

In a third case, also black, the cause of retention appears to have been a prevention of the descent of the fetus, from its arm and leg being secured within the uterus. The woman was thirty-three years old and the mother of one child, and was operated upon by Dr. J. C. Egan, of Shreveport, Louisiana, August 25, 1860.¹ On May 4, 1857, while at work in the field, she felt a sudden and violent pain in the left side; fainted, remained insensible so long as to be thought dead, but finally revived, and was pronounced four months pregnant. Labor began in November; the os dilated, head presented, but did not descend; pains continued at intervals for a month. In the fall of 1858 an abscess opened, leaving a fistula one and a quarter inches below the umbilicus. When operated upon nearly two years later, she was greatly emaciated and affected with hectic fever. The uterus being adherent, the peritoneal cavity was not opened. When the fetus was extracted, its left foot and hand were wanting, and, search being made, were found in a pouch on the left side of the uterus, enclosed by bands which were cut for their liberation. The uterus was examined bimanually to make sure that the cervix was sufficiently open for drainage. The decomposed fetus had been carried thirty-three months after maturity. Dr. Egan believes that a partial rupture of the uterus took place at the time of her attack in the field, and that the arm and leg were caught in its partial cicatrization. The woman made a good recovery.

Much light is thrown upon a possible way of accounting for some of the mysterious cases of missed labor, which have been claimed to be extra-uterine in order to account for them, by a case recently operated upon in Portland, Maine, by Dr. Stanley P. Warren, and kindly reported to me by letter. The woman was a native, of Scotch-Irish descent, aged thirty-two, and mother of a child of thirteen. She last menstruated in January, 1884. Supposed accidental abortion in May, as there was hemorrhage; the physician said he had removed the placenta, and there was a thick "molasses-like" discharge afterward. Dr. Warren was called in a week later; found metro-peritonitis and a tumor of about four inches in diameter in the right groin. The peritonitis became general, and Dr. W. was in attendance for fifteen days. On July 1st the tumor was in the median line, and foetal movements and heart-sounds distinct. Labor expected about October 28th; subsequent gestation normal. Was called October 26th, at 11 P.M.; found no true pains; pains apparently abdominal, rather than uterine, and continuous in the back and over the sides of the uterus. Fetus transverse, with head to right; pulse 152. No change for several days. Second week in November found child dead. Next four weeks slight occasional chills, and temperature 102° for two or three nights, but usually normal. Absolutely no expulsive pains. Cervix reached with difficulty, and finger passed through a long tubular neck, but fetus not reached. Cervix absolutely closed from December 21st to 29th; pulse 120, temperature 100° to 102°. Attempted to dilate with sponge tent, but could not pass it into the uterine cavity. December 30th

¹ N. O. Med. and Surg. Journ., July, 1877, p. 85; also communicated by operator, 1878.]

attempted to open cervix by digital dilatation, and succeeded finally in passing a cranioclast, but the parts closed as soon as the dilators were removed. Patient in a profound shock. After stimulating for an hour, performed Cæsarean section; hemorrhage slight; peritoneum adherent everywhere to uterus; uterine wall one-quarter inch thick; child presented by right arm and side; placenta thin and far advanced in fatty degeneration; no hemorrhage on its removal; uterus did not contract; sutured by continuous stitch with catgut. Child eight and a half pounds. Woman rallied slightly, but died of shock in twenty-eight hours. Drs. T. A. Foster and S. C. Gordon were associated with Dr. Warren in the management of the case.

It would appear in this instance of missed labor that the changes produced by metro-peritonitis prevented the natural dilatation of the cervix and the contractile action of the muscular coat of the uterus. Possibly, fatty degeneration of the muscular fibres had taken place, but this could not be ascertained, as there was no autopsy.

The Cæsarean case of Dr. Brodie S. Herndon, of Fredericksburg, Virginia, operated upon with success in 1845, bears a close resemblance in many of its features to that of Dr. Warren. The subject was a white multipara of thirty, whose pains of labor gave place to the continuous pain and other characteristic symptoms of peritonitis. This disease lasted a month, during which time the fluid contents of the uterus escaped and the vaginal discharge became very offensive. Five weeks after the peritonitis commenced the os uteri admitted two fingers, and attempts at dilatation were made, but failed. Under ergot an offensive placenta was expelled, but the fetus could not be removed. The woman being greatly wasted and her room filled with stench, the Cæsarean operation was performed on November 16th, forty-six days after the first signs of labor appeared. The uterus being adherent, the peritoneal cavity was not exposed; the uterus was sponged out, but did not contract; it was closed in the suturing of the abdomen. The patient made a good recovery. As in the Warren case, the uterus became unsuited for performing the functions of labor by reason of changes in its tissues effected by inflammatory action.—ED.]

CHAPTER VII.

DISEASES OF PREGNANCY.

THE diseases of pregnancy form a subject so extensive that they might well of themselves furnish ample material for a separate treatise. The pregnant woman is, of course, liable to the same diseases as the non-pregnant; but it is only necessary to allude to those whose course

and effects are essentially modified by the existence of pregnancy, or which have some peculiar effect on the patient in consequence of her condition. There are, moreover, many disorders which can be distinctly traced to the existence of pregnancy. Some of them are the direct results of the sympathetic irritations which are then so commonly observed; and, of these, several are only exaggerations of irritations which may be said to be normal accompaniments of gestation. These functional derangements may be classed under the head of neuroses, and they are sometimes so slight as merely to cause temporary inconvenience, at others so grave as seriously to imperil the life of the patient. Another class of disorders is to be traced to local causes in connection with the gravid uterus, and are either the mechanical results of pressure, or of some displacement or morbid state of the uterus; while the origin of others may be said to be complex, being partly due to sympathetic irritation, partly to pressure, and partly to obscure nutritive changes produced by the pregnant state.

Derangements of the Digestive System.—Among the sympathetic derangements there are none which are more common, and none which more frequently produce distress, and even danger, than those which affect the digestive system. Under the heading of "The Signs of Pregnancy," the frequent occurrence of nausea and vomiting has already been discussed, and its most probable causes considered (p. 149). A certain amount of nausea is, indeed, so common an accompaniment of pregnancy that its consideration as one of the normal symptoms of that state is fully justified. We need here only discuss those cases in which the nausea is excessive and long-continued, and leads to serious results from inanition and from the constant distress it occasions. Fortunately a pregnant woman may bear a surprising amount of nausea and sickness without constitutional injury, so that apparently almost all aliments may be rejected without the nutrition of the body very materially suffering. At times the vomiting is limited to the early part of the day, when all food is rejected, and when there is a frequent retching of glairy transparent fluid, in several cases mixed with bile, while at the latter part of the day the stomach may be able to retain a sufficient quantity of food, and the nausea disappears. In other cases the nausea and vomiting are almost incessant. The patient feels constantly sick, and the mere taste or sight of food may bring on excessive and painful vomiting. The duration of this distressing accompaniment of pregnancy is also variable. Generally it commences between the second and third months, and disappears after the woman has quickened. Sometimes, however, it begins with conception, and continues unabated until the pregnancy is over.

Symptoms of the Graver Cases.—In the worst class of cases, when all nourishment is rejected, and when the retching is continuous and painful, symptoms of very great gravity, which may even prove fatal, develop themselves. The countenance becomes haggard from suffering, the tongue dry and coated, the epigastrium tender on pressure, and a state of extreme nervous irritability, attended with restlessness and loss of sleep, becomes established. In a still more aggravated degree, there is general feverishness, with a rapid, small, and thready

pulse. Extreme emaciation supervenes, the result of wasting from lack of nourishment. The breath is intensely fetid, and the tongue dry and black. The vomited matters are sometimes mixed with blood. The patient becomes profoundly exhausted, a low form of delirium ensues, and death may follow if relief is not obtained.

Prognosis.—Symptoms of such gravity are fortunately of extreme rarity, but they do from time to time arise, and cause much anxiety. Gueniot collected 118 cases of this form of the disease, out of which 46 died; and out of the 72 that recovered, in 42 the symptoms only ceased when abortion, either spontaneous or artificially produced, had occurred. When pregnancy is over, the symptoms occasionally cease with marvellous rapidity. The power of retaining and assimilating food is rapidly regained, and all the threatening symptoms disappear.

Treatment.—In the milder forms of obstinate vomiting, one of the first indications will be to remedy any morbid state of the primæ viæ. The bowels will not unfrequently be found to be obstinately constipated, the tongue loaded, and the breath offensive; and when attention has been paid to the general state of the digestive organs by aperient medicines and antacid remedies, such as bismuth and soda and liquor pepticus after meals, the tendency to vomiting may abate without further treatment.

The careful regulation of the diet is very important. Great benefit is often derived from recommending the patient not to rise from the recumbent position in the morning until she has taken something. Half a cup of milk and lime-water, or a cup of strong coffee, or a little rum and milk, or cocoa and milk, a glass of sparkling koumiss, or even a morsel of biscuit, taken on waking, often has a remarkable effect in diminishing the nausea. When any attempt at swallowing solid food brings on vomiting, it is better to give up all pretence at keeping to regular meals, and to order such light and easily assimilated food, at short intervals, as can be retained. Iced milk, with lime- or soda-water, given frequently, and not more than a mouthful at a time, will frequently be retained when nothing else will. Cold beef-jelly, a spoonful at a time, will also be often kept down. Sparkling koumiss has been strongly recommended as very useful in such cases, and is worthy of trial. It is well, however, to bear in mind, in regulating the diet, that the stomach is fanciful and capricious, and that the patient may be able to retain strange and apparently unlikely articles of food; and that, if she express a desire for such, the experiment of letting her have them should certainly be tried.

The medicines that have been recommended are innumerable, and the practitioner will often have to try one after the other unsuccessfully; or may find, in an individual case, that a remedy will prove valuable which, in another, may be altogether powerless. Amongst those most generally useful are effervescing draughts, containing from three to five minims of dilute hydrocyanic acid; the creasote mixture of the Pharmacopœia; tincture of nuxvomica, in doses of five or ten minims; single minim doses of vinum ipecacuanhæ, every hour in severe cases, three or four times daily in those which are less urgent; salicine,

in doses of three to five grains three times a day, recommended by Tyler Smith; oxalate of cerium, in the form of a pill, of which three to five grains may be given three times a day—a remedy strongly advocated by Sir James Simpson, and which occasionally is of undoubted service, but more often fails; the compound pyroxylic spirit of the London Pharmacopœia, in doses of five minims every four hours, with a little compound tincture of cardamom, a drug which is comparatively little known, but which occasionally has a very marked and beneficial effect in checking vomiting; opiates in various forms—which sometimes prove useful, more often not—may be administered either by the mouth, in pills containing from half a grain to a grain of opium, or in small doses of the solution of the bi-meconate of morphia or of Battley's sedative solution, or subcutaneously, a mode of administration which is much more often successful. The hydrochlorate of cocaine is said to be very efficacious; two grains are dissolved in five ounces of water, by means of spirit, of which mixture a teaspoonful may be taken every hour. Menthol has been highly recommended by Gottshalk,¹ in doses of about two grains every hour. Antipyrine in ten-grain doses has sometimes proved useful. If there is much tenderness about the epigastrium, one or two leeches may be advantageously applied, or one-third of a grain of morphia may be sprinkled on the surface of a small blister, or cloths saturated in laudanum may be kept over the pit of the stomach. The administration *per rectum* of twenty grains of chloral, combined with the same amount of bromide of potassium, in a small enema, is said to be very useful. In many cases I have found that the application of a spinal ice-bag to the cervical vertebrae, in the manner recommended by Dr. Chapman, has checked the vomiting when all drugs have failed. The ice may be placed in one of Chapman's spinal ice-bags, and applied for half an hour or an hour, twice or three times a day. It invariably produces a comforting sensation of warmth, which is always agreeable to the patient. Ice may be given to suck *ad libitum*, and is very useful; while if there be much exhaustion, small quantities of iced champagne may also be given from time to time. The application of the ether spray over the epigastrium has been highly recommended.

Inasmuch as the vomiting unquestionably has its origin in the uterus, it is only natural that practitioners should endeavor to check it by remedies calculated to relieve the irritability of that organ. Thus morphia in the form of pessaries *per vaginam*, or belladonna applied to the cervix, have been recommended, and—the former especially—are often of undoubted service. A pessary containing one-third to half a grain of morphia may be introduced night and morning without interfering with other methods of treatment. Dr. Henry Bennet directs especial attention to the cervix, which, he says, is almost always congested and inflamed, and covered with granular erosions. This condition he recommends to be treated by the application of nitrate of silver through the speculum. Dr. Amand Routh has recently spoken highly of the good effects of painting the cervix with a strong solution

¹ Der Frauenarzt, March, 1891.

of iodine.¹ Dr. Clay, of Manchester, advocates, especially when vomiting continues in the latter months, the application of one or two leeches to the cervix. Exception may fairly be taken to these methods of treatment as being somewhat hazardous, unless other means have been tried and failed. I have little doubt, however, that in many cases a state of uterine congestion is an important factor in keeping up the unduly irritable condition of the uterine fibres, and an endeavor should always be made to lessen it by insisting on absolute rest in the recumbent posture. Of the importance of this precaution in obstinate cases there can be no question. Dr. Copeman, of Norwich, strongly recommended dilatation of the cervix by the finger, and stated that he found it very serviceable in checking nausea. It is obvious that this treatment must be adopted with great caution, as, roughly performed, it might lead to the production of abortion. Dr. Hewitt's views as to the dependence of sickness on flexions of the uterus have already been adverted to, and reasons have been given for doubting the general correctness of his theory. It is quite likely, however, that well-marked displacements of the uterus, either forward or backward, may serve to intensify the irritability of the organ. Cazeaux mentions an obstinate case immediately cured by replacing a retroverted uterus. A careful vaginal examination should, therefore, be instituted in all intractable cases, and if distinct displacement be detected, an endeavor should be made to support the uterus in its normal axis. If retroverted, a Hodge's pessary may be safely employed; if anteverted, a small air-ball pessary, as recommended by Hewitt, should be inserted. I believe, however, that such displacements are the exception, rather than the rule, in cases of severe sickness.

The importance of promoting nutrition by every means in our power should always be borne in mind. The effervescent koumiss, which can now be readily obtained, I have found of great value, as it can often be retained when all other aliment is rejected. The exhaustion produced by want of food soon increases the irritable state of the nervous system, and, if the stomach will not retain anything, we can only combat it by occasional nutrient enemata of strong beef-tea, yolk of egg, and the like.

The Production of Artificial Abortion.—Finally, in the worst class of cases, when all treatment has failed, and when the patient has fallen into the condition of extreme prostration already described, we may be driven to consider the necessity of producing abortion. Fortunately cases justifying this extreme resource are of great rarity, but nevertheless there is abundant evidence that every now and then women do die from uncontrollable vomiting whose lives might have been saved had the pregnancy been brought to an end. The value of artificial abortion has been abundantly proved. Indeed, it is remarkable how rapidly the serious symptoms disappear when the uterus is emptied, and the tension of the uterine fibres lessened. It has fortunately but rarely fallen to my lot to have to perform this operation for intractable vomiting. In one such case the patient was reduced to a state of the

¹ Brit. Med. Journ., June 5, 1891.

utmost prostration, having kept hardly any food on her stomach for many weeks, and when I first saw her she was lying in a state of low muttering delirium. Within a few hours after abortion was induced all the threatening symptoms had disappeared, the vomiting had entirely ceased, and she was next day able to retain and absorb all that was given to her. The value of the operation, therefore, I believe to be undoubted. Where it has failed it seems to have been on account of undue delay. Owing to the natural repugnance which all must feel toward this plan, it has generally been postponed until the patient has been too exhausted to rally. If, therefore, it is done at all, it should be before prostration has advanced so far as to render the operation useless. In these cases the obvious indication is to lessen the tension of the uterus at once, and, therefore, the membranes should be punctured by the uterine sound, so as to let the liquor amnii drain away, and this may of itself be sufficient to accomplish the desired effect. It is almost needless to add, that no one would be justified in resorting to this expedient without having his opinion fortified by consultation with a fellow-practitioner.

Other disorders of the digestive system may give rise to considerable discomfort, but not to the serious peril attending obstinate vomiting. Amongst them are loss of appetite, acidity and heartburn, flatulent distention, and sometimes a capricious appetite, which assumes the form of longing for strange and even disgusting articles of diet. Associated with these conditions there is generally derangement of the whole intestinal tract, indicated by furred tongue and sluggish bowels, and they are best treated by remedies calculated to restore a healthy condition of the digestive organs, such as a light, easily digested diet, mineral acids, vegetable bitters, occasional aperients, bismuth and soda, and pepsin. The indications for treatment are not different from those which accompany the same symptoms in the non-pregnant state.

Diarrhœa is an occasional accompaniment of pregnancy, often depending on errors of diet. When excessive and continuous it has a decided tendency to induce uterine contractions, and I have frequently observed premature labor to follow a sharp attack of diarrhœa. It should, therefore, not be neglected; and if at all excessive, should be checked by the usual means, such as chalk mixture with aromatic confection, and small doses of laudanum or chlorodyne. The possibility of apparent diarrhœa being associated with actual constipation, the fluid matter finding its way past the solid materials blocking up the intestines, should be borne in mind.

Constipation is much more common, and is indeed a very general accompaniment of pregnancy, even in women who do not suffer from it at other times. It partly depends on the mechanical interference of the gravid uterus with the proper movements of the intestines, and partly on defective innervation of the bowels resulting from the altered state of the blood. The first indication will be to remedy this defect by appropriate diet, such as fresh fruits, brown bread, oatmeal porridge, etc. Some medicinal treatment will also be necessary, and, in selecting the drugs to be used, care should be taken to choose such as are mild and unirritating in their action, and tend to improve the

tone of the muscular coat of the intestine. A small quantity of aperient mineral water in the early morning, such as the Hunyadi, Friedrichshalle, or Pullna water, often answers very well; or an occasional dose of the confection of sulphur; or a pill containing three or four grains of the extract of colocynth, with a quarter of a grain of the extract of nux vomica and a grain of extract of hyoseyamus, at bedtime; or a teaspoonful of the compound liquorice powder in milk at bedtime. Constipation is also sometimes effectually combated by administering, twice daily, a pill containing a couple of grains of the inspissated ox-gall, with a quarter of a grain of extract of belladonna. Enemata of soap and water are often very useful, and have the advantage of not disturbing the digestion. In the latter months of pregnancy, especially in the few weeks preceding delivery, the irritation produced by the collection of hardened feces in the bowel is a not infrequent cause of the annoying false pains which then so commonly trouble the patient. In order to relieve them, it will be necessary to empty the bowels thoroughly by an aperient, such as a good dose of castor oil, to which fifteen or twenty minims of laudanum may be advantageously added. Should the rectum become loaded with scybalous masses, it may be necessary to break down and remove them by mechanical means, provided we are unable to effect this by copious enemata.

Hemorrhoids.—The loaded state of the rectum so common in pregnancy, combined with the mechanical effect of the pressure of the gravid uterus on the hemorrhoidal veins, often produces very troublesome symptoms from piles. In such cases a regular and gentle evacuation of the bowels should be secured daily, so as to lessen as much as possible the congestion of the veins. Any of the aperients already mentioned, especially the sulphur electuary, may be used. Dr. For-dyce Barker¹ insists that, contrary to the usual impression, one of the best remedies for this purpose is a pill containing a grain or a grain and a half of powdered aloes, with a quarter of a grain of extract of nux vomica, and that castor oil is distinctly prejudicial, and apt to increase the symptoms. I have certainly found it answer well in several cases. When the piles are tender and swollen, they should be freely covered with an ointment consisting of four grains of muriate of morphia to an ounce of simple ointment, or with the ungu. gallæ cum opio of the Pharmacopœia; and, if protruded, an attempt should be made to push them gently above the sphincter, by which they are often unduly constricted. Relief may also be obtained by frequent hot fomentations, and sometimes, when the piles are much swollen, it will be found useful to puncture them, so as to lessen the congestion, before any attempt at reduction is made.

Ptyalism.—A profuse discharge from the salivary glands is an occasional distressing accompaniment of pregnancy. It is generally confined to the early months, but it occasionally continues during the whole period of gestation, and resists all treatment, only ceasing when delivery is over. Under such circumstances the discharge of saliva is sometimes enormous, amounting to several quarts a day, and the dis-

¹ The Puerperal Diseases, p. 33.

tress and annoyance to the patient are very great. In one case under my care the saliva poured from the mouth all day long, and for several months the patient sat with a basin constantly by her side, incessantly emptying her mouth, until she was reduced to a condition giving rise to really serious anxiety. This profuse salivation is, no doubt, a purely nervous disorder, and not readily controlled by remedies. Astringent gargles, containing tannin and chlorate of potash, frequent sucking of ice or of tannin lozenges, inhalation of turpentine and creosote, counter-irritation over the salivary glands by blisters or iodine, the continuous galvanic current applied over the parotids, the bromides, opium internally, small doses of belladonna or atropine, may all be tried in turn, but none of them can be depended on with any degree of confidence.

Toothache and Caries of the Teeth.—Severe dental neuralgia is also a frequent accompaniment of pregnancy, especially in the early months. When purely neuralgic, quinine in tolerably large doses is the best remedy at our disposal; but not unfrequently it depends on actual caries of the teeth, and attention should always be paid to the condition of the teeth when facial neuralgia exists. There is no doubt that pregnancy predisposes to caries, and the observation of this fact has given rise to the old proverb, "For every child a tooth." Mr. Oakley Coles, in an interesting paper¹ on the condition of the mouth and teeth during pregnancy, refers the prevalence of caries to the co-existence of acid dyspepsia, causing acidity of the oral secretions. There is much unreasonable dread amongst practitioners as to interfering with the teeth during pregnancy, and some recommend that all operations, even filling, should be postponed until after delivery. It seems to me certain that the suffering of severe toothache is likely to give rise to far more severe irritation than the operation required for its relief, and I have frequently seen badly decayed teeth extracted during pregnancy, and with only a beneficial result.

Affections of the Respiratory Organs.—Amongst the derangements of the respiratory organs, one of the most common is spasmodic cough, which is often excessively troublesome. Like many other of the sympathetic derangements accompanying gestation, it is purely nervous in character, and is unaccompanied by elevated temperature, quickened pulse, or any distinct auscultatory phenomena. In character it is not unlike whooping-cough. The treatment must obviously be guided by the character of the cough. Expectorants are not likely to be of service, while benefit may be derived from some of the anti-spasmodic class of drugs, such as belladonna, hydrocyanic acid, opiates, or bromide of potassium. Such remedies may be tried in succession, but will often be found to be of little value in arresting the cough. **Dyspnoea** may also be nervous in character, and sometimes symptoms not unlike those of spasmodic asthma are produced. Like the other sympathetic disorders, it, as well as nervous cough, is most frequently observed during the early months. There is another form of dyspnoea, not uncommonly met with, which is the mechanical result of the interference with the action of the diaphragm and lungs by the pressure of

¹ Trans. of the Odontological Society.

the enlarged uterus. Hence this is most generally troublesome in the latter months, and continues unrelieved until delivery, or until the sinking of the uterine tumor which immediately precedes it. Beyond taking care that the pressure is not increased by tight lacing or injudicious arrangement of the clothes, there is little that can be done to relieve this form of breathlessness.

Palpitation.—Palpitation, like dyspnoea, may be due either to sympathetic disturbance, or to mechanical interference with the proper action of the heart. When occurring in weakly women it may be referred to the functional derangements which accompany the chlorotic condition of the blood often associated with pregnancy, and is then best remedied by a general tonic regimen, and the administration of ferruginous preparations. At other times anti-spasmodic remedies may be indicated, and it is seldom sufficiently serious to call for much special treatment.

Syncope.—Attacks of fainting are not rare, especially in delicate women of highly developed nervous temperament, and are, perhaps, most common at or about the period of quickening. In most cases these attacks cannot be classed as cardiac, but are more probably nervous in character, and they are rarely associated with complete abolition of consciousness. They rather, therefore, resemble the condition described by the older authors as *Leipthymia*. The patient lies in a semi-unconscious condition with a feeble pulse and widely dilated pupils, and this state lasts for varying periods, from a few minutes to half an hour or more. In one very troublesome case under my care they often recurred as frequently as three or four times a day. I have observed that they rarely occur when the more common sympathetic phenomena of pregnancy, especially vomiting, are present. Sometimes they terminate with the ordinary symptoms of hysteria, such as sobbing. The treatment should consist during the attack in the administration of diffusible stimulants, such as ether, salvolatile, and valerian, the patient being placed in the recumbent position, with the head low. If frequently repeated it is inadvisable to attempt to rally the patient by the too free administration of stimulants. In the intervals a generally tonic regimen, and the administration of ferruginous remedies, are indicated. If they recur with great frequency, the daily application of the spinal ice-bag has proved of much service.

Extreme Anæmia and Chlorosis.—In connection with disorders of the circulatory system may be noticed those which depend on the state of the blood. The altered condition of the blood, which has already been described as a physiological accompaniment of pregnancy (p. 145), is sometimes carried to an extent which may fairly be called morbid; and either on account of the deficiency of blood corpuscles, or from the increase in its watery constituents, a state of extreme anæmia and chlorosis may be developed. This may be sometimes carried to a very serious extent, the condition amounting to that known as "pernicious anæmia." Thus Gusserow¹ records five cases, in which nothing but excessive anæmia could be detected, all of which

¹ Arch. f. Gyn., 1871, Bd. 11, S. 218.

ended fatally. Generally when such symptoms have been carried to an extreme extent, the patient has been in a state of chlorosis before pregnancy. In cases of this aggravated type the patient will probably miscarry, and the induction of premature labor or abortion may even become imperative.

Treatment.—The treatment must, of course, be calculated to improve the general nutrition, and enrich the impoverished blood; a light and easily assimilated diet, milk, eggs, beef-tea, and animal food—if it can be taken; attention to the proper action of the bowels, a due amount of stimulants, and abundance of fresh air, will be the chief indications in the general management of the case. Medicinally, ferruginous preparations will be required. Some practitioners object, apparently without sufficient reason, to the administration of iron during pregnancy, as liable to promote abortion. This unfounded prejudice may probably be traced to the supposed emmenagogue properties of the preparations of iron; but, if the general condition of the patient indicate such medication, they may be administered without any fear. Preparations of phosphorus, such as the phosphide of zinc, or free phosphorus, also promise favorably, and are well worthy of trial.

Some of the more aggravated cases are associated with a considerable amount of serous effusion into the cellular tissue, generally limited to the lower extremities, but occasionally extending to the arms, face, and neck, and even producing ascites and pleuritic effusion. Under the latter circumstances this complication is, of course, of great gravity, and it is said that after delivery the disappearance of the serous effusion may be accompanied by metastasis of a fatal character to the lungs or the nervous centres. This form of œdema must be distinguished from the slight œdematous swelling of the feet and legs so commonly observed as a mechanical result of the pressure of the gravid uterus, and also from those cases of œdema associated with albuminuria. The treatment must be directed to the cause, while the disappearance of the effusion may be promoted by the administration of diuretic drinks, the occasional use of saline aperients, and rest in the horizontal position.

Albuminuria.—The existence of albumin in the urine of pregnant women has for many years attracted the attention of obstetricians, and it is now well known to be associated, in ways still imperfectly understood, with many important puerperal diseases. Its presence in most cases of puerperal eclampsia was long ago pointed out by Lever in this country and Rayer in France, and its association with this disease gave rise to the theory of the dependence of the convulsion on uræmia, which is generally still entertained. It has been shown of late years, especially by Braxton Hicks, that this association is by no means so universal as was supposed; or rather, that in some cases the albuminuria follows and does not precede the convulsions, of which it might therefore be supposed to be the consequence rather than the cause; so that further investigations as to these particular points are still required. Modern researches have shown that there is an intimate connection between many other affections and albuminuria; as, for example, certain forms of paralysis, either of special nerves, as puerperal

amaurosis, or of the spinal system; cephalalgia and dizziness; puerperal mania; and possibly hemorrhage. It cannot, therefore, be doubted that albuminuria in the pregnant woman is liable, at any rate, to be associated with grave disease, although the present state of our knowledge does not enable us to define very distinctly its precise mode of action.

The presence of albumin in the urine of pregnant women is far from a rare phenomenon. Blot and Litzman met with albuminuria in 20 per cent. of pregnant women, which is, however, far above the estimate of other authors; Fordyce Barker¹ thinks it occurs in about one out of 25 cases, or 4 per cent.; Hofmeier² found it in 137 out of 5000 deliveries in the Berlin Gynecological Institution, or 2.74 per cent.; while, more recently, Leopold Meyer³ found it in 5.4 per cent. out of 1124 cases, with casts in 2 per cent. As in most of these cases it rapidly disappears after delivery, it is obvious that its presence must, in a large proportion of cases, depend on temporary causes, and has not always the same serious importance as in the non-pregnant state. This is further proved by the undoubted fact that albumin, rapidly disappearing after delivery, is often found in the urine of pregnant women who go to term, and pass through labor without any unfavorable symptoms.

Pressure by the Gravid Uterus.—The obvious facts that in pregnancy the vessels supplying the kidneys are subjected to mechanical pressure from the gravid uterus, and that congestion of the venous circulation of those viscera must necessarily exist to a greater or less degree, suggest that here we may find an explanation of the frequent occurrence of albuminuria. This view is further strengthened by the fact that the albumin rarely appears until after the fifth month, and, therefore, not until the uterus has attained a considerable size; and also that it is comparatively more frequently met with in primiparæ, in whom the resistance of the abdominal parietes, and consequent pressure, must be greater than in women who have already borne children. It is, indeed, probable that pressure and consequent venous congestion of the kidneys have an important influence in its production; but there must be, as a rule, some other factors in operation, since an equal or even greater amount of pressure is often exerted by ovarian and fibroid tumors, without any such consequences. They are probably complex. One important condition is doubtless the increased amount of work the kidneys have to do in excreting the waste products of the fœtus, as well as those of the mother. The increased arterial tension throughout the body associated with hypertrophy of the heart, known to exist in pregnancy, also operates in the same direction. But in the large majority of cases, although these conditions are present, no albuminuria exists, and they must, therefore, be looked upon as predisposing causes, to which some other is added before the albumin escapes from the vessels. What this is generally escapes our observation, but probably any condition producing sudden

¹ American Journal of Obstetrics, 1878, vol. xi, p. 449.

² Berlin, klin. Wochenschr., September, 1878.

³ Zeitschr. für Geb. u. Gyn., Band xvi, S. 215.

hyperæmia of the kidneys, and giving rise to a state analogous to the first stage of Bright's disease—such, for example, as sudden exposure to cold and impeded cutaneous action—may be sufficient to set a light to the match already prepared by the existence of pregnancy. It has more recently been pointed out that a transient albuminuria, disappearing in a few days, is very common during and after labor, and probably depends on a catarrhal condition of the urinary tract. Ingersten¹ observed this in 50 out of 153 deliveries, and in 15 only had any albumin existed before the confinement; and Meyer² in 25 per cent. out of 11,138 women in labor, with casts in 12 per cent. In addition to these temporary causes it must not be forgotten that pregnancy may supervene in a patient already suffering from Bright's disease, when, of course, the albumin will exist in the urine from the commencement of gestation.

The various diseases associated with the presence of albumin in the urine will require separate consideration. Some of these, especially puerperal eclampsia, are amongst the most dangerous complications of pregnancy. Others, such as paralysis, cephalalgia, dizziness, may also be of considerable gravity. The precise mode of their production, and whether they can be traced, as is generally believed, to the retention of urinary elements in the blood, either urea or free carbonate of ammonia produced by its decomposition, or whether the two are only common results of some undetermined cause, will be considered when we come to discuss puerperal convulsions. Whatever view may ultimately be taken on these points, it is sufficiently obvious that albuminuria in a pregnant woman must constantly be a source of much anxiety, and must induce us to look forward with considerable apprehension to the termination of the case.

Prognosis.—We are scarcely in possession of a sufficiently large number of observations to justify any very accurate conclusions as to the risk attending albuminuria during pregnancy, but it is certainly by no means slight. Hofmeier believes that albuminuria is a most severe complication both for woman and child, even when uncomplicated with eclampsia. The prognosis, he thinks, depends on whether it is acute in its onset, that is, coming on within a few days of labor, or is extended over several weeks. The former is more likely to pass entirely away after delivery, while in the latter there is more risk of the morbid state of the kidneys becoming permanent, and leading to the establishment of Bright's disease after the pregnancy is over. Goubeyre estimated that 49 per cent. of primiparæ who have albuminuria, and who escape eclampsia, die from morbid conditions traceable to the albuminuria. This conclusion is probably much exaggerated, but, if it even approximate to the truth, the danger must be very great.

Besides the ultimate risk to the mother, albuminuria strongly predisposes to abortion, no doubt on account of the imperfect nutrition of the fœtus by blood impoverished by the drain of albuminous materials through the kidneys. This fact has been observed by many writers.

¹ Zeitschrift f. Geburt. u. Gynäk., 1879, Band v. Heft 2.

² Op. cit.

A good illustration of it is given by Tanner,¹ who states that four out of seven women he attended suffering from Bright's disease during pregnancy, aborted, one of them three times in succession.

Symptoms.—The symptoms accompanying albuminuria in pregnancy are by no means uniform or constantly present. That which most frequently causes suspicion is anasarca—not only the œdematous swelling of the lower limbs which is so common a consequence of the pressure of the gravid uterus, but also of the face and upper extremities. Any puffiness or infiltration about the face, or any œdema about the hands or arms, should always give rise to suspicion, and lead to a careful examination of the urine. Sometimes this is carried to an exaggerated degree, so that there is anasarca of the whole body.

Anomalous nervous symptoms—such as headache, transient dizziness, dimness of vision, spots before the eyes, inability to see objects distinctly, sickness in women not at other times suffering from nausea, sleeplessness, irritability of temper—are also often met with, sometimes to a slight degree, at others very strongly developed, and should always arouse suspicion. Indeed, knowing as we do that many morbid states may be associated with albuminuria, we should make a point of carefully examining the urine of all patients in whom any unusually morbid phenomena show themselves during pregnancy.

The condition of the urine varies considerably, but it is generally scanty and highly colored, and, in addition to the albumin, especially in cases in which the albuminuria has existed for some time, we may find epithelium cells, tube-casts, and occasionally blood corpuscles.

Treatment.—The treatment must be based on what has been said as to the causes of the albuminuria. Of course, it is out of our power to remove the pressure of the gravid uterus, except by inducing labor; but its effects may at least be lessened by remedies tending to promote an increased secretion of urine, and thus diminishing the congestion of the renal vessels. The administration of saline diuretics, such as the acetate of potash, or bitartrate of potash, the latter being given in the form of the well-known imperial drink, will best answer this indication. The action of the bowels may be excited by purgatives producing watery motions, such as occasional doses of compound jalap powder. Dry cupping over the loins, frequently repeated, has a beneficial effect in lessening the renal hyperæmia. The action of the skin should also be promoted by the use of the vapor bath, and with this view the Turkish bath may be employed with great benefit and perfect safety. Jaborandi and pilocarpin have been given for this purpose, but have been found by Fordyce Barker to produce a dangerous degree of depression. The next indication is to improve the condition of the blood by appropriate diet and medication. A very light and easily assimilated diet should be ordered, of which milk should form the staple. Tarnier² has recorded several cases in which a purely milk diet was very successful in removing albuminuria. With the milk, which should be skimmed, we may allow white of egg, or a little white fish. The tincture of the perchloride of iron is the best medicine we

¹ Signs and Diseases of Pregnancy, p. 428.

² Annal. de Gynéc., 1876, tom. v. p. 41.

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. Spiegelberg¹ is opposed to it, while Barker² 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 fetus, 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 neuralgias are common. Amongst the latter the most frequently met with are pain in the breasts, due to the intimate sympathetic connection of the mammae 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