It is also encountered under the form of recurring urethritis (p. 69), and is then often associated with some prostatorrhea (p. 95). Again, it is met with—and under a more acute form—as the result of slight injuries, usually at the hands of the surgeon. It is a negligible phenomenon in many cases of stricture. It may be due to habitual sexual excess. Finally, it occurs in the hypertrophied prostate, and is an epiphenomenon in prostatic tuberculosis and cancer.

All these forms of the inflammation, while varying in degree, are comparable in their morbid anatomy and symptoms to the gonorrheal process. The only variety sufficiently characteristic to delay us is that form of simple urethritis, or surface prostatitis, as it is more appropriately termed in this connection, which occurs in the hypertrophied prostate. This inflammation is commonly due to instrumentation, and when once it has set in, the vulnerable condition of the prostate makes of this simple trouble a malady even less amenable to treatment than the notoriously intractable chronic gonorrheal inflammations of the unhypertrophied gland. Moreover, in its tendency to complications, this simple inflammation, instead of exhibiting a benign aspect, shows a virulence exactly comparable to that of the specific disease.

Chronic Gonorrheal Posterior Urethritis

This is chronic gonorrhea. The German school has a tendency to exaggerate the importance of chronic anterior urethritis. Many American authors have insisted upon the importance of stricture, which is a special form of chronic *anterior* urethritis. But it has been my experience that chronic gonorrhea, with its cardinal symptom, viz., gleet, is nothing more nor less than chronic posterior urethritis. There is, practically, always some anterior urethritis, whence the gleety discharge; but to insist solely upon that discharge, and to relegate the inflammation of the posterior urethra to a position of secondary importance, while making every effort to cure the inflammation of the anterior canal, is a position unwarranted by science and unsupported by practice, for the anterior urethra is a comparatively smooth canal. Every urination flushes its deepest crevices. Unless there is stricture, or follicular abscess, or papillomatous growth—and a careful examination of a series of patients will convince the surgeon how relatively infrequent these conditions are—the urethral walls present few lodging places for the gonococcus once the acute inflammatory stage is past.

But in the posterior urethra all is different. Posterior urethritis is synonymous with surface and follicular prostatitis. The canal is here nothing more than a tunnel through the thousand-mouthed, suc-

culent prostate. The gonococci once established in the ducts of the prostatic glands—and they are not slow so to establish themselves—are not swept by the urinary stream, and are all but inaccessible to the surgeon's irrigations. This is pure theory, but practice bears it out. The recognised tenacity of all prostatic inflammations, the futility of anterior injections to cure these cases, the evil wrought by sounds, which only irritate the sensitive prostate, and the presence, in practically every case, of pus in the second flow of urine, prove, I believe, the importance of posterior urethritis. I feel justified in asserting, therefore, that with a few exceptions, among which stricture is the most important, chronic gonorrhea is posterior urethritis.

Morbid Anatomy.—The essential lesion in chronic posterior urethritis is a catarrhal inflammation of the mucous membrane of the prostatic urethra, the prostatic glands, and the orifices (at least) of the ejaculatory ducts. Thus the inflammation may easily spread in several directions—viz., up the seminal canals to produce vesiculitis and epididymitis, deep into the prostate to produce parenchymatous prostatitis, forward into the bulb to produce gleet or perhaps to light up an acute urethritis, and backward into the bladder to set up cystitis or contracture of the neck (p. 317). It is to some one or more of these complications that the symptoms are due. Yet the essential underlying lesion is usually found in the prostatic urethra.

Symptoms.—Chronic gonorrheal posterior urethritis is commonly encountered towards the end of an acute attack of the disease. It is characterized by but two symptoms. There is pus in both urinary flows (p. 83)—rarely only in the first—and there is more or less gleety discharge; a morning drop or a fairly free flow, varying from day to day, and dependent upon the degree of inflammation of the anterior canal. Be it clearly understood, gleet almost invariably accompanies posterior urethritis; but local treatment may stop the gleet by curing the inflammation of the anterior urethra without so much as affecting the posterior inflammation. Any stoppage of discharge will be hailed by the patient with delight as evidence of a cure; but so long as the urine is hazy with pus the surgeon must recognise that the enemy is only repulsed, not conquered.

Beyond this there is usually nothing. Prostate and vesicles feel normal to rectal touch, though the expressed contents of either may be found to contain pus and gonococci. There may be prostatic neuralgia. There are often some symptoms of parenchymatous prostatitis, even though no enlargement of the gland can be detected.

Acute Parenchymatous Prostatitis—Prostatic Abscess

An acute inflammation of the prostate may occur at any time in the course of a posterior urethritis, or may be induced by trauma even though the urethra is not permanently inflamed. When occurring in the course of a gonorrheal posterior urethritis it is due to some indiscretion, sexual excitement, alcoholic excess, or the passage of instruments; even exposure to cold or undue fatigue may induce it.

The initial symptom is usually a sharp chill immediately followed (perhaps preceded) by an increasing sense of heat and weight in the perineum, a frequent desire to urinate, with a sensation of burning during the act and an acute pain at its termination. Defecation is almost equally painful. The fever runs high and is irregular; there may be a succession of chills; the prostration, loss of appetite, and constipation are marked. In fact, the patient is the subject of an acute septicemia which terminates either in resolution or in abscess formation—usually the latter—and the abscess, in turn, bursts into one or more of the neighbouring viscera, or is evacuated by the surgeon. An infrequent complication is gonococcus pyemia (p. 145).

As the tension of the abscess increases the local symptoms are intensified. The dysuria becomes continuous and frightfully painful, the soreness radiating in all directions, and if the prostate becomes so swollen as to obstruct the urethra, retention adds its miseries.

Rectal examination may well be exquisitely painful. It reveals an enormously enlarged, hot, throbbing prostate. An abscess is distinguishable as an edematous or a frankly softened and fluctuating area amid the surrounding, hot, hardened prostatic mass. A deeply seated abscess cannot be distinguished by rectal touch.

As the disease progresses the suppurating foci, be they few or many, usually fuse into an extensive cavity, generally situated towards the rectal surface of the gland and in one or other lateral lobe. The abscess habitually opens through the urethra spontaneously during an effort at urination or defecation, or is accidentally opened by a catheter introduced to relieve retention, or during exploration with a sound or a searcher. Once opened it discharges intermittently during the intervals of urination in jets, or with the urinary stream only, for the cut-off muscle usually keeps the pus from flowing away constantly from the meatus. If the abscess has been small, recovery is prompt; if large, the drainage is often imperfect, and the grave responsibilities remain of a chronic, persisting granulating cavity, and of possible pyemia or infiltration of urine. Again,

the spontaneous opening may have been small, and when the tension is relieved it may close, forcing the pus to find another means of exit, and giving rise to an abscess cavity with multiple openings.

Petit and Erichsen have both recorded a direct opening of prostatic abscess into the bladder. I have observed this on one occasion.

Rupture of prostatic abscess into the rectum is another spontaneous effort at cure on the part of Nature. Such rupture can only occur after the rectum has been sealed to the prostate by preliminary inflammation of the connective tissue between them. Under these circumstances all goes well, but if such adhesions default, as they very well may, the result is diffuse cellular periprostatitis or periprostatic abscess.

An accumulation of pus within the prostate may take two routes instead of one, and burst into the rectum as well as into the urethra, eventually leaving urethro-rectal fistula, through which intestinal gas and fecal material may invade the urethra. I have seen this occur. Spontaneous closure of such fistulæ is possible.

Chronic Parenchymatous Prostatitis

Chronic parenchymatous prostatitis may follow an acute inflammation, but its onset is usually insidious, not attributable to any cause, nor characterized by any special symptoms. Indeed, there is doubtless a diffuse inflammation of the prostate gland that never shows any symptoms, except those mentioned above as characteristic of chronic posterior urethritis. And conversely there may be a slight parenchymatous prostatitis, producing the symptoms of that disease without its one physical sign—which is an enlargement of the prostate quite comparable to the lateral enlargement of the hypertrophied gland. The prostate swells within its capsule, often to the size of a small orange, perhaps unevenly, one lobe being involved to a greater extent than the other—sometimes in an irregular, nodular manner. The exploring finger in the rectum at once strikes against this mass, which encroaches upon the cavity of the gut and is hot, tense, and sensitive in proportion to the acuteness of the symptoms.

While it is possible for parenchymatous prostatitis to give no evidence of its existence other than the physical signs, there are certain characteristic subjective symptoms that appear and disappear as the inflammation varies in intensity. These symptoms are vague, and are described differently by different patients. Some complain of an irritation, as though there was a ball in the rectum, and may demand a purgative under the mistaken impression that clearing the lower bowel will relieve the discomfort. Pressure upon the peri-

neum by the finger or in sitting may be painful, and there is a subjective sensation of pain, heat, throbbing, or weight in the perineum and lower belly, penis, and scrotum, with, perhaps, constant pain running along the urethra to the head of the penis. There may also be pain in the back, down the thighs, and perhaps in the feet. These symptoms are all due to the tension of the swollen prostate within its capsule.

Periprostatitis

Chronic periprostatitis is the direct extension of some inflammation of the prostate to the connective tissue about the gland. This inflammation results in the formation of masses of inflammatory tissue about the prostate. They give no symptoms. I have seen a case of diffuse chronic pericystitis and periprostatitis diagnosed as cancer of the prostate.

Acute periprostatitis—i. e., periprostatic cellulitis or abscess—usually results from a prostatic purulent focus pointing downward; but wounds through the rectum may occasion it, abscess of the seminal vesicle may be its cause, it may be a complication of cancer or of tubercle of the prostate or of the base of the bladder near the neck, and it may owe its origin to a suppuration of one of the lymphatic glands lying between the prostate and the rectum (Lannelongue[1]).

Such accumulations are diffused in the meshes of the connective tissue about the prostate. The symptoms are, in the main, those of prostatic abscess, but are less intense and run a slower course. A general diffuse inflammatory edema is easily appreciated by rectal touch, blotting out the limits of the prostate, and more boggy in some places than in others, perhaps frankly fluctuating at a given point.

This collection, following the line of least resistance forward into the perineum and the ischio-rectal fossa, generally opens into the urethra or the rectum, sometimes into the ischio-rectal fossa, or even through the perineum; sometimes, not uncommonly (21 times in 115 cases reported by Ségond), both through the rectum and the urethra. Before doing this it has usually given rise to urinary retention, and afterward to all the inconveniences of a urethro-rectal fistula, urine passing into the rectum each time the bladder is emptied, and gas and fecal matter finding their way, from time to time, into the urethra. Such a fistula does not often close spontaneously, because it is usually a long tract with a chronic abscess cavity situated along its route. Sometimes this cavity becomes very extensive, dissecting up the rectum more or less, and perhaps occasioning quite a formidable retrovesical abscess pouch, or running into the ischio-rectal fossa, there to give rise to all the symptoms of abscess of that region.

[1] Bull. de la soc. de chir., 1878, iv, 600.

If the pus burrows forward into the perineum it may occasion considerable mischief following along towards the corpus cavernosum, or even laying it bare (Demarquay). It has been known to go through the obturator foramen (Tillaux), and even to follow the connective-tissue plane about the spermatic cord and to point in the inguinal canal, or to get into the space of Retzius, to appear at the umbilicus, to pass by the sciatic notch (Guyon), or to burst through the posterior vesico-rectal *cul-de-sac* into the peritoneal cavity, or even, circumventing the bladder, to mount in front of the abdomen in the sheath of the rectus up to the ribs (Desnos, referring to Curtis)—all very rare, but still possible culminations of periprostatic suppuration. As Guyon has put it, every connective-tissue plane in communication with the retroprostatic layer is a route open to suppuration.

When such long burrowing courses are followed it is usual for several spontaneous perforations to occur *en route*.

As may be inferred from what has just been written, the course, duration, and termination of periprostatic suppuration are all open to wide variation, and may call for expert surgery.

In discussing these points Desnos[1] refers to the limit of cure as being twelve days and fifteen months, and in 114 observations, cure 70 times, persistence 10, death 34—of which latter 11 were due to a cause foreign to the prostatic malady.

Phlebitis, pyemia, and peritonitis may at any time complicate periprostatic suppuration.

Clinical Varieties of Posterior Urethritis

All cases of posterior urethritis may be classed as follows:

1. Mild cases.
2. Intractable cases.
3. Relapsing cases.
4. Irritable cases.
5. Neurotic cases.

1. Mild Cases.
2. Intractable Cases. —Although most chronic inflammations of the posterior urethra are mild in the sense that their symptoms are not annoying, few of them are mild in responding promptly to treatment. And so it is that many a man does not much care

[1] Traité élém. des mal. des voies urin., 2de éd., 1898, 327.

whether he has a posterior urethritis or not, so long as it remains symptomatically mild. But to the conscientious surgeon nothing is more exasperating than those cases that persist in hanging fire in spite of his best efforts to cure them. Cases that are rapidly curable are those in which the prostate is not hypertrophied, the inflammation not gonorrheal, and the patient docile; conversely, an intractable patient, a gonorrheal inflammation, and a hypertrophied prostate are elements that tend to make the inflammation resist all treatment. Another feature that militates against a cure is the existence of such complications as parenchymatous prostatitis, periprostatitis, vesiculitis, and epididymitis. The battle with these conditions is often tedious to the last degree, and it is small wonder that the surgeon's judgment and the patient's endurance should fail, as they so often do during the long months that may be required before a cure is reached.

3. **Relapsing Cases.**—Every case of chronic urethritis has some little tendency to relapse after a cure has apparently been effected. But certain urethræ show a tendency in this respect little less than maddening. Perhaps the patient will have been carried successfully through an acute gonorrhea by the irrigation treatment when an unexpected outbreak of the disease in the deep urethra disappoints surgeon and patient alike. Or a chronic case may have gradually yielded to methodical treatment only to burst out afresh at the slightest provocation. Those cases that relapse year after year are often more annoying to the surgeon than to the patient. It is especially provoking when a patient leaves town with all the evidences of a cure to have him wire from the first station he stops at that his discharge is in full blast. To avoid this mishap it is absolutely essential to know, before declaring a patient cured, that his prostate no longer harbours gonococci. This fact ascertained, the surgeon may at least prophesy that if a relapse does occur, it will only be a light non-specific inflammation that will subside in a few days without local treatment.

A peculiar feature of the relapse is that it may act more or less like a new infection. The inflammation spreads throughout the urethra in a few hours, due, apparently, to a reinfection by the gonococci that had seemingly lost their virulence.

The cause of relapse may be a collection of pus in some gland or follicle, urethral or prostatic, or a local irritation due to alcohol, to sexual excess, to a cold in the head, or to excess in the local treatment. But the great predisposing cause is the catarrhal habit, whether natural to the patient or induced by overmuch work or dissipation. Without this any of the exciting causes may light up a

relapse; but with it relapses occur and recur on the slightest provocation or on no provocation whatever, defying local treatment and demanding hygiene and tonics to effect a cure.

4. **Irritable Cases.**—Some urethræ are so sensitive that local treatment is next to impossible, whether because of the pain and spasm it evokes, or because an outburst of acute inflammation in the neck of the bladder, the prostate, the vesicle, or the epididymis follows every attempt at local treatment and every indiscretion on the part of the patient. This local irritability, while in a sense peculiar to the individual, is usually the result of a habitual disregard of the rules of prudence. The patient is either a hard drinker, or addicted to sexual excess, or overworked and overworried, or—and this alternative is, unfortunately, not a rare one—he has been irritated by local treatment. An appreciation of this fact will help to direct the treatment of such cases.

5. **Neurotic Cases.**—The neuroses of the prostate are not habitually due to antecedent gonorrhea of that organ, and it is only exceptionally that one encounters evidence of neurosis while the inflammation still continues. The neurotic taint adds many and various symptoms to those of the inflammation, and protracts the patient's miseries even after his prostate has apparently returned to its normal state.

This consideration of the prostatic inflammations has insensibly brought about a digression from the clinical plan proposed—namely, to consider all the urethral, suppurative, and catarrhal maladies together. It would seem natural here to take up a consideration of the maladies of the seminal vesicle associated with gonorrhea, with urethral discharge, and with evidences of prostatitis. But before doing this it is better to dispose of mucous discharges from the urethra and then through prostatorrhea, again to approach the seminal vesicles, and to terminate the study with follicular urethral abscess, periurethritis, and cowperitis, bringing up with the treatment of everything at the end to avoid repetition.

URETHRORRHEA

This term has for the most part a negative significance, and is only useful in that it may be employed to designate a mucoid flow from the urethra, not purulent, not prostatic, not seminal. It is a pellucid, sticky drop—or a number of drops, indeed, sometimes a flow—which sticks the lips of the meatus together; and on separation of these the glue-like fluid of blue-white colour is seen. When caught upon the finger and rubbed against the thumb this drop is

tenacious, and strings out as the thumb and finger are separated, feeling soapy as they are again rubbed together; or, on the other hand, the drop may be quite watery and thin, but it is always somewhat sticky and never has a seminal odour. This flow when abundant stiffens, but does not stain the linen, and it may come away in greater quantity during straining effort, as at stool, during exercise, or after micturition. If the discharge be due to surface urethral congestion it is quite watery, clear, and only slightly sticky. When the secretion of the glands of Littré and Cowper is mixed with it or constitutes its main bulk, it is thick, cohesive, and tenacious. Patients generally think that it is spermatic fluid. The microscope shows it to be composed of single flat epithelial cells and clusters of the same, mucous corpuscles, films of striated mucus, granular *débris* of various kinds, no pus threads (unless there be also a patch of chronic anterior granular urethritis, which is quite possible as a concomitant), no prostatic bodies, no spermatozoa, no lecithin bodies, no Böttcher's [1] crystals.

The causes of this affection are prolonged, ungratified sexual desire, constant impurity of thought, a sort of mental masturbation through the imagination, often indulged in by weak-minded youths, as well as by old men who are regretfully conscious that they are getting beyond the potential stage of sexuality. Another cause is delayed orgasm during intercourse or withdrawal before emission, pernicious practices which occasion sexual strain. Masturbation if excessive, or too much natural sexual exercise under the stimulus of mental provocation—all these and the like, being a violence to the various urethral mucous glands and to the circulation of the urethra by prolonged, sustained, excessive nervous tension, lead to passive congestion and lack of tone in the circulation of the urethra and in its mucous glands and follicles, and thus occasion an excess of mucous secretion all along the line, together with more or less desquamation of pavement epithelium—and this is the malady and the whole of it.

The natural beading of the meatus during intense sexual excitement is physiological. It is equivalent to the watering of the mouth when one is hungry and smells appetizing food.

Whether it is fair also to denominate urethrorrhea that form of mucous oozing following chronic anterior urethritis in some cases, notably in the strumous, gouty, and debilitated, after the pus and shreds have disappeared, may be questioned; but it is much the same thing, being a mucoid oozing from congested surfaces which are not

[1] The fluid must be examined in substance. It cannot be recovered by the pipette from a specimen of urine since the latter totally dissolves it.

inflamed enough to yield pus, and it gets well, not by local treatment, which indeed may maintain and prolong it, but by improved general health, change of air, etc., with lapse of time. I well remember such a case, which came to me thirty years ago, a solicitous young man who had been under continuous treatment for a year at the hands of one of New York's most noted surgeons without avail. I stopped all treatment and sent him to Bermuda. The vessel had not been twenty-four hours out of port before his mucoid drop diminished notably. It promptly disappeared and never returned.

Many a time a little, final mucoid drop of this sort is entertained for weeks or months by excess in local treatment due to unnecessary solicitude on the part of the patient and inordinate zeal on the part of the surgeon.

But the true urethrorrhea, be it due to whatever cause among those enumerated, gets slowly better upon doing away with the continued action of that cause—be it lust, masturbation, excess, or what not which has occasioned it—and by insisting on urethral and general hygiene aided, perhaps, by monobromid of camphor 30 centigrammes 3 times a day, if erections be insistent, and such tonics as seem indicated, notably iron and strychnin. A minute dose of atropin, sufficient to dry the mouth slightly, assists. I think it also somewhat dries the urethral and prostatic secretion. Massage of the urethra by the passage of a large steel sound every two or three days through the anterior canal, or by the double-current cold-water metallic sound (Winternitz) with iced water, is sometimes helpful, with perhaps a light injection of the non-alcoholic fluid extract of hydrastis 8%, or claret and water 50%, once or twice a day. Strong injections irritate, and any injection may do as much harm as good, notably in those self-centred cases where morbid introspection is the salient feature of the malady. Here anything that keeps the patient's mind upon his genitals harms him, and any local treatment may be mischievous. A cold morning douche to the external genitals has a tonic effect. The patient's mind must be disabused of his morbid fancies. Horseback exercise is helpful, unless there be also chronic prostatitis, when it might do harm.

For treatment, see page 140.

PROSTATORRHEA

This malady may occur alone, in which case it is not inflammatory, not a prostatitis—with which it is almost universally confounded, nor yet a urethritis—but a sexual malady, and, like urethrorrhea, due to some form of sexual strain.