time the appetite is lost, and the sufferer emaciates rapidly. From continual traction on the ureters they may become inflamed, as also the kidneys, and uræmia supervenes. Blood is sometimes passed with the urine. Cystitis may occur, which increases the suffering and danger. The mucous membrane may become hypertrophied, congested, and even œdematous. The constitutional symptoms bear no relation to the amount of tissue extruded or the area of mucous surface exposed."

The DIAGNOSIS depends upon the passage of a sound into the bladder, which will be found abnormally short. At the same time it will be found that the pedicle of the tumor-like mass is made up of the base of the bladder. The ureters, if located upon the mass, will confirm the true condition.

The TREATMENT of bladder dislocations calls for the removal of the cause, be it the separation of adhesions, the removal of abdominal or pelvic tumors, the repair of the pelvic floor, or the replacement and maintenance, in its normal position, of a prolapsed uterus.

The extroverted bladder must be replaced. Anæsthetize the patient, place her in the knee-breast (Kelly) position, and with gentle compression and manipulation invert the prolapsed organ. Place the patient in bed, by preference lying upon the abdomen or in the lateral position. Pack the vagina with sterile gauze from day to day while the patient is in bed, and insert a hollow-round or other pessary when it is deemed prudent to permit the patient to assume the upright posture. If the bladder prolapses, narrow the urethral canal as in the treatment of dilatation.

Hypertrophy and Atrophy of the Bladder.

Hypertrophy of the bladder involves chiefly the muscular structure and is due to the presence of an unnatural stimulus to contraction, such as the presence of foreign bodies, neoplasms, calculus, or any means by which the organ is impelled to excessive contractile effort. When the bladder wall is thickened and at the same time the organ has become dilated, the condition is designated *eccentric hypertrophy*; if thickened and contracted, *concentric hypertrophy*. The latter is usually met with in tuberculous cystitis.

Thickening of the bladder wall is easily recognized by introducing a sound into the bladder and estimating the thickness by the hand placed upon the abdominal wall, or by the finger introduced through the vagina.

On removal of the obstruction, and after the cystitis has been cured or the irritating factor has been removed, the hypertrophy will disappear.

Atrophy of the bladder, like hypertrophy, occurs less frequently in women than in men, and most often after the age of fifty years. As a temporary condition it follows extreme distention. It is always associated with fistula and with incontinence, and is a common accompaniment of tumors that press upon the bladder, of malformations, and of habitual retention. If a definite cause can be found, correct it; but in those patients who are over fifty years of age, the prognosis, despite the use of tonics, electricity, etc., is quite discouraging.

Vesical Paresis.

Vesical paresis may be due to some lesion of the brain or spinal cord; it may also result from the general fatty degeneration which is apt to develop in old age. Adhesions binding the bladder to some adjacent organ are competent to produce vesical paresis. When it exists, whatever may be the cause, regular emptying of the bladder by means of the catheter constitutes the essential part of the treatment. Care must be exercised in emptying an overdistended bladder not to remove more than two-thirds of the accumulated urine, and afterward to apply a snugly fitting abdominal binder.

Foreign Bodies in the Urethra and Bladder.

Foreign bodies in the urethra and bladder may be best studied from the standpoint of those introduced from outside the body, and such as are formed or develop within the organ itself—calculi and neoplasms.

Foreign bodies are used by women and children in their efforts to relieve itching due to the following causes: pin-worms around the anus, in the rectum, in the vagina, or hidden under the clitoris; fissure or fistula in ano; vulvar pruritus in diabetes; and irritating vaginal secretions. Libidinous women, in order to gratify a natural passion by unnatural means, intentionally or unintentionally introduce pins, pencils, parasol handles, catheters, candles, needles, matches, glass, tooth-brush handles, etc., etc. The introduction of such bodies is fraught with danger from three sources: (*a*) if repeated, the procedure will lead to dilatation and denudation of the canal; (*b*) if the foreign body is permitted to enter the bladder, it will carrry with it infectious micro-organisms, which are liable to incite cystitis; (*c*) if it should be lost in the bladder, it will form a nidus around which calculous deposits take place.

Calculi.—As the nature and mode of origin of vesical calculi will be treated in detail in other volumes of the HANDBOOK, no further mention of this part of the subject will be required in the present article. The treatment of calculi will be discussed in a later section.

Neoplasms of the Bladder.

Very little is known or has been written in relation to the etiology of new growths of the bladder and urethra.

Age.—Of 89 cases of papilloma collected by F. S. Watson, 59 were males, 30 females. Of the latter there were: between 1 and 2 years of age, 1 case; between 17 and 40 years, 17 cases; over 40 years, 12 cases. Of 100 cases of carcinoma in both sexes, the youngest patient was 20 years old: 12 cases were between 40 and 50, and the rest were over 50 years. On the other hand, of 20 cases of sarcoma collected by Hinterstoiser, the youngest was under 2 years; 5 were under 20 years; 3 were between 20 and 30 years; 2 were between 40 and 50; 6 were between 50 and 60; and 4 were over 60 years of age.

Sex.—Tumors of the bladder occur less frequently in females than in males, the proportion being about 2 to 3.

Mode of Attachment.—As encountered clinically, tumors of the bladder are either pedunculate, sessile, or infiltrating growths. The benign forms (papilloma, fibroma, adenoma, myoma, dermoid and hydatid cysts) show little or no tendency to invade surrounding tissues, this being a distinctive feature of the malignant varieties (epitheliomats, glandular and mixed).

It is generally agreed that non-malignant growths are more common than the malignant forms. Of 640 cases given by Watson, 385, or 60 per cent., were benign. "It is generally believed that of benign growths, papilloma occurs most frequently; next in order is myxoma.

"The *location* of vesical tumors is shown by Fere's table. Analyzing 107 cases, 25 involved the base only; 13 the base and wall; 17 the posterior wall; 8 in close proximity to the left ureter, 5 the right ureter; 2 the anterior wall; 1 the anterior superior wall; 4 the right or left lateral walls; 1 the anterior and superior wall; 12 multiple, and 8 diffuse tumors, etc."

Papillary tumors in the bladder are met with as pedunculate, tufted excrescences, which may be either benign or malignant.

Benign papillomata are made upon a framework of connective tissue, more or less abundant, richly supplied with blood-vessels, and covered everywhere with vesical epithelium. They usually have a tufted, villous, branching appearance, and are so vascular that the name "villous angioma" has been given to them. Sometimes the interspaces between the prolongations are filled with detritus, in which case the fungating appearance is lost. "A frequent form is that of a cauliflower growth, attached by a thin pedicle; others spring separately or in clusters directly from the mucous membrane, in very delicate, thread-like projections. In the sessile form the papillæ are short and thick, and clumped together. The pedicle varies in length from a few millimetres to 3 or 4 cm.; in thickness it may be a mere thread or 1, 2, or 3 cm. in diameter." In color a fresh growth generally resembles the inner surface of the lip.

Fibroma; Fibro-Papilloma.—It is in this class of neoplasms that the connective-tissue elements preponderate. These growths are less common than those of the former variety, and are infrequently met with in women. The pedicle and mucous surface are richly supplied with blood-vessels. Myxomatous degeneration frequently intervenes.

Malignant Papillomata.—"Papillo-sarcomata usually begin as benign or simple fibroid tumors and pass over to the malignant variety. These tumors are characterized by a dense, fibrous groundwork of very irregular growth, and by the presence in this groundwork of variously shaped cells, generally arranged in different groups. In some there are small, round cells; in others large, irregular cells. The surface of these growths is covered with columnar epithelium, resembling that of the normal bladder. The one feature which differentiates them from the ordinary papilloma is the arrangement of the ground substance, and the presence in it of the irregularly shaped cells, which do not belong to the normal tissue on the one hand, or to that of distinct new growth on the other" (Gibbs quoted by Watson).

Adenoma.—The deficiency of glandular elements within the bladder makes the occurrence of adenoid growths a rarity. An adenoma is sessile or pedunculate, and has a smooth, lobulated, or papillary surface. When sessile, the tumor can be easily enucleated with the finger without hemorrhage. Kelly mentions a case of papillary adenoma that was removed by Kaltenbach, through a vesico-vaginal incision, from a woman forty-four years old. The origin of this tumor was traced by Professor Boström to the mucous crypts of the bladder. Von Fritsch has also described a fibro-adenoma of the bladder in a girl three years old; it was covered with calcareous deposit and filled the whole bladder.

Myoma.—This is one of the rarest forms of vesical tumor; it is made up of hypertrophied muscular coat, with more or less connective tissue, and is covered with intensely congested mucous membrane. These growths vary in size from a pea to a child's head, completely filling the bladder. They may project into its lumen by a very small pedicle or be attached by a broad base.

Cysts.—Follicular cysts, due to occlusion of the mucous follicles, are met with occasionally; they are associated with chronic cystitis. They are readily opened by a spear-shaped knife or by the sharp point of a scalpel. *Dermoid cysts*, as primary growths of the bladder, are almost unknown, but ovarian dermoids have been known to discharge their contents into the bladder, and hair be discharged through the urethra.

Malignant neoplasms of the bladder originate from the connective tissue (sarcoma), from the gland tissue and epithelium (carcinoma), and from degenerative changes in the numerous benign growths (myxoma).

Carcinoma originates from the squamous epithelium of the bladder, (true epithelioma); and from the racemose mucous glands, (glandular-cell carcinoma). Both these varieties present features which characterize carcinoma in other regions: they extend by infiltrating contiguous structures; they project into the bladder as multiple nodules or disseminated patches, often covered with papillary growths or villosities, resembling benign papillomata. The vesical surface may be covered with smooth mucous membrane or it may present a raised, rugged ulcerated surface, with indurated edges. The surrounding bladder wall (muscular and interstitial coats) is considerably hypertrophied.

The disease is most often met with in the lower third of the base of the bladder; it tends to remain confined to the bladder wall rarely involving neighboring organs. According to Clado, its limitation is due in some cases to the presence of a layer of adipose tissue between the cancerous base and the sound tissue beneath. Hoggan explains this as due to the lack of direct communication between the larger portion of the lymphatic channels and the mucous membrane, and he thus accounts for the absence of the infection in neighboring glands, for the tardy extension of the disease, and for the extraordinarily long course which it pursues.

"The carcinomatous area is liable to inflammatory changes, cystic degeneration on its surface or surrounding wall, interstitial hemorrhages, and gangrene in infected cases."

Sarcoma.—But few instances of connective-tissue malignant neoplasms of the bladder have been recorded. "Sarcoma appears about one-third oftener in women than in men, at almost any period of life from early childhood up to fifty-nine years of age. The tissue in which the neoplasm takes its origin is probably the stroma of the mucosa, which ordinarily contains round cells. The tumors are usually multiple, almost always sessile, varying greatly in size, and having, as a rule, a smooth surface; the color is red, violaceous, or even blackish. The parts of the bladder adjacent to the base are usually infiltrated. In women sarcoma is especially prone to extend through the urethra, and appear at the external orifice" (Kelly).

Myxoma.—Myxomata represent the degenerative form of neoplasms, and are always of the compound variety: commonly fibro-sarcomata, myxo-sarcomata, or myxo-fibromata. "The growth is composed almost entirely of small, round cells of a lymphoid type, embedded in a base, homogeneous, or nearly so, on the surface, but becoming more and more fibrous toward the pedicle, until, at the lowest part, fibrous tissue forms the bulk of the growth" (Watson).

These appear most often in children as single or multiple pedunculated growths, closely resembling nasal polypi. They are first noticed as protruding from the urethral meatus, or as having been expelled therefrom. They manifest a decided tendency to rapid return after removal.

Removal of Neoplasms, Calculi, and Foreign Bodies from the Bladder.

The chief indication, when the presence of a foreign body, a calculus, or a new growth has been diagnosticated, is its immediate removal. This may be accomplished (*a*) through the dilated urethra; (*b*) by colpocystotomy; (*c*) by suprapubic cystotomy; (*d*) by symphyseotomy; and (*e*) by cystectomy.

In selecting the mode of operating heed must be given to the size, shape, and location of the foreign body, or to the facts whether the tumor is pedunculate, sessile, or infiltrating, benign or malignant.

(*a*) *Removal through the Urethra.*—Small calculi, new growths, and other foreign bodies which are not too large to be delivered through the urethra dilated up to 20 mm. are suitable for removal through this canal. Simon advises nicking the posterior wall of the urethra in two places, and has shown that by gradual dilatation by sounds up to 2 cm. the danger of incontinence is avoided. Through a speculum of this size, delicate forceps or the electric wire can be introduced for the complete removal of pedunculate growths and fragments of calculi.

(*b*) *By colpocystotomy.*—"The vaginal route is best when a limited portion of the bladder wall is to be excised with the tumor. It is easier to operate in this way upon the upper portion of the bladder, when the vaginal outlet is relaxed and the anterior wall naturally tends to drop down; it is awkward and difficult to operate with a tight vaginal outlet."

"To make the *vaginal incision* the patient is placed in the left lateral (Sims') position, the perineum is retracted and the cervix fixed with tenaculum forceps; the base of the bladder is then cut through on to a sound introduced through the urethra, and the incision enlarged, if need be, forward to the internal orifice and back to the cervix. The edges of the incision are now drawn apart and the foreign body, calculus or neoplasm, already located cystoscopically, is drawn through the opening into the vagina, everting with it the contiguous portion of the bladder wall. If a tumor, occupying but a small space, it may

now be excised piecemeal, suturing step by step, and, if the bleeding is free, tying the sutures as they are passed. If the area of excision is a larger one, and if the cut goes deeply into or through the bladder wall, it will be best to transfix the wall in several places, at a distance from the field of operation, to hold it in place while the operation and suturing are going on; by so doing the great risk of hemorrhage and delay from the open wound pulling back into the bladder will be avoided.

"If the field of extirpation lies in the neighborhood of the intravesical portion of a ureter, it will be safer to insert a bougie beforehand so as to protect it.

"After removal accurately close the opening at once, with silkworm gut, including all the layers except the vesical mucosa. Drain the bladder for four or five days, and primary union without fistula should take place; inoperable malignant disease may necessitate an artificial fistula."

(c) *Suprapubic Route.*—Hypogastric cystotomy is indicated for the removal of an extremely large stone; it is especially suitable for children, and for the removal of tumors involving the extirpation of any considerable portion of the bladder with the tumor.

Having filled the bladder with water, an incision beginning at the symphysis pubis is carried upward a distance of from 5 to 8 cm. (from 2 to 3 inches) in the median line and the prevesical space exposed. Care must be taken not to enter the peritoneal cavity, and the peritoneum should be pushed upward to avoid infecting that cavity.

Many authors lay especial stress on the necessity of avoiding unnecessary disturbance of the prevesical space and its fat. As a means of avoiding infection, some prefer to displace it downward, others to push it upward.

Entrance to the bladder is secured by a vertical incision, which should be long enough to afford ample space for the necessary manipulations. The insertion on either side of a heavy silk traction suture, passed through the substance of the bladder and abdominal wall, will aid in lifting the organ and will facilitate access to its deepest recesses.

Neoplasms covering a considerable superficial area must be removed by careful dissection, including the muscular coat if that portion is involved by the disease. Nearly the whole of the mucous membrane can be excised, and if strips are left here and there regeneration will take place without materially interfering with the bladder function. Gaps in the mucous membrane should be closed up by continuous catgut sutures, whenever it is possible to do so. Sutures at the base should be tied within the bladder, those at the fundus on the outside; they should not include the mucous membrane.

If the tumor involves one of the ureteral openings, Kelly recommends cutting off the ureter and transplanting it to another portion of the organ. If it is found impossible completely to close the bladder, a gauze drain must be inserted, and later replaced by a small rubber tube.

Transverse Incision.—Antal, of Buda-Pesth, proposed a transverse incision instead of the perpendicular one, access to the bladder being obtained by incising the wall layer by layer. This mode of entrance is of advantage in cases in which the peritoneal fold is found to be "low down," Helferich uses the cross incision in preference to the vertical, and sometimes adds a short cut in that direction, thus giving to the entire incision a **T** shape.

(d) *Symphyseotomy.*—Helferich has used and recommends for certain cases a partial resection of the symphysis, as affording more room and greater facility in reaching the base of the bladder; but this method is seldom if ever required in the female subject.

(e) *Cystectomy.*—Complete removal of the female bladder has been successfully accomplished by von Badenhauer four times, and by Paulik once; but as a rule those in need of so radical a measure are usually in such a low physical condition as to prohibit such an operation.

Neoplasms of the Urethra.

New growths of the female urethra are encountered at all periods of life. They appear most often as polypi, and the spot from which they originate may be located either in the bladder or in the urethral canal. When they originate in the bladder they are forced down by excessive contractile efforts and eventually appear at the meatus or are first recognized when expulsion takes place. Others, arising from some portion of the urethral tube, lodge therein, and are expelled in the same way. The large majority, however, take origin at or just within the external meatus. The marked disproportion between the size of these tumors and the suffering which their presence is capable of inducing, makes it imperative that in every case with pain or discomfort in the pelvis we should determine the exact condition of the urethra.

Urethral caruncle, papillary polypoid angioma of Skene, the most painful and common of urethral new growths, is found at or just within the meatus, usually attached by a slender pedicle, at times by a broad base. It is of a bright red color, spindle-shaped or sessile, and varies in size from a pinhead to a hickory nut. It is composed of connective tissue and hypertrophied papillæ, enclosing bunches of dilated vessels, and covered with a delicate layer of mucous membrane. The pain and suffering induced by these small growths are at times so great as to cause loss of flesh and strength, confine the sufferer to bed, and make life a burden. In other cases pain is experienced only during micturition, but the act is fraught with so much agony as to compel delay, or it makes micturition so nearly impossible as to induce retention, relief being possible only through a catheter, introduced when the patient has been anæsthetized by chloroform or ether. Local anæsthesia or any attempt to approach the external genitalia is absolutely refused by the patient. Sensitive girls and young women, from a sense of false modesty, which prevents them from divulging the seat of the trouble, are the chief sufferers, and it is not a rare thing for one to break down under the strain ere she will confess. The congestion during menstruation will intensify the discomfort.

Condylomata, so frequently found upon the external genitals, may invade the urethral canal, and when they are of recent origin they closely resemble caruncles in shape and color, but differ from them in being insensitive, painless. Several of the growths are usually present, and they may be found in clusters on the floor of the vestibule, invading the vagina and surrounding the anus. The persons thus affected are, as a rule, uncleanly women who have become infected with the gonococcus of Neisser. Condylomata are composed of a tough network of connective tissue, with dilated capillaries, covered by a more or less dense layer of epithelium, the thickness of which modifies the color of the growths from a bright red to a whitish hue.

Fibromata of the urethra, so-called urethral polypi, are connective-tissue growths. They are of somewhat rare occurrence. They may be encountered at any period of life. A fibroid polyp the size of a fist, attached to the inferior margin of the urethra, was removed from the vagina by Hoening (*Berl. klin. Woch.*, 1869).

Mucous Cysts.—Cysts of the female urethra have been found in a premature fœtus, and at all ages. "In early life they are situated in the meatal portion of the passage, but later in life near the vesical neck. They are usually formed by the occlusion of the orifice of the mucous ducts, and in some cases a black speck upon the surface of the cyst indicates the seat of the orifice."

Varices; Angioma.—Urethral hemorrhoids appear as bunches of worm-like, irregularly distended, dark blue or bluish-red veins, upon the floor of the urethra, at any portion of its length. The swelling, which is at times cedematous in character, occludes the lumen and interferes with the outflow of urine. Sometimes rupture takes place; the blood is poured out beneath the mucous membrane, and later appears at the meatus as a pedunculated mass.

Chancre and *chancroids* are frequently found involving the meatus externus, occasionally both varieties at the same time, and coupled with gonorrhœal infection. Chancre presents itself as a hard, indurated, sometimes ulcerated nodule, upon one side of the meatus, or extending around the greater portion of its circumference, and, if neglected, causes destructive sloughing of that portion of the canal.

"Chancroids of the meatus pursue their usual course, vesication, pustulation, discharge, and present a punched-out, round, irregular or ragged, often undermined ulcer which spreads rapidly, secretes freely, is frankly inflammatory in type, and exhibits an unhealthy diphtheroid, worm-eaten surface, which can be scarcely confounded with any other lesion" (Martin).

Epithelioma originating within the canal is the *rara avis* of the urethra, and some authorities claim that it never occurs in that organ other than as an extension from the bladder, cervix uteri, vagina, vestibule, or the clitoris. The writer has seen three cases of this form of new growth, which involved the whole lumen of the urethra.

Sarcoma.—Kelly was able to find but four cases of sarcoma of the urethra on record, all affecting the external orifice: Beigel's case, a woman of fifty years; and Ehrendorfer's case, a woman of fifty-two years; Galabin's case, a little girl of three years—myxo-sarcoma of the urethra; and Reed's case of melano-sarcoma, occurring in a single woman aged sixty-four years.

The symptoms of urethral neoplasms depend upon the size, location, and sensitiveness of the growth. Small tumors, other than caruncle, give rise to slight irritability of the urethra, with a tendency to frequent micturition; larger growths exercise a marked influence upon the outflow of urine, either by spasm or by creating an actual obstruction in the canal. Ulceration with hemorrhage, slight in amount and readily controlled, is quite common. Malignant growths, however, break down and bleed profusely; sometimes they produce marked anæmia and loss of flesh and strength. The pain which is incident to spasm, and which is aggravated by voluntary or involuntary retention, may be referred to the back, sacrum, hips, thighs, legs, heels, and suprapubic region.

Treatment of Urethral Neoplasms.

New growths in the urethra offer but one mode of treatment, viz., surgical extirpation of the most complete character. Pedunculate tumors at or just within the meatus can readily be cut off with scissors, or destroyed by the cautery, or ligated with silk or catgut. Those situated higher up within the tube may be exposed through the endoscope, caught with a tenaculum or small forceps, and amputated by the nasal snare or electric wire. Sessile tumors are best removed by the knife encircling the base, with closure of the gap by catgut sutures. Multiple small growths can be removed with a sharp curette, care being taken not to destroy the mucous membrane of the whole circumference of the canal, for by so doing stricture might follow.

Removal of urethral tumors is easily accomplished under cocaine anæsthesia. A cotton applicator, saturated with a ten-per-cent. solution, will, if placed within the canal and allowed to remain there for five minutes, afford ample anæsthetic effect. In carrying out this procedure the patient is to be placed in the lithotomy position, the bladder is to be emptied, and the external genitals are to be thoroughly scrubbed as for any other operative procedure.

Sessile tumors with broad base, situated high up within the canal, may require general anæsthesia; and it may be necessary, before they can be reached, to dilate the urethra considerably. It is in this variety that galvano-puncture, repeated at intervals of from seven to ten days, has proven so successful in destroying these tumors.

Bleeding after removal rarely amounts to anything more than an oozing, but if the scissors are used to remove polypoid growths and hemorrhage is active, a ligature must be applied.

Caustics for the ablation of neoplasms do not seem to affect the base, recurrences are much more likely to occur, and the danger of stricture is one not to be overlooked.

Malignant growths which do not involve the base of the bladder can be removed, with the larger part of the vestibule, and the labia used to replace the deficiency; but in two cases seen by the writer, incontinence, with excoriation of the genitals and thighs, resulted, and gave rise to almost as much suffering as that caused by the growth. Recurrence took place in both cases within a few months.

Injuries and Inflammations of the Bladder and Urethra.

The intimate relations which exist between the bladder and the urethra on the one hand, and the rectum, vagina, generative organs, parturient canal, abdominal cavity and kidneys on the other, render the former especially liable to injury and infection.

Injuries.—Contusion and laceration of the urethra as the result of rape, attempted or accomplished; violent or too frequent intercourse; intercourse *per urethram;* the intentional or unintentional introduction of foreign bodies, instruments, or the finger; prolonged pressure of the oncoming fetal head; instrumental labor, especially if a calculus lies within the tube or the lower zone of the bladder; the introduction of a hard catheter into that organ—all these are liable to produce a variety of disorders, and to be accompanied by incontinence or partial or total inability to evacuate the urine. Prolonged pressure may so interfere with the circulation as to cause sloughing, gangrene, and such loss of tissue as to impair the structural integrity of the floor of the urethra and bladder. Injury of so grave a character, if associated with infection, tends to a fatal issue.

Gonorrhœal Urethritis.—The introduction into the urethral canal of the gonococcus of Neisser is the most frequent exciting cause of urethritis. The child, during its passage through the birth canal, or later while being bathed, or at the hands of a careless nurse or mother who wipes the genitals with a napkin which she has but recently worn, may be inoculated. Infection may also be conveyed in other ways too numerous to be mentioned.

Gonorrhœal urethritis is said to be less common in women than in men; but the statement must be accepted with some reserve, as the difficulties which stand in the way of ascertaining the facts, in the case of women, are practically insuperable.

As a rule the acute form of inflammation begins in the vestibule or vagina, and, a few days later, invades the urethra, though the latter may be the primary seat, and rarely the only point of infection.

Attention to the urethra is first attracted by a scalding sensation when passing urine. This increases in intensity until the act becomes very painful and ineffective. It is apt to be followed by a slight discharge of blood and an intense and almost constant desire to urinate. The meatus is covered with a cream-like or greenish-yellow secretion, very acrid, which, if the vagina also is invaded, excoriates the vulva, thighs, and anus.

Chronic gonorrhœal urethritis represents the commonest form, and presents characteristic lesions easily noted through the urethroscope. It exists in two forms, described by Kelly as follows:

"1. The *diffuse chronic urethritis* is especially apt to follow on the acute when located in the anterior part of the urethra. It is marked by small abscesses, especially involving Skene's glands, and by a diffuse chronic swelling in the anterior urethra. The funnel wall in these cases is thickened and pouts into the speculum, and the central figure may be displaced laterally. The vessels are deeply injected, giving the mucosa a livid color. The mucosa in older cases presents grayish or slate-

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