

irregular vascular excitement, or deficiency of nourishment—thus the vessels of the redundant part being more numerous and more active than they ought to be, produce an excess of growth, whilst those of the deficient parts are just in a contrary condition. Where a connection of two children, nearly or quite perfect, exists, I cannot help thinking that union takes place not only after fecundation, but after the fœtuses have grown to a certain size. In the case of the Siamese twins, or those shown in figures 111 and 112, I presume that they were originally true twin conceptions, but that the membranes which ought to have enveloped each body, so as to form an inseparable barrier between them, were imperfect, and that, in consequence, the bodies were allowed to come into close contact with each other; that there is such a strong formative power existing in the vascular system of the fœtus, that when the two cuticular surfaces came together, vessels shot from one to the other, and the parts became permanently united by adhesion, in the same way that two fingers would coalesce, provided the skin was removed and they were kept together. We know that sometimes twins are contained in the same bag of membranes, and in such case, provided they lay for any length of time in contact, we may believe it quite possible for a junction of the two bodies to occur.

Richerand (*Elements of Physiology*, trans. 1815, p. 462) tells us, “by placing in a confined vessel the fecundated ova of a tench, or any other fish, the numerous young ones which are formed, not having space sufficient for their growth, adhere to each other, and fishes truly monstrous are produced.” And in the vegetable kingdom it is not very unusual for two fruits, in contact and cramped in their growth, to unite indissolubly.

DOUBLE PEOPLE.

Concerning double people, twins united in an abnormal manner at birth, the authentic records are numerous, but a few examples must suffice.

In 1701, united twins were born at Szany, in Hungary. They were christened by the names of Helen and Judith, and were exhibited for some years in the chief cities of Europe. They were joined together at the lower part of the back, the faces and bodies being half sideways, or diagonal, neither back to back nor side by side. The two girls were not equally strong, nor equally well made; one had a more resolute will than the other, and settled all questions as to whether to move, and whither. Being carefully educated, they read, recited, and sang well, conversed in Hungarian, German, French, and English, and afforded much scope for study to psychologists; for there was sufficient difference between them in strength, temper, health, and intellect, to give play to two sets of forces, mental as well as bodily. It was observed, however, that when one was ill, the other became more or less affected with the same complaint; and it was deemed probable that their deaths would be nearly simultaneous. This proved to be the case. Judith was attacked with a complicated disease of brain and lungs, in 1723, and died. Helen, who at the commencement of her sister's malady was in good health, soon sickened with her, and the two died almost at the same instant. They were buried in a convent grave-yard at Presburg, and the particulars of their remarkable history found admission into the *Philosophical Transactions of the Royal Society*.

There was another case of a man named Lazarus, or rather a double man named Lazarus-Johannes, very attractive to sight-seers in Germany several years ago. There was much of a curious character in the degree in which the feeding of Lazarus helped

to feed Johannes, without any distinct participation of the latter in the eating process. As the Johannes portion of the duplex was less fully developed than Lazarus, some discussion arose among the ecclesiastics, as to whether each half had a soul to be saved, distinct from the other; it was decided in the affirmative, and the two names of Lazarus and Johannes were given in baptism. The men were alive at the age of twenty-eight, but we have no mention of their age at death.

The Siamese twins were more completely two human beings than any others we have here spoken of; for the only physical or organized band of connection between them was at the two chests. In one of Dr. Todd's medical works, a description is given, which conveys a sufficiently clear notion of the nature of this band, to those who have neither seen the twins themselves nor pictures of them. When first exhibited, they were not exactly opposite to each other, but stood side by side, or rather obliquely one by another; but this position, there can be little doubt, was acquired by the attempts which they had instinctively made to separate from each other in walking, or in lying and sitting down, and by the extension they had thus effected in their band of union, which was considerably more slender than in any other yet described. It was quite impossible for them to remain always face to face; therefore their bodies acquired an oblique direction, in which they also moved. The consequence of this was, that the right limbs of the one and the left of the other individual were the principal organs of movement, and that the intermediate limbs (that is to say, the left of the one and the right of the other) remained nearly passive. In organic and animal relation of life, they appeared to be independent of each other. Each had his own circulation of the blood, and his own respirative and digestive functions. The curious yellow-skinned couple were wont to play at battledore and shuttlecock with each other; one had a battledore in his right hand, the other had one in his left, and very deftly they tossed the feathered messenger to and fro.

TWINS AND SUPERFETATION.

Twins that are both born at the same time, and of the same age, have evidently originated from two eggs impregnated at the same time, and triplets from three, and so on. It is a question, however, whether it is possible for one impregnation to occur after another, while the female is yet pregnant. This is called superfœtation, and its possibility is by some denied, though there is every reason to believe in its possibility within certain limits. Dr. Ryan remarks:

“Physiologists are at issue upon the question of superfœtation, that it is possible for a pregnant woman to conceive a second time. According to Aristotle, a female was delivered of twelve infants, and another of twins, one of which resembled her husband, the other her lover. Some writers maintain that superfœtation is possible during the first two months of pregnancy; the majority hold it possible in a few days after conception, before the uterine tubes are closed by the decidua. This is the received opinion, though cases are on record which justified Zacchias and other jurists to conclude that superfœtation might occur until the sixtieth day, or even later. Nothing is more common than to see a full-grown infant born, and another of the second, third, fourth, fifth, or sixth month expelled immediately after. I need not cite authorities upon this point, as obstetric works abound with examples, a few of which may be given. Dr. Mason published an account of a woman who was delivered of a full-grown infant, and in three calendar months afterward of another,

apparently at the full time. A woman was delivered at Strasburg, the 30th of April, 1748, at ten o'clock in the morning; in a month afterward, M. Leriche discovered a second fetus, and on the 16th September, at five o'clock in the morning, the woman was delivered of a healthy, full-grown infant. Degranges, of Lyons, attests a similar case; the woman was delivered at the full time, the 20th of January, 1780; in three weeks afterward she felt the motions of an infant, and her husband had no intercourse with her for twenty-four days after delivery. On the 6th of July (five months and sixteen days subsequent to delivery), she brought forward a second daughter, perfect and healthy. On the 19th January, 1781, she presented herself and both infants before the notaries at Lyons, to authenticate the fact. Buffon related the case of a woman in South Carolina, who brought forth a white and black infant; on inquiry, it was discovered that a negro had entered her apartment after the departure of her husband, and threatened to murder her, unless she complied with his wishes. Dr. Mosely relates a similar case. A negress of Guadaloupe brought forth a black and mulatto, having had intercourse with a white and black man the same night. Another negress produced a white, black, and a piebald infant. A domestic of Count Montgomery's produced a white and black child at one birth. Gardien relates a similar case, on the authority of M. Valentin. A mare also has produced a foal and a mule, she having been impregnated by a horse, and five days afterward by an ass.

"Another argument, which I have never seen, occurs to me from analogy, which deserves mention, namely, that each dog will produce a distinct puppy; this no one can deny, for the offspring will resemble the different males that fecundate the bitch in succession. If a number of healthy, vigorous men were to have intercourse in succession, immediately after the first conception, I think it probable and possible that similar superfetation would happen. I am proud to say that Dr. Elliotson is an advocate of superfetation; he explains Buffon's case this way. Magendi is of the same opinion. Medical men must bear in mind that women have had three, four, and five children at one birth. Various cases of infants of different sizes, being expelled in succession, are recorded in our own periodicals.

"One of the Pennsylvania newspapers, in 1827, recorded the case of an Irish lady, who in eighteen months had at three births twelve living children, all born prematurely. She and her husband were healthy fresh-looking people, and only two years married. Cases of twins, triplets, quadruple, and quintuple births are of very rare occurrence; but of these more particularly hereafter. Dr. Golding delivered a woman of six infants during the year 1829."

It is, perhaps, possible that eggs may be formed sometimes during pregnancy, and possibly also the animalcules may make their way between the deciduous membrane and the walls of the womb to impregnate them, and thus superfetation may occur. I think it likely, however, that some of the cases mentioned may have been caused by there being a *double uterus*, and each one having become the seat of impregnation, independent of the other, and at a different time. Some of the cases of resemblance may also have originated in the way explained in the article on The Permanent Influence of the Male over the Female Organs.

It is a vulgar error to suppose that twins will not breed, or that one of them will be sure to be barren. When of the same sex one or both frequently are barren; but in other cases both are fertile. When they are of different sexes one is nearly always imperfect, as in the case of the Free Martin, explained farther on.

PLURAL BIRTHS.

Women, although usually uniparient, like other uniparient animals, sometimes produce more than one offspring at a birth; and when the gestation is plural, twins are by far the most frequent.

The average of twin cases varies considerably in different parts of the world; and we find also no little difference in the tables kept by separate individuals in the same country. Thus Denman shows that in the Middlesex Hospital, in London, one occurred in about every 95 labors; in the London practice of midwifery the estimate is stated as one in 48; Conquest considers it one in 90; Gooch, one in about 70; Blundell states, that from the statistical accounts transmitted to government in the year 1801, it appeared that in Great Britain one in 65 was a twin case. Bland in London, and Boer at Vienna, found the average one in 80; in the Maternity at Paris, one was met with in 88; in the Maison d'Accouchemens, one in 91; Mad. Boivin met with one only in every 132; Dewees averages the frequency in North America as one in 75; Dr. Arnell's average is also one in 75; Mr. Moore's, one in 76. From Collins' table of 129,172 women delivered in the Dublin Lying-in-Hospital, there were 2,062 cases of twins, being one in about every 62 labors; 29 of triplets, or one in 4,450, and one of quadruplets. From tables which I have myself kept, I find that out of 35,743 cases that occurred in the royal Maternity Charity, from January 1st, 1828, to December 31st, 1843, there were 386 instances of twins, or one in nearly every 93 labors. Of these 135 were of different sexes; 123 were both boys; and 128 both girls—183 of these children presented both with the head; 152, the head and breech, or lower extremities; 33, both breech or lower extremities; 14, one head, one transversely; 3, one breech, the other transversely; and in one both presented transversely. It is curious, too, that when the children were of different sexes they mostly presented with the head and breech. It is generally supposed that triplets are to be met with once in about 3 or 4,000 labors; and the returns from Dublin would lead us to believe that estimate tolerably correct; but I am inclined to think the frequency of these cases generally much overrated, for out of these births there was but one case of triplets. Quadruple cases are so rare as to defy anything like an accurate calculation.

It is popularly supposed that climate, and the state of civilization to which the country has advanced, exert an influence on the multiplication of the human species; and that certain external circumstances are favorable or otherwise to the frequent production of twins; but this is by no means proved, although we know that some animals, the sow for instance, farrow more young at a birth, and also more frequently, when domesticated, than when in a state of nature. Dewees says, that if the various tables can be relied on, it is certain "there are conditions and circumstances which give rise to more double births" in America than Europe; while Collins remarks, "it is singular that in Ireland the proportional number of women giving birth to twins is nearly a third greater than in any other country from which I have been able to obtain authentic records."

I have heard these two opinions, apparently contradictory, attempted to be reconciled by the explanation that a large proportion of the first European emigrants to America were from the Emerald Isle. Denman, too (chap. xvii. section 1), thinks climate and the state or degree of civilization have their influence over the fecundity of human beings.

It is also a belief that preternatural fecundity is, to a certain extent, hereditary; and Dewees states, that "some facts within his own knowledge would seem to countenance this supposition; but they are not sufficiently numerous or strong to confirm it." He looks upon it, however, as, in some instances, constitutional, and adduces the case of a woman, whom he knew, that five times produced twins, and never had a single child, and another who thrice brought forth twins, though not consecutively.

Gottlob mentions one who in three births produced eleven children.—(Elliotson's *Notes to Blumenbach*, p. 487.)

It has been observed, indeed, that some seasons appear more prolific than others, as well in the human race as other productions of nature; but whether this is quite accidental, or dependent on some fixed laws, is not easily determined. Denman thinks "it can scarcely be doubted that there is some relation in those years between the animal and vegetable creation."

Rare as instances of quadruplets are, the prolific powers of the human female are not even limited to the production of four children at a birth. In the Museum of the College of Surgeons in this city, there are five fœtuses preserved which were expelled at one birth, under the care of the late Dr. Hull, of Manchester; they had advanced to five months intra-uterine age.

When there is more than one fœtus in utero, each is generally smaller than in single births, and in proportion to the number will the size of the children be less. Thus Dr. Joseph Clarke's estimate of the weight of twins is twelve pounds and a half a pair. We often remark also that in twin gestations one fœtus at birth is sensibly smaller than the other. Should the uterus contain more children than two, the woman seldom carries them to the full term, and they are consequently rarely reared.

In the London practice of midwifery, which is a copy of the late Dr. John Clarke's lectures, and some other works on the science, it is stated that Dr. Osborn met with six distinct ova thrown off at one abortion, but on what authority I have not been able to discover.

Paré (lib. xxv. chap. 3), tells us, that in his day the wife of the Lord of Maldemeure, in the parish of Sceaux, near Chambelly, produced six children at a birth, after which she died; and that the then present Lord of Maldemeure was the only surviving one. His history of this extraordinary occurrence is so circumstantial as to impress us with the belief that he was himself fully convinced of the fact.

Twins may possibly proceed both from one ovarium, or the rudiments of one fœtus may be furnished by each gland. When the conception, however, is more than duplex, it is clear that one ovary must supply two; for no instance has yet been met with where these organs were in excess. It is commonly supposed that twins are the result of one connection, and instances are noted where this must have been the case. But it is not equally plain that this is a universal rule, and it appears to me by no means impossible that a second impregnation may take place soon after a former one has occurred. It is not difficult, indeed, to imagine that such an event may happen at any time previously to the uterus becoming lined with the secretion afterward converted into the deciduous membrane, or until its mouth is plugged with that viscid mucus which divides its cavity from that of the vagina, and which, after its formation, would entirely prevent the immission of the seminal fluid *in coitu*.

Dr. Dewees (*Philadelphia Med. Museum*, vol. i.) has related that a servant in Montgomery county was delivered of a black and white child at one birth, which were often seen by the doctor. He states also, that on the report of the pregnancy, both

a black and a white man disappeared from the neighborhood, and Elliotson, (*Notes to Blumenbach*, p. 485) has put on record that Mr. Blackaller, of Weybridge, sent him the following account.—A white woman of very loose character left her husband, and some time afterward returned pregnant to the parish, and was delivered in the workhouse of twins, "one of which," says Mr. Blackaller, "was born of a darker color than I have usually observed the infants of the negroes in the West Indies to be; the hair quite black, with the woolly appearance usual to them, with flat nose and thick lips; the other had all the appearance common to white children." That these respective twins were not the offspring of one parent is very evident, and a second impregnation, therefore, must have taken place; but we have proof, in two at least, that the connections followed each other quickly, before any changes could have been commenced in the uterus. With the knowledge, then, of such accidental occurrences in our possession, we are warranted in believing that, in the case of a woman living with her husband, twins might possibly be the result of two separate connections if only a short period intervened between them.

In regard to multiparient animals, whose uteri are cornuated, it is a well-known fact that more than one connection may be fruitful if they follow each other within a short time. Thus if a bitch, while in heat receive two or three dogs of various species in succession, she may bring forth mongrel puppies of different kinds, some partaking of the character of one dog, and others of the rest.

Each individual child which the uterus contains, according to the law of nature, is distinctly enveloped in its own membranes—so that its body is not in contact with that of its brother—possesses its own quantity of liquor amnii, has a separate cord and separate placenta—the circulations not inosculating. Generally the placenta are attached together at a part of their edges, and often, on regarding the maternal face, they appear but one mass; at other times they are situated distinctly from each other at different points of the uterus; again, occasionally, though very rarely, the vessels of the one child anastomose with those of the other. It has been remarked that both children have been found in one bag of membranes, and cases are recorded where the placenta was in all respects single, and the funis also arose singly, and divided into two branches when about to terminate in the umbilicus of each fœtus.

See a case by Dr. H. Davies (*Medical Gazette*, May 14, 1841, p. 307) of three children at a birth, in which two of them lay in one bag of membranes, though the circulation did not inosculate. Also another (May 28, 1841, p. 384), very similar, by Mr. Dodd, of Northampton. In the same periodical for June 11th, 1841, there is also a case of five at a birth, given by Mr. Wardleworth, in which three of the umbilical cords arose from the placenta by one common origin, and the other two cords by another. The three umbilical veins united to form one, and it would seem that there were but five umbilical arteries.

Besides the instances mentioned there are a few more well-attested cases of five children at a birth. One will be found in the *Gentleman's Magazine* for 1736; the patient lived in the Strand; another in the same periodical, 1739, at Wells, Somersetshire; one occurred in Upper Saxony; one near Prague in Bohemia.

In the *British and Foreign Medical Review* for 1839, a notice is given of a woman at Naples being delivered of five children at seven months; in the *Dublin Med. Journal* for January, 1840, there is an account given of Dr. Evory Kennedy having shown to the Dublin Pathological Society five ova of between two and three months, which were expelled at once under the superintendence of Dr. Thwaites.

They were all male children. And if we could credit newspaper reports, we might add the following:—The wife of a cannon-founder at Luginski, in Russia, was delivered, on May 22d, 1836, of five girls, of whom four were living and likely to do well. The *Giornale del Duc Sicilie* states that a woman was safely delivered, on June 21, 1838, of a boy and four girls, all of whom died at the expiration of half an hour. The wife of a landed proprietor at Altruitweida, near Mitweida, in Saxony, was recently delivered of five daughters, who though perfect in their conformation, died in about half an hour after their birth. A woman in New Hampshire was delivered of five living children at a birth, in the beginning of the year 1841. Mrs. Manger, of St. Owen, Jersey, had five daughters at a birth at six months, on May 20, 1840. Sir Thomas Urquhart, the translator of *Rabelais*, had twenty-five brothers and eleven sisters, all of whom were living at the same time. Dr. Plot, in his *Natural History of Staffordshire*, published in 1686, relates that a Lady Child of Shropshire, was married at twelve years of age, had her first baby, a daughter, before she completed her thirteenth year. This daughter also married at the age of twelve, and gave birth to a child before she reached thirteen. Thus Lady Child became a grandmother before twenty-seven.

The most miraculous instance of supposed fecundity in a human female is that of the Countess Henneberg, recorded on a marble tablet, which still is, or at least was, in the church of Lonsdunen, near Leyden. The monument bears the following announcement:—

“That Margaret, wife of Hennan, Earl of Henneberg, and daughter of Florence, the fourth Earl of Holland and Zealand, being about forty years old upon Easter day, 1276, at 9 A. M., was brought to bed of 365 children, all of which were baptized in two brazen basins by Guido, the suffragen of Utrecht. The males, how many soever there were of them, were christened John, all the daughters Elizabeth, who all, together with their mother, died on the same day, and with their mother lie buried in this church at Lonsdunen.” This supernatural infliction is accounted for on the principle of retributive justice; for we are informed that the countess being solicited for alms by a poor woman who was carrying twins, shook her off with contempt, declaring that she could not have them by one father, “whereupon the poor woman prayed to God to send her as many children as there were days in the whole year, which came to pass, as is briefly recorded in this table for perpetual recollection, testified as well by ancient manuscripts as by many printed chronicles.”

The credulity of the people who raised the memorial must create a smile, and yet no doubt the story may not be without some slight foundation. It is probable that the poor lady died after having *given birth* to a number of watery cysts, which were looked upon as ova. A very slight stretch of the imagination might transform them into children in embryo, and in the rigid adherence to the Catholic forms of worship, it might have been thought necessary that the baptismal ceremony should be performed, though they were nothing more than a mass of hydatids, as is clear from the declaration that “they were baptized in two brazen basins.” The noble lady probably sank from flooding.

MISCELLANEOUS MATTERS CONNECTED WITH THE FOREGOING TOPICS.

Some of the terms which have been used, or that will be used further on, may require explanation, so that their exact meaning may be understood.

Miscarriage is the name generally given to an expulsion of the new being from the womb before the period when it can live. Usually this is seven months, but as children have lived that were born still earlier, it is perhaps now proper to use the term miscarriage only up to the sixth month. After the sixth month it is called a *premature labor*.

The term *abortion* is also used to designate any premature birth before six or seven months, and is more general than miscarriage.

In regard to the vitality of the new being, it seems certain that it has a life of its own, quite independent of that of the mother. This is shown by those cases in which the fœtus lives and grows, without any vascular connection with its parent whatever, as when it simply floats in the amniotic liquor. In many cases also, when the ovum has been expelled at an advanced period quite intact, with the membranes unbroken, the fœtus has lived, and its circulation has continued for an hour or more. When connected with the mother, it derives nutriment from her beyond doubt, and is immensely influenced by her mental and bodily condition, as before explained, but it has its own independent life, even from the beginning. At the first it is only a simple cell, and may be nutrified, like all other cells, by simple *osmose*, through its membranous covering. Even in after life, when made up of a congeries of cells, the same process may still take place, as we see in those cases where the fœtus is nourished solely by the fluids with which it is surrounded. It forms its own blood, and circulates it with its own vessels, even when most intimately connected with the mother. Her blood is not used directly by her child, in the state in which she uses it for her own body, but the child absorbs from it, in the placenta, the materials by which its own blood is made. Close as is the connection between them, the two are independent lives, but intimately bound up with each other. The child is, in reality, dependent on the mother for *nutrition*, and not for *vitality*!

The old idea that the fœtus really swallowed the amniotic liquor and digested it, as we do food, is quite erroneous. In the first place, at an early stage there is no mouth. In the second place, a fœtus has been found which had lived and grown, with no continuous intestine. Another was born, full grown, without head, heart, or intestines. Animals have also frequently been born alive, and full formed, without mouths or noses, and even without heads. In all such cases, nutrition must have been effected by simple absorption or osmose, through the skin, as in all cells.

That substances do pass direct from the mother into the child's body is demonstrated, and it is an important fact. Thus when animals with young have the dye-stuff *madder* given them in their food, it will pass into the body of the young, and stain their urine, teeth, and bones red.

Women just previous to labor have also had rhubarb given them, and it has been found, after birth, in the blood flowing from that part of the navel-string connected with the child, and also in its first urine, and in the amniotic liquor.

Without doubt, therefore, any medicine the mother may take, at such times, or indeed anything whatever entering her blood, may pass directly into the child. If this fact were more generally known, much more care would be taken in regard to using medicine by pregnant women, and no doubt ignorance of it often makes them, unintentionally, do great harm to their offspring; perhaps for all their future lives.

The *sacrum* or os sacrum, the lowest part of the back-bone, will be referred to more especially when we treat upon parturition, but there are some particulars about

it which will be well to state here. It is important, in connection with the expulsion of the foetus, whether at full term or prematurely.



FIGURE 113.—The Sacrum, and Os Coccygis.

a. The hollow of the sacrum.
b. The top, where the upper part of the back-bone rests upon it.
c. The side. d. The os coccygis, which is detached, in order to show how it is connected. This small bone has three, and sometimes four joints, which enables it to bend back during parturition, and so facilitates the exit of the child.

In a very old Hebrew book, called *Medrac Rabbath*, which treats upon the deluge, we are told that when the world was drowned at that period, the destruction of all human beings was so complete, that every *luz* even was destroyed, from which man might be again formed, so that Noah and his family alone could re-people the earth. It also states that one Rabbi Joshua, to prove to the Roman emperor the indestructible character of this bone, tried to grind it in a mill, and to burn it with fire, without success. He also tried to crush it with a hammer, on an anvil, but the anvil itself split, and the hammer burst.

The Arabs also held this bone in the same veneration, as Sale tells us, in his Introduction to the Koran. Mahomet, he says, teaches that the body of man decays in the earth, except the bone called *al ajib*, which is the same as what we call the os coccyx, or rump bone. This bone, which is the first point formed, remains undecayed, and is the seed from which the whole body is afterward recreated.

The origin of this singular idea it is impossible now to trace. It is, of course, unnecessary to say that it has no foundation in fact. It is, perhaps, the *lightest* bone in the body, being very spongy, and therefore most likely to decay first, and it certainly is not the first formed, as this old superstition taught.

This bone forms the back of the basin of the pelvis, and is the largest part of the spinal column. The spinal marrow, proper, stops at the sacrum, but a thin nervous thread passes down the center of it, called the *cauda equina*, or horse tail. The os coccygis is the small bone at the very end of the sacrum, forming the lowest point of the spinal column.

There has been much curious speculation as to the origin of the name of this bone,—*sacrum*. In some way or other it seems, in old times, to have been specially devoted to the Deity, and held sacred, but for what reason is now unknown. Probably this arose from its connection with the sexual organs, and especially from its importance during child-birth. Some say it should be secret instead of sacred, and that it was so called from its association with the mystery of birth. Even among the ancient Jews there were some singular superstitions about this bone. One of the Rabbinical doctrines was that, though all the rest of the skeleton would decay, this one bone would not, and that it would become the germ, as it were, of the new body at the time of the resurrection. It was called *luz*, and believed to be incorruptible.

CHAPTER XXX.

DURATION OF PREGNANCY, AND PERIOD WHEN THE CHILD CAN LIVE.

THESE are two questions of great interest, and about which there has always been much dispute.

The duration of pregnancy, or the precise term of utero-gestation, is not fixed. It appears, from accurate observation, that there is no absolute period determined by natural laws, and therefore there is none laid down by human enactments. An approximation can be made, by taking the average of a number of cases, and the period of limitation may also be determined in the same way. The most usual period is about nine months, or from thirty-five to forty weeks, some females going beyond the thirty-six weeks, and others not so long. First children are frequently born under the nine months, and more so than those that come after; this is a fact not generally known, and ignorance of it has often given rise to unjust suspicions. It is quite possible for a female to be delivered, with the child at full period, in a little over eight months after marriage, without there being any just grounds whatever for suspecting unfaithfulness.

Dr. R. Lee, in his *Lectures on the Theory and Practice of Midwifery*, gives the best summary that we have in the language, of our information on this subject; I will therefore quote from this work, making such comments and additions as I may think advisable.

“The Roman law fixed the period of gestation at ten lunar months. The civil code of Prussia ordains that a child born 302 days after the death of the husband shall be considered legitimate. By the law of France, the legitimacy of a child cannot be called in question who is born 300 days after the death or departure of the husband. The laws of England declare that the usual period of human utero-gestation is nine calendar months, or forty weeks; farther than this they do not fix a definite period: the law is not exact as to a few days. Nine calendar months contain only 275 days, and only 273 or 272 if February be included. To fix bastardy on a child in Scotland, absence must continue till within six months of the birth, and a child born after the tenth month is accounted illegitimate.

The difficulty of determining the precise time when impregnation takes place in the human subject, renders it almost impossible, in any case, to calculate with absolute certainty the duration of pregnancy. We are, however, in possession of a sufficient number of observations to establish the fact that the ordinary period is about forty weeks, or 280 days; but it is certain that it does occasionally exceed or fall short of this period by several days. As we never can be certain of the precise day, between the periods of menstruation, when conception occurs—whether it takes place immediately after the last period, or before the expected period, or midway between these—it is obvious that all calculations founded upon the cessation of the catamenia must be extremely uncertain. The error of the calculation will be still

greater if the catamenia should have appeared, or a discharge like the catamenia should have occurred once or twice after conception. Impregnation most frequently takes place soon after menstruation, but in others it does not happen till later; so that two women may have menstruated at the same time, and one may have reached the full period two weeks before the other; and to this extent, or nearly so, an opinion founded on this disappearance of the catamenia may be erroneous.

"Calculations of the duration of pregnancy, founded upon what has been observed to occur after casual intercourse, or perhaps a single act, in individuals who can have no motive to tell us what is false, are likely to be much more correct; and the conclusion to be drawn from these is, that labor usually, but not invariably, comes on about 280 days after conception, a mature child being sometimes born before the expiration of forty weeks, and at other times not until the forty weeks have been exceeded by several days. A case came under my observation very lately, in which I had no doubt the pregnancy existed 287 days: the labor did not take place till 287 days had elapsed from the departure of the husband of this lady for the East Indies. Some women are always delivered before the end of the forty weeks, according to the usual calculation, and their children are mature.

"In the evidence given on the Gardner Peerage case, the period of utero-gestation was limited, but not strictly, by some of the witnesses, to forty weeks, or 280 days; by others it was extended to 311 days. Dr. Merriman, whose opinion is always entitled to much respect, thinks the greatest number of women complete gestation in the 40th week, and next to that in the 41st. Of 114 pregnancies, calculated by him from the last day of menstruation, and in which the children appeared to be mature, 3 deliveries took place at the end of the 37th week; 13 in the 38th; 14 in the 39th; 33 in the 40th; 22 in the 41st; 15 in the 42d; 10 in the 43d; and 4 in the 44th week.

"How long before the expiration of the 40 weeks a child may be born with the power of supporting life has not been determined. Where I have induced premature labor for distortion of the pelvis, before the end of the seventh calendar month from the last menstruation, I have never seen a child reared. The lady of the clergyman in Fife, whose case has lately given rise to so much discussion, was delivered 175 days after marriage, and the child lived five months. To what extent gestation may be protracted in some cases beyond the 280 days it is very difficult to determine, and the opinions of the most eminent writers differ upon the subject. I should suspect some great error in the calculation where the period of gestation exceeded 300 days. But the experiments made on the lower animals prove that there exists in them a great variation between the shortest and the longest gestation; and it is difficult to comprehend why there should not be a difference in this respect in human species."

In a trial which took place in this country, in the county of Lancaster, Pa., as reported in the *Medical Examiner* for June, 1846, it was decided that gestation may be prolonged to *three hundred and thirteen days!* The female swore that conception must have taken place on the twenty-third of March, 1845, and the child was not born till the thirtieth of January, 1846, or over *eleven months*. The judge directed the jury to return a verdict in her favor, and I suppose this case establishes a precedent for America.

In a recent number of the *Medical Gazette*, I find a case reported, wherein the period was said to be prolonged still farther. A man left his wife in New South

Wales, he coming to England, and *twelve months* after he left, she was delivered of a child, which she claimed to be legitimate. He denied this, however, and the judge in the Consistory Court decided, without hesitation, in his favor. Taking the medium between these two cases, therefore, it appears to be decided that the *extreme limit* is somewhere between *eleven* and *twelve months!* It must be recollected, however, that both were perfectly arbitrary, and that, for anything known positively on the subject, both may be either right or wrong.

Except when labor is brought on prematurely by violence, it usually commences at what would have been one of the monthly periods; or in other words, after a certain number of *full months*, and never at any time between! If, therefore, a female passes over the *ninth* month, she will probably go to the *tenth*. This has been proved by extensive observation, and is only another proof of the regular method in which nature conducts all her operations. The same law is also observed in abortions, which generally take place at one of the months, unless brought on suddenly by violence.

Dr. Ryan remarks that "Hippocrates, Aristotle, Galen, Pliny, Avicenna, Mauriceau, Riolan, La Motte, Hoffman, Schenk, Haller, Bertins, Lieutaud, Petit, Levet, Louis, Astruc, etc., maintained that pregnancy usually terminates at the end of the ninth calendar month, but might be protracted to the tenth, eleventh, twelfth, and, some of them said, to the fifteenth.

"It is also decided by a preponderating majority of the profession, in all countries, that the term of utero-gestation is not uniform; in other words, not invariably limited to nine months. This position is strongly attested by the analogy afforded by the inferior animals; for it appears by the extensive observations of M. Tessier, on the gestation of heifers, mares, sheep, swine, and rabbits, that all these animals exceed their usual period of delivery. (*Trans. de l'Acad. des Sc.*, Paris, 1817.) Further evidence is afforded by the vegetable kingdom, in which we observe in the same field, on the same tree, shrub, etc., different parts of vegetables arrive at maturity with more or less celerity. Petit informs us that many faculties of medicine, forty-seven celebrated authors, and twenty-three physicians and surgeons, concluded pregnancy might be protracted to the eleventh or twelfth month. He cites a case on the authority of Schlegel, in which pregnancy was protracted to the thirteenth month; the child was admitted to be legitimate, on account of the probity and virtue of the mother, which induced her shopman to marry her, and she bore two children by him, each at thirteen months. Tracy, a naval physician, relates a case at the fourteenth month. Dulignac, a French surgeon, positively asserts that his own wife quickened at four months and a half, and on two occasions she went on to the thirteenth month and a half, and on the third to the eleventh month. Desormeaux relates a case of a woman who was maniacal, who had three children, and whose physician, after all means had failed, recommended pregnancy. Her husband had intercourse with her once in three months, of which he kept an exact account. She was closely watched by her domestics, and she was extremely religious and moral; she was delivered at nine months and a half. (Velpeau.) The last author attests a case which went to three hundred and ten days, and Orfila two of ten months and a half. I have repeatedly known women mistake expected delivery, four, five, and six weeks.

"The term of gestation seems capable of being prolonged by peculiarities in the constitution or rate of development of the fœtus, which are derived from the male parent; for it was ascertained by the late Earl Spencer, that of 75 cows in calf by a