fatal, have been traced to imprudence in this respect. That the activity of the disease is promoted by it there can be no doubt. And in the not improbable event of pregnancy, the risk encountered is vital.

The internal use of remedies is greatly limited to the fulfilment of special accidental indications. The bowels commonly demand attention. Constipation is a troublesome complication. It must be met by suitable peristalsis, and by enemata.

Sodium and iodine internally were greatly relied upon by Boinet. Iron seems indicated by the degraded state of the blood. But it is not often well borne. Saline I have found of great service, Bismuth, strychnine, hydrocyanic acid will occasionally be required to allay irritability of stomach. I have seen in many cases remarkable benefit from cod-liver oil.

CHAPTER XXVIII.

THE DISEASES OF THE VAGINA.

Colitis (Vaginitis): Simple, Inflammatory, Acute, Chronic; Displacement; Wound; Dilatation; Atrophy; Contraction; Syphilitic, Tuberculous, Cancerous Ulceration; Slaughtering; Cathartic; Lacerations of the Cecum Uteri; Vision-Osno and Recto-Vaginal Fistule; Neutered Perineum; New Formations; Fibrous Tumors; Sarcoma; Phallic Tuberosa; Hamatomata; Calculus.

Some of the abnormal conditions of the vagina have been described in the preceding chapters (see Amenorrhea, etc.). It will here be necessary to describe those which have received insufficient attention.

Vaginitis or Colitis.

Acute vaginitis sometimes follows labor, the result apparently of con.

The diseases of the uterus and vagina, in a state of stagnated vascularity. In these cases exfoliation or desquamation of the epithelial layer is very active, so that the bare surface presents a raw velvety-red angry appearance. Even during pregnancy the intense vascularity of the vagina exposes to free shedding of epithelium, which often collects about the summit of the vagina in the form of a creamy pustula, or in shreds or pellets.

Acute vaginitis may also occur from exposure to cold during a menstrual period, from injury, from direct infection, from the introduction of foreign substances, from the use of irritating powders or injections. In children it may be caused by ascariasis, by neglect of cleanliness, by improper manipulation. I have referred to the association of vaginitis with the eruptive fevers. Scarcely, especially, affects the genital-mucous tract, and thus I have known intense vaginitis produced. The
the openings of the lacune, and in such cases recognition of urethritis is easy; but when the disease is internal, and when no macula or pus appears externally, detection becomes more difficult. When any doubt exists, the patient should be emptied of the bladder for several hours; the finger should then be introduced into the vagina, and drawn along the anterior wall, so as to press out any purulent matter collected within the urethra.

Chronic catarrhal inflammation commonly occurs after repeated acute inflammations, as from menstrual suppression, gonorrheal infection, childbed, in chlorotic or scrofulous persons, from uterine catarrh, the irritation of uterine polypi, or hypertrophied vaginal-portion, dislocations of the uterus, the formation of morbid growths, and ulcerating processes. It is also frequent, and often at first acute in character, in newly-married women from excess or awkwardness in intercourse.

Vaginal catarrh is of importance from its liability to spread to the uterus, and thence to the tubes; and it disposes to intussusception and prolapse of the vagina.

Inflammation of the sub-mucous fibrous coat of the vagina is not common apart from traumatic causes. Kiwisch has called attention to the occurrence of abscesses in this tissue during pregnancy.

But there is a chronic form, not very uncommon, the result in most of the cases which I have seen of imperfect or irritating intercourse. It is marked by thickening of the walls of the vagina, the formation of abscesses, and a degree, sometimes considerable, of oedema of the canal.

Sympotoms and Diagnosis.—In the acute stage there is pain, often severe, characterized as “burning” in the part. Dyspareunia is almost never absent. Some fibrous excitation attends. Unlike metritis, it is very rarely complicated with peritonitis. Hence the local and constitutional symptoms are less severe. Dysuria generally attends the gonorrhoeal form. In this form also there is leucorrhoea of the character described. But absolute diagnosis can only be made out by the aid of the speculum, when we can take note of the vivid red mucous membrane, and see the discharge in situ.

In the chronic and non-specific forms, pain is not so much complained of. I must refer to the chapter on “Leucorrhoea” for further information on this subject. When the disease has involved the cervical canal, vaginal injections are insufficient. Topical applications inside the cervix are essential. One form of drug, “Vaginosan,” has been described in connection with “Dyspareunia.”

The treatment of catarrh consists greatly in observing rest and cleanliness. To aid in securing rest, an essential condition often is to keep the inflamed walls of the vagina apart. This is accomplished by wearing Sims’s or my vaginal rest for several hours during the day; by using a gauze mop or piece of gauze steeped in tannin and glycerine, changing it two or three times a day, or by simple rest in the recumbent posture. Douches of tepid water or poppy-head decoction are often of signal service. In the more acute stages injections of lead in proportion of one dram to a pint of water are best borne; later, sulphate of zinc, chlorid of zinc, alum, tarax, more serviceable. The gonorrhoeal inflammations may be treated exactly on the same principles as the similar affection in the male. The quickest method of cure is undoubtedly to touch the diseased surface lightly every other day with solid nitrate of silver, solid or in solution, or with tincture of iodine.

Diphtheritic inflammation most frequently occurs in childhood, and especially in lying-in hospitals; but I have seen an example in home practice. There is a form of vaginitis in which the mucous membrane is covered by pedicles, or flake, white, very brittle, to which the name diphtheritis is sometimes given. At best this should be called pseudo-diphtheria. I have not met with it, it is strictly limited to the mucous membrane, and the pedicle consists almost entirely of agglutinated epithelium-scales. The formation of the pedicle seems simply due to the preponderance of the scales over the mucous plasma. If the mucous plasma were more abundant, the discharge would be called leucorrhoea.

Displacements of the Vagina.—Displacements of the vagina can hardly arise without the preliminary condition of relaxation, or of displacement of the uterus. Whether prolapse of the uterus be the cause or the effect of prolapse of the vagina is a question already discussed. No doubt, prolapse of the vagina is commonly associated with prolapse of the uterus, but I believe prolapse of the vagina may exist independently. There is a preparation in St. George’s Museum (No. xiv. 100) which seems to show that vaginal rectocele may exist without prolapse of the uterus.

Hernias consist in an inversion of the anterior wall of the vagina with the bladder—cystocele vaginitis—or in inversion of the posterior wall from the lower end of the rectum—rectocele vaginitis—or in a hernia vaginitis posterior—cystocele vaginitis. This last form consists in dilatation of Douglas’s pouch to a hernial sac, so that the peritoneum is carried deep down behind the wall of the vagina to the perineum. The intestinal folds contained in it drag upon the vagina, then tilt it from behind, pressing from above downwards more and more of its circumference, according to the degree to which the uterum follows the traction and descends. The prolapse of the vagina thus produced gradually proceeds to a complete inversion, which contains in its cavity the prolapsed uterus, which in consequence of this traction undergoes very frequently a considerable or even monstrous elongation of its cervix. Commonly the rectum is also protruded to a prolapse by the hernia. In rare cases, in consequence of the mass of intestinal convolutions accumulating in the hernial sac between the uterus and the inverted vagina, laceration of the posterior wall of the vagina has occurred with a fatal issue.

The tendency to rectocele is found in the natural bulging of the pouch or expansion of the rectum just above the sphincter ani. This is always seen in operations for restoration of the perineum. To dissect a flap of mucous membrane from this pouch constitutes one of the most important procedures in this operation. When this pouch loses the support of the perineum, it becomes larger. It is also increased to rectocele under fecal accumulation, retention, and straining at stool.

The treatment of vaginal prolapse and hernia in most cases merges in that which is indicated for prolapses of the uterus. In some cases a Hodge or stem-pessary may be useful. Astringent injections are almost
always serviceable. But when the prolapse is great, so that folds of vagina protrude through the vulva, becoming liable to chafing and inflammation, surgical treatment is necessary to remove the redundant portion. A piece of the mucous membrane of size and form indicated by the conditions of the case must be dissected off, and the edges brought together, so as to contract the canal. It will commonly be necessary to combine this proceeding with the perineal operation.

The vagina is liable to wounds from the introduction of foreign bodies, from accidents, and from surgical operations.

The most frequent cause of the lesions that come before the surgeon is severe labor. The vagina is liable to undergo laceration, contusions, leading to partial necrosis or sloughs. Hence result cicatrizes which may lead to occlusion of the vagina, or fistulas opening into the bladder or rectum. Vesico vaginal fistula may be produced by the mere pressure of the head, long continued, jamming the bladder against the pubes. In precipitate labor, or in protracted labor in primiparae where the vulva is rigid, the perineum is apt to undergo laceration backwards to the anus. The anterior commissure also, as I pointed out many years ago (see Tyler-Smith’s Obstetric Medicine), is liable to rupture, whence severe hemorrhage may arise.

There is a singular preparation in the Museum of St. George’s Hospital (Series xiv. 108). It is a case of laceration of the vagina from colitis. There is a rent passing along the upper two inches of the vagina dividing the mucous membrane and the adjoining fibres of the muscular coat. The rent deepens as it ascends, and on a level with the os uteri has broken through into the peritoneal cavity. The hole in the peritoneum is not quite large enough to admit the little finger. The subject was an old woman.

The most trivial wounds of the vagina are sometimes followed by profuse bleeding. This is especially the case during pregnancy. But at any time the slightest nick, puncture, or laceration may give rise to profuse bleeding if the patient assume the erect posture and be exposed to any exertion. A surgeon nipped off a very small wart-like excrescence from the vagina just inside the vulva. The woman nearly died. Plugging and the application of styptics failed to arrest it. I passed a curved needle armed with a suture so as to get quite under the little wound. The suture drawn tight effectively controlled the bleeding. This is the safest plan to adopt. A short sewing needle held in a forceps might on emergency answer. But in some cases, as noted hereabove, a ped of lint soaked in perchoride of iron or other styptic may be enough. Absolute rest in recumbent posture being understood.

Professor E. Martin describes (Minutes, 1. Geburts., 1889) a temporary dilatation of the fundus, not the result of stretching or distention, but which is caused by a pathological action of the neighboring ligaments: that is, the pubo-vesical-ligament, and the sacro-uterine, the muscular bundles of which contract. The examining finger finds the roof of the vagina so wide that it seems as if its walls were applied close to the sides of the pelvis. This condition is found when there is hemorrhage with uterine colic, and in secondary puerperal hemorrhage. I have commonly ob-
I have seen these cicatrices follow labor, instrumental and not instrumental, also cauterization of the os uteri by potases cum ecales, and even by nitrate of silver homely and applied. They have also followed the use of too concentrated chronic acid and peroxide of iron.

The treatment consists in dividing the cicatrices so as to allow the vaginal wall to resume its natural form. When the cicatrix extends up the vaginal portion this part should be cut first, by dividing the horn which seizes and binds it to the vaginal wall. The first step is to dissect off the adventitious membrane from the vaginal portion, so to restore this part to its normal condition; and then several nicks should be made at different points of the crescentic edge, as deeply as is felt to be safe, taking great care of course not to go through the vaginal wall. This operation is best done without the speculum. The cicatrix is made tense by the forefinger of the left hand, and then the edge of a Simpson’s metrotome is turned upon it. When thus nicked these cicatrices have a tendency to disappear. But it is likely that the incisions will have to be repeated from time to time before they are overcome. Sometimes the bleeding attending this operation is very profuse; and it is, I think, always prudent to plug the vagina firmly with pledges of lint soaked in olive oil and carbolic acid. The operation should in every case, however slight, it may seem to be, be performed on the patient in bed. Absolute rest in the recumbent posture should be rigidly enforced for four or five days afterwards. If these precautions are adopted there will probably be no bleeding of importance; if neglected, profuse, even fatal hemorrhage may result. Under no consideration should the operation be performed in the patient’s room of a hospital, or in the physician’s consulting-room.

A day or two after the operation it is desirable to apply a Hodge-pessary, so shaped that it will keep the roof of the vagina on the stretch, so as to tend to the disposition to contract, which the scar frequently manifests. I have seen extensive cicatrices gradually disappear under this continual stretching. In one case, that of a lady who had suffered extensive sloughing after labor, the vagina was very contracted. But in a year the canal was so nearly restored to its natural state that she subsequently bore a child at term without artificial aid. Fig. 176, shows a case uncommon form of utero-vaginal cicatrical band. Raised on the finger it is made tense for division.

Lacerations of the Cervix Uteri.—Emmet calls attention to the frequency of lacerations of the cervix, and to the serious distress they entail.

**Fistulae.** The genital organs may be divided into four classes: 1. Between the bladder and urethra and vagina; the most common. 2. Between bladder and uterus; rare. 3. Between rectum and vagina; not very rare. 4. Between rectum and uterus; very rare. To these might be added uterine fistula, communicating with an abscess in the pelvis; and fistula opening into the vagina from perimetric abscesses or retro-uterine hematocoele.

The most common seat of the vesico-vaginal fistula is near half an inch below the anterior edge of the os uteri.

**Symptoms.**—The urine may either be retained for a few days after labor, or it may flow by the urethra with more or less pain. But at the end of a week or so the patient becomes conscious that her water runs away by the vagina more or less continuously; in fact, that she cannot hold it; that she is, as the expression goes, “always wet.” Excoriation of the external genitals is a frequent consequence. Phosphates collect in the vagina and cause further irritation. Sometimes, in the recumbent posture, the vulvar sphincter being unimpaired, the vagina forms a pouch, which will retain a considerable quantity of urine, acting the part of a subsidiary bladder. But on rising or exertion this accumulation is discharged, and the dribbling goes on. The inconvenience begins from the falling of the slough. This leaves a hole in the septum between the bladder and vagina, the edges of which gradually cicatrize. In this process the hole contracts, often so much that there may be great difficulty in finding it. But a hole that will barely admit a fine probe is big enough to drain off the urine as fast as it is secreted. The hole may be big enough to admit the tip of the finger. The greater part of the urethra may be destroyed. In some cases the lower segment of the uterus is lost, as well as the base of the bladder. The anterior lip of the os uteri is not uncommonly lost. In some cases I could find no cervix. There was nothing in the roof of the vagina to be found, but a fistulous opening...
admitting the tip of the finger. This was cured in two operations; and the patient menstruated through the bladder.

The diagnosis is established by sight and by touch. Whenever incontinence of urine has come on after labor, examination by finger and sound, and by speculum is indicated. The patient in semi-prone posture, the sound is passed into the bladder, and the forefinger in the vagina carried to the os uteri, and then brought down along the course of the urethra, feeling for the sound through the fistula, if one exists. Generally the puckered cicatrix of the fistula is felt, and guides to the opening. Through this opening is felt projecting a velvety nipple-like mass, the mucous membrane of the bladder. Through this the point of the sound is sometimes carried from the bladder. This evidence, complete in itself, may be extended by the use of Siem's speculum. The perineum being lifted away the aperture may usually be seen; the mucous membrane of the bladder bulging like a cherry or a raspberry, and urine seeping or dribbling through it. The point of the sound may be seen in the fundus of the vagina. When the opening is very small or overlapped by mucous membrane, it may be made out by injecting milk through the bladder. This will be visible when the source of clear urine might not be detected.

In the case of recto-vaginal fistula, the opening may have become so contracted that escape of the vagina is only occasional, that is, when the stools happen to be liquid. It may require some pains to detect the opening. It usually lies rather low down, at the point where the floor of the perineum begins to incline forward from the hollow of the sacrum. It may be made evident by finger and sound.

The etiology of fistula properly belongs to obstetrics. It is, however, important to state here that fistulae are caused in two distinct ways. 1. By straining, the result of long pressure between the child's head and the pelvic bones, or between an edge of the forceps and the pelvis. The latter is comparatively rare; the timely and skilful use of the forceps is indeed the best way to obviate the danger of sloughing from pressure of the child's head. 2. By hysteresis, extending from the edge of the os uteri into the bladder. This, according to Emmet, whose experience is un surpassed, is frequent. The laceration of the os uteri may heal, and yet the opening into the bladder may remain. In these cases there is no loss of tissue.

Any constitutional taint should be carefully treated.

Before operating, the fitness of the parts should be tested. The edges of the fistula should be seized at opposite points with a tenaculum, and the degree of tension estimated by approximation in different directions. Wherever a contraction-band is thus brought into prominence, it should be divided. Very free hemorrhage may follow this proceeding. It will be controlled by rest and plugging.

The time selected for the operation should be a week after the cessation of menstruation. If done later the operation is very apt to precipitate menstruation; and this process may mar success. No operation should be attempted during pregnancy. The bowels should be relieved by enema the day before operating.

Preparatory Steps. Emmet insists (Vesico-vaginal Fistula, etc., New York, 1868) strongly upon the necessity of carefully preparing the parts before attempting to close the fistula. All phosphatic deposit must be carefully removed by a soft sponge, and the raw surface touched with weak solution of nitrate of silver (or iodine). Warm sitz baths and irrigating the vagina with warm water render great service. After bathing, the external parts should be protected from urinary irritation by anointing with ointment. The greatest care should be taken to lessen the contact of urine with the parts. A healthy condition, fitted for operation, is not reached until the hypertrophied and indurated edges of the fistula have attained a natural density and color. This, says Emmet, is the secret of success: without it the most skilfully performed operation is almost certain to fail. No pains to remove cicatrices can be superfluous. Cicatrical contractions may pull upon the edges of the fistula and frustrate union. Cicatrices are generally best made out by the touch. When thus put upon the stretch they are felt as tight bands. They may be divided or nicked in several places by scissors or knife. And to promote relaxation they should be kept stretched by wearing a vaginal rest of glass or valencié. I have found a Hodge pessary answer well. This nicking and stretching may have to be repeated several times before perfect smoothness and mobility of the tissues are attained.

The Operation. The posture of the patient may be either the semi-prone, the knee-elbow, or the lithotomy. The American operators mostly
prefer the semi-prone. If the semi-prone posture is adopted, an assistant holds back the perineum with Sim's duck-bill speculum. If the lithotomy posture is adopted, the ankles and wrists may be secured by Pritchard's anklets, whilst assistants on either side hold open the vulva by fingers or retractors, and the perineum is depressed by the duck-bill speculum. In this way sufficient access to the wound may generally be attained. But Simons usually dragged the parts near to the vulva by hooks and strings attached to the mucous membrane of the vagina and to the os uteri.

Operators differ as to the mode of performance; but all aim at the same end—a clean paring of the margin of the fistula and accurate adaptation of the fresh wound. Emmet prefers scissors, of which several pairs, expressly curved, must be at hand. The edge of the fistula is seized with a very fine tenaculum at the most depending part, and then the edge is removed in a continuous strip all round. The paring should be extended as near the mucous membrane of the bladder as possible, without actually wounding it. To pass the sutures, the tenaculum is again introduced, the point towards the fistula at a convenient distance from its vaginal edge; then by a rotation of the hand in the opposite direction, the bladder end of the fistula will be turned out. The needle is then introduced behind the tenaculum, bringing out its point just at the bladder surface, and while still grasping it with the forceps, the tenaculum is withdrawn, and its hook is passed over the point of the needle to make counter-pressure whilst the needle is passed through. The needle seized and drawn through, the opposite edge of the wound is seized by the tenaculum in like manner, and the needle is carried on, introduced at a corresponding point near the bladder-surface. If a transverse wound is made Avelling's revolving needle answers well.

Four to five sutures to the inch should be used, and one or more should be passed at each extremity beyond the fistula.

Sometimes a good flap for removing by knife can be seized by a broad-toothed forceps, or Hilliard's three or four-pronged fork may serve.

The simple interrupted suture is much to be preferred. The wire may be secured by simple twisting, or by Avelling's coil-clamp and shot. It was long thought that the recent success attained was mainly due to the use of silver wire sutures, upon which the revivers of the operation, Simons, Boeeman, and others, have so much insisted. But the antecedent experience of Charles Brooke has been strangely overlooked in the history of this operation. More than thirty years ago this surgeon cured fistulae by silk sutures secured by his beads. He was also, as I testify by personal observation, eminently successful in curing perineal lacerations by his bead-threads. Indeed it may be surmised that any considerable improvement has been made upon his perineal operation.

The paring the edge of the fistula may be done either in the transverse or in the long axis of the vagina. The choice is determined greatly by the direction of the longest diameter of the fistula. Where the opening is circular, the transverse paring is to be preferred, because the mobility of the walls of the bladder is greater in the longitudinal direction than from the sides. When the opening is very large and irregular in shape, the paring and line of union will be also irregular, perhaps oblique, or even Y shaped or T shaped.

The after treatment consists mainly in rest. As to emptying the bladder, the different practice of surgeons seems to show that the method to be selected is not of essential importance. Emmet and Boeeman retain a catheter in the bladder. Simons thought this unnecessary. The catheter may be passed every eight hours, or the patient may be permitted to empty the bladder in the usual way.

Accidents that may Occur During and After the Operation. One is the presence of the ends of the urineters of the fistulous opening, so that they might be included in the stitches. It is to illustrate this complication that I have introduced Fig. 177. The urineters may sometimes be seen yielding urine stillation. To avoid stitching up these orifices, we may pass the needles as to run between the two mucous membranes, or as Simons did in one case, we may slit the ureter for half-an-inch inside the bladder, so as to secure an opening higher up out of the way. More frequently the fistulous opening being smaller, the orifices of the urineters are not visible; still they are liable to be taken up by the stitches. Generally they are avoided, because they are placed near the extremities of the pared wound where the needles penetrate less deeply; if one lip only of the orifice is included, no obstruction to the flow of urine occurs; and even if the whole orifice be taken up, the urine will commonly find a passage along the tract of the suture, and thus re-establish the orifice.

Primary and secondary hemorrhages. In one case in which the vesico-urinary artery was divided, Simons tied it with silk, and brought the ends of the ligature down through the bladder and urethra, in order to avoid its interference with the healing of the wound. But in two other cases he had equal success by bringing the ligature out into the vagina. He insists that in tying the artery, if at all, it is the only security. But coagulation is almost always stopped by pressure, cold, and by approximation of the wounded surfaces by the stitching. Secondary hemorrhage may take place either into the vagina or into the bladder. In the first case, if arterial, it may be necessary to undo the stitches and secure the vessel by a ligature. Occasionally a vessel may be cut by the needle in passing the sutures; so that the suture should always be given for the fresh bleeding to stop before tightening the sutures. Bleeding into the bladder almost necessarily frustrates the closure of the fistula. Alarming symptoms attend. The bladder may be so distended as to reach the umbilicus, and the urethra being perhaps obstructed by clot, there is retention of urine. Severe pain and vesical colic arise. At length the blood and clots may be expelled through the stretched-open wound and through the urethra. To stop the bleeding ice may be applied to the abdomen, and to ease pain morphia-injecting syringe be made. I am not sure that this may not be necessary to reopen the wound and to dilate the urethra to break up the clots and to empty the bladder.

A source of hemorrhage I have witnessed several times is the unexpected return of menstruation. This event is very apt to be provoked by vaginal operations.

Peritonitis may supervene. The peritoneal fold between bladder and anterior uterine wall may come near the range of the operation, and might be seen not uncommonly up high be wounded. But peritonitis is far more likely to happen from extension of irritation from the proximate