her a social outcast and entirely destroys or greatly minimizes her chances of ever marrying and establishing a home of her own. She must remain a lonely wanderer to the end of her days.

The enormous difference in the results of a misstep in a boy and a girl is clearly seen, and for this reason alone, if for no other, sex instruction is of more importance to the girl than it is to the boy.

But there are other important reasons, and one of them is beautifully and truthfully expressed by Byron in his two well-known lines.

Man's love is of man's life a thing apart,
'Tis woman's whole existence.

Yes, love is a woman's whole life.

Some modern women might object to this. They might say that this was true of the woman of the past, who was excluded from all other avenues of human activity. The woman of the present day has other interests besides those of Love. But I claim that this is true of only a small percentage of women; and in even this small minority of women, social, scientific and artistic activities cannot take the place of love; no matter how busy and successful these women may be, they will tell you if you enjoy their confidence that they are unhappy, if their love life is unsatisfactory. Nothing, nothing can fill the void made by the lack of love. The various activities may help to cover up the void, to protect it from strange eyes, they cannot fill it. For essentially woman is made for love. Not exclusively, but essentially, and a woman who has had no love in her life has been a failure. The few exceptions that may be mentioned only emphasize the rule.

But not only psychically is a woman's love and sex life more important than a man's, physically she is also much more cognizant of her sex and much more hampered by the manifestation of her sex nature than man is. To take but one function, menstruation. From the age 13 or 14 to the age of forty-five or fifty it is a monthly reminder to woman that she is a woman, that she is a creature of sex; and, while to many women this periodically recurring function is only a source of some annoyance or discomfort, to a great number it is a cause of pain, headache, suffering, or complete disability. Man has no such phenomenon to annoy him practically his whole life.

But more important are the results of love-union, of sex relations. A man after a sexual relation is just as free as he was before. A woman, if the relation has resulted in a pregnancy, which is generally

the case, unless special pains are taken it should not so result, has nine troublesome months before her, months of discomfort if not of actual suffering; she then has an extremely trying and painful ordeal, that of childbirth, and then there is another trying period, the period of lactation or of nursing and of bringing up the baby. The penalty seems almost too great.

And when the woman is on the point of ceasing to menstruate she does not do so smoothly and comfortably. She has to go through a period called the menopause, which may last one or two years and which may bring discomforts and dangers of its own. Man does not have to go through such a distinct period of demarcation separating his sexual from his non-sexual life. Altogether it cannot be denied that woman is much more a slave of her sex nature than man is of his. Yes, Nature has handicapped woman much more heavily than she has man.

In short, both in view of the fact that sexual ignorance with its possible missteps has much more disastrous consequences for the girl than it has for the boy, and in view of the fact that the sex instinct and its physical and psychic manifestations occupy a much more important part in woman's life than they do in the life of man, we consider the necessity of sex instruction much greater in the case of woman than in the case of man. I do not wish to be misunderstood as underestimating the need of sex instruction for the male—only I consider the need even greater in the case of the female.

Chapter Two

THE FEMALE SEX ORGANS: THEIR ANATOMY

The Internal Sex Organs—The Ovaries—The Fallopian Tubes—The Uterus—The Divisions of the Uterus—Anteversión, Anteflexión, Retroversión, Retroflexión, of the Uterus—Endometritis—The Vagina—The Hymen—Imperforate Hymen—The External Genitals—The Vulva, Labia Majora, Labia Minora, the Mons Veneris, the Clitoris, the Urethra—The Breasts—The Pelvis—The Difference Between the Male and Female Pelvis.

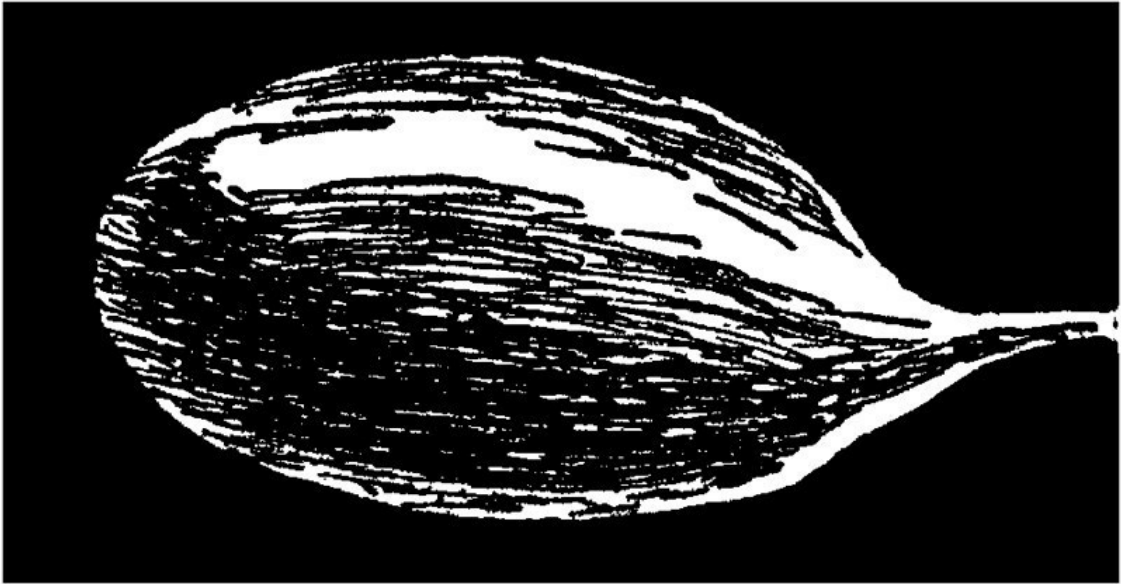
The organs which primarily distinguish one sex from the other are the sex organs. It is by the aid of the sex organs that children are begotten and brought into the world, that the race is *reproduced* and perpetuated. It is for this reason that the sex organs are also called the Reproductive Organs.

The first thing we must do is to become familiar with the *structure* and *location* of the sex organs; in other words, we must get a fair idea of their *Anatomy*.

The female sex organs, also called the reproductive or generative organs, are divided into internal and external. The internal are the most important and consist of: the ovaries, Fallopian tubes, uterus or womb, and vagina. The external sex organs of the female are: the vulva, hymen, and clitoris. Among the external organs are also generally included the mons Veneris and the breasts or mammary glands.

SUBCHAPTER A THE INTERNAL SEX ORGANS

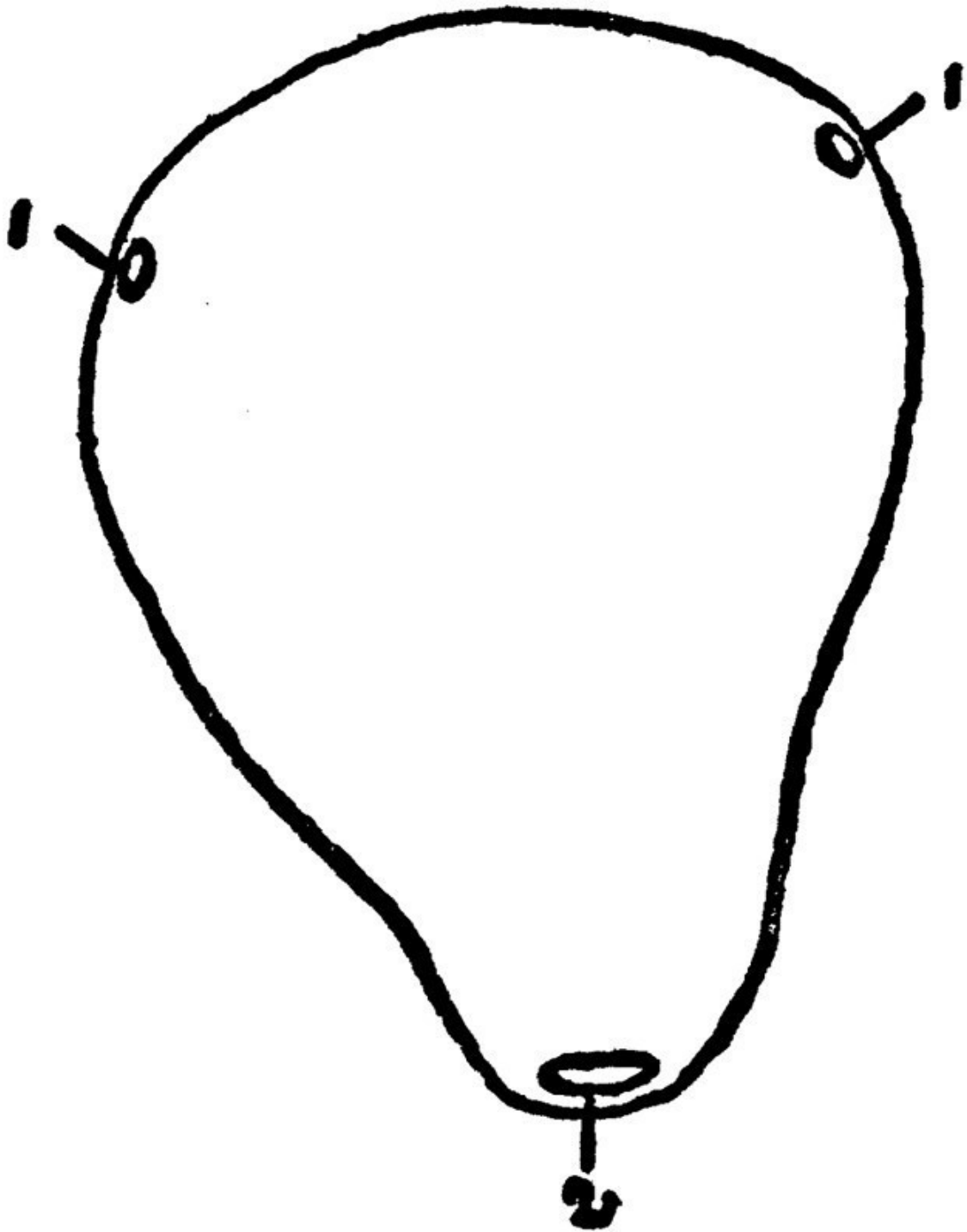
The Ovaries. The ovaries are the essential organs of reproduction. For it is they that generate the eggs, or *ova*, or *ovules*, which, after becoming *fertilized* or *fecundated* by the spermatozoa of the male, develop into children. Without the ovaries of the female, the same as without the testicles of the male (to which they correspond), no children could be begotten, and the entire human race would quickly disappear from our planet. The ovaries are two in number; they are embedded in the *broad ligaments* which support the womb in the pelvis, one on each side of the womb. They are of a grayish or whitish pink color, and are about an inch and a half long, three-quarters of an inch wide, and one-third of an inch thick. They weigh from one-eighth to one-quarter of an ounce. Their surface is either smooth or rough and puckered. Think of a large blanched almond and you will have a pretty fair idea of the size and shape of an ovary.



Ovary.

The Fallopian Tubes. The Fallopian tubes (so called from Fallopius, a great anatomist, who discovered them; also called oviducts: egg conductors, because they conduct the eggs from the ovary into the uterus) are two very thin tubes, extending one from each upper angle of the womb to the ovaries; but at their ovarian end they expand into a fringed and trumpet-shaped extremity. The fringes are referred to as *fimbria*. They are about five inches long and only about one-sixteenth of an inch in diameter; the function of the tubes is to catch the ova as they burst forth from the ovaries and to convey them to the uterus. Taking into consideration the very narrow *lumen*, or *caliber*, of the Fallopian tubes, it is easy to understand why even a very slight inflammation is apt to clog them up, to seal their mouths or openings, thus rendering the woman *sterile*, or incapable of having children. For, if the Fallopian tubes are "clogged" up, the eggs, or ova, have no way of reaching the uterus.

The Greek name for the Fallopian tube is *salpinx* (*salpinx* in Greek means tube). An inflammation of the Fallopian tube is therefore called *salpingitis*. (A *salpingitis* has the same effect in causing sterility in the female as has an *epididymitis* in the male.) *Salpingectomy* is the cutting away of the whole or of a piece of the Fallopian tube (corresponds to *vasectomy* in the male).

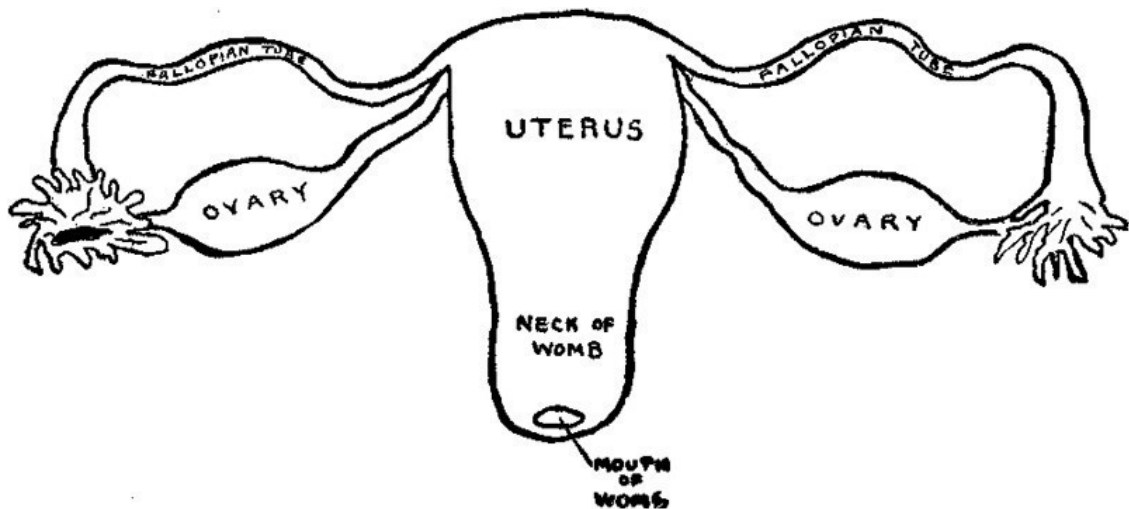


1. Openings into the Fallopian Tubes. 2. Mouth of the Womb.

The Uterus. The uterus or womb is the organ in which the fertilized ovum, or egg, grows and develops into a child. It is a hollow muscular organ, about the size of a pear, with thick walls, capable under the influence of pregnancy of great expansion and growth. The broad part of the pear is called the *body* of the uterus; the lower narrow part is called the *neck* of the uterus, or *cervix*. The uterus in the adult girl or woman is about three inches long, two inches broad in its upper part and nearly an inch thick. It weighs from an ounce to an ounce and a half. When the uterus is in a pregnant condition, it increases enormously, both in size and in weight, as we will see in a future chapter. The cavity of the uterus is somewhat triangular in shape; at each upper angle is the small opening communicating with

the Fallopian tube; the upper portion of the uterus is called the fundus; the external opening of the womb, situated in the center of the cervix, is called the mouth of the womb, or the *os*, or external *os*.

The uterus is situated in the center of the pelvis, between the bladder and the rectum. It is supported by certain ligaments, the chief of which are the broad ligaments; but, on account of general weakness, too hard physical labor, or lifting heavy weights, the ligaments may stretch, and the uterus may sink down low in the vagina, and we then have the condition known as prolapse of the womb. Or, the womb may turn forward, when we have a condition of *anteversion*. If the womb is *bent* (or *flexed*) forward on itself the condition is called *anteflexion*. If the womb is turned backwards, the condition is called *retroversion*; if it is bent or flexed backward upon itself the condition is called *retroflexion*. An extreme degree of anteversion or anteflexion, or retroversion or retroflexion, may interfere with impregnation, as the spermatozoa may find it difficult or impossible to reach the opening of the womb—the external *os*.

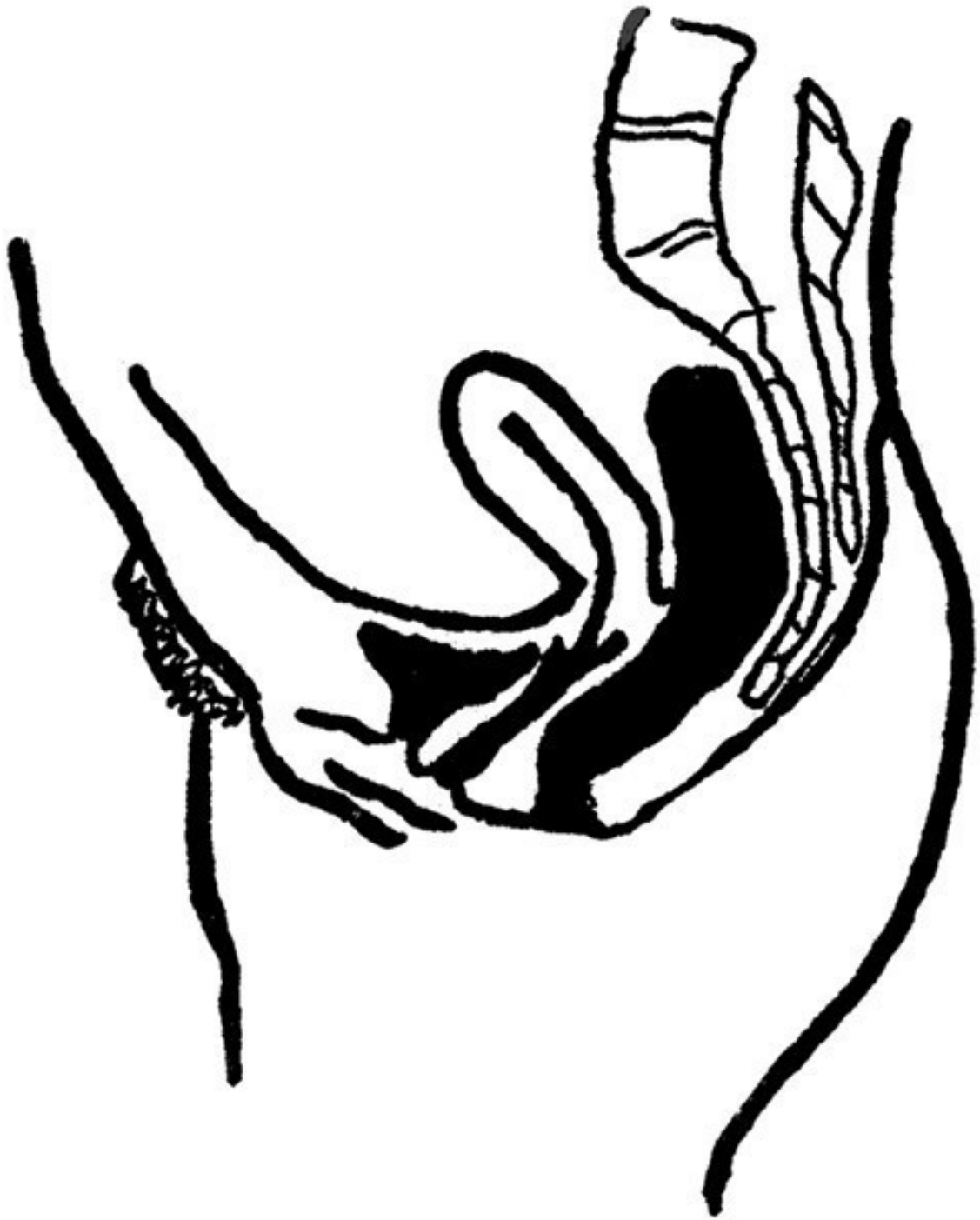


The entire cavity of the uterus is lined by a mucous membrane;¹ this mucous membrane is called the endometrium (endo—within; metra—uterus). An inflammation of the endometrium is called *endometritis*. It is the endometrium that is principally concerned in menstruation—that is, it is from it that the monthly discharge of blood comes.

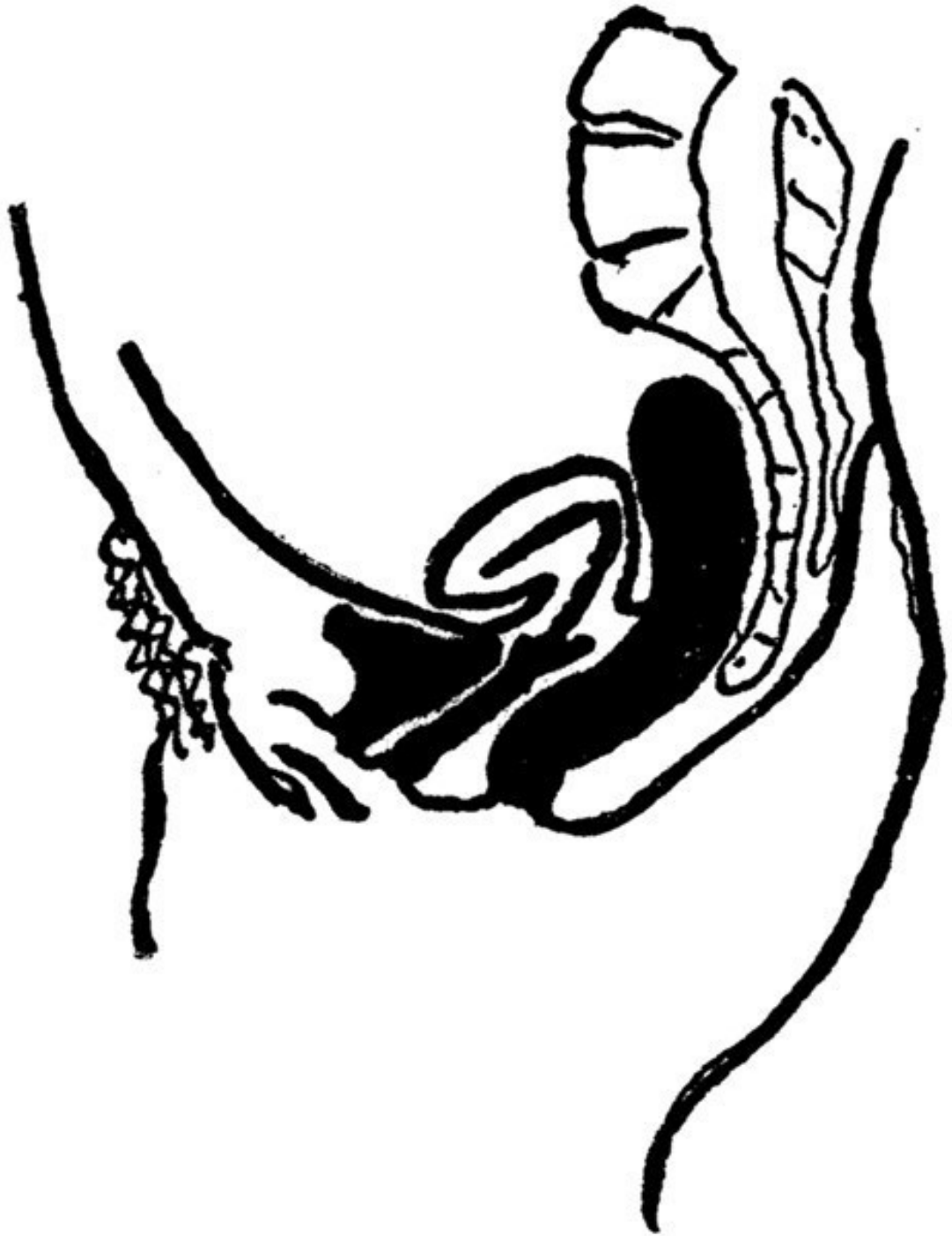
The Vagina [vagina in Latin—a sheath]. The vagina is the tube or canal which serves as a passage-way between the uterus and the outside of the body. It extends from the external genitals or vulva to the neck of the womb, embracing the latter for some distance. It is a strong, fibromuscular canal, lined with mucous membrane. It is not smooth inside, but arranged in folds, or *rugæ*, so that when necessary, as during childbirth, it can stretch enormously and permit the passage of a child's head. The length of the vaginal canal is between three and five inches, but it is in general much more capacious in women that have borne one or more children than in those who have not borne any.

Near the vaginal entrance are situated two small glands; they are about the size of a pea, and secrete mucus. They are called Bartholin's glands; occasionally they become inflamed and give a good deal of trouble.

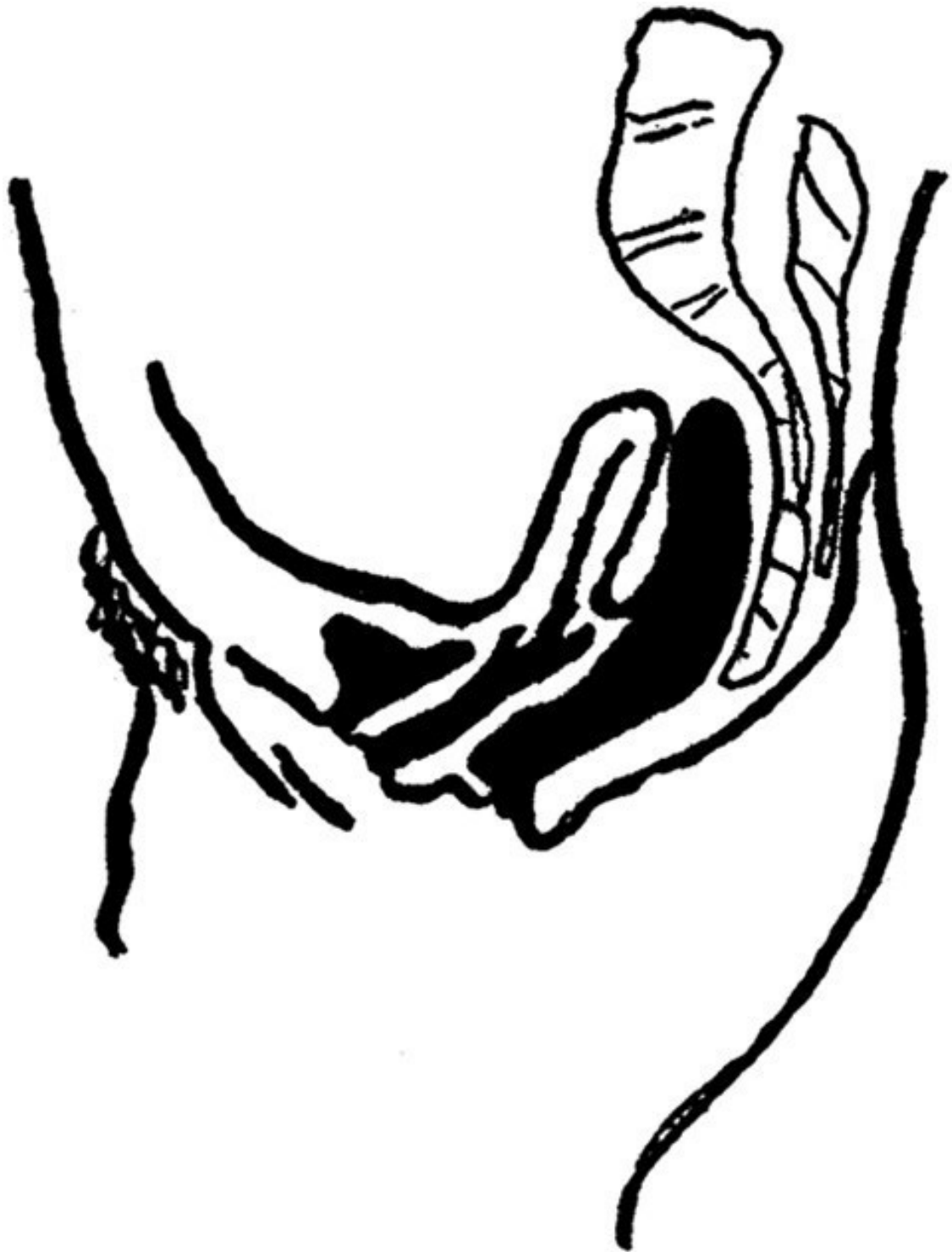
¹ Mucous membrane—briefly a membrane which secretes mucus or some other fluid.



Anteversion of the Uterus.



Anteflexion of the Uterus.



Retroversion of the Uterus.



Retroflexion of the Uterus.

The Hymen [hymen in Greek—a membrane]. The external opening of the vagina, in virgins, that is, in girls or women who have not had sexual intercourse, is almost entirely closed by a membrane called the hymen. The vulgar name for hymen is "maidenhead." The hymen may be of various shapes, and of different consistency. In some girls it is a very thin membrane, which tears very readily; in others it is quite tough. On the upper margin or in the center of the hymen there is an opening which permits any secretion from the vagina and the blood from the uterus to come through. In rare cases there is no opening in the hymen, that is, the vagina is entirely closed. Such a hymen is called *imperforate* (not perforated). When the girl begins to menstruate, the blood cannot come out and it

accumulates in the vagina. In such cases the hymen must be opened or slit by a doctor. In some cases the hymen is congenitally absent; that is, the girl is born without any hymen. While the hymen is usually ruptured during the first intercourse, it, in some cases, being elastic and stretchable, persists untornd after sexual intercourse. It will therefore be seen that just as the presence of the hymen is no absolute proof of virginity, so is the absence of the hymen no absolute proof that the girl has had sexual relations, She might have been born without any hymen, or it might have been ruptured by vaginal examination, by a vaginal douche, by scratching to relieve itching, or by some accident.

The remains of the hymen after it is ruptured shrink and form little elevations which can be easily felt; they are known as caruncles. [In Latin, *carunculae myrtiformes*, which means in English myrtleberry-shaped caruncles; caruncle is a small fleshy elevation; derived from *caro*, which in Latin means flesh.]

SUBCHAPTER B THE EXTERNAL GENITALS

The Vulva. The external genitals of the female are called the *vulva*. The vulva consists of the labia majora (meaning the larger lips), which are on the outside and which in the grown-up girl are covered with hair, and the labia minora (the smaller lips), which are on the inside and which are usually only seen when the labia majora are taken apart.

[Vulva in Latin means folding-door. The ancients Were fond of giving fancy names to things.]

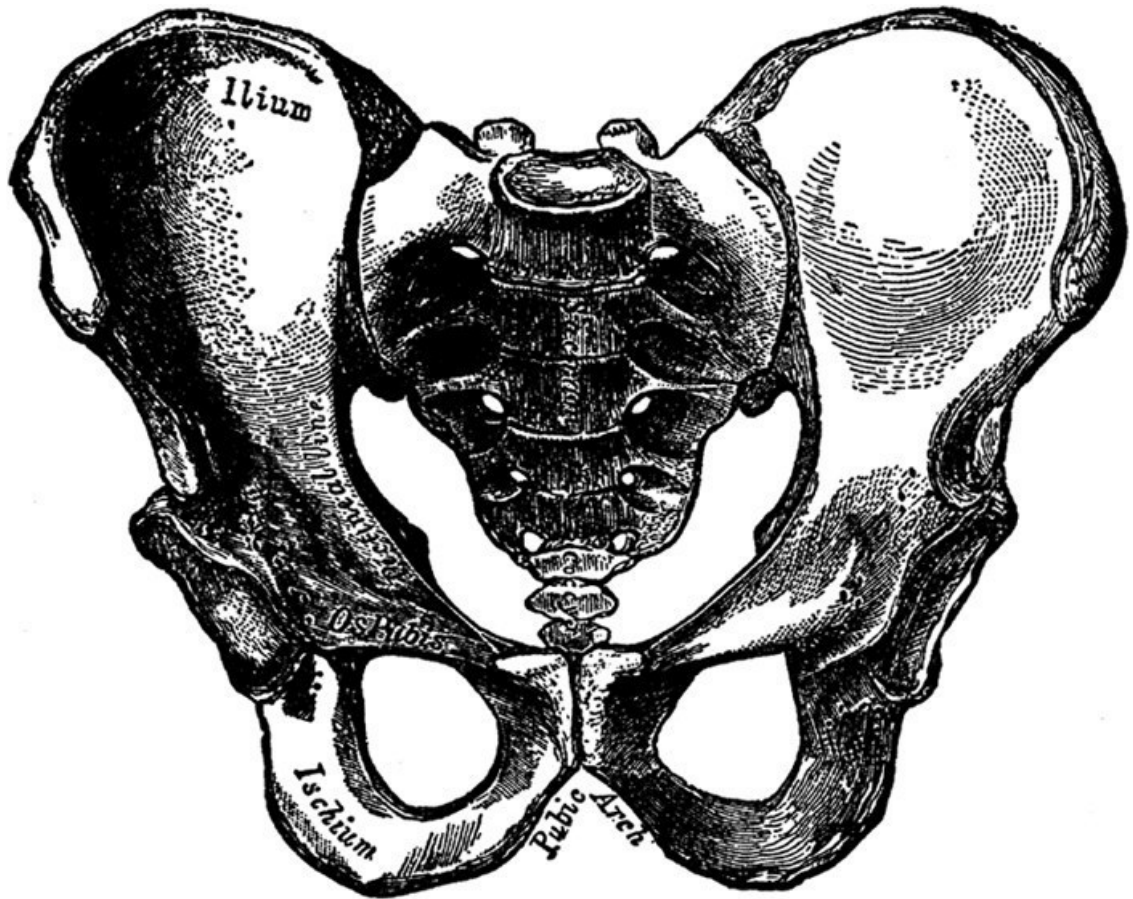
The Mons Veneris. The elevation above the vulva, which during puberty becomes covered with hair, is called by the fanciful name, *mons Veneris*, or Venus' mountain. It is usually well padded with fatty tissue.

The Clitoris. The clitoris is a small body about an inch in length, situated beneath the mons Veneris and partly or entirely covered by the upper borders of the labia minora.

The Urethra. Between the clitoris above and the opening of the vagina below is situated the opening of the *urethra*, or the urinary meatus, through which the urine passes. Many women are so ignorant, or, let us say innocent, that they think the urine passes out through the vagina. This is not so. The vagina has nothing to do with the process of urination.

Again enumerating the female sex organs, but in the reverse order, from before backward, or from out inward, we have: The mons Veneris and the labia majora, or the external lips of the vulva; these are the plainly visible parts of the female genital organs. When the labia majora are taken apart we see the labia minora; when the labia majora and minora are taken apart we can see or feel the clitoris and the hymen, or the remains of the hymen. We then have the vagina, a large, stretchable musculo-membranous canal, in the upper portion of which the neck of the womb, or the cervix, can be seen (when a speculum is used), or felt by the finger. Only the cervix, or neck of the womb, can be seen, but the rest of the womb, the broader portion, can be easily felt and examined by one hand in the vagina and the other hand over the abdomen. Continuous with the uterus are the Fallopian tubes, and below the trumpet-shaped ends of the Fallopian tubes are the ovaries, embedded in the broad ligaments, one on each side.

The Breasts. The breasts, also called mammary glands, or mammæ [mamma in Latin, breast], may be considered as accessory organs of reproduction. They are of no importance in the male, in whom they are usually rudimentary, but they are of great importance in the female. They manufacture milk, which is necessary for the proper nutrition of the infant, and they add a great deal to the beauty and attractiveness of the woman. They are thus a help to the woman in getting a mate or a husband. The projecting elevation of the breast, which the child takes in his mouth when nursing, is called the nipple; the darker colored area surrounding the nipple is called the areola.



The Pelvis of the Male.



The Pelvis of the Female.

SUBCHAPTER C

THE PELVIS

The internal sex organs are situated in the lower part of the abdominal cavity, the part that is called the *pelvis*, or pelvic cavity. The meaning of the word *pelvis* in Latin is basin. The *pelvis*, also referred to as the pelvic girdle or pelvic arch, forms a bony basin, and is composed of three powerful bones: the sacrum, consisting of five vertebræ fused together and constituting the solid part of the spine, or vertebral column, in the back, and the two hipbones, one on each side. The two hipbones meet in front, forming the *pubic arch*.

The hipbones are called in Latin the *ossa innominata* (nameless bones) and each hipbone is composed of three bones: the ilium, the ischium, and the os pubis. The thighs are attached to the hipbones, and to the hipbones are also attached the large *gluteal* muscles, which form the buttocks, or the "seat."

The pelvis of the female differs considerably from the pelvis of the male. The female pelvis is shallower and wider, less massive, the margins of the bones are more widely separated, thus giving greater prominence to the hips; the sacrum is shorter and less curved, and the pubic arch is wider and more rounded. All this is necessary in order to permit the child's head to pass through. If the female pelvis were exactly like the male pelvis, a full-term living child could never pass through it. The two illustrations show the differences between the male and female pelvis very clearly.

Note particularly the differences in the pubic arches: in the male pelvis it is really more of an angle than an arch. Also note how much longer and more solid the sacrum (with its attached bone, called the coccyx²) is in the male pelvis. The differences in the pelvis (the plural of *pelvis* is *pelves*) of the male and female become fully marked at puberty, but they are present as early as the fourth month of intra-uterine life.

² The coccyx consists of three rudimentary vertebræ; it is the vestige of an organ which we once possessed in common with many other animals, namely—a tail.

Chapter Three

THE PHYSIOLOGY OF THE FEMALE SEX ORGANS

Function of the Ovaries—Internal Secretion of the Ovaries—Function of the Internal Secretion—Number of Ova in the Ovaries—The Graafian Follicles—Ovulation—Corpora Lutea—Function of the Fallopian Tubes—Function of the Vagina—Functions of the Vulva, Clitoris and Mons Veneris—Function of the Breasts—Besides Secreting Milk Breast Has Sexual Function—The Orgasm—Pollutions in Women—Secondary Sex Characters—Differences Between Woman and Man.

The importance of an organ depends upon its *function*, upon what it does, and not so much upon what it is. It is important to know the size, structure and location of an organ, but it is still more important to know its function; in other words, for our purpose it is more important to know the *physiology* than the anatomy of the sex organs.

SUBCHAPTER A FUNCTION OF THE OVARIES

Like the testicles in man, so the ovaries in woman are the essential sexual organs. They are the fundamental organs, without which the other sexual organs are useless. Also like the testicles in man, the ovaries have two distinct functions, manufacturing two distinct substances. One function is to manufacture eggs; this, called the oögenetic or egg-producing function, is its *racial* function; without it the race could not perpetuate itself. But the ovary has also an *individual* function. Besides the ova, the ovary manufactures what we call an *internal* secretion which is absorbed by the blood, and which is of the greatest importance to the woman herself. While the manufacture of ova begins only at puberty, with menstruation, and closes at the menopause, the manufacture of the internal secretion lasts throughout the woman's entire life. This secretion, which consists of various chemical substances, has a tremendous influence not only on the development of the woman's body, but also on her feelings.

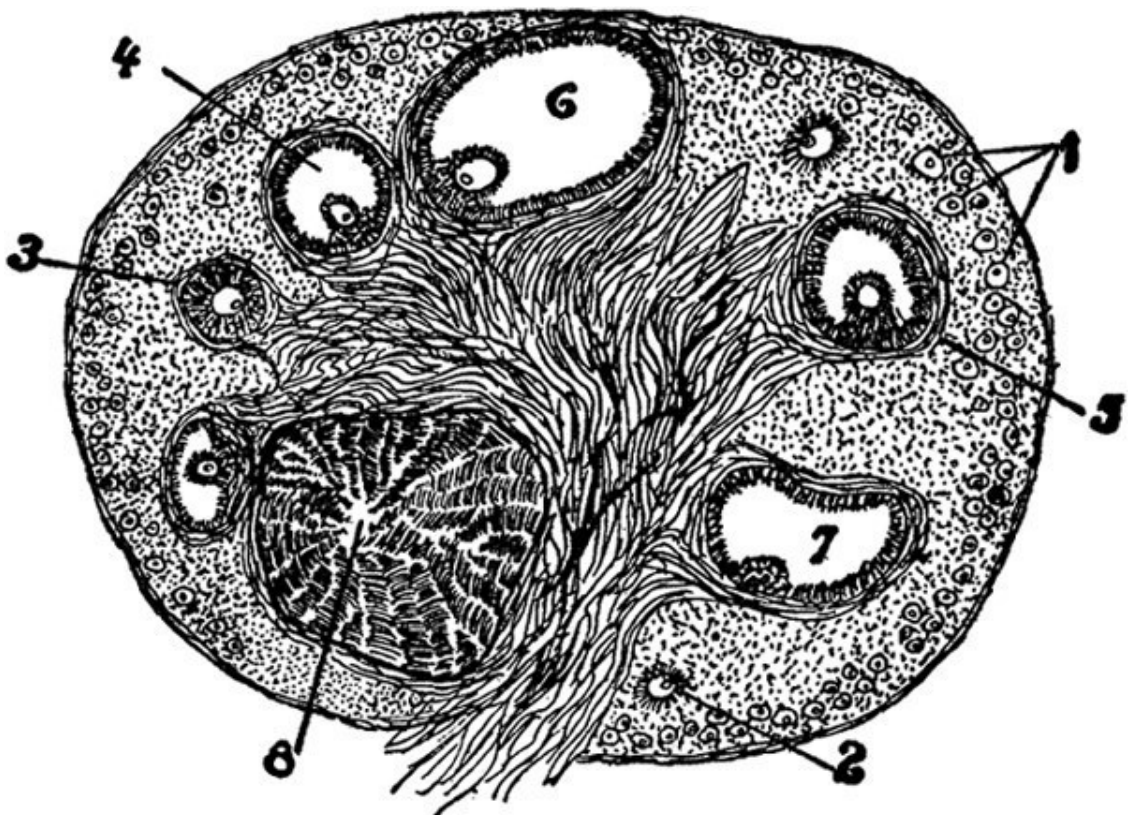
First of all it is necessary for the development of the woman's special characteristics, or *secondary sexual characters*. Without that internal secretion of the ovaries, a woman would look more or less like a man; she would not develop her beautiful rounded form, her pretty long hair, her breasts, her broad pelvis, her feminine voice, etc. *Second*, the secretion is necessary to the proper development of her other sexual organs; if the ovaries are cut out, then the uterus and the vagina and even the vulva shrivel up. *Third*, it is that internal secretion that excites in woman sexual desire and makes her enjoy relations with the male sex. If the ovaries are cut away, particularly if it is done early in life, the woman has no sexual desire and no enjoyment. *Fourth*, it contributes to the general health, wellbeing, energy, and mental alertness of the woman.

You see the importance of the internal ovarian secretion, and you will readily understand why, when the ovaries are removed by operation, the woman, particularly if she is young, undergoes such marked changes. It is because we recognize now the great importance of the ovaries that we always, when operating on diseased ovaries leave at least a small piece of ovary, if at all possible.

Number of Ova. When the female infant is born, her ovaries contain as many ova or eggs as they ever will contain. In fact, they contain more than they will at puberty. For it is estimated that at birth each ovary contains about 100,000 ova; the majority of these, however, disappear so that at the

age of puberty each ovary contains only about 30,000 ova. As only one ovum ripens each month from the time of puberty to the time of the menopause (i.e., about 300 to 400 ova at the utmost during a lifetime), and as only a dozen or two ova would be necessary for the propagation of the race, it seems a superabundance of ova, an unnecessary lavishness. But nature *is* lavish where the propagation of the species is concerned. A portion of an ovary or of both ovaries might become diseased, and thousands of ova might become unfit for fertilization; nature therefore puts in an extra reserve supply. We see a still more striking example of this extreme extravagant lavishness in man; only one spermatozöon is necessary to impregnate the ovum, and only one spermatozöon can penetrate the ovum; nevertheless each normal ejaculation of semen contains between a quarter and half a million spermatozoa.

The Graafian Follicles. Each primitive or primordial ovum³ is imbedded in a little vesicle or follicle, which is generally known as *Graafian follicle*, and there are as many Graafian follicles as there are ova. (The Graafian follicles were first described about 250 years ago—in 1672—by a Delft physician named De Graaf, hence the name.) Until puberty, that is the commencement of menstruation, the Graafian follicles with the oöcytes or primitive ova are in a more or less dormant condition. But with the onset of puberty there commences a period of intense activity in the ovaries. This period of activity is repeated regularly once a month, and it constitutes the process of *ovulation* and *menstruation*. The two processes are closely though not causally connected. Ovulation consists in the monthly maturation and extrusion of a ripe ovum; menstruation, which will be further discussed in a separate chapter, consists in the monthly discharge of blood, mixed with mucus from the inside lining of the uterus. Every twenty-eight days, from the time of puberty to the time of the menopause, a Graafian follicle bursts and an ovum is extruded from the ovary. Before the follicle bursts, it swells and enlarges and reaches the surface of the ovary; the whole follicle is congested with blood, but at one point near the surface of the ovary it is pale and thin, and here the rupture takes place.



³ The ovum is really the fully mature egg ready for fecundation; before maturity it should not be called ovum but oöcyte; and in advanced treatises it is so referred to. But here ovum will do for both the unripe and ripe egg.

Section of Ovary.

1. Graafian follicle in the earliest stage.
- 2, 3, 4. Follicles in more advanced stages.
- 5, 7. Almost mature follicle.
6. Follicle from which the ovum has escaped.
8. Corpus luteum.

Corpora Lutea. After the Graafian follicle has burst and the ovum has been pushed out, the cavity that is left does not remain empty and functionless; there is a further process going on there; there is a growth of cells, of a yellowish color, and the follicle becomes filled with a yellowish body, which on account of its color is called the *corpus luteum* (plural—corpora lutea; luteum in Latin—yellow, corpus—body). This corpus luteum grows in size until it sometimes occupies as much as one-third of the ovary. But there is considerable difference between the corpora lutea of non-pregnant and pregnant women. Up to the end of about a month the corpora lutea are the same, but after that the corpus luteum of the non-pregnant woman begins to get smaller, to shrink, so that at the end of two or three months it is reduced to a small scar and later cannot be noticed at all. The corpus luteum of the pregnant woman keeps on increasing until the end of the second month, remains about the same size until the end of the sixth month, and only then begins gradually to diminish. The corpus luteum of the non-pregnant woman, that is, the one following menstruation, is called false corpus luteum; the corpus luteum following pregnancy is called a true corpus luteum. The corpus luteum acts like a gland and elaborates a secretion which has an influence on the circulation in the uterus and on menstruation. It probably possesses other properties, with which we are not yet quite familiar. The corpora lutea of various animals are now prepared in powder or tablet form and used in medicine in the treatment of certain diseases of women.

SUBCHAPTER B

FUNCTION OF THE OTHER GENITAL ORGANS

Function of the Fallopian Tubes. The function of the Fallopian tubes or oviducts as they are sometimes called is to catch the ovum as it bursts through the ovary and to conduct it from the ovary into the uterus. It is while the ovum is in the narrow lumen of the tube that the spermatozoön which has travelled up from the uterus usually finds it, and it is in the tube, near its entrance to the womb, that impregnation usually takes place. After the ovum is impregnated or fecundated, it slowly moves down to the uterus, where it attaches itself and remains and grows for nine months, until it is ready to come out and start an independent life.

The uterus or womb is the house of the embryo almost from the moment of conception to the moment of birth. Within the thick warm sheltered walls of the uterus the child grows, develops, eats and breathes, until all its organs and functions have reached such a stage of perfection that it can live by itself and for itself. And this may be said to be the sole function of the uterus, or at least its sole useful function. For the other function of the uterus, menstruation, cannot be said to be a necessary or a useful function. It is a normal function because it occurs regularly in every healthy woman during her child-bearing period, but not every normal function is a necessary or useful function. Not everything that is right or useful.

Function of the Vagina. The vagina is the canal in which sexual intercourse takes place. It receives the male organ (penis) during the sexual act, and serves as a temporary repository for the male semen. After the spermatozoa have reached the uterus, the vagina has no further function to perform.

Functions of the Vulva, Clitoris, and Mons Veneris. The vulva and the clitoris have no special functions to perform; but in them, in the clitoris particularly, but also in the labia minora,

resides the feeling of voluptuousness, the pleasurable sensation experienced during the sexual act. Another seat of voluptuousness in the woman is located in the cervix of the uterus.

The mons Veneris has no special physiological function to perform, but it as well as the vulva serve as strong points of attraction for the male sex. While the entire female body is attractive to the male, and vice versa, there are certain zones which are especially attractive or exciting. Such zones or areas are called *erogenous zones*—the word erogenous means love-generating. The vulva and the mons Veneris are the strongest erogenous zones; other erogenous zones are the lips, the breasts, etc.

Function of the Breasts. The function of the breasts is to nurse or suckle the young on the mother's milk until they are able to live on other food. The other name for breasts is mammary gland (in Latin, mamma—breast), and all animals who suckle their young are called mammals or mammalia. Besides its milk secreting function, the breasts constitute a strong erogenous zone; they are a point of strong attraction for the male sex, many men being more attracted by well-developed breasts than by a pretty face. There is a good biological reason for this. Well developed breasts indicate that the other sexual organs are well developed and that the woman will make a satisfactory wife and satisfactory mother. Considering then the importance of the breasts in attracting a husband and their function in nursing the young, also their erogenous properties, it is perfectly proper to class them among the reproductive organs.

SUBCHAPTER C THE ORGASM

The culmination of the act of sexual intercourse is called the orgasm. It is the moment at which the pleasurable sensation is at its highest point, the body experiences a thrill, there is a spasmodic contraction in the genital organs, and there is a secretion of fluid from the genital glands and mucous membranes. This fluid in women is not a vital fluid like the semen in man; it is merely mucus, and in some women it is very slight in amount or altogether absent. Adult women who live without sexual relations occasionally have sexual or erotic dreams; that is, they dream that they are in the company of men, playing or having relations with them. Such dreams are usually accompanied by an orgasm or an orgasmic feeling, and by a discharge of mucus, the same as in sexual intercourse. Such a discharge of mucus during sleep is called an emission or pollution.

In the male sex pollutions play an important rôle (see the author's "Sex Knowledge for men"), because the semen is a vital fluid, and if it is lost too frequently the system is put under a heavy drain. In boys and men the pollutions or night losses may occur several times a week or even every night, or several times a night. When they occur with such frequency the man may become a wreck. Not so with women. First, pollutions or night dreams in women are much more rare than they are in men; and second, as just mentioned, the fluid secreted by woman during intercourse or during an erotic dream is not of a vital character, as the semen is in man; it is mucus, and the secretion of a mucous fluid, even if somewhat excessive, does not constitute a drain on the system. For this reason women can stand frequently repeated sex relations and emissions or pollutions much better than men can.

SUBCHAPTER D THE SECONDARY SEX CHARACTERS

The sex organs constitute the primary sex characters. It is they that distinguish primarily one sex from another. But there are numerous other sex characters or sex differences which while not so important serve to differentiate the sexes, at the same time forming points of attraction between one sex and another. For instance, the beard and mustache are a distinct male characteristic and constitute one of the secondary male sex characters. The secondary sex characters are very numerous; one might say that each one of the billions of cells in the body bears the impress of the sex to which it belongs.

First, the skeleton. The entire female skeleton differs from the male skeleton; all the bones are smaller and more gracile; the pelvis, as we have seen before, is shallower and wider. Then the muscles are smaller and more rounded. The entire contour of the body is rounded rather than angular as in man. The skin is finer, softer, more delicate. The hair on the head is longer and of a finer texture, while over the body the hair is also finer and less abundant. The voice is finer, more pleasant, and of a higher pitch (soprano). The breasts are well developed, and serve an important purpose, while in men they are rudimentary. The breathing is also different; woman breathes principally with the upper part of the chest, man with the lower. The brain is smaller and its convolutions somewhat less complex in woman.

Woman differs considerably from man not only physically, as we have seen, but also mentally and emotionally. But into this phase of the subject we will not enter, except to remark that it is foolish to speak of the superiority or inferiority of one sex to another. In some respects man is greatly superior to woman, in others he is inferior; on the whole the sexes balance one another pretty well, and while the sexes are not and never will be exactly alike, we have no right to speak of the inferiority of one sex to another. We recognize that the sexes are different, but they complement one another, and the claim of the reactionary and of the woman-hater that woman is an inferior creature is just as senseless as is the claim made by some ultra-militant feminists that woman is the superior and man the inferior.

Chapter Four

THE SEX INSTINCT

Universality of the Sex Instinct—Not Responsible for Our Thoughts and Feelings.

The sex instinct, which runs all through nature from the lowest animal to the highest, is the inborn impulse, craving or desire which one sex has for the other: the male for the female and the female for the male. This instinct, this desire for the opposite sex, which is born with us and which manifests itself at a very early age, is not anything to be ashamed of. There is nothing disgraceful, nothing sinful in it. It is a normal, natural, healthy instinct, implanted in us by nature for various reasons, and absolutely indispensable for the perpetuation of the race. If there were anything to be ashamed of, it would be the lack of this sex instinct, for without it the race would quickly die out.

Not Responsible for Thoughts and Feelings. It is necessary to impress this point, because many girls and women, whose minds have been perverted by a vicious so-called morality, worry themselves to illness, brood and become hypochondriac because they think they have committed a grievous sin in experiencing a desire for sexual relations or for the embrace of a certain man. Altogether it is necessary to impress upon the growing girl, when the occasion presents itself, that a thought or a feeling can never be sinful. An action may be, but a thought or a feeling cannot. Why? Because we are not responsible for our thoughts and feelings; they are not under our control. Though it does not mean that when they do arise we are to give them full sway. We should attempt to combat them and drive them away, but there is nothing to be ashamed of, because for their origin we are not responsible.

Responsible for Actions. Our actions are under our control, to a certain extent at least, and if we do a bad or injurious act, we have committed a sin and are morally responsible. The *desire* for the sexual act is no more sinful than the desire for food is when one is hungry. But the performance of the act may, under certain circumstances, be as sinful as the eating of food which the hungry man obtained by robbing another fellow-being, just as poor as himself.

I am not preaching to you. But I am not an extremist nor a hypocrite. I am advocating neither asceticism nor licentiousness. One is as bad, or almost as bad, as the other.

What I am trying to do is to inculcate in your minds, if possible, a sane, well-balanced view of all things sexual.

For I believe that wrong, perverted views of the physiology and hygiene of the sex act and of sex morality, that is, the proper relationship of the sexes, are responsible for untold misery, for incalculable suffering. Both sexes suffer, but the female sex suffers more. The woman always pays more. This is due to her natural disabilities (menstruation, pregnancy, lactation), to her age-long repression, to the fact that she must be sought but never seek, and to her economic dependence.

For the above reasons, sex instruction is a matter of double importance to woman—this fact has been emphasized in the first chapter. But woman's disabilities impose upon us another duty: *because* she carries the heaviest burden, *because* she always pays more dearly than the man, it becomes incumbent upon man to treat her with special consideration, with genuine kindness and chivalry.

Chapter Five

PUBERTY

Physical Changes in Puberty—Physical Changes in the Genital Organs and in the Rest of the Body—Psychic Changes—Puberty and Adolescence—Nubility.

Puberty is the most wonderful, the most significant period in a girl's life. Important as it is in a boy's life and development, it is still more so in a girl's. At this period there are often laid the foundations which either make or mar the girl's future life.

The meaning of the word puberty is maturity. It is the period at which the girl and the boy reach sexual maturity; in other words, the period at which the sex glands of the boy begin to generate spermatozoa, and the sex glands of the girl begin to mature and expel eggs or ova; with the girl puberty is marked by an additional phenomenon, which has no analogue in the boy, namely, menstruation.

Physical Changes. The word puberty is derived from the word *puber*, which in Latin means mature, ripe. But the word *puber* is itself derived from the word *pubes*, which in Latin means fine hair or down. For at this period of maturity all mammals (that is animals which have breasts and nurse their young) begin to develop a growth of hair. You know that our entire body, with the exception of the palms of the hands and the soles of the feet, is covered with innumerable hair follicles, and from our birth our entire body, with the exception named, is covered with fine hair. The hair may be too delicate to be seen, but it is there, and with a magnifying glass you can see it without any trouble. But at puberty the hair increases in thickness and in quantity, and becomes abundant in places where it was hardly noticeable before—the upper lip and face in boys, and the armpits and lower part of the abdomen in both boys and girls.

And so the first apparent physical sign of puberty in a girl is the gradual appearance of hair in the armpits, on the mons Veneris and the labia majora. But all the genital organs are undergoing rapid development; the vulva, the vagina, the uterus and the ovaries become larger, and the ovaries which up to that time were elaborating an internal secretion only, now also begin to manufacture ova; in other words, the monthly process of ovulation is begun. Synchronously with the process of ovulation, there commences the monthly function of menstruation. The breasts also increase in size, assume the characteristic contour, develop their glandular substance, and become capable of secreting milk for the use of any possible offspring. During this period of development they are often very sensitive to the touch or feel painful without being touched.

But not only the genital organs undergo growth and development—the entire body participates in the process. The growth in height is the most rapid at this period; the greatest growth takes place in the limbs—legs and arms. The pelvis becomes broader, and the chest or thorax also becomes broader and larger. The muscles become larger and rounder and finally give the girl the beautiful womanly form.

Psychic Changes. But the changes are not only physical; the changes that take place in the girl's psychic sphere during the pubertal years are also highly important. That is the period of the development of the emotions; she is overflowing with emotion; she becomes sensitive; in her relations with boys and men she becomes self-conscious. Distinct sexual desire fortunately does not make its appearance in the girl at this period, as it does in the boy, but she becomes filled with vague undefined and undefinable longings. It is the period of "crushes" when the girl is apt to bestow her overflowing emotion on a girl friend. There is nothing reprehensible in these crushes—they act as a safety valve—and only in rare cases are they apt to lead to abnormal development. This is also the period of day-dreaming and of romancing; the girl likes to read love-stories and novels in which she identifies

herself with the heroine. And it makes quite some difference as to what the girl reads during this period, for literature has a strong influence on the young in the most plastic period of their lives; and it is important that older persons see to it that those in their care spend their time on books of noble ideals and high artistic value.

Girls of a highly sensitive or so-called "nervous" temperament, especially if there is "nervousness" in the family, must be particularly looked after. For it is during the years of puberty and adolescence that any neurotic traits are apt to develop and become emphasized. It is also the period when bad sexual habits (masturbation) are apt to develop, and the careful mother will devote special attention to her girls in their years of puberty, and guard them as much as possible against physical and emotional shocks.

The age of puberty in girls is by many writers considered as synonymous or synchronous with the onset of menstruation, which in this country in the majority of cases occurs between the ages of thirteen and fourteen. The year of gradual development before the onset of menstruation is by some referred to as the pre-pubertal year; and the first year after the onset of menstruation is the post-pubertal year. The period from puberty to full sexual maturity is called adolescence, and this term is applied generally to the period between thirteen and eighteen. For at eighteen the boy and the girl have reached full maturity. Mentally we acquire things as long as we live, and even physically the body gets larger for some years after eighteen. But sexually both boys and girls are fully mature at eighteen, though in order to become parents it is best, for various reasons, to wait to the ages of twenty or twenty-five.

Nubility. Nubility is the age or state when a boy or a girl is "fit" for marriage. This is a vague and unsatisfactory term. At the age of thirteen to fifteen boys and girls are physically "fit" for marriage, that is at that age a boy is capable of begetting and a girl of having children. But it does not mean that it would be advisable for them to marry at such an early age. Neither their bodies nor their minds are fully developed, and children begotten of such young parents are apt to be weaklings, both mentally and physically. The youngest age for girls to marry should be eighteen, and for boys twenty; but the youngest age for becoming parents should be twenty to twenty-two for the mother and twenty-three to twenty-five for the father.

Chapter Six

MENSTRUATION

Definition of Menstruation—Where Menstrual Blood Comes From—Age of Menstruation—Age of Cessation of Menstruation—Duration—Amount—Regularity and Irregularity.

The first function with which the girl will be confronted, which will impress upon her that she is a creature of sex, that she is decidedly different from the boy, is *menstruation*. And this function we will now proceed to study.

What is menstruation? Menstruation is a monthly discharge of blood. The word is derived from the Latin word *mensis*, which means a month; and menstruation is also frequently spoken of as *the menses*. It is also called the *catamenia* or *catamenia-flow* (Greek, *kata*—by, *men*—a month). Other terms are: the periods, courses, monthlies, turns, monthly changes, monthly sickness, sickness, flowers, to be unwell, to be regular. "Not to see anything" is a common term for having missed the menses. This flow of blood recurs in most cases with remarkable regularity once a month; not a calendar month, but once a lunar month, i.e., once every twenty-eight days. And as there are thirteen lunar months a year, a woman menstruates not twelve but thirteen times a year.

Where does the menstrual blood come from? The menstrual blood comes from the inside of the womb. Every month, for a few days prior to menstruation, the inside lining of the womb (what we call the mucous membrane or endometrium) becomes congested and its bloodvessels become distended with blood. If the woman has sexual intercourse and pregnancy happens to take place, then this extra blood is used to nourish and develop the new child; but if no pregnancy takes place, that extra blood exudes from the bloodvessels (some of the bloodvessels rupture) and is discharged from the uterus into the vagina, and from there to the outside, where it is caught on cotton, sanitary napkins or some other pad.

At what age does menstruation begin? The usual age at which menstruation begins in this country is thirteen or fourteen; in some it may occur as early as twelve, in others as late as fifteen, sixteen or even seventeen. For menstruation to begin earlier than twelve or later than seventeen is in this country a rare exception. But in cold northern climates the age of eighteen is not rare, and in the hot southern climates menstruation often starts at the ages of ten or eleven. Change of climate or of country will often have an influence on the menses. In the early years of his medical practice, the author had many Finnish girls as patients. It was a very common occurrence for them to stop menstruating for the first few months or even for the first year of their residence in this country.

At what age does menstruation cease? The age at which menstruation ceases is called the *menopause* or *climacteric*. It usually takes place at the age of forty-eight or fifty. In some cases it does not take place until the age of fifty-two, in others it takes place as early as forty-five or forty-four. In general, it may be said that the woman's menstruating period, during which she is able to have children, lasts about thirty-five years. And if no restraint be taken, and if no precautions be taken against conception, a woman could have twenty or thirty children during her childbearing period.

How many days does a woman menstruate? The usual number of days is from three to five; in some cases menstruation lasts only two days, in others as long as seven. As a rule, the greatest amount of blood passed is during the first two days.

The amount of blood. It is hard to estimate the exact amount of blood passed by a woman during her menses, but it reaches about an ounce and a half to three ounces. In some women the amount may reach as much as four or five ounces and in exceptional cases as much as eight ounces.

Where it exceeds this amount, it is an abnormal condition, requiring treatment. The usual statement that a normally menstruating woman should not have to use more than three napkins during the twenty-four hours is correct.

The periodical regularity with which menstruation recurs in many women is remarkable. I know a woman who has not missed her menses in twenty years; during those twenty years the menses have started every fourth Friday, almost always at the same hour. I know another one who has her menses every fourth Wednesday, about seven in the morning. She skipped her periods during her two pregnancies, then they were irregular for a while, then they came back to Wednesday. Other women have their menses on a certain day of the month, say the first or the fifth, regardless of the number of days in the month (such cases are, however, exceptional). And in some women the menses are irregular: every three weeks, every five or six weeks, every six or seven weeks, etc. Some women never know when they may expect their menses, so irregular they are.

Chapter Seven

ABNORMALITIES OF MENSTRUATION

Disorders of Menstruation—Menorrhagia—Metrorrhagia—Amenorrhea—
Vicarious Menstruation—Dysmenorrhea of Organic and of Nervous Origin.

In many girls and women menstruation is a perfectly normal, physiological process. They suffer no discomfort whatever from it. They suffer no pains, no headache, no irritability, they have no admonition of its onset, until they feel the blood oozing or trickling out. But, unfortunately, this is true only of a small percentage. The majority of women have some unpleasant symptoms. Some have a headache for a day or two, some complain of a dragging down sensation, some are irritable, feel depressed or quarrelsome; some have no appetite, no ambition, no desire for work or company, while some girls have such severe pains and cramps that they are obliged to go to bed for a day or two and call in medical aid.

When the menstruation is very profuse, resembling more a hemorrhage than normal menstruation, it is called *menorrhagia*; if the hemorrhage from the uterus occurs out of the regular menstrual periods, it is called *metrorrhagia*. When the menses are skipped, or when they are so scanty that you can hardly notice any blood, we use the term *amenorrhea*. In a few rare cases the menstruation instead of coming normally from the uterus, comes from some other part of the body, for instance, the nose. Some women have a hemorrhage from the nose every month. In some a bloody discharge may come from the breasts. To such a substitute menstruation we apply the term *vicarious menstruation*. Such cases, however, are rare, and are mere curiosities.

Dysmenorrhea. I mentioned before that in some girls and women the menses are accompanied by pains and cramps. This affliction, which is the lot of millions of women, and from which men are entirely free, is called *dysmenorrhea*. Dysmenorrhea means painful and difficult menstruation. A slight pain or at least a feeling of discomfort is present in most cases of menstruation. But in many cases the pain is so severe, so *excruciating*, that the sufferer, girl or woman, is incapacitated for any work, and must go to bed for a day or two. In some cases the pain is so severe as to necessitate the use of morphine, and as it is a very bad thing to have to give morphine every three or four weeks, every endeavor should be made to find out the cause of the trouble and to remove it. It is a mistake, however, to think that all or even most cases of dysmenorrhea are due to some local trouble, that is, to an inflammation of the ovaries, or a displacement of the womb. Many cases of dysmenorrhea are of *nervous* origin; the cause resides in the central nervous system, and not in the genital organs themselves. It is, therefore, not advisable to undertake any local treatment, unless a competent physician has made a thorough examination and has decided that local treatment is advisable.

As to the percentage of dysmenorrhea, a recent statistical examination of 4,000 women showed that dysmenorrhea of some degree was present in over one-half, namely, 52 per cent.

Chapter Eight

THE HYGIENE OF MENSTRUATION

Lack of Cleanliness During Menstrual Period—Superstitious Beliefs— Hygiene of Menstruation.

The hygiene of menstruation can be expressed in two words: cleanliness and rest. Common sense would suggest these two measures, and as far as rest is concerned, many women do rest or take it easy while they are unwell. Some are forced to do it, because, if they don't, their dysmenorrhea is worse and the amount of blood they lose is considerably increased. The same cannot be said of cleanliness. Due undoubtedly to the superstitious opinions about menstruation, which came over to us from the ages-of-long-ago, menstruation is still considered a *noli-me-tangere*, and women are afraid to bathe, to douche or even to wash during the periods. And if there is any period when a woman needs a douche it is during menstruation. Any leucorrhea that a woman may be suffering from becomes aggravated around the periods; the menstrual blood of some women has a decided odor, and if no cleansing douche is taken during four or five days, some of the blood decomposes and acquires a decidedly offensive odor, which can be noticed at some distance and to which some men and women are very susceptible. There are some women who never take a vaginal douche. Some consider it a useless and unnecessary luxury; while some orthodox puritanical women consider it an ungodly procedure (forgetting that cleanliness is next to godliness) fit only for women of gay and questionable character. If these orthodox women knew what was good for them—and for their health—they would take a douche at least during menstruation, if at no other time.

Cleanliness. When the girl reaches the age of twelve or thirteen the mother should explain to her the phenomenon of menstruation and the likelihood of its making its appearance in a short time. Of course she should be told that there is nothing shameful in it, that when it makes its appearance she should at once tell her mother, who will instruct her what to do. She should be shown the use of sanitary napkins. Rags, unless recently washed and kept wrapped up and protected from dust, should not be used. Unclean rags may lead to infection. I have no doubt that many cases of leucorrhea date back their origin to unwashed rags. Every morning and every evening the girl should wash the external genitals with warm water, or plain soap and water. Married women should also take a douche once a day—the douche may consist of two quarts of water in which has been dissolved a teaspoonful of common table salt, or a tablespoonful of borax or boric acid. Such things like alum, potassium permanganate, carbolic acid, lactic acid, or tincture of iodine should only be used when there is leucorrhea present and generally only under a physician's directions. Bathing is permissible, but it is safe to use only a lukewarm bath. Cold tub baths, cold shower baths, as well as ocean and river bathing are best avoided during the period; at least during the first two days. I do not give this as an absolute rule; I know women who bathe and swim in the ocean during their menstrual periods without any injury to themselves, but they are exceptionally robust women; advice in books is for the average person, and it is always best to be on the safe side.

Rest. Rest is just as important during menstruation as cleanliness, if not more so. Some women as mentioned before feel during their menses just as well as they do at other times, and do not need any special hygiene. But these are in the minority. Most girls and women do feel somewhat below par during that period, and it is very important that they take it easy, particularly during the first two days. It is an outrage that many delicate, weak girls and women must stay on their feet all day or work on a machine when they should be at home in bed or lying down on a couch.

The womb is congested during the period, is larger and heavier than normal, and it is then that there is often laid the foundation for some future uterine disease, the well-known "womb trouble," or "female disease." It is not necessary that work be given up altogether, but there certainly should be less of it and there should be as much rest as possible. For delicate and sensitive girls it is always best to stay away from school during the first and second days. Speaking again of the average and not the exception, it is best that dancing, bicycle riding, horseback riding, rowing, and other athletic exercises be given up altogether during the menses. Automobile riding and railroad and carriage travelling prove injurious in some instances, greatly increasing the flow of blood. But these are the exceptions at the other extreme.

Chapter Nine

FECUNDATION OR FERTILIZATION

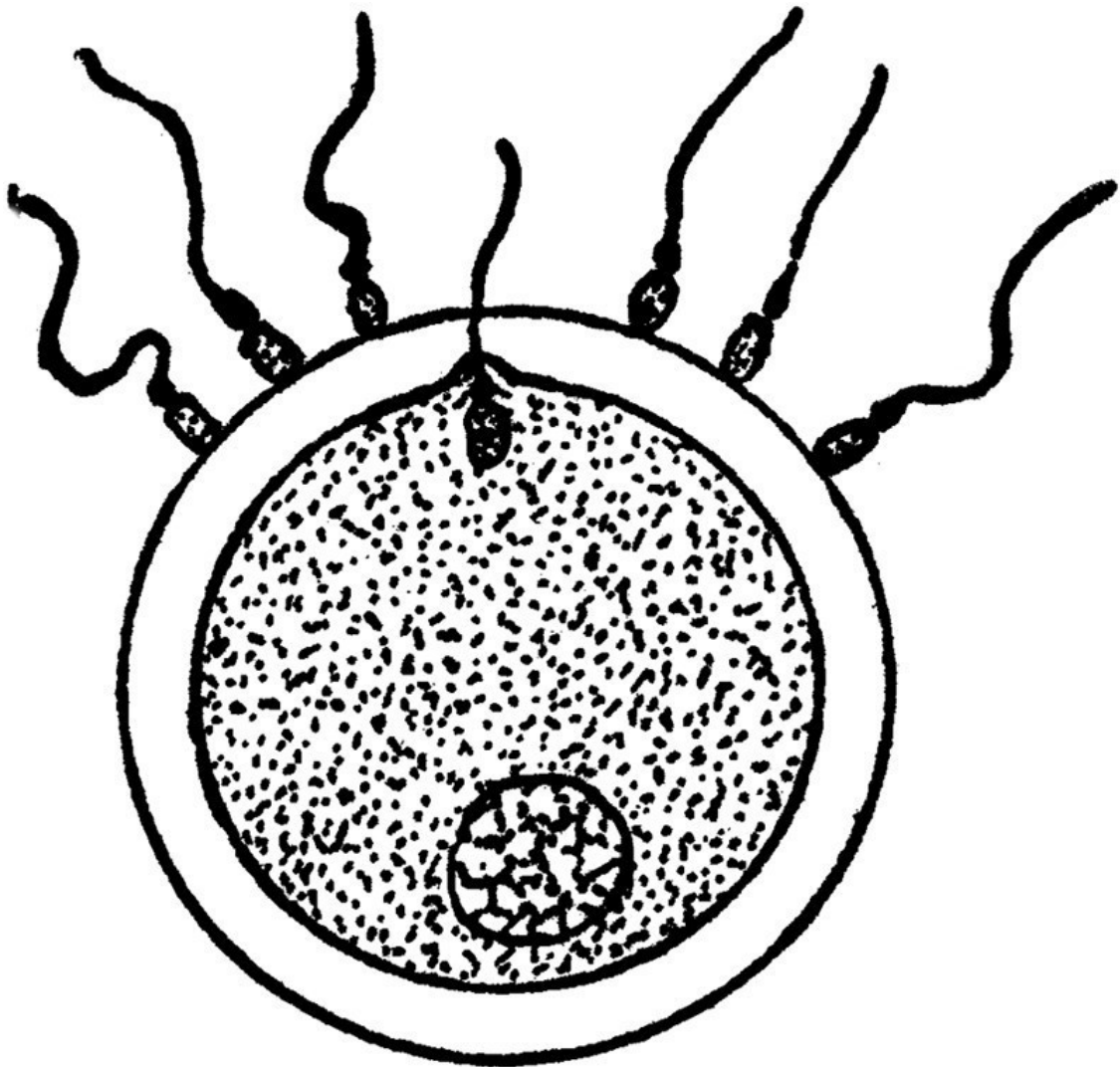
Fecundation or Fertilization—Process of Fecundation—When the Ovum Matures—Fate of Ovum When no Intercourse Has Taken Place—Entrance of Spermatozoa as Result of Intercourse—The Spermatozoa in Search of the Ovum—Rapidly of Movements of Spermatozoa—Absorption of Spermatozoön by Ovum—Activity of Impregnated Ovum in Finding Place to Develop—Pregnancy in the Fallopian Tube and Its Dangers—Twin Pregnancy—Passivity of Ovum and Activity of Spermatozoön Foretell the Contrasting Rôles of the Man and the Woman Throughout Life.

Fecundation and fertilization are important terms to remember. They stand for the most important phenomenon in the living world. Without it there would be no plants and no animals, excepting a few very low forms of no importance, and of course no human beings.

Fecundation or fertilization is the process of union of the female germ cell with the male germ cell; speaking of animals, it is the process of union of the egg or ovum of the female with the spermatozoön of the male. When a successful union of these two cells takes place a new being is started. The process of fertilization or fecundation is also known as impregnation and conception. We say, to fertilize (chiefly, however, when speaking of plants) or to fecundate an ovum, or to impregnate a female or woman, and to conceive a child. We say the woman has become impregnated or has conceived.

The Process. The process of fecundation is briefly as follows. An ovum becomes mature, breaks through its Graafian follicle in the ovary and is set free. It is caught by the fimbriated or trumpet-shaped extremity of the Fallopian tube and, moved by the wave-like motion of the cilia⁴ of the lining of the tube, it begins its travel towards the uterus. If no sexual intercourse has taken place nothing happens. The ovum dries up, or "dies," and either remains somewhere in the tube or womb or is removed from the latter with the menstruation, or mucous discharge. But if intercourse has taken place, thousands and thousands of the male germ cells or spermatozoa enter the uterus through its opening or external os, and begin to travel upward in search of the ovum. The spermatozoa are capable of independent motion, and they travel pretty fast. It is claimed that they can travel an inch in seven minutes, which is pretty fast when you take into consideration that a spermatozoön is only 1/300 of an inch long. Many of the spermatozoa, weaker than the others, perish on the way, and only a few continue the journey up through the uterus to the tube. When near the little ovum, which remains passive, their movements become more and more rapid, they seem to be attracted to it as if by a magnet, and finally one spermatozoön—just one—the one that happens to be the strongest or the nearest, makes a mad rush at it with its head, perforates it, and is completely swallowed up by it. As soon as the spermatozoön has been absorbed by the ovum, the opening through which it got in becomes tightly sealed up—a coagulation takes place near it—so that no other spermatozoa can enter the ovum. For if two or more spermatozoa got into the same ovum a monstrosity would be apt to be the result.

⁴ Hair-like appendages.



Spermatozoön Penetrating the Ovum.

What becomes of all the other spermatozoa? They perish. Only one is needed. But in the ovum that has been impregnated, and which is now called an embryo, a feverish activity commences. First of all it looks for a fixed place of abode. If the ovum happened to be in the uterus when the spermatozoön met and entered it, it remains there. It becomes attached to some spot in the lining of the womb and there it grows and develops, until at the end of nine months it has reached its full growth, and the womb opens and it comes out into the outside world. If the ovum is in the Fallopian tube when the spermatozoön meets it, as is usually the case, it travels down to the uterus, and fixes itself there.

Extra-Uterine Pregnancy. The tube is a bad place for the ovum to grow and develop, because the tube cannot stretch to such an extent as the uterus can, nor can it furnish the embryo such good nourishment as the uterus can. Occasionally, however, it happens that the impregnated ovum remains in the tube and develops there; we then have a case of what we call *extra-uterine* (outside-of-the-uterus) or *tubal* pregnancy. Extra-uterine pregnancy is also called *ectopic* pregnancy, or ectopic gestation. Unless diagnosed early and operated upon, the woman may be in great danger, for after a few weeks or months the tube generally ruptures.

From the moment the spermatozoön has entered the ovum, a process of *division* or *segmentation* commences. The ovum, which consists of one cell, divides into two, the two into four, the four into eight, the eight into sixteen, these into thirty-two, these into sixty-four, 128, 256, 512, 1,024, until they can no longer be counted. This mulberry mass of cells arranges itself into two layers, with a

cavity in between. And from these layers of cells there develop gradually all organs and tissues, until a fully formed and perfect child is the result. If two ova are impregnated at the same time by two spermatozoa, the result is twins.⁵

I might mention here that the moment the ovum is impregnated, i.e., joined by a spermatozoön, it is called technically a zygote; it is also called embryo, and this name is applied to it until the age of five or six weeks. Some use the term embryo up to two or three months. After that, until it is born, it is called fetus.

A study of the development of the embryo and the formation of the various organs from one single cell, the ovum, vitalized or fecundated by another single cell, the spermatozoön, is the most wonderful and most fascinating of all studies. But that belongs to the domain of Embryology, which is a separate science.

What we see in the process of fecundation is a foreshadowing of the future man and woman. The ovum has no motion of its own, it is moved along by the wave-like motions of the lining cells of the Fallopian tube, and throughout the entire act it remains passive. The spermatozoön, on the other hand, is in a state of continuous activity from the moment it has been ejaculated by the male until it has reached its goal—the ovum. And as the spermatozoa carry in them the entire impress of the man, and the ova of the woman, they foretell us the fates of the future boy and girl. The woman's rôle throughout life is a passive and the man's an active one. And in choosing a mate the man will always be the active factor or pursuer. So biology seems to tell us. Whether education—using the word in its broadest sense—will effect a radical change in the relation of man and woman remains to be seen. A change putting the man and the woman on a footing of *equality* would be desirable; but whether biological differences having their roots in the remotest antiquity can be obliterated, is a question the answer of which lies in the distant future. As Geddes and Thomson so well said: The differences [between the sexes] may be exaggerated or lessened, but to obliterate them it would be necessary to have all the evolution over again on a new basis. What was decided among the prehistoric Protozoa cannot be annulled by act of Parliament.

⁵ Each ovum has one germinal vesicle; occasionally one ovum may contain two germinal vesicles; and from the impregnation of such an ovum a twin pregnancy may result.

Chapter Ten

PREGNANCY

Period of Pregnancy in Human Female—Physiologic Process of Pregnancy
—Growth of Embryo from Moment of Conception—Pregnant Woman Provides
Nourishment for Two—Her Excreting Organs Must Work for Two.

From the moment the ovum has been fertilized or fecundated by the spermatozoon, the woman is said to be pregnant (or in French *enceinte*. This term was used very frequently and is still used by prudes, who seem to consider the word pregnant vulgar and disgraceful). Pregnancy, or the period of gestation, lasts from the moment of conception to the moment that the fetus or child is expelled from the uterus. The period of pregnancy differs very widely in different animals,⁶ but in the human female it lasts nine calendar months or ten lunar months—from about 274 to 280 days. We usually count 280 days from the *first* day of the *last* menstruation. A pregnant woman generally wants to know the day of the expected confinement—for this purpose a table is appended to this chapter. If you know the first day of your last menstruation, you will see at a glance when the confinement may be expected. There may be a difference of a few days—either before or after the expected date—but for practical approximate purposes the tables serve very well.

A simple way is to count back three months and add seven days. For instance, a woman's last menstruation occurred on April 4th; counting back three months gives you January 4th; add seven days and you get January 11th, the probable date of delivery. The first day of the last menstruation was December 30th; counting back three months gives you September 30th; add seven days and you get October 6th, the probable date of delivery. The presence of a short month like February may be disregarded, as the calculation is not absolutely, but only approximately correct.

The period at which the child's movements begin to be felt by the mother is termed Quickening. It usually occurs at the middle of the pregnancy, between the 16th and 18th week.

Pregnancy is a normal physiological process; but every active physiological process is apt to be accompanied by disturbances, and there is certainly no process in the animal body in which greater activity, greater changes, go on than during the process of pregnancy. Just see what occurs in nine months. The uterus, at first the size of a small pear, reaches a size larger than that of the head of a big man; it does not merely stretch, as some think, but it actually grows enormously in size, the muscular walls of a pregnant uterus being many times thicker than those of a non-pregnant one. They have to be or they would not have the strength to expel the child, when the proper time comes. It is to be borne in mind that the child does not slip out by itself; it is the powerful muscular contractions of the uterus that push it out. If the uterus should refuse to work, if its walls were too thin or too weak, the child could not come out, but would have to be taken out with forceps. Still greater changes than in the uterus take place in the child itself. At the moment of conception it is the size of *the head of a pin*; at the moment of birth it weighs from seven to ten pounds; at the moment of conception it is a minute, undifferentiated mass of protoplasm, just a single fertilized cell; at the moment of birth it consists of millions and millions of cells, which have become differentiated into numerous harmoniously working organs, and different tissues, such as brain and nerve tissue, muscular tissue, connective tissue, bone, cartilage, etc., etc. A truly wonderful process. And in the meantime this child, which is biologically a parasite (though it is not a nice name to call it by) draws its sustenance from the mother's blood, and the mother has to provide nourishment for two. And, besides providing

⁶ For instance, in rabbits one month, in dogs two months, in sheep five months, in cows nine months, in horses eleven months.

nourishment, her excreting organs, her kidneys, must work for two, because her system has also to get rid of the child's excretions. No wonder that the pregnant woman, particularly under an artificial unhealthy mode of living, is subject to many troubles and disturbances.

DR. ELY'S TABLE FOR CALCULATING THE DATE OF CONFINEMENT

January OCTOBER	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 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.
February NOVEMBER	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 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.
March DECEMBER	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 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 JANUARY	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 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 FEBRUARY	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 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	MAR.
June MARCH	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 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 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 31 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
August 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 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
September 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 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 8	JULY
October 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 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.
November AUGUST	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 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.
December SEPTEMBER	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 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.

Explanation.—Find in top line the date of menstruation, the figure below will indicate the date when confinement may be expected, *i.e.*, if date of menstruation is June 1st, confinement may be expected on March 8th, or one day earlier if leap year.

Chapter Eleven

THE DISORDERS OF PREGNANCY

Smooth Course of Pregnancy in Some Women—Pregnancy and Parturition May be Made Normal Processes Through Education in True Hygiene—Morning Sickness and Its Treatment—Necessity for Medical Advice in Pernicious Vomiting—Anorexia—Bulimia—Aversion Towards Certain Foods—Peculiar Cravings—Tendency to Constipation Aggravated by Pregnancy—Dietary Measures in Constipation—Rectal Injections in Constipation—Laxatives—Cause of Frequent Desire to Urinate During First Two or Three and Last Months of Pregnancy—Treatment of Frequent Urination—Cause of Piles During Pregnancy and Their Treatment—Cause of Itching of External Genitals During Pregnancy and Treatment—Cause of Varicose Veins and Treatment—Liver Spots.

We saw that in some women menstruation runs a perfectly smooth course, free from any disagreeable symptoms. The same is true of pregnancy. It is remarkable how smooth and easy the entire course is with some women. Many women know that they are pregnant only because of the non-appearance of the monthly periods; and even in the later months they feel no discomfort, attending to all their work and pleasures as usual; and even childbirth is a trifling matter with them. Unfortunately the number of such women is not very large, and, because of our confined, unnatural, often exhausting way of living, is becoming smaller and smaller. There is no question that the civilized, refined woman has a harder ordeal in pregnancy and childbirth than has her primitive sister. We confidently hope that this will not be so in the future; we expect the time to come when true hygiene will be an integral part of the education and the life of every girl, and then pregnancy and parturition may become even easier processes than they are in the primitive races. But the time is not yet; and in the meantime our young women have a good deal to go through.

Morning Sickness. One of the commonest disorders of pregnancy is the so-called morning sickness. This consists in a feeling of nausea and vomiting, which comes on soon after getting up. The morning sickness makes its first appearance in the third, fourth or fifth week of pregnancy and lasts usually until the end of the third or fourth month. In some women, however, the morning sickness comes on in a few days after impregnation has taken place, and those women diagnose their condition unmistakably by the feeling of slight nausea which they experience on getting up. Medicines are as a rule of little use in treating morning sickness. The "disease" can be relieved but not cured. The patient should stay in bed later than usual, should have her breakfast in bed, and then not get up for about half an hour afterward. If the patient is anemic, a good iron preparation may prove useful.

Pernicious Vomiting. The vomiting of pregnancy sometimes becomes so severe and uncontrollable that it has been given the name pernicious. The patient is unable to retain any kind of food, not even liquids, vomits almost incessantly, and may become very much run down and exhausted. The vomited matter may contain blood. For this condition a competent physician must be consulted, for in some cases the patient's life may be in danger and an abortion has to be performed.

Capricious Appetite. A capricious appetite is very common in pregnancy. The capriciousness may express itself in four different directions: (1) The patient may lose her appetite, almost altogether, partaking only of very little food, and that with effort. This condition of loss of appetite is called anorexia. (2) The patient may develop an enormous appetite—what we call bulimia—eating several times as much as she does ordinarily. (3) She may develop an aversion towards certain articles of food. Thus many women develop an aversion towards meat, the mere sight of or talk about meat

causing in them a sensation of nausea. (4) She may show a craving for the most peculiar articles of food and for articles which are not food at all. The craving for sour pickles or sour cabbage is well-known; but some women will eat chalk, sand, and even more peculiar things (for the chalk there may be a reason: the system needs an extra amount of lime and chalk is carbonate of lime).

Constipation. Constipation is very common among women in the non-pregnant condition; but in the pregnant it is much more common and much more aggravated. Constipation must be guarded against, but the measures must be of a mild nature. If we can relieve the constipation by dietary measures alone, so much the better. The dietary measures should consist in eating plenty of fruit—prunes, apples, figs, dates, etc., and coarse bread and bran. Constipating articles, such as cheese or coffee, should be eliminated. Where dietary measures alone are insufficient, the patient should take an enema—a rectal injection—twice or three times a week. The enema should consist of about 8 ounces (half a pint) of cold or lukewarm water containing a pinch of salt, and should be retained about ten minutes. Instead of water, we may advise an occasional enema of two to four drams of glycerin. Or instead of a glycerin enema, a glycerin suppository may be used. If internal laxatives are to be used, only the mildest and non-gripping preparations should be employed. The best are: a good mineral oil—one or two tablespoonfuls on going to bed, or fluid extract of cascara sagrada, one-half to one teaspoonful on going to bed. It is very important, whatever we use, *not* to use the same thing for a long time. If the same drug or measure is used without any change, the bowels get used to it and cease to respond and we have to use larger and larger doses. In fighting constipation we must therefore constantly change our weapons: one night we use mineral oil, the next night cascara sagrada, the third night an enema, the fourth night a glycerin injection or suppository, the fifth night perhaps nothing at all, the sixth night a blue mass pill, the seventh morning a Seidlitz powder, then a rest for a day or two, then a repetition of the same measures. But always remember: first try to get along without any drugs at all. Many cases can get relieved of their constipation by a proper change in diet alone. And where this is impossible, then use mild laxatives and use them interchangeably.

Toothache is not uncommon in pregnancy, and a pregnant woman should have her teeth put in first-class condition.

Difficulty in Urination. Pregnant women often suffer with frequency and urgency of urination. Some have to urinate, while they are on their feet, every few minutes. This is due to the fact that during the first two or three months of pregnancy the uterus is not only enlarged but is also *anteverted*, that is *turned forward* and *presses down* upon the bladder. When the woman is lying down the pressure on the bladder is relieved, and she does not have to urinate frequently. This pressure lasts only the first two or three months, because after that the growing womb lifts itself out of the pelvis, rising into the abdominal cavity; it is no longer anteverted and the pressure on the bladder is relieved. During the last months of the pregnancy there is again frequent urination, because then the heavy uterus sinks again into the pelvic cavity and presses upon the bladder. The treatment for this frequent urination consists in wearing a well fitting abdominal belt or corset, which raises the uterus and prevents pressure on the bladder. Sometimes a pessary which prevents the anteversion is efficient. In all cases lying down and resting is useful. In short, keeping off one's feet is the most efficient remedy for the treatment of frequent urination in pregnant women.

Hemorrhoids (Piles). On account of the pressure of the womb on the rectum, and also on account of the constipation which is so frequent during pregnancy, hemorrhoids or piles are quite frequent among pregnant women. The treatment of hemorrhoids consists in removing the cause: wearing a well-fitting abdominal belt, and relieving the constipation. Injecting into the rectum about half a pint of cold water three times a day is very useful. For the intolerable itching sometimes present in hemorrhoids the following ointment will be found very grateful: menthol, 5 grains; calomel, 10 grains; bismuth subnitrate, 30 grains; resorcin, 10 grains; oil of cade, 15 grains; cold cream, one ounce. The piles (the hemorrhoids) are to be well cleansed with hot water, and this ointment is to be well smeared over; a little is pushed into the rectum, and a piece of cotton is put over the anus.

This protects the clothes from soiling and keeps the medicine in place for a longer time. Instead of ointment a cocoa butter suppository may be used. A suppository of the following composition is good: powdered nutgalls, 3 grains; oil of cade, 3 drops; resorcin, 1 grain; bismuth subnitrate, 5 grains; cocoa butter, 20 grains. One such suppository to be inserted three times a day. The ointment and the suppository given above, if used in conjunction with the proper regulation of the bowels, will not only relieve but will cure most cases of hemorrhoids caused by pregnancy.

Itching of the Vulva. Pruritus Vulvæ. Itching of the external genitals during pregnancy is not uncommon. This may be due to the fact that the vulva is generally congested and swollen during pregnancy or it may be caused by an increased leucorrhœal discharge. The itching is sometimes very severe, and if the patient scratches with her nails and produces bleeding, she may cause an infection of the parts. The patient should be cautioned against scratching; she should try simple measures to relieve the itching. A small towel or gauze compress wrung out of boiling water and applied to the vulva several times a day, followed by a free application of stearate of zinc powder is often efficient. If it is not, the following salve may be tried: carbolic acid, 10 grains; menthol, 5 grains; resorcin, 15 grains; zinc oxide, 1 dram; and white vaseline, one ounce. In very severe cases the vulva should be painted with a solution of silver nitrate, 25 grains to 1 ounce of distilled water.

Varicose Veins. In most women during pregnancy the veins in the legs become somewhat enlarged. This is due to the pressure of the womb, which interferes with the circulation. If the veins become very prominent, swollen and tortuous, they are called varicose. This condition should be prevented, because it often and to some degree always persists permanently even after the pregnancy is over. The best precautionary measure is for the woman to wear a well-fitting abdominal belt or maternity corset, which supports the womb and does not permit it to sink too low into the pelvis. If varicose veins have been permitted to develop, the woman should wear well-fitting rubber stockings, or at least have the legs bandaged with woven elastic bandages. The bandage must be applied by a competent person, uniformly and not too tightly. Constipation has also a bad effect in making varicose veins worse; the bowels should therefore also be looked after. In some severe cases all measures are of little value unless the patient at the same time stays in bed or on a couch for a few days, with the legs elevated.

Swelling of the feet should be at once attended to. It may be a trifling matter due only to pressure of the womb; then again it may be due to some kidney trouble. The physician will determine the true cause and prescribe the appropriate treatment.

Liver Spots. Chloasma. In some cases irregular brownish patches or splotches develop on the skin around the breasts, on the sides, or on the face. These patches are known popularly as liver spots or in medical language as *chloasma*. Nothing can be done for them, but they generally disappear after the pregnancy is over. A few patches here and there may remain permanently.

Chapter Twelve

WHEN TO ENGAGE A PHYSICIAN

Necessity for the Pregnant Woman Immediately Placing Herself Under Care of Physician and Remaining Under His Care During Entire Period.

The disorders and disturbances described above are, with the exception of pernicious vomiting, of a minor nature. They are annoying, may cause considerable discomfort and suffering, but they do not endanger the life of the woman or of the child. Occasionally, however, fortunately not very often, the kidneys become affected, and for this condition treatment by a physician is absolutely necessary. In fact, the correct and safe thing for a woman to do is to consult a physician as soon as she knows she is pregnant, and have him take care of her during the entire pregnancy. Some women engage a physician during the eighth or ninth month and this is decidedly wrong, because it may then be too late to correct certain troubles which if taken at the outset could have been easily cured; while many troubles in the hands of a competent physician can be prevented altogether. I must therefore reiterate: every woman should engage a physician from the beginning of her pregnancy, or at least during the third or fourth and certainly not later than the fifth month. He will examine the urine every month and make sure that the kidneys are in order, he will make sure that the child is in a normal position, and will prevent a host of other ills.



Position of the Child in the Womb.

This is not a special treatise on the management of pregnancy, and therefore minute details are out of place. Besides, to the details the physician will attend. But some hints regarding diet and general hygiene will prove useful.

If everything is satisfactory, if there is no severe vomiting, kidney trouble, etc., the usual mixed diet may continue. The only changes I would make are the following: Drink plenty of hot water during entire course of pregnancy: a glass or two in the morning, two or three glasses in the afternoon, the same at night. From six to twelve glasses may be consumed. Also plenty of milk, buttermilk and fermented milk. Plenty of fruit and vegetables. Meat only once a day. For the tendency to constipation, whole wheat bread, rye bread, bread baked of bran or bran with cream.

As to exercise, either extreme must be avoided. Some women think that as soon as they become pregnant, they must not move a muscle; they are to be put in a glass case, and kept there to the day of delivery. Other women, on the other hand, of the ultramodern type, indulge in strenuous exercise and go out on long fatiguing walks up to the last day. Either extreme is injurious. The right way is moderate exercise, and short, non-fatiguing walks.

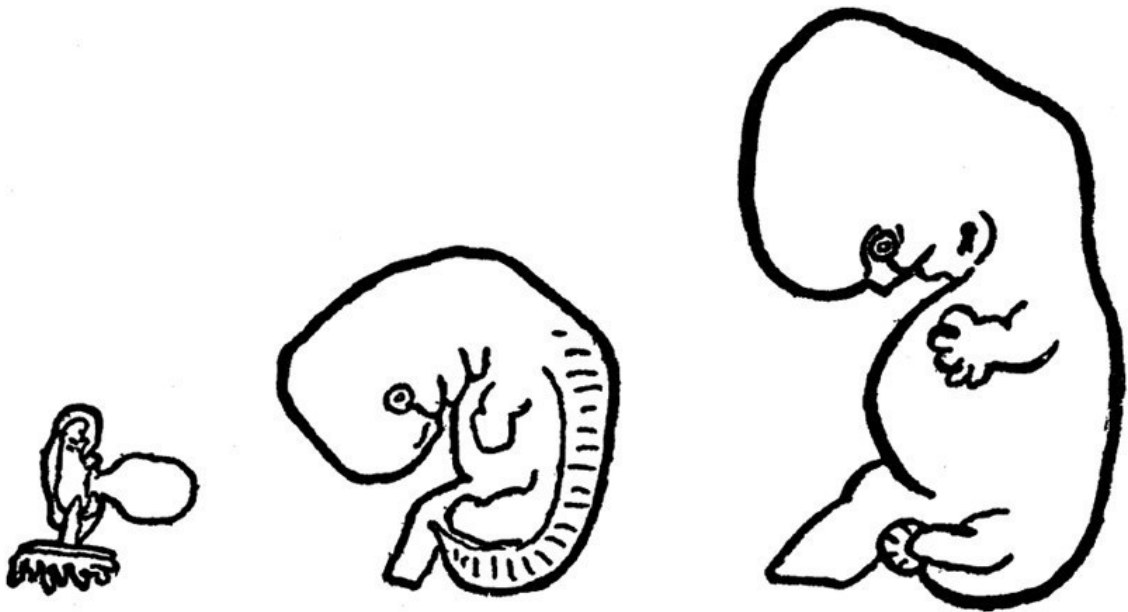
Bathing may be kept up to the day of delivery. But warm baths, particularly during the last two or three months, are preferable to cold baths.

Chapter Thirteen

THE SIZE OF THE FETUS

Approximately Correct Measurements and Weight of Fetus at End of Each Month of Pregnancy.

Men and women are always interested to know how large the fetus is and how far it is developed during the various months of pregnancy. Absolutely exact measurements cannot be given, but the following approximate measurements are correct:



1. Embryo Between One and Two Weeks Old.
2. Embryo About Four Weeks Old.
3. Embryo About Six Weeks Old.

At the end of the first month (lunar) it is about the size of a hazelnut. Weighs about 15 grains.

At the end of the second month it is the size of a small hen's egg. The internal organs are partially formed, it begins to assume a human shape, but the sex cannot yet be differentiated. Up to the fifth or sixth week it does not differ much in appearance from the embryos of other animals.

At the end of the third month it is the size of a large goose egg; it is about two to three and a half inches long. Weighs about one ounce.

At the end of the fourth month the fetus is between six and seven inches long and weighs about five ounces.

At the end of the fifth month the fetus is between seven and eleven inches long, and weighs eight to ten ounces.

At the end of the sixth month it is eleven to thirteen inches long and weighs one and one-half to two pounds. If born, is capable of living a few minutes, and it is reported that some six months' children have been incubated.

At the end of the seventh month the fetus is from thirteen to fifteen or sixteen inches long and weighs about three pounds. Is capable of independent life, but must be brought up with great care, usually in an incubator.

At the end of the eighth month the length is from fifteen to seventeen inches, and weight from three to five pounds.

At the end of the ninth month the length of the fetus is from sixteen to seventeen and one-half inches, and weight from five to seven pounds.

At the end of the tenth lunar month (at birth) the length of the child is from seventeen to nineteen inches and the weight from six to twelve pounds; the average is seven and a quarter, but there are full term children weighing less than six pounds and more than twelve; but these are exceptions.

Chapter Fourteen

THE AFTERBIRTH (PLACENTA) AND CORD

How the Afterbirth Develops—Bag of Waters—Umbilical Cord—The Navel—Fetus Nourished by Absorption—Fetus Breathes by Aid of Placenta—No Nervous Connection Between Mother and Child.

Whatever part of the womb the ovum attaches itself to is stimulated to intense activity, to growth. Numerous bloodvessels begin to grow and that part of the lining membrane with its numerous bloodvessels constitute the placenta, or as it is commonly called *afterbirth*, because it comes out *after* the *birth* of the child. From the placenta there is also reflected a membrane over the ovum, so as to give it additional protection. That membrane forms a complete bag over the fetus; this bag becomes filled with liquid, so that the fetus floats freely in a bag of waters; this bag bursts only during childbirth. The fetus is not attached close to the placenta, but is, so to say, suspended from it by a *cord*, which is called the *umbilical cord*. When the child is born, the umbilical cord is cut, and the scar or depression in the abdomen where the umbilical cord was attached constitutes the navel or umbilicus (in slang language—button or belly button). The umbilical cord consists of two arteries and one vein embedded in a gelatin like substance and enveloped by a membrane, and it is through the umbilical cord that the blood from the placenta is brought to and carried from the fetus. The blood of the fetus and the blood of the mother do not mix; the bloodvessels are separated by thin walls, and it is through these thin walls that the fetal blood receives the ingredients it needs from the mother's blood. In other words, it receives its nourishment from the mother by *absorption* or *osmosis*. The blood from the placenta also furnishes the fetal blood with oxygen, so that the fetus breathes by the aid of the placenta, and not through its own lungs.

It is well to remember that there is absolutely no nervous connection between mother and child. There are no nerves whatever in the umbilical cord, so that the nervous systems of the fetus and of the mother are entirely distinct and separate. And this will explain why certain nervous impressions and shocks received by the mother are not readily transmitted to the child. It is only through changes in the mother's blood that the fetus can be influenced. As will be seen in a later chapter we are skeptical about "maternal impressions."

Chapter Fifteen

LACTATION OR NURSING

No Perfect Substitute for Mother's Milk—When Nursing is Injurious to Mother and Child—Modified Milk—Artificial Foods—Care Essential in Selecting Wet Nurse—Suckling Child Benefits Mother—Reciprocal Affection Strengthened by Nursing—Sexual Feelings While Nursing—Alcoholics are Injurious—Attention to Condition of Nipples During Pregnancy Essential—Treatment of Sunken Nipples—Treatment of Tender Nipples—Treatment of Cracked Nipples—How to Stop the Secretion of Milk When Necessary—Menstruation While Nursing—Pregnancy in the Nursing Woman.

Every mother should nurse her child—if she can. There is no perfect substitute for mother's milk. There is only one excuse for a mother not nursing—that is when she has no milk, or when the quality of the milk is so poor that the child does not thrive on it, or when the mother is run down, is threatened with or is suffering with tuberculosis, etc. In such cases the nursing would prove injurious to both mother and child.

When the mother cannot nurse the child, it should be brought up artificially on modified cow's milk. Formulas for modified milk have been worked out for every month of the child's life, and if the formulas are carefully followed, and the bottle and nipples are properly sterilized, the child should have no trouble, but should thrive and grow like on good mother's milk. If the child is sickly or delicate and does not thrive on modified cow's milk or on the other artificial foods, such as Horlick's malted milk, or Nestlé's food, then a wet nurse may become necessary. But before engaging a wet nurse great care should be taken to make sure that she is healthy, that the age of her child is approximately the same as the age of the child which she is about to nurse, and particularly that she is free from any syphilitic taint. One, two or more Wassermann tests should be made to settle the question definitely.

Mothers should bear in mind that suckling the child is good not only for the child, but for the mother as well. Lactation helps the *involution* of the uterus: the uterus of a nursing mother returns more quickly and more perfectly to its normal ante-pregnant condition than the uterus of the mother who cannot or will not nurse her child.

It is asserted that the reciprocal affection between mother and child is greater in cases in which the child suckled its mother's breast. This is quite likely. It is also asserted that the nursing mother transmits certain traits to its child, which the non-nursing mother cannot. This is merely a hypothesis without any scientific proof.

On the other hand, the statement that many women experience decidedly pleasurable sexual feelings while nursing seems to be well substantiated.

That the mother who nurses her child should partake of sufficient nourishment goes without saying. But the advice often given to nursing mothers to partake of beer, ale or wine is a bad one. It is a question if a mother partaking of considerable quantities of alcoholic beverages may not transmit the taste for alcohol to her children. No, alcoholics should be left alone, but milk, eggs, meat, fruit and vegetables should be partaken of in abundance.

Preparing the Nipples. For the infant to be able to nurse properly the nipples of the breast must be in good condition. If the nipples are sunken, depressed, it is torture for the child to nurse. It uses up a lot of energy uselessly, becomes exhausted, and gets very little milk; while if the nipples be tender or cracked the process of nursing is a torture for the mother.

It is therefore necessary to attend to the nipples in due time—to begin at the fifth or sixth month is not too early. If the nipples are sufficiently prominent, little need be done for them except to wash them with a little boric acid solution (one teaspoonful of boric acid to a glass of water) occasionally, and now and then to rub in a little petrolatum, plain or borated. But if the nipples are sunken so that they are below the surface of the breast, or if they are only slightly above the surface of the breast, they must be treated. Gentle traction must be made on them with the fingers three or four times a day. There are only a few cases where persistent manipulation will not develop the nipple and make it stand out prominently.

If the nipple is tender it should be washed two or three times a day with a mixture of alcohol and water; one part of alcohol to three parts of water is sufficient. In washing the nipple with this diluted alcohol it should be dried and a little petrolatum or vaseline rubbed in. This done two or three times a day during the last month or two of the pregnancy will generally produce a good healthy nipple.

The Treatment of Cracked Nipples. If the care of the nipple has been neglected, and it develops cracks or fissures so that the nursing of the child causes the mother severe pain, the nursing should be done through a nipple shield, and in the meantime between the nursings the nipple should be rubbed with the following preparation, which is excellent and which I can fully recommend: thymol iodide, ½ dram; olive oil, ½ ounce. This should be applied every hour to the nipple and covered with a little cotton; before each nursing, however, it must be well washed off with warm water or warm boric acid solution. When the nipples are cracked, the infant's lips should also before nursing be carefully wiped out with boric acid solution. For the baby's mouth contains bacteria which while harmless in themselves may if they get into the cracks of the nipple set up an inflammation of the breast or "mastitis" and cause an abscess. If the cracks are excruciatingly painful, as they sometimes are, it is necessary to give the one breast a rest for twenty-four hours and have the child nurse at the other until the cracks have partially healed.

When It Is Necessary to Dry Up the Breasts. In case of the death of the child, or if the mother for some other reason finds herself unable to nurse, such as in cases where there is absolutely no nipple, instead of the prominence of the nipple there being a deep depression, it becomes necessary to stop the secretion of the milk, or as it is said in common parlance, "to dry up the breasts." In former days, not so very long ago, and the practice is still common enough to call attention to it and to condemn it, the breasts used to be tightly bandaged, or they used to be pumped every few hours. The first causes unnecessary pain and trouble, while the second procedure, the pumping, does exactly the reverse to what it is intended to do. Instead of drying up the breasts it keeps up the secretion. The best thing to do in a case like that is to leave the breasts alone, not to pump them, but just gently support them with a bandage and then in three or four days the secretion of the milk will gradually disappear. There is some discomfort the first twenty-four or forty-eight hours, but if left alone the discomfort is less than if the breasts are manipulated, bandaged or pumped.

Menstruation or Pregnancy While Nursing. Many women do not menstruate and do not become pregnant while they are nursing. Some women will not conceive, no matter how long they may nurse the child—a year or two or longer. And some women take advantage of this fact, and in order to avoid another child they will keep up the nursing as long as possible. In Egypt and other Oriental countries where our means for the prevention of conception are unknown, it is no rare sight to see a child three or four years old interrupting his work or his play and running up to suckle his mother's breast. But not all women have this good luck. Some women (about fifty per cent.) begin to menstruate in the sixth month of lactation, while some become pregnant even before they begin to menstruate. It only too often happens that a woman considering lactation her safeguard omits to use any precautions and finds herself, to her great discomfiture, in a pregnant condition.

When a nursing woman discovers that she is pregnant she should give up nursing at once. The milk is apt to become of poor quality, but even where this is not the case, it is too much for a woman to feed one child in the uterus and one at the breast.

Chapter Sixteen

ABORTION AND MISCARRIAGE

Definition of Word Abortion—Definition of Word Miscarriage—Spontaneous Abortion—Induced Abortion—Therapeutic Abortion—Criminal Abortion—Missed Abortion—Habitual Abortion—Syphilis as Cause of Abortion and Miscarriage—Dangers of Abortion—Abortion an Evil.

The word abortion, used somewhat loosely, signifies the premature expulsion of the fetus; the expulsion of the fetus from the womb before it is viable, i.e., before it is capable of living independently. Used in a stricter sense, the word abortion is applied to the expulsion of the fetus up to the end of the 16th week; to the expulsion of the fetus between the 16th and the 28th week the term miscarriage is applied; and when the expulsion of the fetus takes place after the 28th week, but before full term, we use the term premature labor. The laity does not like the term abortion, as it is under the impression that the term always signifies criminal abortion; it therefore prefers to use the term miscarriage ("miss"), regardless of the time at which the expulsion of the fetus takes place.

When an abortion (or miscarriage) takes place by itself, without any outside aid, we call it *spontaneous abortion*. When it is brought on by artificial means, whether by the woman herself or by somebody else, we call it *induced* abortion. When an abortion is induced for the purpose of saving the woman's life, we call it *therapeutic* abortion; this is considered perfectly legal and proper. But where an abortion is induced merely to save an unmarried mother's reputation, or because the married mother is too poor or too weak to have any more children, or is reluctant to have any (or any more) for any other reason, it is called *criminal* or *illegal* abortion, and, if discovered, subjects the mother and the person who produced the abortion to severe punishment.

When the fetus for some reason dies in its mother's womb, it is generally expelled within a few hours or days. Sometimes this is not the case, and the dead fetus is retained for several weeks, or months or even years; to such a phenomenon we apply the term *missed* abortion. Some women suffer from what might be called the abortion habit; they can hardly ever carry a child to full term, but lose it in the same month or even in the same week of gestation during each pregnancy; we call this habitual abortion. And this habitual abortion may be independent of disease, such, for instance, as syphilis. The terms *threatened*, *imminent* and *inevitable* abortion require no further explanation.

The Causes of Abortion. Outside of the abortion habit, which may be due partly to heredity or be caused by a diseased condition of the lining membrane of the uterus, the principal cause of abortion and miscarriage is syphilis. And when a woman has had two or three or four or more miscarriages in succession we generally assume the cause to be syphilis, and in most cases the assumption will be correct.

When an abortion is performed by an experienced physician, with the observance of the utmost cleanliness (asepsis and antisepsis), then the abortion is accompanied with very little or no danger; but when performed carelessly, by incompetent, non-conscientious physicians and midwives, the operation is fraught with great danger to the patient's health or to her very life. And abortion is a great cause of premature death and chronic invalidism among women. And as long as the people will remain ignorant of the proper means of regulating their offspring, so long will abortion thrive.

While I recognize that there are cases in which the performance of an abortion is perfectly justifiable from a moral standpoint, for instance in cases of rape or where the mother is unmarried, nevertheless abortion must be recognized as an evil, a necessary evil now and then, but an evil, nevertheless. It is never to be undertaken lightly, or to be considered in a frivolous spirit; and it is

the duty of all serious-minded and humanitarian men and women to do everything in their power to remove those conditions which make abortion necessary and unavoidable.

Chapter Seventeen

PRENATAL CARE

Meaning of the Term—Misleading Information by Quasi-Scientists—Exaggerated Ideas Regarding Prenatal Care—Nervous Connection Between Mother and Child—Cases Under Author's Observation—Effects on Offspring—Advice to Pregnant Women—Germ-plasm of Chronic Alcoholic—A Glass of Wine and the Spermatozoa—False Statements—Cases of Violence and Accidents During Pregnancy.

By prenatal care we understand the care taken during pregnancy before the child is born. Used in a wider sense the term includes the care which both parents should take of themselves even before the child is conceived.

Of course the father and the mother should be in the best possible physical and mental condition during the time of conception and even before conception, and the mother should take the very best care of herself—she should be in good health and as calm a spirit as possible during the entire period of gestation. For the general health and condition of the mother does influence the child.

And still I feel impelled to say something which may meet with violent opposition in some quarters. The trouble is, there are too many half-baked scientists in our midst. They spread misleading information and the public at large is too apt to take every statement that has a quasi-scientific seal for something absolute, for something positive, for something that admits of no exceptions.

I have seen so much misery caused by wrong prenatal care teaching and by the foolish, exaggerated ideas on the subject, that I consider it my duty to say something in order to counteract those erroneous notions. I consider it my special mission to destroy error, mysticism and superstition. And the prenatal care teaching as imparted by some unfortunately partakes of all three of the above.

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