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A CONTRIBUTION TO THE STUDY OF THE SYMPTOMS OF CHRONIC URETHRITIS.

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The fact that a patient observes a persistent or occasional drop at the meatus, by no means proves that gonorrhea exists. On the other hand, the absence of discharge does not exclude the presence of chronic gonorrhea. This fact alone warrants a detailed study of the symptoms of this disease.

At the outset, it is well to say that no attempt at considering the urethritides in general is made. To extend this paper to the urethritides of a non-gonorrheal character would expand it beyond its intended dimensions. Moreover, the urethritides, other than gonorrheal, merit exhaustive study by themselves.

The separate consideration of gonorrhea infecting the region before or behind the compressor is due, like the vast majority of other advances in the study and treatment of genito-urinary diseases, to the great master, Felix Guyon.¹ This division into anterior and posterior urethritis is not only rational, but also the most convenient.

In most cases the symptoms of this disease vary according to the region affected; an effort will here be made, in studying them, to place them where they belong. But while attempting this, it will be found that there are symptoms which may show affection of either urethra. To recite these separately would encumber us with a new division. It seems better to adhere to Guyon's classification and, while using it, to mention wherever applicable the local differentiation, so important in treatment.

SYMPTOMS OF CHRONIC ANTERIOR GONORRHEA.

1. *Agglutination of the meatus.*—Some cases present, as the sole symptom of urethral disease, a mere cohesion of the meatus, most frequent on arising from sleep. This may take the shape of a slight, transparent pellicle or a crust formed by the dried discharge. When the discharge is so copious as to prevent its drying, it takes the shape of the morning drop, to be discussed farther on. It is important to ascertain, microscopically, whether the substance that even but agglutinates the meatus is the result of a diseased condition, or whether it indicates merely an increased normal secretion, due to erection during sleep. A particle of the "glue," pellicle or crust, rubbed with a drop of distilled water upon a cover-

glass, will prepare it for examination. But one such microscopic examination by no means suffices for diagnostic purposes. For some reason the specimen taken one day may contain only mucus or perhaps urethral epithelium; while the substance that causes the lips of the meatus to adhere but slightly may after several examinations be found to contain gonococci.

2. *The discharge*, like the agglutination, is often the only symptom which the patient observes. Its appearance and persistent reappearance, even without any accompanying inconveniences, harass him. It is difficult, without detailed study, to reach conclusions which will justify the physician in assuring the patient regarding the danger or innocuousness of this discharge.

3. *Description of the discharges.*—With a view to systematizing the description of urethral discharges, I beg to submit the following classification. While it is by no means exhaustive, I think it has the advantage of carrying a definition in each title: 1, thick bloody discharge; 2, thick green discharge; 3, thick yellow discharge; 4, thick white (creamy) discharge; 5, thick rice-water (grayish, opaline) discharge; 6, thick watery discharge.

The above discharges may vary or be mixed as regards consistence. Any of them may be thin, carrying thicker drops; they may also be mixed as regards color; thus, there may be a greenish-yellow discharge, or a yellowish-white one, etc.

When the discharge does not flow freely from the meatus, it may be present as, *a*, the morning drop (small, medium or large), varying from a dirty gray even brownish tint to the colorless appearance of raw egg-albumin; *b*, an excess of moisture, easily expressible from the meatus by stripping the urethra; *c*, an excess of moisture expressible to the meatus; *d*, an excess that can not be expressed, but remains within the meatus and is visible only on opening its lips.

4. *The abundance of the discharge* may vary in the same individual. In most cases of chronic urethritis, it presents only in the morning before the first urination (*goutte militaire*). In others it becomes evident an hour or two after urination. In others still, it appears only occasionally, as after fatigue, dissipation, the abuse of stimulants, etc.

5. *Color of the discharge.*—The morning drop especially may be creamy or yellow, or it may be grayish or opaline, or colorless.

6. *Consistence of the discharge.*—The discharge, drop, or mere excess of moisture in chronic gonorrhea may be as fluid as that of an acute specific urethritis; it may also be coherent, slimy and easily drawn out into long threads when taken between the fingers.

7. *Stains on garments.*—Very many patients see the sole evidence of disease in stains on their shirts. And indeed, when they or their physicians endeavor to strip from the urethra some more of the discharge

¹ Guyon: *Leçons Cliniques sur les Maladies des Voies Urinaires*.

that produces these stains, they succeed in bringing only a slight excess of transparent moisture to the meatus, but not expressible from it. Often these stains produce in the patient a greater disquietude than the discharge did, when it was evident. Such patients use all possible means to impress upon the physician the presence of the stains. It is nothing unusual to have a patient bring quite a laundry package for ocular demonstration. One of my cases wore his shirt a whole week, examined it almost hourly, and whenever he found a drop, encircled it with indelible pencil ring and marked it with the date and hour at which he discovered it. It is not rare to have a patient cut the stained portion from the shirt and attach it to labels, giving the above data.

8. *Relation between stains and discharge.*—When drops are discharged from the urethra, the stains on the garments bear a color-relation to the urethral discharge. As Diday has shown, a colorless drop gives the shirt a starch-like stain; an opaline drop gives the shirt a grayish stain; a white drop gives the shirt a yellow stain; a yellow drop gives the shirt a green stain.

9. *Urine stains* are sometimes confounded with the stains from urethral discharge. To recall their gross differences, I tabulate them as follows:

URINE STAINS.	STAINS FROM URETHRAL DISCHARGE.
Irregularly shaped; diffuse.	Circular or ovoid.
Large, with undefined edges.	Small, with sharply defined edges.
Color of same shade throughout.	Center darker than periphery.

10. *Diagnostic value of stains from urethral discharge.*—While excellent authors, *inter alia* Guiard,² do not attach very great importance to the stains from urethral discharge, these certainly merit attention. Thus the deeper in color and the greater in density a stain, the greater the likelihood of its containing gonococci; yet, a very light, starchy stain by no means excludes them.

11. *Microscopy of the stains on linen.*—When, for any reason, the patient can not be examined personally and it is necessary to prepare these stains for the microscope, it may be done by moistening the spot with distilled water, rubbing it upon a cover-glass and then drying, fixing, staining and mounting in the usual manner.

In many cases the discharge is so slight that it will not stain the linen. Then several hours must elapse before sufficient of the discharge accumulates to become at all evident in the meatus. Or it may be so small in quantity that stripping of the urethra is required to reveal its presence. In such cases the patient may not perceive it except after a night's rest, when it appears as the

12. *Morning drop (goutte militaire).*—This may show itself as a mere light drop of a pearly grey color, or through all the gradations to a very heavy, thick yellow drop. In some cases it does not take the form of a drop, but dries upon the lips of the meatus, slightly agglutinating them or, if the quantity be larger, may seal them with a thick crust. To obtain the drop for microscopic examination the patient must be examined before he has passed his first morning urine. When this can not be done, he must be provided with cover-glasses, and instructed in catching the drop.

13. *Absence of discharge* does not prove that the patient is cured. What is called "latent gonorrhea" (Guiard, *Annales*, 1884) may exist, especially in the posterior urethra, with no symptoms whatever, except as manifested by filaments, flakes or granules in the urine. I believe "residual gonorrhea" a more correct term for this condition. The "floaters" found in the first morning urine should be fished therefrom with a sterilized platinum loop and examined microscopically. If they can not be thus obtained, the urine may be centrifuged and the sediment examined.

14. *Absence of "floaters"* may not prove a cure either. *Ramonage* may then be advantageously employed with the other methods for determining the condition of the urethra, as described in another paper.³

15. *Itching or tickling* within the urethra, is one of the most annoying symptoms of chronic urethritis. It is especially aggravating when the symptom obtains in the posterior urethra. It is then often referred to the rectum. Such cases are subjected to all manner of treatment, even operations upon the anus and rectum, of course without relief. The reflex nervous symptoms resulting from this urethral itching or tickling, not infrequently drive the patient to desperation. In some cases the diseased area is so minute that its location is difficult even with the urethroscope. In extremely small infected spots, or perhaps a single one, it may not be found at all. Fortunately the vast majority of cases yield to dilatation and irrigations.⁴ In those few which persist, the urethra is prepared by this treatment, for more searching urethroscopy, until the diseased region can be brought to view.

16. *Painful urination* is not frequent in chronic gonorrhea, except when the patient has rendered the urine abnormally irritating by dissipation, or increased the local disturbance in the same manner by coitus or over-exertion. These may also reproduce the discharge or aggravate it, if present. Equally a meatus agglutinated, or sealed with a dried discharge, may render urination painful. The inflamed canal is distended to a painful degree, until the agglutination is torn away by the force of the stream. The tearing of the incrustation from the meatus carries with it superficial and sometimes deeper epithelium, producing at first pain alone and later ulceration of the meatus, until every attempt at urination is as exquisitely painful as it was in the beginning of acute gonorrhea. This can be avoided by teaching the patient to soak the meatus in a hot boric acid or very weak bichlorid solution, before urinating. The urine in chronic gonorrhea presents symptoms of import in both anterior and posterior infection of the organ and may be considered with the latter.

17. *The urethroscopic symptoms* of chronic anterior and posterior gonorrhea can not well be studied separately. And indeed they require, for their proper comprehension, an essay devoted to them. The only concise article on the subject that at present exists in English, as far as my knowledge goes, is the brilliant paper by H. R. Wossidlo.⁵

18. *The urethrometric findings* of chronic anterior gonorrhea merit investigation in a paper limited to the diagnosis of the disease.

² Valentine: "The Proofs of Cure in Gonorrhea." *Clinical Recorder*, April, 1898.

⁴ Valentine: "Chronic Gonorrhea: its Scientific Treatment." *Clinical Recorder*, January, 1898.

⁵ Wossidlo: "Practical Urethroscopy," *Medical Record*, September 7, 1895.

² Les Uréthrites Chroniques chez l'homme. 1898.

I have in the preceding endeavored to sketch the symptoms most frequent in chronic anterior gonorrhea. In doing so, I hope that the statement be not taken too strictly, as almost any of the symptoms can be simulated by disease of the posterior urethra.

There are also a number of symptoms which can not be separately studied; these will therefore be associated with consideration of

THE SYMPTOMS OF CHRONIC POSTERIOR GONORRHEA.

Posner⁶ hopefully says that acute posterior urethritis can heal without any special, and particularly without any local, therapeutics. This is fortunately true. Still, in view of the fact that 33 per cent. (Guyon and Jamin) to 85 or 92 per cent. (Ambert, Brand, Hassler, Jadassohn Letzel, Audry) of anterior gonorrheas traverse the compressor and infect the posterior urethra, it will not be well to envelop ourselves too firmly in what too often proves fancied security. Indeed it seems not remote that many of the sad results of residual gonorrhea are due to the fact of its lying unobserved in the posterior urethra, waiting, perhaps years, for the fitting occasion to become manifest. The comparative difficulty with which the posterior urethra ordinarily can be reached, may leave many cases unobserved until much later, when the most eccentric manifestations may suggest that it once was infected. Indeed, this infection in the acute stage may have been so insidious, as to be barely manifest, so that, to quote Guiard,⁷ it may have been chronic at the very outset (*chronique d'emblée*).

19. *Discharge.*—The discharge in chronic posterior gonorrhea is exceedingly variable. It may be so slight as to escape detection. Indeed there are cases in which the only gross evidence of infection of the posterior urethra is shown by shreds in the urine. If the patient's attention has not been attracted to them, their presence may be learned only when the physician examines the urine in quest of explanation for some other disease.

20. *Sudden large stain.*—Guyon and Jamin were the first to describe this symptom. It appears as a sudden large drop, with or without partial sensations of a slight ejaculation. Its stain upon the linen differs from the spots made by chronic anterior urethritis, in being much larger; when dried it usually has a whitish-yellow center, and becomes lighter colored and starchy toward the margins. Sometimes a stain of this character becomes evident to the patient only from its moisture. Not long since I had a patient who could, perhaps as a result of training, expel such a drop at will.

The presence of a large stain upon the linen may be accompanied by smaller drops, as described before. They would then evidence both chronic anterior and posterior gonorrhea, if on examination, the spots of both dimensions contain gonococci. There is no reason why another form of urethritis may not affect the anterior urethra, while the posterior is the seat of chronic gonorrhea, and *vice versa*. The explanation of the sudden large staining drop, as it escapes from the posterior urethra, is not very simple. The compressor being the anterior boundary of the posterior urethra, is a much stronger muscle than the sphincter vesicæ, which barely separates the urethra from the bladder. It is perhaps the presence of a heavier, thicker accumulation than the urine, in the posterior urethra, that stimulates the compressor to relax and

the accelerator to expel the substance. This must be coincident with too little urine in the bladder to overcome the sphincter. But the absence of this large drop, for the reason above given, is more frequent than its presence. The sphincter is more apt to yield than the compressor. Consequently when the accumulation in the posterior urethra is sufficient to be appreciable by it, the contraction of the region is more likely to throw it into the bladder. It then may be ejected with the first urine and convey the erroneous impression that a healing anterior urethra is the site of the disease. To obviate such misapprehension, the anterior urethra should be carefully washed before allowing the patient to urinate. The first urine, after the washing, will then carry the pathologic secretion of the posterior urethra, provided it be not too small and tenacious to be dragged along with the stream.

21. *Stains as evidence of spermatorrhea.*—A considerable number of patients, misled mainly by the publications of quacks, interpret the spots of chronic anterior or posterior gonorrhea as evidence of spermatorrhea, with all the horrors it is made to portend to them. In all cases, especially where the patient is threatened with sexual neurasthenia in consequence, it may be well to demonstrate microscopically the absence of spermatozoa from the harassing spots. Undeniably spermatorrhea may occasionally be coincident with chronic posterior urethritis and be provoked by it. But as the supposed spermatorrhea usually yields with the cessation of urethritis, or shortly thereafter, the patient may be safely reassured.

22. *A dry meatus,* as before indicated, may coexist with very copious pathologic secretion in the posterior urethra. Indeed, the entire anterior urethra may prove healthy, under urethroscopic examination, while large drops of discharge may be propelled from the posterior urethra, simulating a series of "*petites ejaculations*" as Guiard calls them.

23. *Supposed incontinence of urine.*—Some patients seek advice for inability to hold the urine, while they control it perfectly. They point to the stains on their shirts for confirmation of this diagnosis. It requires but little experience to distinguish the purulent circular stains from the diffuse stains of urine.

24. *Apparent defecation—or urination—spermatorrhea.*—A fairly large number of patients observe a thick, whitish drop either within or escaping from the meatus, during or after defecation, or at the end of urination. It is easy to understand how the final contractions of defecation or urination may force from the posterior urethra such secretion as was not carried off by the stream of urine. The microscope will decide whether the drop is due to chronic posterior urethritis, seminal vesiculitis, prostatorrhea or spermatorrhea.

25. *Apparent anterior urethritis.*—Occasionally cases present simulating chronic anterior gonorrhea, by an almost continual discharge, containing gonococci. If the anterior urethra is carefully washed and then examined with the urethroscope, it will be found in perfect health. Holding the tube's distal extremity close to the sphincter, pus will be seen welling into it, sometimes in sufficient quantity, if the Oberlander urethroscope is used, to extinguish the light. I saw a case where the manifestations were so characteristic of anterior urethritis that the practitioner who brought him feared to use intravesical irrigations lest he might thereby infect the posterior urethra.

⁶ Posner; *Therapie der Harnkrankheiten*, Berlin, 1895.

⁷ Guiard; *Les Uréthrites Chroniques*, Paris, 1898.

Parenthetically I may say here, that this has never occurred. On urethroscoping the anterior urethra, it proved to be perfectly normal. The region of the compressor, however, bulged forward and slight pressure of the tube against it caused so large an extrusion of thick whitish discharge that it filled about one-third of the tube, suggesting a seminal emission. On examination this proved to be mainly pus, thoroughly loaded with gonococci. Under intravesical irrigations of potassic permanganate, this case soon recovered. The fact that such a chronic posterior gonorrhea can exist without infecting the anterior urethra, is doubtless attributable to a species of perhaps temporary immunity acquired by the gonorrhea, which was extended into the posterior urethra.

In view of the preceding, this manifestation of chronic posterior urethritis is not difficult of explanation. But when the discharge is very small in quantity and very tenacious, as in

26. *Chronic residual posterior gonorrhea*, without even the characteristic pain after urination, the only evidence thereof may be found in the shreds, filaments, flakes, etc., in the urine.

27. *Disturbances of ejaculation* are not infrequent accompaniments of very prolonged chronic posterior urethritis. Among these those most often found are

28. *Apparent aspermia*.—The patients so affected experience only a very slight or no sensation of the flow of semen through the urethra. On withdrawal for visual confirmation of the sensation, they find that nothing comes from the meatus. In such cases, the semen, instead of being vigorously ejected from the urethra, flows into the bladder and is carried off with the next urine. In several cases of this kind the patients confessed to a former habit of digital compression of the urethra, at the moment of venereal spasm, to avoid impregnation. One of these (a physician) claimed that he had acquired the power of compelling the semen to flow into the bladder, but after a gonorrhea had lost all ability to eject semen normally forward.

29. *Post-coital seminal dribbling*.—In some cases the semen is partially or entirely retained within the posterior urethra, and dribbles from the meatus upon cessation of the erection. This symptom is more frequent in urethritis ex libidine, than in chronic posterior urethritis.

30. *Painful ejaculations*.—In those not due to the ejaculatory spasm drawing upon nerve terminals compressed in infiltrations of the anterior urethra, the pain may be due to irritation of the chronically inflamed posterior urethra, just as urine, the normal stimulant to vesical contraction, gives pain in cystitis, and as light, the normal visual stimulant, gives pain in iritis. These painful ejaculations, however, are by no means essentially of gonorrheal origin. In character, they may be lancinating, burning, extending from the meatus to the rectum, or radiating to the testicles and lasting some time after coitus, which may be followed by scalding on urination. They are most frequent in excesses, such as are likely to be committed by middle-aged men in sexual relations with very young women. The most aggravated case in which painful ejaculation was the exclusive symptom of chronic anterior and posterior gonorrhea, was that of an otherwise normal man, who screamed at the moment of ejaculation and fainted before entire conclusion of the act. Usually the patients with chronic anterior urethritis complain of no pain during ejaculation, or

only a slight burning. When the pain is sharp, lancinating, stabbing and extends to the region of the anus or rectum, chronic posterior urethritis is probably associated with disturbance of the anterior urethra and with or without involvement of the seminal vesicles or prostate, or both.

31. *Painful erections*.—These are comparatively rare when accompanied by sufficient genesic impulse to overshadow the pain. But there are cases in which erections without sexual desire are provoked by the presence of the chronic localized inflammation; they then stretch the tense areas or draw upon them, producing exquisite pain, while increasing the inflammation. Many a man has mere mechanical erections from an overfilled bladder. When the urethra harbors a chronic gonorrhea, the erections are, as a rule, more or less painful. They subside, however, as soon as the bladder is emptied.

32. *Excessive sexual desire*.—Another symptom, which, however, does not belong solely to chronic urethritis, but to affections of the prostate and vesicle as well, is what some patients call a "teasing" or "nagging" of the genesic apparatus. It urges a wish for coitus with partial erections, or only a slight swelling of the penis, or none at all. It is much akin to those localized troubles, as a long prepuce or tight meatus or other irritation which lead children to masturbation. These erections present mainly at night or on awakening. While the excessive sexual desire is evident principally during the day, it often disturbs sleep. In both conditions bromide of soda, bromide of potassium, or bromide of camphor in full doses will palliate the annoyance, but unless attention is paid to the patient's general condition, and unless his local affection is treated, they are of no avail.

33. *Premature ejaculations* frequently occur when chronic posterior urethritis has ceased to furnish other external manifestations. They may be so marked as to cause the patient to ejaculate, when his penis merely touches the external female genitalia. In extreme cases even accidental brushing against any part of a woman's garments, will cause an ejaculation, even without partial erection, or suggestion of sexual desire.

34. *Seminal emissions* are not infrequent in chronic posterior urethritis. In those cases due to abstinence from sexual intercourse they may occur once, twice, even thrice a week, and not be followed by any mental or physical disturbances. But if they recur several times in the same night, they are likely to become independent of sensual thoughts or dreams and then merit serious consideration.

35. *Urethral pains*, extending to the neighboring organs in some cases, even down the inner surface of the thighs, are not infrequently associated with chronic posterior gonorrhea. They generally occur independent of urination, but may be aggravated during ejaculation.

36. *Sexual neurasthenia* not infrequently supervenes in cases affected with chronic posterior gonorrhea. The seriousness of aggravated forms of what has grown into an essentially neuropathic condition merits separate study, such as has been given to it by Beard, who invented the term.

37. *The urine* yields symptoms of chronic gonorrhea, which might more properly be considered in a study of urinalysis. But the macroscopic findings are such that the patients soon learn them and attach importance to them beyond their real merit.

I propose here to merely outline those which are useful in common, rapid office-work. Ordinarily the patient is asked to urinate into two glasses, usually conical, not unlike sherry glasses. Guyon⁸ directs attention to the need of a preliminary thorough cleaning of the meatus, lest the urine contain the results of balanitis or the abundance and diversity of foreign bodies, that may be carried with it. He enumerates mineral dust, coal, wool, silk, linen, hemp, cotton, threads, bits of hair, feathers, grains of starch, etc. The first and second urine obtained as above, is in a measure inconvenient, and liable to yield false impressions. To overcome these I suggested, some three years ago, that large test-tubes be used in place of the conical glasses. They proved too fragile, however, for rapid office and dispensary work. I therefore substituted 12-inch ignition tubes. These give a column of urine equal in all parts, easy to handle, especially in those macroscopic examinations that are most frequently employed. Moreover, they are very convenient for transference to centrifugal glasses, to test tubes and to microscopic cover-glasses. Guyon⁹ devotes 365 pages to pathologic modifications of the urine; other authors have written volumes upon the subject. Hence, to attempt to more than glance at the most superficial macroscopic evidences of disease would be impossible in a paper like this. And in doing so, heed will be given only to those symptoms which attract the patient's attention.

38. *Malodorous urine*.—This is frequently the first symptom which patients observe. It sometimes has a fishy odor in chronic posterior urethritis and in tumors of the bladder, an excessively aromatic odor after taking balsams (e.g., santal oil); a violet-like odor—almost a perfume—after taking turpentine preparations, etc.

39. *Turbid urine*.—If the first urine is turbid it is generally accepted as evidence of anterior urethritis. This, however, is open to error, as mentioned in another portion of this paper, in connection with a consideration of posterior gonorrhea simulating anterior gonorrhea. If washing out the anterior urethra produces only clear wash-water and the first urine then passed is turbid, disease of the posterior urethra is fairly well established. If all the urine passed is turbid, it may be due to an inflammatory disease of any part of the urinary tract, except the anterior urethra, whose pus is generally washed away with the first 150 centigrams of urine.

40. *Dhomé's test*.—If the turbidity is caused by pus, the addition of a saturated solution of caustic potash and then twirling the tube, will soon provoke thatropy separation which Dhomé, who devised the test, called "snotty." This forcible term (rotzig) has, as far as I know, not yet found a more elegant and equally descriptive English substitute.

41. If *bacteruria* causes the turbidity, caustic potash will not separate the clear urine, as above described.

42. *Phosphaturia* can show the urine just as turbid as in either of the preceding conditions. A little nitric, hydrochloric or acetic acid will, especially after boiling the urine, clear it with the formation of bubbles, causing it to resemble champagne. This excess of phosphates may accompany the act of digestion, especially in dyspeptics; it may follow mental exertion, anger, fright or apprehension; it is almost always present in prostatic enlargement.

43. *Perfectly clear and brilliant urine* by no means proves absence of disease. Centrifuging the specimen may reveal slight but positive evidence that some part of the urinary apparatus is affected.

44. *Shreds, flakes, filaments, granules in the urine* are the symptoms which bring patients to us, long after other manifestations of disease have passed. Roughly these substances found in clear urine or in urine not so turbid as to conceal them, become smaller with the approach to restoration to health.¹⁰ With Guyon (*Maladies des Voies Urinaires*) and Guiard (*Les Uréthrites Chroniques*), I deem the following general classification of these substances carried in the urine the most convenient for general practical purposes:

PURULENT FILAMENTS.	MUCO-PURULENT FILAMENTS.	MUCOUS FILAMENTS.
Short. Multiple.	Very much longer. Less numerous, often have ends rolled into a ball, or are serpentine.	Uniformly transparent.
Opaque. Yellowish.	Not homogenous, but often consist of thicker spots, held together by a more transparent substance.	No opaque spots.
Fall rapidly to bottom; dissolve readily and increase turbidity.	Sink slowly and remain coherent a long time. By twirling the tube they can be made to rise from bottom.	Light; remain in the upper part or float on surface of the urine.
Easily removable from the urine with platinum loop.	More difficult to "fish" as proportion of pus diminishes.	Still more difficult to fish.
Easily spread upon cover-glass; no tendency to curl.	Tendency to roll into a thick slippery heap or serpentine mass upon cover-glass.	Tendency to roll into a clear, thick mass on cover-glass, where it dries very slowly and then is barely recognizable.
Microscopically: Large masses of leucocytes, few epithelial cells, no mucus.	Microscopically: Leucocytes, often with equal quantity of altered epithelial cells, englobed in a substratum of mucus.	Microscopically: Never exclusively mucus; always have some epithelial cells, often also a few leucocytes.

In the above comparative table, constructed for easy reference, I intentionally omit all mention of microbes. The coarsest shreds, which quickly drop to the bottom, may be free from gonococci, while the finest mucous filament may contain distinct groups.

In a general way, all that precedes applies to the urine in chronic anterior gonorrhea; but it is mentioned here because it is most convenient to examine both the first and second urines together. When manifestations point beyond doubt to chronic anterior gonorrhea alone, the first urine is usually considered without preliminary washing of the anterior urethra. But when doubt obtains, every effort should be made for proper differentiation.

45. *Washing the anterior urethra*.—Commonly, the patient having been instructed to come in the morning before he has urinated, the meatus is cleansed with cotton soaked in mercuric bichlorid 1:6000 and a sterilized, small soft catheter is introduced as far as the compressor. Hot boric acid 4 per cent. is injected through this catheter, until the solution that escapes along its sides is perfectly clear of even the finest granules. This washing with the catheter is perhaps the safest for those practitioners who have not much experience in the method which I find more convenient and efficacious. It consists in washing the anterior urethra without a catheter, as described elsewhere.¹¹ Naturally, in employing the irrigator, care must be taken that none of the wash-fluid

¹⁰ Valentine: "Chronic Gonorrhea; its Scientific Treatment." Clinical Recorder, January, 1898.

¹¹ Valentine: "Improvements in Urethral and Intravesical Irrigation," Medical Record, June 5, 1897.

⁸ *Maladies des Voies Urinaires*, Tome I, p. 293. ⁹ *Op. cit.*

be injected into the posterior urethra, whose contents may be diluted thereby or have added to them the abnormal secretions of the anterior urethra. This vitiation of the test is more easily obviated by employing the irrigator I now use and recommend. The anterior urethra being thoroughly washed, the patient is instructed to pass his first 50 c.c. of urine into one tube and the remainder into another or others. If the first urine so passed is turbid, has coarse or fine shreds, filaments, flakes or granules, and if the subsequent urine is clear, the diagnosis of posterior urethritis, in the majority of cases, may be considered established.

46. *Turbid second urine.*—Even when the first urine passed after the cleansing of the anterior urethra is clear, the absence of posterior gonorrhea is by no means proven. The morbid secretion may be so slight and so adherent to the posterior urethra, as to render it not detachable by the urinary stream. The urethroscope is then the only means we have to determine the location of the disease.

Further consideration of these questions is relegated to a paper on the "Diagnosis of Chronic Gonorrhea," now in preparation. Even cursory attention to the preceding shows that nothing beyond an elementary study of the most salient symptoms of chronic gonorrhea has been contemplated. This may appear, at first, as an unwarrantable consumption of the time of this learned body. Yet, even among the best informed, symptoms are often hastily passed over as if familiarity with them had reduced their importance. My principal motive, I unhesitatingly confess, is to provoke a discussion which will doubtless be so instructive, as to fully repay me for the labor I devoted to this effort.

The large number of subjects touched upon makes it seem convenient to index them for rapid reference. The figures attached to the titles correspond to those in which they are mentioned.

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CHRONIC PROSTATITIS AND ITS TREATMENT.

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So many mooted questions still envelop chronic prostatitis that its presentation, especially in a necessarily brief paper, is attended with considerable difficulty. The symptoms, too, are so readily confounded with those of other ailments, save by most searching study, that oftentimes a patient with chronic prostatitis is treated for all manner of other diseases, unsuccessfully. To contribute what I can, in the time at my disposal, to the better comprehension of the disease is the task I have set myself in this paper.

The more or less severe tickling and burning in the urethra or at the glans, either incessantly or at intervals, the often increased frequency of micturition, the aching and stabbing pains in the anus, sacrum or perineum, the pain in the suprapubic region as well as the radiating pain along the lumbar region and the legs are well-known manifestations of chronic prostatitis. I hardly need mention the often present uneasy feeling or even painful sensation along the inguinal canal and in the testes, nor will it be necessary to describe the various nervous symptoms of neurasthenic origin in consequence of a chronic prostatitis.

However, it may be useful to emphasize the fact that the variety of symptoms arising from chronic inflammation of the prostate do not in every case point directly to the local affection, but on the contrary very often obscure the real nature of the disease, and may cause the original trouble to be overlooked. Another cause of this error is the similarity of the symptoms of chronic prostatitis to those of posterior urethritis. This, in a great measure, explains the wide differences that prevail regarding the frequency of chronic prostatitis. While, for instance, Erraud observed prostatitis in 70 per cent. of all cases of gonorrhea, and Posner as well as Finzer mentions the frequent occurrence of the disease, Fürbinger and others are of an opposite opinion. Lately, however, the attention of physicians has been drawn more closely to this question and observations of a larger number of cases are reported by Petersen, Neisser, Felecki, Fuller, Berkeley Hill, etc.

My own practice has convinced me that acute and chronic prostatitis could be diagnosed much more frequently if in every case of acute, subacute or chronic gonorrheal urethritis the patient's prostate were examined. Of course, I do not mean to say that in every case of acute or chronic gonorrhea the prostate must be affected. Considering the close connection of the prostate with the posterior urethra and also that the ducts of the prostate open into the same, it is easily understood how an inflammation of the posterior urethra can extend into the prostatic gland. But we meet with cases of prostatitis and seminal vesiculitis without any apparent inflammation of the