can give, and it may be advantageously combined with small doses of tincture of digitalis, which acts as an excellent diuretic.

Finally, in obstinate cases we shall have to consider the advisability of inducing premature labor. The propriety of this procedure in the albuminuria of pregnancy has of late years been much discussed. Spiegelberg[1] is opposed to it, while Barker[2] thinks it should only be resorted to "when treatment has been thoroughly and perseveringly tried without success for the removal of symptoms of so grave a character that their continuance would result in the death of the patient." Hofmeier,[3] on the other hand, is in favor of the operation, which he does not think increases the risk of eclampsia, and may avert it altogether. I believe that, having in view the undoubted risks which attend this complication, the operation is unquestionably indicated, and is perfectly justifiable, in all cases attended with symptoms of serious gravity. It is not easy to lay down any definite rules to guide our decision; but I should not hesitate to adopt this resource in all cases in which the quantity of albumin is considerable and progressively increasing, and in which treatment has failed to lessen the amount; and, above all, in every case attended with threatening symptoms, such as severe headache, dizziness, or loss of sight. The risks of the operation are infinitesimal compared with those which the patient would run in the event of puerperal convulsions supervening, or chronic Bright's disease becoming established. As the operation is seldom likely to be indicated until the child has reached a viable age, and as the albuminuria places the child's life in danger, we are quite justified in considering the mother's safety alone in determining on its performance.

Diabetes.—The occurrence of pregnancy in a woman suffering from diabetes may lead to serious consequences, and has recently been specially investigated by Dr. Matthews Duncan.[4] This must be carefully distinguished from the physiological glycosuria commonly present at the end of pregnancy, and during lactation. It is probable that diabetic patients are inapt to conceive, but when pregnancy does occur under such conditions, the case cannot be considered devoid of anxiety. From the cases collected by Dr. Duncan it would appear that pregnancy is very liable to be interrupted in its course, generally by the death of the fœtus, which has very often occurred. In some instances no bad results have been observed, while in others the patient has collapsed after delivery. Diabetic coma does not seem to have been observed. Out of twenty-two pregnancies in diabetic women four ended fatally, so that the mortality is obviously very large. Too little is known on this subject to justify positive rules of treatment; but if the symptoms are serious and increasing, it would probably be justifiable to induce labor prematurely, so as to lessen the strain to which the patient's constitution is subjected.

[1] Lehrbuch der Geburt.
[2] Amer. Journ. of Obstet., 1878, vol. xi. p. 449.
[3] Op. cit.
[4] Obst. Trans., 1882, vol. xxiv. p. 256.

CHAPTER VIII.

DISEASES OF PREGNANCY—*Continued.*

Disorders of the Nervous System.—There are many disorders of the nervous system met with during the course of pregnancy. Among the most common are morbid irritability of temper, or a state of mental despondency and dread of the results of the labor, sometimes almost amounting to insanity, or even progressing to actual mania. These are but exaggerations of the highly susceptible state of the nervous system generally associated with gestation. Want of sleep is not uncommon, and, if carried to any great extent, may cause serious trouble from the irritability and exhaustion it produces. In such cases we should endeavor to lessen the excitable state of the nerves, by insisting on the avoidance of late hours, overmuch society, exciting amusements, and the like; while it may be essential to promote sleep by the administration of sedatives, none answering so well as the chloral hydrate, in combination with large doses of bromide of potassium or sodium, which greatly intensify its hypnotic effects.

Severe headaches and various intense neuralgiæ are common. Amongst the latter the most frequently met with are pain in the breasts, due to the intimate sympathetic connection of the mammæ with the gravid uterus; and intense intercostal neuralgia, which a careless observer might mistake for pleuritic or inflammatory pain. The thermometer, by showing that there is no elevation of temperature, would prevent such a mistake. Neuralgia of the uterus itself, or severe pains in the groins or thighs—the latter being probably the mechanical results of dragging on the attachments of the abdominal muscles—are also far from uncommon. In the treatment of such neuralgic affections attention to the state of the general health, and large doses of quinine and ferruginous preparations whenever there is much debility, will be indicated. Locally sedative applications, such as belladonna and chloroform liniments; friction with aconite ointment when the pain is limited to a small space; and, in the worst cases, the subcutaneous injection of morphia, will be called for. Those pains which apparently depend on mechanical causes may often be best relieved by lessening the traction on the muscles, by wearing a well-made elastic belt to support the uterus.

Paralysis.—Among the most interesting of the nervous diseases are various paralytic affections. Almost all varieties of paralysis have been observed, such as paraplegia, hemiplegia (complete or incomplete), facial paralysis, and paralysis of the nerves of special sense, giving rise to amaurosis, deafness, and loss of taste. Churchill records twenty-two cases of paralysis during pregnancy, collected by him from

various sources. A large number have also been brought together by Imbert Goubeyre, in an interesting memoir on the subject, and others are recorded by Fordyce Barker, Joulin, and other authors; so that there can be no doubt of the fact that paralytic affections are common during gestation. In a large proportion of the cases recorded the paralyses have been associated with albuminuria, and are doubtless uræmic in origin. Thus in nineteen cases, related by Goubeyre, albuminuria was present in all; Darcy,[1] however, found no albuminuria in five out of fourteen cases. The dependency of the paralysis on a transient cause explains the fact that in a large majority of these cases it was not permanent, but disappeared shortly after labor. In every case of paralysis, whatever be its nature, special attention should be directed to the state of the urine, and, should it be found to be albuminous, labor should be at once induced. This is clearly the proper course to pursue, and we should certainly not be justified in running the risk that must attend the progress of a case in which so formidable a symptom has already developed itself. When the cause has been removed, the effect will also generally rapidly disappear, and the prognosis is therefore, on the whole, favorable. Should the paralysis continue after delivery, the treatment must be such as we would adopt in the non-pregnant state; and small doses of strychnia, along with faradization of the affected limbs, would be the best remedies at our disposal.

There are, however, unquestionably some cases of puerperal paralysis which are not uræmic in their origin, and the nature of which is somewhat obscure. Hemiplegia may doubtless be occasioned by cerebral hemorrhage, as in the non-pregnant state. Other organic causes of paralysis, such as cerebral congestion, or embolism, may, now and again, be met with during pregnancy, but cases of this kind must be of comparative rarity. Other cases are functional in their origin. Tarnier relates a case of hemiplegia which he could only refer to extreme anæmia. Some, again, may be hysterical. Paraplegia is apparently more frequently unconnected with albuminuria than the other forms of paralysis; and it may either depend on pressure of the gravid uterus on the nerves as they pass through the pelvis, or on reflex action, as is sometimes observed in connection with uterine disease. When, in such cases, the absence of albuminuria is ascertained by frequent examination of the urine, there is obviously not the same risk to the patient as in cases depending on uræmia, and, therefore, it may be justifiable to allow pregnancy to go on to term, trusting to subsequent general treatment to remove the paralytic symptoms. As the loss of power here depends on a transient cause, a favorable prognosis is quite justifiable. Partial paralysis of one lower extremity, generally the left, sometimes occurs, from pressure of the fœtal occiput, and may continue for days, or weeks, with a gradual improvement, after parturition.

Chorea.—Chorea is not infrequently observed, and forms a serious complication. It is generally met with in young women of delicate

[1] Thèse de Paris, 1877.

health, and in the first pregnancy. In a large proportion of the cases the patient has already suffered from the disease before marriage. On the occurrence of pregnancy, the disposition of the disease again becomes evoked, and choreic movements are re-established. This fact may be explained partly by the susceptible state of the nervous system, partly by the impoverished condition of the blood.

Prognosis.—That chorea is a dangerous complication of pregnancy is apparent by the fact that out of fifty-six cases collected by Dr. Barnes[1] no less than seventeen, or one in three, proved fatal. Nor is it danger to life alone that is to be feared, for it appears certain that chorea is more apt to leave permament mental disturbance when it occurs during pregnancy than at other times. It has also an unquestionable tendency to bring on abortion or premature labor, and in most cases the life of the child is sacrificed.

Treatment.—The treatment of chorea during pregnancy does not differ from that of the disease under more ordinary circumstances; and our chief reliance will be placed on such drugs as the liquor arsenicalis, bromide of potassium, and iron. In the severe form of the disease, the incessant movements, and the weariness and loss of sleep, may very seriously imperil the life of the patient, and more prompt and radical measures will be indicated. If, in spite of our remedies, the paroxysms go on increasing in severity, and the patient's strength appears to be exhausted, our only resource is to remove the most evident cause by inducing labor. Generally the symptoms lessen and disappear soon after this is done. There can be no question that the operation is perfectly justifiable, and may even be essential under such circumstances. It should be borne in mind that the chorea often recurs in a subsequent pregnancy, and extra care should then always be taken to prevent its development.

Tetanus.—Tetanus has not infrequently been observed in connection with pregnancy in the tropics, where the disease is common. In temperate climates it is exceedingly rare, and has been more often met with after abortion than after labor at term. Little is known of this complication of pregnancy, either as to its cause, or of the modification of the symptoms which may show themselves. The risk to the patient, however, is very great. Out of thirty cases recorded—twenty-eight by Simpson and two by Wiltshire—only six recovered.

Disorders of the Urinary Organs. Retention of Urine.—Disorders of the urinary organs are of frequent occurrence. Retention of urine may be met with, and this is often the result of a retroverted uterus. The treatment, therefore, must then be directed to the removal of the cause. This subject will be more particularly considered when we come to discuss that form of displacement (p. 223); but we may here point out that retention of urine, if long continued, may not only lead to much distress, but to actual disease of the coats of the bladder. Several cases have been recorded in which cystitis, resulting from urinary retention in pregnancy, eventually caused the exfoliation of the entire mucous membrane of the bladder,[2] which was cast off, some-

[1] Obst. Trans., 1869, vol. x. p. 147.

[2] Ibid., 1863, vol. iv. p. 13.

times entire, sometime in shreds, and occasionally with portions of the muscular coat attached to it. The possibility of this formidable accident should teach us to be careful not to allow any undue retention of urine, but, by a timely use of the catheter, to relieve the symptoms, while we, at the same time, endeavor to remove the cause.

Irritability of the bladder is of frequent occurrence. In the early months it seems to be the consequence of sympathetic irritation of the neck of the bladder, combined with pressure, while in the later months it is, probably, solely produced by mechanical causes. When severe it leads to much distress, the patient's rest being broken and disturbed by incessant calls to micturate, and the suffering induced may produce serious constitutional disturbances. I have elsewhere pointed out[1] that irritability of the bladder in the later months of pregnancy is frequently associated with an abnormal position of the fœtus, which is placed transversely or obliquely. The result is either that undue pressure is applied to the bladder, or that it is drawn out of its proper position. The abnormal position of the fœtus can be easily detected by palpation, and is readily altered by external manipulation. In some of the cases I have recorded, altering the position of the fœtus was immediately followed by relief; the symptoms recurring after a time, when the fœtus had again assumed an oblique position. Should the fœtus frequently become displaced, an endeavor may be made to retain it in the longitudinal axis of the uterus by a proper adaptation of bandages and pads. In cases not referable to this cause we should attempt to relieve the bladder symptoms by appropriate medication, such as small doses of liquor potassæ, if the urine be very acid; tincture of belladonna; the decoction of triticum repens, an old but very serviceable remedy; and vaginal sedative pessaries containing morphia or atropine.

Women who have borne many children are often troubled with incontinence of urine during pregnancy, the water dribbling away on the slightest movement. Through this much irritation of the skin surrounding the genitals is produced, attended with troublesome excoriations and eruptions. Relief may be partially obtained by lessening the pressure on the bladder by an abdominal belt, while the skin is protected by applications of simple ointment or vaseline.

Dr. Tyler Smith has directed attention to a phosphatic condition of the urine occurring in delicate women, whose constitutions are severely tried by gestation. This condition can easily be altered by rest, nutritious diet, and a course of restorative medicine, such as steel, mineral acids, and the like.

Leucorrhœa.—A profuse, whitish, leucorrhœal discharge is very common during pregnancy, especially in its latter half. The discharge frequently alarms the patient, but, unless it is attended with disagreeable symptoms, it does not call for special treatment. When at all excessive, it may lead to much irritation of the vagina and external generative organs. The labia may become excoriated and covered with small aphthous patches, and the whole vulva may be hot, swollen, and tender. Warty growths, similar in appearance to syphilitic condylomata, are occasionally developed in pregnant women, unconnected with any specific taint, and associated with the presence of an irritating leucorrhœal discharge. According to Thibièrge,[1] these resist local applications, such as sulphate of copper or nitrate of silver, but spontaneously disappear after delivery. Inasmuch as the leucorrhœal discharge is dependent on the congested condition of the generative organs accompanying pregnancy, we can hope to do little more than alleviate it. In the severer forms, as has been pointed out by Henry Bennet, the cervix will be found to be abraded or covered with granular erosion, and it may be, from time to time, cautiously touched with the nitrate of silver or a solution of carbolic acid. Generally speaking, we must content ourselves with recommending the patient to wash the vagina out gently with diluted Condy's fluid; or with a solution of the sulpho-carbolate of zinc, of the strength of four grains to the ounce of water; or with plain tepid water. For obvious reasons frequent and strong vaginal douches are to be avoided, but a daily gentle injection, for the purpose of ablution, can do no harm.

Pruritus.—A very distressing pruritus of the vulva is frequently met with along with leucorrhœa, especially when the discharge is of an acrid character, which in some cases leads to intense and protracted suffering, forcing the patient to resort to incessant friction of the parts. Pruritus, however, may exist without leucorrhœa, being apparently sometimes of a neuralgic character, at others associated with aphthous patches on the mucous membrane, ascarides in the rectum, or pediculi in the hairs of the mons Veneris and labia. Cases are even recorded in which the pruritic irritation extended over the whole body. The treatment is difficult and unsatisfactory. Various sedative applications may be tried, such as weak solutions of Goulard's lotion; or a lotion composed of an ounce of the solution of the muriate of morphia, with a drachm and a half of hydrocyanic acid, in six ounces of water; or one formed by mixing one part of chloroform with six of almond oil. A very useful form of medication consists in the insertion into the vagina of a pledget of cotton-wool, soaked in equal parts of the glycerin of borax and sulphurous acid; this may be inserted at bedtime, and withdrawn in the morning by means of a string attached to it. Smearing the parts with an ointment consisting of boracic acid and vaseline often answers admirably. Relief is also sometimes afforded by ichthyol ointment. In the more obstinate cases, the solid nitrate of silver may be lightly brushed over the vulva; or, as recommended by Tarnier, a solution of bichloride of mercury, of about the strength of two grains to the ounce, may be applied night and morning. The state of the digestive organs should always be attended to, and aperient mineral water may be usefully administered. When the pruritus extends beyond the vulva, or even in severe local cases, large doses of bromide of potassium may perhaps be useful in lessening the general hyperæsthetic state of the nerves.

Œdema of the Lower Limbs.—Some of the disorders of pregnancy are the direct results of the mechanical pressure of the gravid

[1] Ibid., 1872, vol. xiii. p. 42.

[1] Arch. gén. de Méd., 1856.

uterus. The most common of these are œdema and a varicose state of the veins of the lower extremities, or even of the vulva. The former is of little consequence, provided we have assured ourselves that it is really the result of pressure, and not of albuminuria, and it can generally be relieved by rest in the horizontal position. A varicose state of the veins of the lower limbs is very common, especially in multiparæ, in whom it is apt to continue after delivery. The varicosity is generally limited to the superficial veins, chiefly the saphena, and the veins on the inner surface of the leg and thigh; sometimes the deeper veins are also affected, and this is said to be accompanied by severe pain in the sole of the foot when the patient is standing or walking. Occasionally the veins of the vulva, and even of the vagina, are also enlarged and varicose, producing considerable swelling of the external genitals. Rest in the recumbent position and the use of an abdominal belt, so as to take the pressure off the veins as much as possible, are all that can be done to relieve this troublesome complication. If the veins of the legs are much swollen some benefit may be derived from an elastic stocking or a carefully applied bandage.

Laceration of the Veins.—Serious and even fatal consequences have followed the accidental laceration of the swollen veins. When laceration occurs during or immediately after delivery—a not uncommon result of the pressure of the head—it gives rise to the formation of a vaginal thrombus. It has occasionally happened from an accidental injury during pregnancy, as in the cases recorded by Simpson, in which death followed a kick on the pudenda, producing laceration of a varicose vein, or in one mentioned by Tarnier, where the patient fell on the edge of a chair. Severe hemorrhage has followed the accidental rupture of a vein in the leg. The only satisfactory treatment is pressure, applied directly to the bleeding parts by means of the finger, or by compresses saturated in a solution of the perchloride of iron. The treatment of vaginal thrombus following labor must be considered elsewhere. Occasionally the varicose veins inflame, become very tender and painful, and coagula form in their canals. In such cases absolute rest should be insisted on, while sedative lotions, such as the chloroform and belladonna liniments, should be applied to relieve the pain.

Displacements of the Gravid Uterus.—Certain displacements of the gravid uterus are met with which may give rise to symptoms of great gravity.

Prolapse, which is rare, is almost always the result of pregnancy occurring in a uterus which had been previously more or less procident. Under such circumstances the increasing weight of the uterus will at first necessarily augment the previously existing tendency to prolapse of the womb, which may come to protrude partially and entirely beyond the vulva. In the great majority of cases, as pregnancy advances, the prolapse cures itself, for at about the fourth or fifth month the uterus will rise above the pelvic brim. It has been said that in some cases of complete procidentia pregnancy has gone even to term, with the uterus lying entirely outside the vulva. Most probably these cases were imperfectly observed, the greater part of the uterus being in reality above the pelvic brim, a portion only of its lower segment protruding externally; or, as has sometimes been the case, the protruding portion has been an old-standing hypertrophic elongation of the cervix, the internal os uteri and fundus being normally situated. Should a prolapsed uterus not rise into the abdominal cavity as pregnancy advances, serious symptoms will be apt to develop themselves; for, unless the pelvis be unusually capacious, the enlarging uterus will get jammed within its bony walls, the rectum and urethra will be pressed upon, defecation and micturition will be consequently impeded, and severe pain and much irritation will result. In all probability such a state of things would lead to abortion. The possibility of these consequences should, therefore, teach us to be careful in the management of every case of prolapse, however slight, in which pregnancy occurs. Absolute rest, in the horizontal position, should be insisted on; while the uterus should be supported in the pelvis by a full-sized Hodge's pessary, which should be worn until at least the sixth month, when the uterus would be fully within the abdominal cavity. After delivery, prolonged rest should be recommended, in the hope that the process of involution may be accompanied by a cure of the prolapse. There can be no doubt that pregnancy carried to term affords an opportunity of curing even old-standing displacements which should not be neglected.

Anteversion of the gravid uterus seldom produces symptoms of consequence. In all probability it is common enough when pregnancy occurs in a uterus which is more than usually anteverted, or is anteflexed. Under such circumstances, there is not the same risk of incarceration in the pelvic cavity as in cases in which pregnancy exists in a retroflexed uterus; for, as the uterus increases in size, it rises without difficulty into the abdominal cavity. In the early months the pressure of the fundus on the bladder may account for the irritability of that viscus then so commonly observed. It will be remembered that Graily Hewitt attributes great importance to this condition as explaining the sickness of pregnancy—a theory, however, which has not met with general acceptation.

Extreme anteversion of the uterus, at an advanced period of pregnancy, is sometimes observed in multiparæ with very lax abdominal walls, occasionally to such an extent that the uterus falls completely forward and downward, so that the fundus is almost on a level with the patient's knees. This form of pendulous belly may be associated with a separation of the recti muscles, between which the womb forms a ventral hernia, covered only by the cutaneous textures. When labor comes on, this variety of displacement may give rise to trouble by destroying the proper relation of the uterine and pelvic axes. The treatment is purely mechanical, keeping the patient lying on her back as much as possible, and supporting the pendulous abdomen by a properly adjusted bandage. A similar forward displacement is observed in cases of pelvic deformity, and in the worst forms, in rhachitic and dwarfed women, it exists to a very exaggerated degree.

Retroversion.—The most important of the displacements, in consequence of its occasional very serious results, is retroversion of the

gravid uterus. It was formerly generally believed that this was most commonly produced by some accident, such as a fall, which dislocated a uterus previously in a normal position. Undue distention of the bladder was also considered to have an important influence in its production, by pressing the uterus backward and downward.

Causes.—It is now almost universally admitted that, although the above-named causes may possibly sometimes produce it, in the very large proportion of cases it depends on pregnancy having occurred in a uterus previously retroverted or retroflexed. The merit of pointing out this fact unquestionably belongs to the late Dr. Tyler Smith, and further observations have fully corroborated the correctness of his views.

In the large majority of cases in which pregnancy occurs in a uterus so displaced, as the womb enlarges it straightens itself, and rises into the abdominal cavity, without giving any particular trouble; or, as not unfrequently happens, the abnormal position of the organ interferes so much with its enlargement as to produce abortion. Sometimes, however, the uterus increases without leaving the pelvis until the third or fourth month, when it can no longer be retained in the pelvic cavity without inconvenience. It then presses on the urethra and rectum, and eventually becomes completely incarcerated within the rigid walls of the bony pelvis, giving rise to characteristic symptoms.

Symptoms.—The first sign which attracts attention is generally some trouble connected with micturition, in consequence of pressure on the urethra. On examination the bladder will often be found to be enormously distended, forming a large, fluctuating abdominal tumor, which the patient has lost all power of emptying. Frequently small quantities of urine dribble away, leading the woman to believe that she has passed water, and thus the distention is often overlooked. Sometimes the obstruction to the discharge of urine is so great as to lead to dropsical effusion into the cellular tissue of the arms and legs. This was very well marked in one of my cases, and disappeared rapidly after the bladder had been emptied. Difficulty in defecation, tenesmus, obstinate constipation, and inability to empty the bowels, become established about the same time. These symptoms increase, accompanied by some pelvic pain, and a sense of weight and bearing down, until at last the patient applies for advice, and the true nature of the case is detected. When the retroversion occurs suddenly, all these symptoms develop with great rapidity, and are sometimes very serious from the first.

Progress and Termination.—The further progress is various. Sometimes, after the uterus has been incarcerated in the pelvis for more or less time, it may spontaneously rise into the abdominal cavity, when all threatening symptoms will disappear. So happy a termination is quite exceptional, and should the practitioner not interfere and effect reposition of the organ, serious and even fatal consequences may ensue, unless abortion occurs.

The extreme distention of the bladder, and the impossibility of relieving it, may lead to lacerations of its coats and fatal peritonitis; or the retention of urine may produce cystitis, with exfoliation of the coats of the bladder; or, as more commonly happens, retention of

urinary elements may take place, and death occur with all the symptoms of uræmic poisoning. At other times the impacted uterus becomes congested and inflamed, and eventually sloughs, its contents, if the patient survive, being discharged by fistulous communications into the rectum and vagina. It need hardly be said that such terminations are only possible in cases which have been grossly mismanaged, or the nature of which has not been detected till a late period.

Diagnosis.—The diagnosis is not difficult. On making a vaginal examination, the finger impinges on a smooth round elastic swelling, filling up the lower part of the pelvis, stretching and depressing the posterior vaginal wall, which occasionally protrudes beyond the vulva. On passing the finger forward and upward we shall generally be able to reach the cervix, high up behind the pubes, and pressing on the urethral canal. In very complete retroversion it may be difficult or impossible to reach the cervix at all. On abdominal examination the fundus uteri cannot be felt above the pelvic brim; this, as the retroversion does not give rise to serious symptoms until between the third and fourth months, should, under natural circumstances, always be possible. By bimanual examination we can make out, with due care, the alternate relaxation and contraction of the uterine parietes characteristic of the gravid uterus, and so differentiate the swelling from any other in the same situation. The accompanying phenomena of pregnancy will also prevent any mistake of this kind.

In some few cases retroversion has been supposed to go on to term. Strictly speaking, this is impossible; but in the supposed examples, such as the well-known case recorded by Oldham, part of a retroflexed uterus remained in the pelvic cavity, while the greater part developed in the abdominal cavity. The uterus is, therefore, divided, as it were, into two portions: one, which is the flexed fundus, remaining in the pelvis, the other, containing the greater part of the fœtus, rising above it. Under these circumstances, a tumor in the vagina would exist in combination with an abdominal tumor, and pregnancy might go on to term. Considerable difficulty may even arise in labor, but the malposition generally rectifies itself before it gives rise to any serious results.

Treatment.—The treatment of retroversion of the gravid uterus should be taken in hand as soon as possible, for every day's delay involves an increase in the size of the uterus, and leads, therefore, to greater difficulty in reposition. Our object is to restore the natural direction of the uterus, by lifting the fundus above the promontory of the sacrum. The first thing to be done is to relieve the patient by emptying the bladder, the retention of urine having probably originally called attention to the case. For this purpose it is essential to use a long elastic male catheter of small size, as the urethra is too elongated and compressed to admit of the passage of the ordinary silver instrument. Even then it may be extremely difficult to introduce the catheter, and sometimes it has been found to be quite impossible. Under such circumstances, provided reposition cannot be effected without it, the bladder may be punctured an inch or two above the pubes by means of the fine needle of an aspirator, and the urine drawn

off. Dieulafoy's work on aspiration proves conclusively that this may be done without risk, and the operation has been successfully performed by Schatz and others. It very rarely happens, however, and in long-neglected cases only, that the withdrawal of the urine is found to be impossible.

The bladder being emptied, and the bowels being also opened, if possible, by copious enemata, we proceed to attempt reduction. For this purpose various procedures are adopted. If the case is not of very long standing, I am inclined to think that the gentlest and safest plan is the continuous pressure of a caoutchouc bag, filled with water, placed in the vagina. The good effect of steady and long-continued pressure of this kind was proved by Tyler Smith, who effected in this way the reduction of an inverted uterus of long standing, and it is not difficult to understand that it may succeed when a more sudden and violent effort fails. I have tried this plan successfully in several cases, a pyriform India-rubber bag being inserted into the vagina and distended as far as the patient could bear by means of a syringe. The water must be let out occasionally to allow the patient to empty the bladder, and the bag immediately refilled. In my cases reposition occurred within twenty-four hours. Barnes has failed with this method; but it succeeded so well in my cases, and is so obviously less likely to prove hurtful than forcible reposition with the hand, that I am inclined to consider it the preferable procedure, and one that should be tried first. Failing with the fluid pressure, we should endeavor to replace the uterus in the following way. The patient should be placed at the edge of the bed, in the ordinary obstetric position, and thoroughly anæsthetized. This is of importance, as it relaxes all the parts, and admits of much freer manipulation than is otherwise possible. One or more fingers of the left hand are then inserted into the rectum; if the patient be deeply chloroformed, it is quite possible, with due care, even to pass the whole hand, and an attempt is then made to lift or push the fundus above the promontory of the sacrum. At the same time reposition is aided by drawing down the cervix with the fingers of the right hand *per vaginam*. It has been insisted that the pressure should be made in the direction of one or other sacro-iliac synchondrosis rather than directly upward, so that the uterus may not be jammed against the projection of the promontory of the sacrum. Failing reposition through the rectum, an attempt may be made *per vaginam*, and for this some have advised the upward pressure of the closed fist passed into the canal. Others recommend the hand-and-knee position as facilitating reposition, but this prevents the administration of chloroform, which is of more assistance than any change of position can possibly be. Various complex instruments have been invented to facilitate the operation, but they are all more or less dangerous, and are unlikely to succeed when manual pressure has failed.

As soon as the reduction is accomplished, subsequent descent of the uterus should be prevented by a large-sized Hodge's pessary, and the patient should be kept at rest for some days, the state of the bladder and bowels being particularly attended to. When reposition has been fairly effected a relapse is unlikely to occur.

In cases in which reduction is found to be impossible, our only resource is the artificial induction of abortion. Under such circumstances this is imperatively called for. It is best effected by puncturing the membranes, the discharge of the liquor amnii of itself lessening the size of the uterus, and thus diminishing the pressure to which the neighboring parts are subjected. After this, reposition may be possible, or we may wait until the fœtus is spontaneously expelled. It is not always easy to reach the os uteri, although we can generally do so with a curved uterine sound. If we cannot puncture the membranes, the liquor amnii may be drawn off through the uterine walls by means of the aspirator, inserted through either the rectum or vagina. The injury to the uterine walls thus inflicted is not likely to be hurtful, and the risk is certainly far less than leaving the case alone. Naturally, so extreme a measure would not be adopted until all the simpler means indicated have been tried and failed.

Diseases Coexisting with Pregnancy.—The pregnant woman is, of course, liable to contract the same diseases as in the non-pregnant state, and pregnancy may occur in women already the subject of some constitutional disease. There is no doubt much yet to be learned as to the influence of coexisting disease on pregnancy. It is certain that some diseases are but little modified by pregnancy, and that others are so to a considerable extent; and that the influence of the disease on the fœtus varies much. The subject is too extensive to be entered into at any length, but a few words may be said as to some of the more important affections that are likely to be met with.

The eruptive fevers have often very serious consequences, proportionate to the intensity of the attack. Of these variola has the most disastrous results, which are related in the writings of the older authors, but which are, fortunately, rarely seen in these days of vaccination. The severe and confluent forms of the disease are almost certainly fatal to both the mother and child. In the discrete form, and in modified smallpox after vaccination, the patient generally has the disease favorably, and although abortion frequently results, it does not necessarily do so. The effects on the children vary. The fœtus may escape the disease altogether; or it may be attacked by it either before or after birth; or, if the mother has had smallpox during pregnancy, the child may be subsequently insusceptible to the vaccine virus.

Scarlet Fever.—If scarlet fever of an intense character attacks a pregnant woman, abortion is likely to occur, and the risks to the mother are very great. The milder cases run their course without the production of any untoward symptoms. Should abortion occur, the well-known dangerous effect of this zymotic disease after delivery will gravely influence the prognosis. Cazeaux was of opinion that pregnant women are not apt to contract the disease. It has been thought that the poison when absorbed during pregnancy might remain latent until delivery, when its characteristic effects were produced. It is certainly more common after delivery than during pregnancy; thus Olshausen[1] collected one hundred and thirty-five cases of the former kind, and only seven of the latter.

[1] Arch. f. Gynäk., 1877, Bd. ix. S. 111.

Measles.—Measles, unless very severe, often runs its course without seriously affecting the mother or child. I have myself seen several examples of this. De Tourcoing, however, states that out of fifteen cases the mother aborted in seven, these being all very severe attacks. Some cases are recorded in which the child was born with the rubeolous eruption upon it.

Continued Fevers.—The pregnant woman may be attacked with any of the continued fevers, and if they are at all severe, they are apt to produce abortion. Out of twenty-two cases of typhoid, sixteen aborted, and the remaining six, who had slight attacks, went on to term; out of sixty-three cases of relapsing fever, abortion or premature labor occurred in twenty-three. According to Schweden the main cause of danger to the fœtus in continued fevers is the hyperpyrexia, especially when the maternal temperature reaches 104° or upward. The fevers do not appear to be aggravated as regards the mother, and the same observation has been made by Cazeaux with regard to this class of disease occurring after delivery.

Pneumonia.—Pneumonia seems to be specially dangerous, for of fifteen cases collected by Grisolle[1] eleven died—a mortality immensely greater than that of the disease in general. The larger proportion also aborted, the children being generally dead, and the fatal result is probably due, as in the severe continued fevers, to hyperpyrexia. The cause of the maternal mortality does not seem quite apparent, since the same danger does not appear to exist in severe bronchitis, or other inflammatory affections.

Phthisis.—Contrary to the usually received opinion, it appears certain that pregnancy has no retarding influence on coexisting phthisis, nor does the disease necessarily advance with greater rapidity after delivery. Out of twenty-seven cases of phthisis, collected by Grisolle, twenty-four showed the first symptoms of the disease after pregnancy had commenced. Phthisical women are not apt to conceive; a fact which may probably be explained by the frequent coexistence, in such cases, of uterine disease, especially severe leucorrhœa. The entire duration of the phthisis seems to be shortened, as it averaged only nine and a half months in the twenty-seven cases collected—a fact which proves, at least, that pregnancy has no material influence in arresting its progress. If we consider the tax on the vital powers which pregnancy naturally involves, we must admit that this view is more physiologically probable than the one generally received, and apparently adopted without any due grounds.

Heart Disease.—The evil effects of pregnancy and parturition on chronic heart disease have of late received much attention from Spiegelberg, Fritsch, Peter, and other writers. The subject has been ably discussed[2] in a series of elaborate papers by Dr. Angus Macdonald, which are well worthy of study. Out of twenty-eight cases collected by him, seventeen, or 60 per cent., proved fatal. This, no doubt, is not altogether a reliable estimate of the probable risk of the

[1] Arch. gén. de Méd., vol. xiii. p. 291.
[2] Obst. Journ., 1877, vol. v. p. 217.

complication; but, at any rate, it shows the serious anxiety which the occurrence of pregnancy in a patient suffering from chronic heart disease must cause. Dr. Macdonald refers the evils resulting from pregnancy in connection with cardiac lesions to two causes: first, destruction of that equilibrium of the circulation which has been established by compensatory arrangements; secondly, the occurrence of fresh inflammatory lesions upon the valves of the heart already diseased.

The dangerous symptoms do not usually appear until after the first half of the pregnancy has passed, and the pregnancy seldom advances to term. The pathological phenomena generally met with in fatal cases are pulmonary congestion, especially of the bronchial mucous membrane, and pulmonary œdema, with occasional pneumonia and pleurisy. Mitral stenosis seems to be the form of cardiac lesion most likely to prove serious, and, next to this, aortic incompetency. The obvious deduction from these facts is that heart disease, especially when associated with serious symptoms, such as dyspnœa, palpitation, and the like, should be considered a strong contra-indication of marriage. When pregnancy has actually occurred, all that can be done is to enjoin the careful regulation of the life of the patient, so as to avoid exposure to cold, and all forms of severe exertion.

Syphilis.—The important influence of syphilis on the ovum is fully considered elsewhere (p. 248). As regards the mother, its effects are not different from those occurring at other times. It need only, therefore, be said that, whenever indications of syphilis in a pregnant woman exist, the appropriate treatment should be at once instituted and carried on during her gestation, not only with the view of checking the progress of the disease, but in the hope of preventing or lessening the risk of abortion, or of the birth of an infected infant. So far from pregnancy contra-indicating mercurial treatment, there rather is a reason for insisting on it more strongly. As to the precise medication, it is advisable to choose a form that can be exhibited continuously for a length of time without producing serious constitutional results. Small doses of the bichloride of mercury, such as one-sixteenth of a grain, thrice daily, or of the iodide of mercury, or of the hydrargyrum cum creta, in combination with reduced iron, answer the purpose well; or, in the early stages of pregnancy, the mercurial vapor bath, or cutaneous inunction, may be employed.

Dr. Weber, of St. Petersburg,[1] has made some observations showing the superiority of the latter methods, which he found did not interfere with the course of pregnancy; the contrary was the case when the mercury was administered by the mouth, probably, as he supposes, from disturbance of the digestive system. It must be borne in mind that in married women it may sometimes be expedient to prescribe an anti-syphilitic course without their knowledge of its nature, so that inunction is not always feasible.

Epilepsy.—The influence of pregnancy on epilepsy does not appear to be as uniform as might perhaps be expected. In some cases the

[1] Allgem. Med. Centr. Zeit., Feb. 1875.

number and intensity of the fits have been lessened, in others the disease becomes aggravated. Some cases are even recorded in which epilepsy appeared for the first time during gestation. On account of the resemblance between epilepsy and eclampsia there is a natural apprehension that a pregnant epileptic may suffer from convulsions during delivery. Fortunately, this is by no means necessarily the case, and labor often goes on satisfactorily without any attack.

Diseases of the Eye.—Certain diseases of the eye are observed during pregnancy. They have been well studied by Mr. Power.[1] One of the most common disturbances of vision is due to temporary impairment of accommodation, most generally in patients who are naturally hypermetropic, and dependent on exhaustion of the neuro-muscular apparatus. The symptoms are chiefly difficulty in reading, sewing, or other work requiring minute vision; pain, black spots before the eyes, lachrymation, etc. Suitable convex glasses may be required, and with attention to the general health the symptoms may disappear. Other diseases more serious and lasting in their results are also met with. Mr. Power describes certain important changes in the eye met with in cases of albuminuria. The optic disk is swollen and congested, and irregular hemorrhages and white disks are seen in the retina. The hemorrhages he ascribes to actual rupture of the vessels; the white patches to a lesser degree of distention, admitting of the escape of white corpuscles through the vascular walls. In many of these cases the vision was ultimately regained. Another form of disease he describes is "white atrophy of the optic disk," probably following neuritis, occurring in cases in which there had been great loss of blood.

Simple jaundice, having little serious effect on the mother, although probably tending to produce abortion, is occasionally met with in pregnancy. Such attacks may be transient, and may pass away without being attended with any bad consequence. Their production is probably favored by a slight degree of parenchymatous infiltration of the liver, which is a normal accompaniment of healthy pregnancy, as well as by the mechanical pressure of the gravid uterus on the intestines and the bile-ducts. Their symptoms do not differ from those of similar attacks in the non-pregnant state.

The chief anxiety in regard to jaundice in pregnant women is that it is the frequent precursor of the serious disease known as "acute yellow atrophy of the liver," which is, as a matter of fact, a misnomer, the disease being a general one, of which the liver changes, though marked, are by no means an exclusive manifestation.

Into the pathology and symptoms of this fatal illness it would be out of place to enter here at length. It is chiefly of moment to the obstetrician from the fact that it is undoubtedly more common in pregnant women than in others. This is to be explained partly by the parenchymatous changes in the liver natural to pregnancy, partly to the impaired action of the kidneys, and to the altered state of the blood met with in that condition, the general toxæmia, characteristic of the disease, being ultimately increased by the retention of the bile-

[1] Barnes: Obst. Med., vol. i. p. 390.

products. The prognosis, as regards the mother, is as bad as anything can be, very few cases, and these of a doubtful character, having recovered. As regards the fœtus, the issue is also almost necessarily fatal, and it has been noted that while the fœtus perishes early in the course of the illness, there is not the same tendency for the uterus to throw off its contents which is observed in other conditions in which the ovum is destroyed, but that the dead and macerated fœtus is retained *in utero*.

The important point to decide in a suspected case is as to whether means should be taken to put an end to the pregnancy or not. This would appear to be a reasonable procedure, since the toxic conditions of the blood must go on increasing *pari passu* with pregnancy. Even this, however, is of doubtful expediency, for it has been observed that previously existing symptoms have become intensified after abortion, possibly from the increased weakness resulting from the hemorrhage accompanying it.[1]

Carcinoma.—The occurrence of pregnancy in a woman suffering from malignant disease of the uterus is by no means so rare as might be supposed, and must naturally give rise to much anxiety as to the result. The obstetrical treatment of these cases will be discussed elsewhere. Should we be aware of the existence of the disease during gestation, the question will arise whether we should not attempt to lessen the risks of delivery by bringing on abortion or premature labor. The question is one which is by no means easy to settle. We have to deal with a disease which is certain to prove fatal to the mother before long, and the progress of which is probably accelerated after labor, while the manipulations necessary to induce delivery may very unfavorably influence the diseased structures. Again, by such a measure we necessarily sacrifice the child, while we are by no means certain that we materially lessen the danger to the mother. The question cannot be settled except on a consideration of each particular case. If we see the patient early in pregnancy, by inducing abortion we may save her the dangers of labor at term—possibly of the Cæsarean section—if the obstruction be great. Under such circumstances, the operation would be justifiable. If the pregnancy has advanced beyond the sixth or seventh month, unless the amount of malignant deposit be very small indeed, it is probable that the risks of labor would be as great to the mother as at term, and it would then be advisable to give her the advantage of the few months' delay. If the malignant growth is of the epithelial variety, and limited to the cervix, it might in some cases be advisable to operate on it by amputating the cervix with the écraseur or galvano-caustic wire. This would probably be followed by abortion, which, under such conditions, would not be a disadvantage to the mother.

Ovarian Tumor.—Cases are occasionally met with in which pregnancy occurs in women who are suffering from ovarian tumor, and their proper management has given rise to considerable discussion. There can be no doubt that such cases are attended with very danger-

[1] Lusk's Midwifery, 4th edition, p. 260.

ous and often fatal consequences, for the abdomen cannot well accommodate the gravid uterus and the ovarian tumor, both increasing simultaneously. The result is that the tumor is subject to much contusion and pressure, which have sometimes led to the rupture of the cyst, and the escape of its contents into the peritoneal cavity; at others to a low form of inflammation, attended with much exhaustion, the death of the patient supervening either before or shortly after delivery. The danger during delivery from the same cause, in the cases which go on to term, is also very great. Of thirteen cases of delivery by the natural powers, which I collected in a paper on "Labor Complicated with Ovarian Tumor,"[1] far more than one-half proved fatal. Another source of danger is twisting of the pedicle, and consequent strangulation of the cyst, of which several instances are recorded. It is obvious, then, that the risks are so manifold that in every case it is advisable to consider whether they can be lessened by surgical treatment.

The means at our disposal are either to induce labor prematurely, to treat the tumor by tapping, or to perform ovariotomy. The question has been particularly discussed by Spencer Wells in his works on *Ovariotomy*, and by Barnes in his *Obstetric Operations*. The former holds that the proper course to pursue is to tap the tumor when there is any chance of its being materially lessened in size by that procedure, but that when it is multilocular, or when its contents are solid, ovariotomy should be performed at as early a period of pregnancy as possible. Barnes, on the other hand, maintains that the safer course is to imitate the means by which Nature often meets this complication, and bring on premature labor without interfering with the tumor. He thinks that ovariotomy is out of the question, and that tapping may be insufficient and leave enough of the tumor to interfere seriously with labor. So far as recorded cases go, they unquestionably seem to show that tapping is not more dangerous than at other times, and that ovariotomy may be practised during pregnancy with a fair amount of success. Wells records ten cases which were surgically interfered with. In one, tapping was performed, and in nine ovariotomy; and of these eight recovered, the pregnancy going on to term in five. On the other hand, five cases were left alone, and either went to term, or spontaneous premature labor supervened; and of these, three died. The cases are not sufficiently numerous to settle the question, but they certainly favor the view taken by Wells rather than that by Barnes. It is to be observed that, unless we give up all hope of saving the child, and induce abortion, the risk of induced premature labor, when the pregnancy is sufficiently advanced to hope for a viable child, would almost be as great as that of labor at term; for the question of interference will only have to be considered with regard to large tumors, which would be nearly as much affected by the pressure of a gravid uterus at seven or eight months as by one at term. Small tumors generally escape attention, and are more apt to be impacted before the presenting part in delivery. The success of ovariotomy during pregnancy has certainly been great, and we have to bear in mind that the woman

[1] Obst. Trans., 1867, vol. ix. p. 69.

must necessarily be subjected to the risk of the operation sooner or later, so that we cannot judge of the case as one in which abortion terminates the risk. Even if the operation should put an end to the pregnancy—and there is at least a fair chance that it will not do so—there is no certainty that that would increase the risk of the operation to the mother, while as regards the child we should only have the same result as if we intentionally produced abortion. On the whole, then, it seems that the best chance to the mother, and certainly the best to the child, is to resort to the apparently heroic practice recommended by Wells. The determination must, however, be to some extent influenced by the skill and experience of the operator. If the medical attendant has not gained that experience which is so essential for a successful ovariotomist, the interests of the mother would be best consulted by the induction of abortion at as early a period as possible. One or other procedure is essential; for, in spite of a few cases in which several successive pregnancies have occurred in women who have had ovarian tumors, the risks are such as not to justify an expectant practice. Should rupture of the cyst occur, there can be no doubt that ovariotomy should at once be resorted to, with the view of removing the lacerated cyst and its extravasated contents.

Fibroid Tumors.—Pregnancy may occur in a uterus in which there are one or more fibroid tumors. During pregnancy they may lead to premature labor or abortion, to peritonitis, or they may cause so much pain and discomfort from their size as to render interference imperative. If they are situated low down, and in a position likely to obstruct the passage of the fœtus, they may very seriously complicate delivery. When they are situated in the fundus or body of the uterus they may give rise to risk from hemorrhage, or from inflammation of their own structure. Inasmuch as they are structurally similar to the uterine walls, they partake of the growth of the uterus during pregnancy, and frequently increase remarkably in size. Cazeaux says: "I have known them in several instances to acquire a size in three or four months which they would not have done in several years in the non-pregnant condition." Conversely, they share in the involution of the uterus after delivery, and often lessen greatly in size, or even entirely disappear. Of this fact I have elsewhere recorded several curious examples;[1] and many other instances of the complete disappearance of even large tumors have been described by authors whose accuracy of observation cannot be questioned.

The treatment will vary with the size and position of the tumor, and every case must be treated on its own merits, since it is not possible to lay down rules that will apply to all cases alike. A full report of all recent cases will be found in Dr. John Phillips's[2] paper, which shows how serious the results often are. If the position of the tumor be such as to to render it certain to obstruct delivery, the production of early abortion is perhaps the best course to pursue. It is not without serious risks, but probably less than allowing pregnancy to proceed to term.

[1] Obst. Trans., 1869, vol. x. p. 102; 1872, vol. xiii. p. 288; 1877, vol. xix. p. 101.
[2] "The Management of Fibro-myomata complicating Pregnancy and Labor." Brit. Med. Journ., 1888, vol. i. p. 1331.

In several instances, either the removal of the tumor itself by abdominal section (myomectomy), or the removal of the tumor and the gravid uterus (Porro's operation), has been resorted to on account of the grave concomitant symptoms, and with a fair measure of success. If the tumor is well out of the way, interference is not so urgently called for. The principal danger then is that the tumor will impede the postpartum contraction of the uterus, and favor hemorrhage. Even if this should happen, the flooding could be controlled by the usual means, especially by the injection of the perchloride of iron. I have seen several cases in which delivery has taken place under such circumstances without any untoward accident. The danger from inflammation and subsequent extrusion of the fibroid masses would probably be as great after abortion or premature labor as after delivery at term. It seems, therefore, to be the proper rule to interfere when the tumors are likely to impede delivery, and in other cases to allow the pregnancy to go on, and be prepared to cope with any complications as they arise. The risks of pregnancy should be avoided in every case in which uterine fibroids of any size exist, the patients being advised to lead a celibate life.

CHAPTER IX.

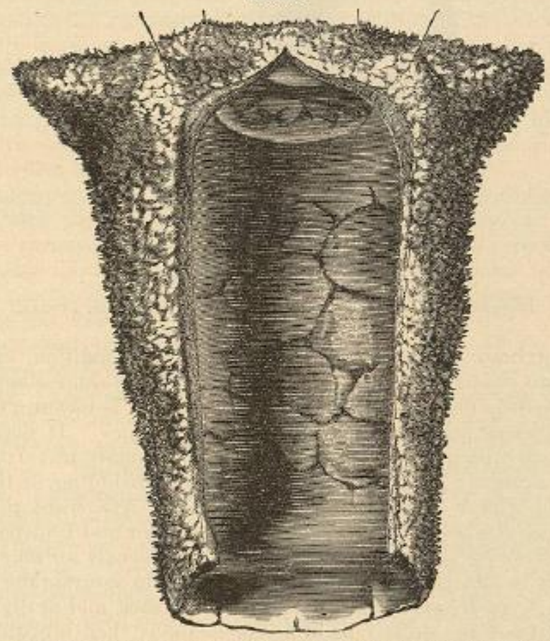
PATHOLOGY OF THE DECIDUA AND OVUM.

Pathology of the Decidua.—Comparatively little is, unfortunately, known of the pathological changes which occur in the mucous membrane of the uterus during pregnancy. It is probable that they are of much more consequence than is generally believed to be the case; and it is certain that they are a frequent cause of abortion.

One of the most generally observed probably depends on endometritis antecedent to conception. When the impregnated ovule reached the uterus, it engrafted itself on the inflamed mucous membrane, which was in an unfit condition for its reception and growth. A not uncommon result, under such circumstances, is the laceration of some of the decidual vessels, extravasation of the blood between the decidua and the uterine walls, and consequent abortion at an early stage of pregnancy. As this morbid state of the uterine mucous membrane is likely to continue after abortion is completed, the same history repeats itself on each impregnation, and thus we may have constant early miscarriages produced. It does not necessarily follow, however, that the pregnancy is immediately terminated when this state of things is present. Sometimes a condition of hyperplasia of the decidua is produced, the membrane becomes much thickened and hypertrophied in consequence of proliferation of its interstitial connective tissue, and

the decidual cells are greatly increased in size (Fig. 90). In other instances the internal surface of the decidua becomes studded with rough polypoid growths,[1] depending on proliferation of its interstitial tissue, a condition described as *endometritis decidualis polyposa*, or *tuberosa*. Duncan has found that the hypertrophied decidua is always in a state of fatty degeneration, more advanced in some places than in others.[2] The result of these alterations is frequently to produce dwindling or death of the ovum, which, however, retains its connection

Fig. 90.



Hypertrophied decidua laid open, with the ovum attached to its fundal portion. (After DUNCAN.)

with the decidua, until, after a lapse of time, the decidua is expelled in the form of a thick triangular fleshy substance, with the atrophied ovum attached to some part of its inner surface. In other cases, in which the hyperplasia has advanced to a less extent, the nutrition of the fœtus is not interfered with, and pregnancy may continue to term, the changes in the decidua being recognizable after delivery. Other diseases besides endometritis may give rise to similar alterations in the decidua, one of these being, as Virchow maintains, syphilis. The converse condition, an imperfect development of the decidua, especially of the decidua reflexa, has also been noted as a cause of abortion. The

[1] Virchow's Archiv für Path., 1861, 1st edit.
[2] Researches in Obstetrics, p. 293.