vagina is more frequently affected in leucorrhœa, and the anterior wall in gonorrhœa.

The modern application of the speculum to the study of venereal diseases (for which we are indebted to Ricord) has rendered an affection, which was before obscure and of difficult diagnosis, at once clear and easily recognizable, and the zeal, of late years, brought to the pathological investigation of the female genital organs, has induced many observers to describe the lesions of vaginitis with great minuteness and detail. It is not to be regretted that these lesions have been subjected to so severe a scrutiny, although they have for this reason acquired an unmerited degree of importance, since it has been shown that they are characterized by no features sufficiently peculiar to indicate their venereal origin, and that they are, in nearly all respects, identical with the more familiar morbid appearances of other mucous membranes, as the conjunctiva oculi, the lining membrane of the mouth, ear, etc.

The speculum should not be employed during the acute stage of vaginitis, as it is likely to excite severe pain and irritate the inflamed tissues. The presence of the catamenia is also a contraindication to its use. The ordinary cylindrical instrument, made of glass, and coated with a layer of india rubber, is of easy introduction, and is generally sufficient for the examination of the vagina in suspected cases of gonorrhœa, but when it is desired to make local applications, or when thorough exposure of all the recesses of this passage is requisite in order to discover if any concealed chancre or chancroid be present, either a valvular or Sims's speculum should be preferred. In order to remove the discharge which may obstruct the field of vision, the surgeon should provide himself with several swabs, which may be conveniently made by winding cotton wadding around the end of a thin splinter of wood.

When the vaginitis is intense and seen at an early period, a portion or the whole of the vaginal walls may be found red, hot, and dry, and entirely destitute of moisture. Ricord states that in several instances he has seen this condition finally terminate in resolution without the slightest discharge appearing at any time. Similar cases of dry or erysipelatous gonorrhœa have been reported as occurring in men, although the difficulty of examining the internal surface of the urethra throughout its whole extent, has left them open to criticism. Generally, however, this dry condition of the vagina, if present at the outset, is succeeded in the course of twenty-four hours by the appearance of a discharge, which, at first transparent, afterwards undergoes changes similar to those which occur in gonorrhœa in the male; and when the disease has attained its height, the vaginal walls are bathed with offensive, purulent matter, of a creamy or greenish color, or sometimes streaked with blood. As already stated, this discharge is acid, whereas the secretion from all other inflamed mucous membranes of the body is alkaline. Zeissl endeavors to explain this by saying that the secretion from the vagina and vulva is not identical with that from the mucous follicles of the cervix uteri in women and the urethra in men, but to my mind, this seems to be only carrying the difficulty one remove further off. Before proceeding with the examination, the field of the speculum must be cleared from the discharge by the assistance of the swabs of cotton wadding, when the mucous membrane will be exposed. This surface is found to be red and tumefied. The redness varies in intensity and also in extent. It is sometimes uniform, and at others arranged in spots of striæ. Frequently patches are seen from which the epithelium has become detached, forming superficial abrasions similar to those met with in balanitis, or resembling blistered surfaces. Another condition which is at times met with has received the name of granular vaginitis. It consists in a development of the vaginal papillæ, which project above the surrounding surface, and are readily recognized by their darker red color. It may also be due to the enlargement of follicles, as is evident from the pus oozing out of them as the edge of the speculum passes over them. These granulations are most frequently observed in the upper part of the vagina, where they may exist in large numbers covering the whole surface, or they may be merely scattered here and there. They have been erroneously regarded by Dr. Deville as peculiar to the vaginitis of pregnant women.[1] They are analogous to the granulations which are so common upon the palpebral conjunctiva. Ricord says that in one case of vaginal gonorrhœa, he observed an eruption presenting every appearance of herpes phlyctenodes situated upon the deeper portion of the vagina, and Ashwell speaks of "herpetic pustules," which by bursting form ulcers.

In addition to the above symptoms, vaginitis is characterized by increased heat and sensibility. The former may be verified by introducing a finger within the vagina, when the parts will be felt to be much hotter than natural. The degree of sensibility varies, and is greatest when the vulva is also involved. In such cases, it is generally quite impossible to introduce a speculum, owing to the pain which it excites; but when the disease is confined to the vagina, this instrument may often be employed without causing much suffering. During the course of vaginitis, there is often a frequent desire to pass the urine, and dull pain is felt in the hypogastric region, owing to sympathy excited on the part of the bladder.

Gonorrhœa of the vagina rarely continues any length of time without extending to the mucous membrane covering the *cervix*, which may exhibit lesions identical with those now described, but more especially patches of superficial erosion. Gonorrhœa of the uterus is commonly confined to the cavity of the cervix. It is usually secondary in this situation, being occasioned by the extension of the disease from the vagina, and very rarely primary. The lips of the os are seen to be tumefied and red, the cervix congested and enlarged, and its cavity filled with tenacious and transparent muco-purulent

[1] Arch. Gén. de Méd., Paris, 4e série, vol. v., p. 305.

matter. This secretion owes its transparency to the alkali which it contains. It becomes curdled and opaque when mixed with the vaginal acid, and hence cannot always be recognized after it has descended into the vagina, or is discharged from the vulva. The fact that gonorrhœa, confined to the cervix uteri, may readily be overlooked, may explain some of the cases in which a clap is derived from an apparently healthy woman.

The acute stage of vaginitis rarely continues longer than a week or ten days, and may be of much shorter duration. As the acute symptoms subside, the pain and difficulty of motion are diminished. The discharge becomes less copious and purulent, and the redness and tumefaction of the tissues gradually disappear. After this partial advance towards recovery, however, the disease often lingers for an indefinite period, and is extremely difficult to eradicate. The vaginal walls may seem to have recovered their normal condition, having lost the morbid appearances which characterized the acute stage, but there is still a small amount of discharge from their surface, or from the cervical cavity, which is capable of producing gonorrhœa in the male.

The occurrence of menstruation is always a set-back in cases of vaginitis, both on account of its interrupting treatment and the congestion of the parts during this period. If a woman was supposed to be well, or nearly well, at the time her courses came on, she should always be examined again after they have ceased. The persistence of this disease in a subacute chronic form is almost always due to those constitutional causes, already mentioned when speaking of its etiology. In consequence of its long duration, the vaginal walls may lose their soft velvet-like feel, and become coarse, rough, and dry.

Dr. Tilt[1] says that vaginitis, even when not very severe, may be followed by such an amount of contraction, that it becomes necessary to notch the unyielding ring to facilitate labor. "The occlusion has been known to be complete through the whole length of the canal." He quotes Dr. Daniel,[2] as saying that, in one West African tribe, a young woman, who permits illicit connection, is handed over to the matrons of the community, who stuff her vagina with a pulp made of the unripe pods of capsicum, and thus produce a superacute vaginitis, which is followed by so contracted a state of the vagina, that intromission is ever after prevented.

Gonorrhœa of the Uterus.—The cervix uteri is often involved by extension of gonorrhœal inflammation from the vagina. It may also be primarily attacked, as is readily explained by the fact that this is the part of the female genital organs against which the glans penis most impinges in the sexual act, and consequently the part where, in chronic gonorrhœa especially, a drop of contagious matter, issuing from the meatus of the male, is very likely to be alone deposited. I

[1] Uterine Therapeutics, 4th ed., 1878, p. 353.
[2] Native Diseases of the Gulf of Guinea, London, 1849.

have seen repeated instances, in which the mucous membrane covering the cervix and the upper part of the vagina was the seat of acute inflammation, while the lower and outer portions of the genitals were intact.

On examination with the speculum, we find the usual symptoms of inflammation of a mucous membrane, congestion, redness, varying in intensity, development of the papillæ, and at first a thin, and afterwards a purulent discharge. As the acute inflammation subsides, we often see superficial ulcerations of the cervix, seated especially upon the posterior lip. When the muciparous follicles are involved, they appear in the form of granulations, varying in size from a millet-seed to a pea, and capable either of undergoing resolution or of breaking of the follicular abscesses, leaving behind small, roundish ulcerations. Since the cervix is almost devoid of sensibility, gonorrhœa confined to this part occasions but little pain, but may give rise to general malaise, reflex neuralgias, disturbance of digestion, and irregularity in menstruation.

Gonorrhœal inflammation may also involve the cavity of the cervix, in which case we find a peculiar gelatinous secretion, resembling in appearance the white of an egg, projecting from the os, and so tenacious that it is with difficulty removed even by a swab. It is sometimes detached spontaneously in lumps, falling into the vagina, where it excites no little irritation, and is finally discharged through the vulva upon the patient's linen. The alkaline reaction of this secretion, in contrast to the acidity of the vaginal discharge, has already been mentioned.

In describing this secretion, we should not fail to observe that it is by no means to be considered as characteristic of gonorrhœal contagion, since it may depend upon many other affections incident to women. A probability of its gonorrhœal origin would be afforded by the fact that it had been preceded by acute vaginitis, or that it had coexisted for a considerable time with chronic subacute inflammation of the upper portion of the vagina. Here, as in urethral discharges from the male, an accurate diagnosis is often impossible, for the simple reason that there is nothing specific in the disease.

This discharge from the os uteri is often innocuous, especially in married life and in persons of cleanly habits, but under the (usually) oft-repeated intercourse between the unmarried, or when attention to cleanliness is not observed, it is liable to occasion gonorrhœa in the male.

Still further upwards may the inflammation of gonorrhœa extend, involving the lining membrane of the cavity of the uterus itself. We do not propose to enter fully into the category of symptoms which may be thus produced, and which belong rather to the domain of gynæcology. We will merely enumerate some of them, as various disturbances of menstruation, and especially an irregular and profuse monthly flow; gradual dilatation of the uterine cavity from the collection and decomposition of the secretion from its walls, and hence so-called physometra; abnormal flexions of the uterus; and, finally,

the disturbances of the digestion and general health of the patient, which these conditions are sure sooner or later to entail (Zeissl).

Gonorrhœa of the urethra usually coexists with that of the vulva, or vagina, and sometimes with that of the uterus alone. Cases, however, are reported, in which this was the only part of the genital organs affected. Gibert met with three such instances,[1] Ricord with two,[2] and Cullerier with one,[3] and in several of them it was noticed that the stains of the discharge upon the woman's linen were small and circular, instead of being large and irregular, as in cases of vulvar and vaginal gonorrhœa.

The shortness of the urethra in women and the oblique position of the canal, which favors the spontaneous flow of matter, render the diagnosis of the urethritis less easy than in the male. The discharge in cases of vulvitis, also, being seen, as might easily happen, in the vicinity of the meatus, may be erroneously supposed to come from that orifice. Again, the passage of urine causes all traces of urethritis to disappear for a time. An examination, in order to be conclusive, should be made at least an hour or two after an evacuation of the bladder, and any discharge around the meatus should first be removed. The finger may then be passed into the vagina, and pressure be made against the pubic arch, in the course of the canal, from behind forwards, when, if urethritis be present, one or more drops of purulent matter will appear at the meatus, the lips of which will be found swollen and inflamed, and the introduction of a sound into the canal is attended with considerable pain. Scalding during micturition may easily be a deceptive symptom, since it may be produced to a still greater degree by the contact of the urine with the excoriated mucous membrane of the vulva, when the latter is involved. If no vulvitis be present, it is a symptom of value. A few drops of blood are sometimes mixed with the discharge, but hæmorrhages are never so copious as in urethritis in the male. Gonorrhœa of the urethra, occurring in women otherwise healthy, does not show the same tendency to run into a gleet, as in men. It almost always disappears before the accompanying vaginitis or vulvitis, and is, therefore, to be regarded as of secondary importance.[4] In broken-down constitutions, however, and in women who have borne many children, or who are suffering from congestion of the abdominal viscera, it may assume a chronic form, and prove exceedingly obstinate. A thickening takes place throughout the whole canal, which can be traced as a firm cord behind the pubes, and may be seen standing out in relief at the upper part of the entrance of the vulva, when the nymphæ are separated. This condition is attended with uncomfortable sensations in the part,

[1] Gibert's first case was published in the Rev. méd., Paris, t. i., 1834. He has also given awo other cases in his Manuel sur les maladies syphilitiques, p. 284.
[2] Mém. Acad. roy de méd., t. 2e, p. 159, Paris, 1833.
[3] N. Dict. de méd. et de chir. prat., Paris, t. 4e, p. 253.
[4] Durand Fardel, Mémoir sur la blennorhagie chez la femme, et ses diverses complications. J. d. conn. méd.-chir., Paris, juillet, août, et Septembre, 1840.

and a frequent desire to pass water, aggravated by motion, by coitus, and the return of the menstrual period, and relieved by rest and the recumbent posture.[1]

The shortness of the urethra in women also favors the extension of the inflammation to the neck of the bladder, in which case the dysuria is very distressing.

Vegetations often spring up around the meatus, partially or almost wholly closing the orifice, and interfering with the passage of the urine.

The value of urethritis, as indicating contagion, has been noticed by many authors. In the majority of cases in which it is present, patients acknowledge that they have been exposed to impure intercourse. Every physician knows how common it is for the vulva and vagina to become inflamed from causes other than contagion, but he will find it difficult to recall a single case of like character, in which the urethra was inflamed, and gave forth a purulent secretion; hence purulent urethritis in women is strong presumptive proof of contagion.

Complications.—Bubo is a less frequent complication of gonorrhœa in women than in men, and Ricord states that it very rarely occurs, unless the urethra is affected.[2] Durand Fardel reports the case of a woman who had a rape committed upon her by several men, and in whom a bubo formed and terminated in suppuration.[3] An examination showed that she had acute inflammation of the vulva and vagina, and that there was no laceration or ulceration of the mucous membrane, yet the violent origin of the disease would excite suspicion as to the bubo being due entirely to the gonorrhœa. No mention is made of the condition of the urethra.

Vegetations, mucous patches or tubercles, chancroids and chancres, are frequently found to coexist with gonorrhœa of different portions of the female genital organs, and especially with vulvitis. Their presence is a constant source of irritation, and their removal is essential to a cure of the primary disease. Vegetations should be destroyed by the knife or caustics; mucous patches are a symptom of syphilis, and require general as well as local treatment; and chancres and chancroids are to be treated according to rules to be laid down hereafter.

Inflammation of the Fallopian tubes sometimes occurs as a consequence of the extension of the disease from the uterine cavity. At the post-mortem examination of a case of this character, M. Mercier[4] found one tube obliterated by a deposit of lymph upon its fimbriated extremity, and the peritoneal surface inflamed to a considerable extent around it. In a case, reported by Bernutz and Goupil, small

[1] West, Lectures on the Diseases of Women, 2d ed., p. 618.
[2] Notes to Hunter, Bumstead's translation, 2d ed., Phil., 1859, p. 107.
[3] Op. cit.
[4] Mémoire sur la peritonite considerée comme cause de stérilité chez les femmes, Gaz. méd. de Paris, 1838, p. 577; also Gaz. de hôp., Paris, 1846, p. 432.

abscesses were found upon the wall of the tubes on one side, while on the other side there was a purulent collection within the peritoneal cavity, possibly due to the passage of matter from the tube. The obstruction and obliteration of the Fallopian tubes in this manner will doubtless account for the well-known barrenness of prostitutes in some cases.

Ovaritis has been mentioned by a number of authors as another complication; among others by Ricord,[1] who considers it analogous to gonorrhœal epididymitis in the male. Ricord describes his case as follows: The patient, aged thirty-two, an inmate of the Hôpital du Midi, was suffering from acute gonorrhœa of the uterus and external genital organs, when a swelling suddenly appeared in the left iliac fossa. The part was very sensitive to the touch and its temperature increased. There was considerable febrile excitement and nausea. The patient lay on her back, inclined a little to the left, with the thighs flexed. The discharge from the urethra and vagina had almost entirely disappeared. Pressure upon the neck of the uterus, with the finger introduced within the vagina, was not painful; but when the womb was pressed toward the right side, pain and a sense of tension were felt in the left broad ligament. Pressure toward the left side, tried for the sake of comparison, caused scarcely any inconvenience. The passage of the fæces and urine and all motion of the abdominal walls were painful. Under the use of antiphlogistic remedies, these symptoms gradually diminished and disappeared in about twelve days, and at the same time the discharge increased in quantity. The patient, however, was shortly afterwards seized with a second attack on the opposite side, with the same symptoms and the same suspension of the discharge.[2]

The late Mr. De Méric also reported three cases of gonorrhœal ovaritis in the London *Lancet*, June 14th, 1862, which were followed by two cases, by Mr. John Taylor, in the same journal, for July 12th, 1862.

It is doubtful, however, whether the ovaries can be affected in the same isolated manner as the epididymis in men. Their inflammation in these cases is probably part and parcel of the gonorrhœal pelvi-peritonitis already alluded to, and which was first thoroughly studied in the admirable work of Bernutz and Goupil.[3] These authors observed this affection at Lourcine Hospital, in Paris, in an extraordinary proportion of cases, since out of ninety-three women, who entered with gonorrhœa, twenty-eight had pelvi-peritonitis, or nearly one in three! This proportion cannot, of course, be taken as the general rule, for it was, doubtless, the occurrence of this severe complication, which led many of them to come to the hospital, while hundreds of uncomplicated cases of gonorrhœa stayed away.

In the cases seen by Bernutz and Goupil there was no instance of the occurrence of the peritoneal affection before the eighth day. It was rare before the fourteenth, but frequent towards the end of a

[1] Notes to Hunter, 2d ed., p. 106.
[2] Ibid., p. 107.
[3] Clinique méd. sur les mal. d. femmes, Paris, 1862, t. ii., p. 140.

month, that is, about at the menstrual period. De Méric, on the contrary, states that in his cases the ovary became affected at the most acute point of the disease. The immediate causes may be regarded as the recurrence of the menses, fatigue, and excessive sexual indulgence. There follows an almost complete cessation of the vaginal discharge. For the symptoms, I must refer the reader to works on the diseases of women, as gonorrhœal pelvi-peritonitis does not differ from that due to other causes.

Diagnosis.—Before the application of the speculum to the study of venereal diseases, the diagnosis of gonorrhœa in women was often difficult, and sometimes impossible, and the discharges of vaginitis and of various syphilitic lesions within the vulva were confounded together. To a surgeon of the present day, acquainted with modern methods of investigation, such mistakes are not likely to occur. With the recognition of the disease, however, our power, so far as diagnosis is concerned, ceases. It is impossible to go farther and determine its origin. Many authors have attempted to give diagnostic signs as between gonorrhœa originating in contagion and that produced by other causes, but they have all most signally failed to produce any which are at all satisfactory, simply for the reason that none such exist. "The microscope fails to furnish us with a means of distinguishing between gonorrhœal and simple vaginitis, and no symptom or combination of symptoms is absolutely conclusive on this point."[1] Acute inflammation and the presence of urethritis may render impure intercourse probable, but cannot be regarded as decisive, and what is wanting in the physical diagnosis must be sought for in the history of the case.

Treatment.—The treatment of the different forms of gonorrhœa in women varies but little in the acute stage of the disease. It is chiefly during the chronic stage that any variation is required to meet special indications presented by inflammation of particular portions of the mucous membrane. Moreover, nature does not always, nor indeed in most instances, follow the classification which we have found it convenient to adopt; several of the genito-urinary organs are generally involved together—more commonly the vagina and vulva—and the treatment of this most numerous class of cases will first claim our attention.

The chief remedies adapted to the acute stage are rest, cathartics, hot baths, lotions, and a general antiphlogistic regimen. Zeissl recommends cold applications over the genitals, which should be changed as soon as they become warm. It is of the first importance that the patient should abstain from exercise of all kinds, and, if possible, be confined to her bed; indeed, in most cases her own sensations demand this without the order of the surgeon. Meats and stimulants should be forbidden, and the diet restricted to weak tea,

[1] West, op. cit., p. 628.

toast, a decoction of flaxseed, rice or barley water, gruel, etc., unless the symptoms are subacute from the first, or the patient debilitated. In selecting a cathartic at the outset of the disease, preference should be given to a mercurial, for the purpose of unloading the abdominal and pelvic vessels, and the bowels should afterwards be freely opened every day by small doses of Epsom salts, citrate of magnesia, and other salines. Aloes, and the numerous preparations which contain it, should be avoided, on account of its tendency to produce congestion of the hæmorrhoidal vessels.

Bloodletting.—Bleeding from the arm, and even the application of leeches in the neighborhood of the genital organs, may be said to be things of the past, although the latter may possibly be required in rare instances. If used, they should be applied to the groins, where their bites will not be smeared with the discharge.

Baths and Lotions.—A hot bath, repeated once or twice a day during the acute stage, is very grateful to the feelings of the patient, and beneficial in equalizing the circulation and relieving the local inflammation; and immersion of the whole body is to be preferred to hip-baths.

Meanwhile, the external genital organs should be frequently bathed with some emollient lotion, and a piece of lint soaked in the same be inserted between the labia, in order to separate the inflamed surfaces and absorb the discharge. The following is an excellent formula for this purpose:

℞. Decocti Papaveris, 3 pts.
Liquoris Plumbi Subacetat. dilut., 1 pt.
M.

Diday recommends the introduction at night of pledgets of cotton, smeared with the following ointment:

℞. Cucumber Ointment, ℥j	30
Alum, ʒj	4
Tannin, ϑij	2 60
M.	

These should be removed in the morning, and the following wash be applied or injected:

℞. Decoction of White Oak Bark, Oj . .	500
Borax, ℥ss	15
M.	

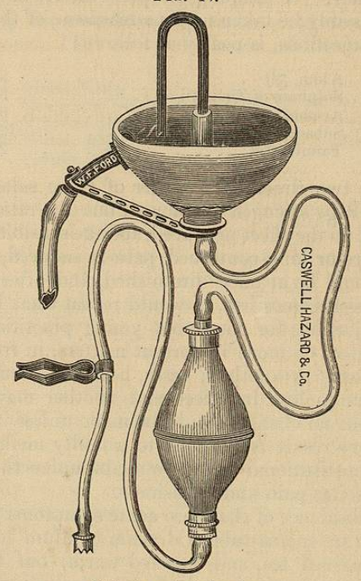
Sedatives, of which Dover's powder is perhaps the best, should be administered at night to induce sleep, and also at intervals during the day if the pain is severe or the patient nervous and irritable.

Injections.—The above measures are the only ones admissible during the acute stage of the disease, especially if the vulva is involved, in which case the insertion of an enema-tube is too painful to admit of injections. When, however, the inflammation is chiefly confined to the vagina, the lotion just mentioned may be injected into this canal every few hours, and, in many cases of a subacute type, injections

may be used from the very commencement. As soon as the sensibility of the parts will permit, it is also desirable to introduce a speculum and ascertain if any ulcer be present.

The kind of syringe used, and the mode of injecting, are matters of no little importance. The small metallic or glass instruments in common use are entirely inadequate for the removal of the discharge. The astringent ingredients of the first portion of fluid injected are spent in coagulating the purulent matter collected in the vagina. To wash away the coagula thus formed, and exert a medicinal effect upon the mucous membrane, the quantity of the injection should not be

Fig. 45.



Foster's vaginal douche.

less than a pint; indeed, it is better to precede any medicated injection by a copious one of plain water, so as to cleanse the vaginal walls as freely as possible. A pump-syringe, or, better still, one of Davidson's or Mattson's syringes, made of india-rubber, and provided with metallic valves, will enable the patient to inject any desired quantity with one introduction of the tube. While using the injection the patient should lie on her back, with the pelvis elevated; if she merely stoop down the fluid escapes as fast as it is injected, and fails to reach the deeper portions of the canal. With a bed-pan under her, the wetting of the floor and clothes will be avoided. Far-