

cases, it is rather desired than otherwise, and is apparently not at all injurious, and then it must be objected to on other grounds than being unnatural. Perhaps there are but few persons who need any particular reason for abstaining at such times, considerations of delicacy alone being sufficient. The feelings and instincts of the female herself are all that need be consulted, and it is very seldom that they will direct her wrong. It is certain that there are persons who never experience a *desire* for association, except at such times, and we are certainly not justified, on scientific grounds at least, in saying that it should then be forbidden. The old idea that certain diseases originated from association at such times is altogether erroneous, and without the slightest foundation.

Until recently, it was thought that menstruation occurred in human beings only, but it is now known that it occurs in most animals, though in a different form. Every being that brings forth its young alive, has a certain period in which the development of its ova or eggs is effected, and at those times when they are fully ripe, there occurs a function analogous to menstruation. Thus taking most kinds of cattle for instance, as the wild deer, they are capable of conception only at one time in the year, and will only receive the male at that time. This is what is called the season of *Rut* or *Heat*, and on dissecting them, the cause of it becomes obvious. They ripen an egg only once in the year, and when that occurs it causes the excitement which makes them desire association, and also results in a peculiar discharge from the genital organs, which is, strictly speaking, the same as human menstruation, though it is nearly colorless. A discharge of this nature is seen in all animals at such times, and, occasionally, as in some of the monkeys, it is even tinged with blood. It is, therefore, merely in its color, quantity, and frequency of appearance that it varies; in some taking place but once a year, in others every two or three months, and in the human being monthly, according to the frequency with which the eggs are ripened. These facts have led some physiologists to suppose that the most appropriate time for association in the human being, is near to the monthly periods, because in the animals above referred to, it is *only* at such times that they desire it. In the human being, however, there are many essential differences, in regard to the commerce of the sexes, and especially in the feelings that lead to it. In the lower animals, it is, of course, a mere amorous propensity that impels, and which is excited only by peculiar conditions of the genital organs in both; but in human beings there are other feelings, of a higher order, which are often more powerful than the sexual instinct itself. The mere animals being impelled to the act only by physical excitement, depending on a certain condition of the parts, will, of course, feel the impulse only when those conditions exist, but the human being may also be impelled by mental and moral agencies, though the physical excitement may be weak, or even if it be quite extinguished. It is not always therefore solely for the indulgence of the mere sexual propensity that human beings associate but for that conjointly with other instincts, and therefore the same rule should not apply to them. It is, perhaps, desirable, physiologically speaking, that association should never take place without both physical and moral enjoyment in both, and therefore those times should be chosen when the female organs are most disposed to these peculiar excitements. This time is not always the same, being just after the period in some, and just before it in others, and occasionally only during the flow itself. As a general rule, it is found that in the great majority of females, the inclination is strongest immediately after the flow, and it is also then that conception is most likely to ensue. This is

analogous to what is observed in the lower animals, in whom the flow has always passed its height before the heat is experienced. In medical practice, it is found that those means which we use, in cold temperaments, to produce sexual feelings, always act best just after the period is over, and this is, therefore, doubtless the most proper and favorable time for association, though there is nothing inherently wrong in it at other times.

Formerly a notion prevailed that association during the flow was wrong because the offspring resulting therefrom would be diseased or insane; and in fact, certain peculiar affections were thought to have originated in that way. This is, however, altogether erroneous, because conception cannot occur at that time, as shown in another place.

It is probable that the menstrual flow is also made use of by nature as a means of periodical purification, and that many matters which would be hurtful to the body, if retained, are removed by it. This accounts for the fact that females can work without injury at certain employments in the metals, where poisonous fumes are evolved, and which would kill men, the deleterious matter being carried off in this way. It is for this reason also that the turn of life, when the flow ceases, is so critical a period. The cessation of this periodical purification, of course, makes the body more liable to disease, and more disposed to suffer from congestions of blood, because there is now no monthly abstraction to give relief. It is, therefore, at this time, particularly necessary to attend to all the other secretions, especially the skin and bowels, to keep them active, so as to make up for that which is suspended.

It may not be out of place to remark here, that the existence of this function alone makes it impossible for woman—except in a few peculiar individual cases—to pursue the same avocations, and follow the same mode of life as man. It makes her, of necessity, not so continuously active, nor so capable of physical toil, while, at the same time, it causes her to yearn for sympathy and support from some being that she feels is more powerful than herself.



## CHAPTER XXXII.

## CAUSE OF THE DIFFERENCE IN SEX, AND PRODUCTION OF SEX AT WILL.

THESE have always been fruitful subjects of discussion both among physiologists and popularly, but until recently nothing certain has been known about them. Nevertheless, I am of opinion that they will eventually be perfectly understood, and that the sex of every child will be known previous to its birth. Our knowledge at the present time, it is true, is not perfect on this point, but still much more is known than what is usually supposed, and as such information may occasionally be really valuable, besides being of great interest, I shall lay it before my readers.

All the old ideas on this subject are utterly unfounded, and generally as absurd as they are erroneous. Such, for instance, as supposing that if the parties lie on the *right* side, during the act of association, the offspring will be *male*, and if on the *left* side, *female*. Or imagining, as others do, that males are more apt to follow from connection in the early part of the day, and females when it is practiced in the evening. Neither is there any foundation for supposing that it depends upon which sex the parents most strongly desire, as many know well from experience.

The idea about the *position*, during the act, determining the sex, originated from an unfounded theory of the physiologists themselves, namely, that the right ovary produced males, and the left females. So generally was this opinion received, and so far did it influence even practical men, that about the year 1827, a physiologist named *Millot*, published a book on "*The Art of Procreating the Sexes at Will*," in which he gave directions for producing whichever might be desired. He even gave the names of several mothers who were said to have succeeded in their wishes by following his directions, but of course did not enumerate those who were disappointed, though experience has fully demonstrated that they were undoubtedly equally as numerous. In short, the theory, though captivating, is founded on an untruth, and cannot, therefore, be practically true.

In several instances it has been demonstrated, most conclusively, that each ovary can produce *both* sexes. Thus instances have been known where one has been destroyed by disease, or where it has been naturally deficient, and yet the female has borne both boys and girls. In one case not only was the ovary and Fallopian tube absent entirely on one side, but even the corresponding half of the womb itself was imperfect, and yet she had borne eleven children of both sexes.

The fact appears to be that the sex is determined by the joint action of several distinct causes, the principal of which at least *are known*, so that the great majority of children *can be made of whichever sex is desired*, providing certain suggestions are attended to. And I may remark here, that this assertion is not based upon theory alone, but upon certain observations, and also upon a long series of experiments with animals. The peculiar nature of my practice has of course brought many persons to me for information on this very topic, and I have therefore been able to

verify the correctness of my conclusions. *In every case*, unless certain inappropriate conditions existed before marriage which could not be corrected, *I would guarantee either the one sex or the other*, providing my advice was strictly attended to!

To understand how this can be done, I must first state what has been ascertained respecting the influence of relative age. It has been found, by actual observation of some thousands of cases, that the *oldest* parent most frequently imparts the sex, unless the age be so great as to verge upon decrepitude. Thus, for instance, when the fathers are younger than the mothers there will be born about *ninety* boys to *one hundred* girls, and very nearly the same when they are of equal age. When, however, the fathers are from one to six years older than the mothers, there will be born *one hundred and three* boys to one hundred girls; and when the fathers are from nine to eighteen years the oldest, the number of boys will be *one hundred and forty* to one hundred girls; but if they be more than eighteen years older, the number of boys will be *two hundred* to the hundred girls.

In the same way, just in proportion as the mothers are the oldest, the number of girls will predominate; till, when they are from eighteen to twenty years older than the man, there will be *twice as many* girls as boys. It may of course happen that this rule may not hold good in many single families that may be noticed, but it will always do so when the average is taken of a large number, and the chances of course are in the same ratio in every instance. Thus in every case when the father is over eighteen years older than the mother, it is *two chances to one* that the child will be a boy, and in three hundred such births there would be just two hundred male to one hundred females; while, if the mother be so much the elder, the chances and results will be just the same the other way.

The relative age, therefore, has a most potent influence over the sexual formation, but still there are evidently other agencies also, because it does not operate in every individual case, and we must therefore endeavor to discover what those other agencies are. My own impression is, that in the exceptional cases, where the *elder* parent does *not* impart the sex, it is owing to the younger parent being much the more *vigorous*. This view I have had many opportunities of verifying, in confidential communications, and I have almost invariably found it correct. This also shows why it is, that the greater age is no advantage beyond a certain period. Thus, for instance, if the father be over *fifty*, while the mother is under *thirty-five*, the rule will change, and the number of girls will predominate. We also find that the greater number of *first* children are boys, especially if born soon after marriage, owing to the father being naturally most powerful then. In illegitimate children, on the contrary, there are most *girls*, probably because in many of these cases the female is more vigorous than ordinary. In those countries where polygamy predominates, or where the men have several wives, there are many more girls born than boys, owing, no doubt, to the male power being weakened by excess, and expended among so many, which causes the female power to predominate. For this reason polygamy must always continue itself, because the number of females will constantly be greater than the number of males; and if there were no foreign admixture to take place, a nation would probably become extinct, in time, under such an institution.

It is stated, in the article on the influence of connection after conception, that the more frequently it takes place, the more the child will resemble the father in many particulars, but not necessarily in *sex*. If, however, the mother have much less sexual



power, and experiences little or no enjoyment at those times, the father is likely to impart *sex also*, as well as general resemblance.

There are many females who are capable of proper excitement at other times, but *not* after conception, owing to some change in the action of the organs, and if connection still continues in such cases, the offspring is nearly sure to be a boy, because the father then predominates. On the contrary, there are other females who never experience excitement till they *have* conceived, and then it is often so great as to preponderate, and very likely to cause a girl to be produced. This accounts for those instances in which children are produced of the same sex as the parents who are the least vigorous—they being, in fact, the most so at a particular and critical period, though usually otherwise.

The production of either sex, therefore, is, to a very great extent, within our power, providing we can fulfill the principal of the above indications. If, for instance, a boy is desired, the father should be older than the mother—say at least five years—and conception should not be allowed to take place during the first five days after the monthly period. The relative warmth of temperament should also be regulated, so that the female do not preponderate, especially at the time of conception and during the first two or three weeks afterward. If a girl be desired, of course the opposite conditions should exist, and in every case where the age is not appropriate, the other particulars must be the more scrupulously attended to. The means by which the warmth of the temperament may be increased, in either sex, is a portion of the medical art, and is explained in another place. Suffice it to say here, that it can nearly always be accomplished, even in those females who have been always perfectly indifferent.

Many intelligent breeders of animals are practically acquainted with these principles, and will undertake to breed almost any proportion of either sex, by properly mating the parents as to age, vigor, and frequency of association, besides causing the offspring to resemble which they please, and to partake of any general characteristics.

Taken in conjunction with what is stated in another article, respecting the influence of the male in connection after conception, and also with what is stated as to the power of the mother's imagination over her offspring, it will be seen that these facts are of the greatest value, and it will one day be accounted of the utmost importance for every married person to be acquainted with them.

From what is observed in some animals, and also in the vegetable world, the conversion of one sex into the other is actually demonstrated. Thus it is well known that bees, when deprived of their queen, will *make another*; and this they do by taking one of the larvæ or grubs, such as produce, under ordinary circumstances, a common worker or drone, and treating it in a peculiar manner, feeding it upon different food, and carefully tending it in a different way to what they ever tend the others. The result is, that the grub, which would have been an ordinary bee, under the usual conditions, is by this treatment formed into a queen or perfect female. In this case, then, sex is evidently a result of development, effected chiefly by a peculiar kind of nutrition. Botanists also know that plants frequently change their sex in a remarkable degree, under peculiar cultivation, some becoming nearly altogether staminate or male, and others nearly altogether pistillate or female, though in their natural condition they remain uniformly one or the other, or a proper mixture of both.

A still further confirmation of the identity of these organs in the early stages, is afforded by some cases of accidental hermaphroditism. Thus, in many crustaceous animals, as crabs, for instance, it is not at all unusual to find a perfect ovary on one side, and a perfect testicle on the other. I have observed the same peculiarities in fishes also, and in one case at least it was found in a human being. Birds scarcely ever have the ovary developed but upon *one side*, the other being merely rudimentary, and sometimes even formed something like a testicle.

Many circumstances make it probable that the first stage of development of the primary cellules is always into *ovaries*, and if they develop no further, of course the being remains female, and all the other parts correspond. If, however, any additional impulse be given, they develop further, and become *testicles*, the other parts changing also, and thus forming a male.

There are therefore various causes that influence sex, as already shown, but there is one that really determines it, in nearly all cases, and that we will now explain, but first give a short sketch of the various opinions held on the subject, from the most remote times.

Hippocrates taught that both the male and female secreted a *semen*, which was a kind of *essence*, coming from every part of the body in each. He also considered that the semen, in both, consisted of two parts, one male and the other female, and that when the two *male* semens combined a proper boy was formed, and when the two *female* semens combined a proper girl was formed. But if the male part of the father's semen united with the *female* part of the mother's, there would be either an effeminate boy, or a boyish girl, according to which semen predominated.

This, of course, was all theory, and without the least foundation in fact.

Some followers of Hippocrates went further than this, and undertook to give the signs by which it could be told, in either male or female, which semen predominated in them, and consequently which sex they would be likely to procreate; but all these signs were mere fanciful speculations.

Others considered, as before stated, that the semen from the right testicle produced males, and that from the left, females; but this theory had no better foundation than the other. Nevertheless practical rules were given, founded upon this theory. Thus, those who wished *boys* were directed to tie a band round the cord leading from the left testicle, or even to have it *cut out*, so that semen could come only from the right one. Those who wished *girls*, of course were to do the same with the right testicle, so that semen could come only from *the left* one.

No doubt much mischief and disappointment was caused by the promulgation of such a theory, but it held its ground for a long time. Hufeland first showed its improbability by referring to the fact, that if a number of fish eggs are impregnated with *the same semen*, some will form males and some females, and not all one sex or the other. Those who acted practically upon the theory soon found out it was not to be relied upon. Besides, men with only one testicle were known to become fathers of children of both sexes.

A similar theory was then broached in regard to the female *ovaries*,—that the eggs from the *right* one produced boys, and those from the left one girls. This, however, was equally unfounded with the other, and was disproved by the fact that females with only one active ovary had children of each sex, the same as men with one testicle only were fathers of both boys and girls.

One celebrated physiologist even asserted that the womb was divided into seven



parts, three on the right side for males, and three on the left for females, with one in the middle for hermaphrodites. Of course this was all fancy—a mere speculation.

Harvey taught that the female semen formed the egg after the male semen came in contact with it, and that from this egg the new being was formed. He was quite unaware that the egg was formed independent of any connection with the male.

Buffon, still holding to the teaching of Hippocrates, that each sex secreted a *semen*, contended that the animalcules in the male semen formed boys, and those in the female semen girls.

More modern theorists have supposed that sex was a mere matter of development, and that all were the same, or hermaphrodites, at first. And it is true that in the early stages it is impossible to tell one sex from the other, the organs being precisely the same in all cases. The different parts of the sexual system, in males and females, correspond to each other, and in the early stages no one can tell what the future sex might be.

#### PRODUCTION OF SEX AT WILL.

To understand the true theory of the cause of sex, we must refer to the Physiology of Generation, as already explained.

The female forms the egg, and the male forms the semen, both independent of the other, but the egg cannot develop into the new being till the semen unites with it. The female ripens one or more eggs each month, at what is called the monthly period, and these eggs are retained in the womb, when passed there from the ovary, only for a certain number of days. It is therefore possible for the conception to occur only during those days, for the semen cannot cause conception if there be no egg in the womb for it to impregnate.

The majority of conceptions occur within eight days after the monthly period, though a few may occur as late as twelve days after, or in very rare cases, perhaps fourteen. It may also be possible a day before, in very few cases, as previously explained. At all other times conception is impossible.

Now, it must be borne in mind that the egg at first is not quite *perfect*,—it gradually *ripens* as it proceeds on its way to the womb. Very often it is not ripe enough to be impregnated when it first reaches the womb, but has to remain there some days first, and this is why some females cannot conceive till some days after their periods. In others, on the contrary, it is fully ripe when it reaches the womb, and if not impregnated immediately, it becomes over ripe, and breaks up. In such cases, if the woman is not impregnated *immediately* her period is over, she cannot conceive at all, and this is one reason why many are sterile,—they are always *too late*.

It is upon this fact, of the gradual *ripening*, or perfecting of the egg, that the true theory of the cause of sex depends, as we will now show.

It must be borne in mind that the egg can be impregnated only at a certain stage of ripeness, or maturity, and that before that stage, or after it is passed, impregnation cannot take place. Thus M. Coste has shown, in his observations upon poultry, that their eggs can be impregnated only in the upper part of the oviduct, and that when they have passed to the lower part they are *over ripe*, and can no longer be impregnated.

And this is strictly analogous to what occurs in plants, there is only one stage in the development of the pistil in a flower when the pollen can fertilize it. Before that stage arrives, or after it has passed, fertilization is impossible.

This particular stage of maturity, or ripeness, in some cases endures but for a very short time, but in others it is much more prolonged, both in plants and animals. But in all cases it is the limit within which impregnation is possible.

Now it has been discovered, through observations upon the lower animals first, that *the sex of the future being developed from any egg depends, mainly, upon the stage of ripeness that egg was at when impregnated.*

Messrs. Schirac and Huber discovered, in their observations upon *bees*, that an egg only partly developed always produced a *female*, while one fully developed, or ripened, always produced a *male*.

The queen, or fruitful female bee, only needs to be impregnated once to make fruitful all the eggs she may lay for the whole season. It is observed, however, that all the eggs she lays during the ten first months produce only *females*, while those that she lays during the last two months produce *males*. The reason of this is that the first eggs are not fully ripened, or developed, while the last ones have arrived at full maturity. Consequently the first are only capable of forming females, while the last ones are perfect enough to form males.

Acting upon this fact it is possible to make her produce male eggs only. Thus, if she be kept from impregnation during the first few weeks, till all the eggs are well ripened, they will be all males, and the working bees may treat them in any way they please, but can never form a female from them.

The sex, therefore, of the future being depends upon the maturity of the egg from which it is developed, and consequently there are male and female *eggs*, and the sex is determined even *before impregnation!* Nothing which can be done, therefore, at the time of conception; or after, can alone determine the sex.

The most recent observers assure us that though the sex of the new being *seems* the same in all cases, at *very early* periods, still it is only apparently so, and that there is an essential difference from the very first moment. They assert that the sex is established, and can be distinguished, *from the very first!* In fact, as above stated, it is probably established in the egg itself before impregnation.

Although these facts were known long ago, in reference to plants and the lower animals, yet it is only recently they have been recognized as equally applicable to human beings. This arose from the circumstance that the true physiology of generation in human beings, and other mammalia, has only been recently discovered. Directly it was ascertained that all mammiferous females, the human female included, formed eggs, the same as birds or bees, at regular periods, and that the new being was formed from those eggs, it was at once concluded that they were subject to the same laws of development. A celebrated professor of Geneva, M. Thury, was one of the first to put this to a practical test, in the following way:

Assuming, in regard to cattle, that at the *beginning* of the *rut*, or *heat*, the eggs would not be in so perfect a state of development as later, and therefore most likely to produce females, he gave instructions accordingly to a stock breeder, M. G. Cornaz. He advised him, if he wished *female* young *only*, to let the mothers be impregnated only at the very *commencement* of the *heat*, when the eggs were not fully ripe. If, on the contrary, he wished all *male* young, he advised him to not allow the sexes to associate till later, when the eggs of the mother would be more mature.



The result was just as he had predicted. Those begotten at the very beginning of the rut were all *females*, while those begotten later were all males, with very few exceptions. So convincing was the experiment that the breeder, M. Cornaz, states most emphatically he was able to have nearly all males, or all females, in his stock, just as he chose, by observing these simple directions!

The period of the rut is longer or shorter in different kinds of animals, and it varies even in individuals of the same species. In all cases, however, the eggs may be impregnated at any time while the heat lasts, but they are invariably not fully developed in the early stages, and consequently *female*, and become *male* only at a later period, when fully matured.

In cows the heat lasts from twenty-four to forty-eight hours, varying in different individuals. All that was needed, therefore, was to find out the *habit* of each one, and then allowing connection with the male only in the first half of the period, or the last, and she could be made to produce either a male or female at will.

The importance and value of such a discovery as this can scarcely be over-estimated, and it must be remembered that it applies to *all* animals, without exception.

It must be borne in mind, however, that in animals who lay many eggs in succession, like birds and bees, and with whom one impregnation affects all the eggs laid for a long time after, it is much more difficult to use the discovery practically. Still, even with them, the first-laid eggs almost always produce females, because not fully matured, and the males come after.

It was formerly thought that the bees could form a new queen from any larva, simply by feeding it with a peculiar kind of food, but this is now known to be a mistake; they can develop a *barren* female—that is, a working bee—into a fruitful female, or queen, but cannot change the sex.

It is further to be observed, that if the *ovulation*, or egg-laying, be continued too long, or if from any cause the female's generative organs be much weakened, the *last-laid* eggs may also be imperfectly formed, and again produce only females, as at *first!*

Sometimes animals that are too richly fed, and also live in too artificial a state all the time, have the period of heat very *imperfectly* marked, and with them therefore it would be difficult to apply the rule successfully. It is much the same sometimes even with human females, many of whom menstruate very irregularly. The result thus obtained, therefore, by these experiments is this: That the sex of any new being depends upon the degree of development of the egg from which it originated at the time when that egg was impregnated.

When an egg is formed in any animal, it is not fully perfected when first separated from the ovary, but gradually develops as it progresses along the female organs. And if the male semen impregnate it in the early, or imperfect stage, it produces a female, but if the impregnation be delayed till the egg is fully ripe it produces a male.

This fact is as fully applicable to the human female as to any other, and enables us, in nearly all cases, to produce *either sex at will!* We have only to bear in mind that *menstruation*, in the human female, is strictly analogous to the *rut* in other beings, and that it is caused by the production and throwing off of the egg.

Now the egg of the human female is at first only partially developed, though capable of being impregnated, and it ripens more perfectly during its stay in the womb. If impregnation occurs in the first, or imperfect state, the egg will develop

into a *girl*, but if it occurs at a later period, when the egg is perfected, it will develop into a *boy!*

*The production of either sex, therefore, depends upon the period when impregnation takes place, and thus either boys or girls can be produced at will!*

The rule may be broadly stated thus:

*To produce girls impregnation must take place only on the last day of the monthly period, or during the two first days after it has stopped.*

*To produce boys impregnation must not take place till at least three days after the complete stoppage of the monthly flow, and better not till the fifth or sixth.*

The egg remains in the womb not more than about twelve days after the stoppage of the courses, in any case, as already explained, and usually not nearly so long; perhaps averaging not more than six or eight days. This is the limit during which it can be impregnated, and in the first part of this time it is not fully perfected, and can produce only a female. Later, when more perfect, it produces a male, and still later, when over ripe, it decomposes, or breaks up, and can no longer produce anything, or be impregnated.

There are, of course, many differences in different individuals, not only as to the time during which the egg remains in the womb, but also as to the rate at which the egg ripens.

In some females the egg ripens very quickly, and consequently they may produce boys earlier than others, while some, on the contrary, ripen it very slowly, and they may produce girls to a much later date than usual. There are some females apparently in whom the egg is always perfect from the first, and they always bear *boys*, while in others it is never perfect, and they, on the contrary, always bear girls. This is why the rule may sometimes fail, but such cases are very rare.

To make quite sure of having *female* offspring, however, connection should not take place after the second day following the stoppage of the monthly flow. And to make sure of male offspring it should not take place till five or six days after.

A little study of the peculiarities of each parent should be made, and then there will be no difficulty in so advising as to insure either sex that may be wished.

In a previous article on the cause of the difference in sex, it was shown to what an extent sex was influenced by several causes—such as difference of age, temperament, and physical condition; these were then thought to be the actual *causes* of sex. We now see that they are only secondary causes, and act indirectly, through some influence on the egg or the semen. Thus, for instance, a female, who is feeble, will perhaps be able to develop the eggs only enough to produce females; or, they may not be capable of impregnation till they reach the male stage, the first, or female stage, being too imperfect. In a vigorous female, on the contrary, the eggs may be perfect enough in the very earliest, or female stage.

It must be remembered, also, that the *semen* varies in power, the same as the egg does in degree of development, and thus the relative vigor of the two parents becomes an important indirect influence in the production of sex. But all such influences operate only partially, and in few cases.

#### RULES TO INSURE EITHER SEX.

The rules to be observed, then, are simply these:

*To insure a girl*, practice association only on the last day of the monthly flow, or during the two first days that follow its stoppage.



Also let the woman avoid all kind of excitement or fatigue, and use the most strengthening food, to insure the greatest vigor ; while the man should do the reverse of this.

To insure a boy, never practice association till the sixth day after the stoppage of the monthly flow.

Also, let the male live in such a manner and take such food as will insure the greatest bodily vigor ; while the female should live low, and exhaust herself to some extent by bodily exertion.

By observing these rules either sex may be produced at will.

CHAPTER XXXIII.

DOUBTFUL OR DOUBLE SEX.—HERMAPHRODISM.

It is generally supposed that individuals are occasionally born that are both male and female, and it is certain that sometimes it is very difficult to decide upon the sex, through the form of the genitals being so unusual. In the lower animals, perfect hermaphrodites are not at all unusual, especially in those that are low down in the scale of creation. Indeed, hermaphroditism becomes more frequent in proportion as we descend, till, in some of the very lowest species, there are none but hermaphrodites, each individual being both male and female, impregnating itself, and bringing forth its own young without the concurrence of any other individual. In none of the so-called hermaphrodites in the human being, however, is this ever the case. They cannot perform the functions of both sexes, though uninformed persons suppose they can, not even when the resemblance to both is most perfect. All such cases are either of one sex, with some deformity which also makes them resemble the other, or else they are mere monstrosities, and, properly speaking, of no sex at all.

The greater number of so-called hermaphrodites are truly females, in whom the clitoris has assumed an unusual development, so as to resemble the male penis. In some instances this development has been so large, and the power of erection in the part so complete, that it could be used like the male organ, with another female, and thus an imperfect connection could be held, but it of course could not lead to conception, owing to there being no secretion of semen. In other cases, the womb has been extended from the vagina, and while in that situation has been used for a similar purpose, and supposed by ignorant persons to be truly a male organ. A proper investigation, however, soon reveals the truth in all such instances.

In men we sometimes find the scrotum cleft, and an opening through it into the bladder, which has been taken for a vagina. In such formations it is occasionally possible for one of the same sex to have connection, by this unnatural passage, but of course without any result, there being neither womb, ovaries, nor ova.

Cases of sexual monstrosity are found of infinite variety, all of which it is neither necessary nor useful to describe.

Many of these deformed females, who are called hermaphrodites, also resemble the male in other respects, such as the form of the pelvis and shoulders, the shortness of the hair, and tone of voice, and also occasionally in having an imperfect beard. This has still further led to wrong conclusions, and has tended to confirm the popular misapprehension. M. Béclard describes a curious case of this kind, and I have met with several such myself. In one instance that I saw, a young person of sixteen, who had always been considered and treated as a boy, was found, upon full examination, to be really a girl. The vagina was completely closed by a membrane across its external mouth, and the clitoris was at the same time much enlarged, so that there seemed to be something like a male organ, but no indication of the usual female



passage. This led to the mistake, which probably would never have been rectified, but for her falling sick, and complaining of peculiar pains in the abdomen, the character of which induced an examination, which led to the discovery. It was with the greatest difficulty that I could convince the parents that they had mistaken the sex of their child, whom they insisted in considering a boy. I felt certain, however, that the pains complained of arose from *menstruation*, and that the usual flow would be seen if the vagina was not closed. I therefore made a thorough examination of the membrane, and determined to puncture it, so as to open the passage, which I ascertained existed beyond. A small incision was accordingly made, through which a probe readily passed to the usual depth of the vagina, without any difficulty. This was kept open and gradually enlarged till the finger could be introduced, when the *womb* was distinctly felt at the top, and in a short time after the menstrual flow occurred, and continued regularly. The only deformity now existing was the enlarged clitoris, and this, at the earnest request of the parents, was amputated, till it was no larger than usual. She was now perfectly female, and in a short time little or no difference could be seen between her and most other young women of the same age. If this had not been done, she would always have been considered an imperfect male, or an hermaphrodite, and would have led a life of misery in consequence. I have since heard that she afterward married and became a mother. It is worthy of remark that previous to the operation, her general appearance was certainly more that of a boy than a girl, the hair being quite short, the voice rough, and the pelvis quite narrow. Very soon after the operation, however, and especially after menstruation had begun, the appearance changed rapidly, so that in a short time she differed but little from other young persons of her sex. The hair grew long, the voice softened in its tone, and the pelvis rapidly attained its full dimensions.

In the year 1818, an hermaphrodite was exhibited in London, but, on examination by a medical class, she turned out to be a female with an enlarged clitoris.

A celebrated Prussian physician, Rudolphi, gave a description before the Academy of Sciences, in Berlin, in the year 1825, of the most perfect case of admixture of the sexes perhaps ever seen. It was a child that died soon after its birth, and which was found to possess a testicle on one side and an ovary on the other, besides a uterus, vagina and penis. In this case, the two sexes were undoubtedly united, but had it lived, probably both sets of organs would have been inactive, or one set would have disappeared and left the other. No single instance has ever been known, in the human species, in which both sets of organs performed their functions in the same individual. Uninformed people judge from mere external appearances, and these are often deceptive.

A curious instance occurred a short time ago, in one of the Eastern States, in which an individual, who had always passed as a man, voted at an election, which was decided by that one vote, but the losing party objected to it, on the ground that the voter was a *woman*. It being a case of doubtful sex, what decision was come to I never ascertained, but the question was a curious one, and must, of course, be decided by medical examination.

In many of these cases, the inclination of the individual is sufficient to decide the question, as they nearly always desire to associate with those of the opposite sex.

Perhaps the most complete case of hermaphroditism, among the higher order of animals, was observed by Dr. Harlan, on an *ourang-outang*. It had ovaries, Fallopian tubes, uterus and vagina—being the complete female apparatus, and also two

testicles, with the epididymi and vasa deferentia, and also a perfect penis, being the complete male apparatus.

The case represented by the following cuts is that of a female who died in the Fever Hospital, Leeds, England. Her previous history was unknown, and as no one claimed the body, it was sent to the dissecting-room, when the curious conformation of the genital organs was first noticed.

It will be seen that the clitoris is so developed as to resemble a real penis, and that it also has a perfect passage, or urethra, down it, communicating with the bladder,

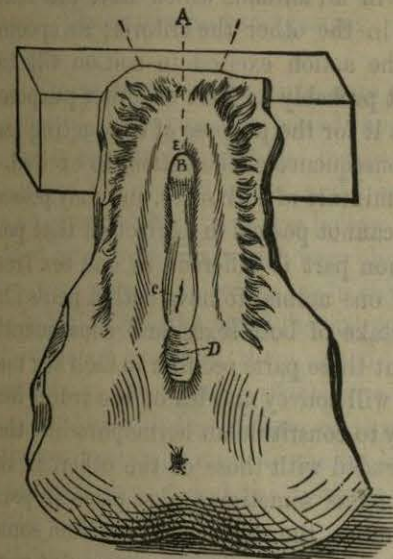


FIGURE 114.—View of the Organs when the Clitoris was raised up toward the Abdomen.

A. A probe passed down the passage in the clitoris. B. The glans of the clitoris or penis. C. The probe passing out of the lower end down the passage of the clitoris, close by the meatus urinarius, or mouth of the passage into the bladder, which was the same as in other females. D. The folds or rugæ in the entrance of the vagina. E. The commencement of the passage down the clitoris, at the top of the glans.

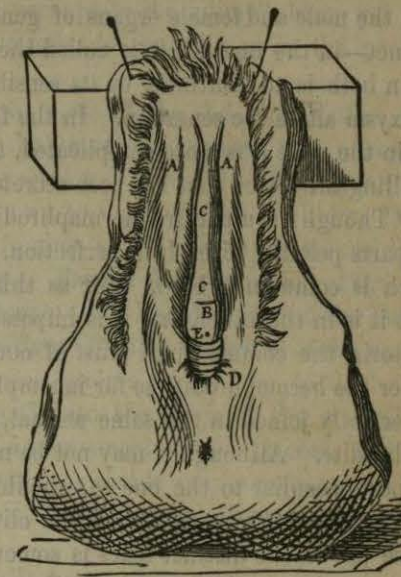


FIGURE 115.—View of the Organs with the Clitoris hanging down in its natural position when not erect.

A, A. The large lips. B. The glans of the clitoris. C, C. The body of the clitoris or penis. D. The vagina. E. The opening in the glans.

It is probable that the urine actually passed down the passage in the clitoris, when that hung down, but that it passed out of the natural opening (at C, Fig. 114) when the clitoris was held up. There seems little doubt of this organ having been fully capable of the usual functions of the penis, with another female.

and down which, in all probability, the urine could flow. In every other respect, the organs are in no wise different from those of other females; but the clitoris could, in all probability, erect and perform the part of a penis.

In its collapsed condition, the clitoris measured about two inches and a half in length, or about half the average size of the male penis, and when erect must have measured *four or five inches* in length. Its diameter was probably about an inch and a quarter, and its structure evidently indicated that it was capable of perfect congestion and erection. Every other organ was normal, except the ovaries, which were *very large*, and in appearance much resembled the male *testicles*! They were undoubtedly female in their action, however, for she had, in all probability, been pregnant, and the *corpora lutea* were readily distinguishable.