also more easily and conveniently administered than the benzyl esters, which are disagreeable to many patients.

SUMMARY

1. Attention is called to the activity and usefulness of chelidonin, a neglected alkaloid, obtained from tetterwort or celandine, which was formerly official in the U. S. Pharmacopeia.

2. The actions of chelidonin resemble those of papaverin and the benzyl esters, but differ from morphin in several particulars. It possesses a relatively low toxicity.

3. Chelidonin causes depression and narcosis without subsequent excitation of the central nervous system, differing in this respect from morphin. It slows the pulse and lowers the blood pressure, owing to cardiac depression, relaxes smooth muscle in all regions, and depresses skeletal muscle without influencing the nervous connections.

4. Therapeutically, chelidonin is indicated in hyper-tonus, angina pectoris, bronchial asthma, intestinal ureteral and uterine colic, or spasm of smooth muscle anywhere.

5. Being obtained from a weed growing extensively in the United States, and which can also be easily cultivated, chelidonin offers a distinct economic advantage over papaverin which, at present, is virtually unobtainable. It is also more palatable than the benzyl esters.

THE TREATMENT OF GONORRHEA
OF THE MALE URETHRA *

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Gonorrhea in the adult male is a self-limited venereal disease. Consequently, it is commonly considered an ignominious and unimportant disease, the treatment of which need not concern the mind of the well-educated practitioner in medicine.

But those who have had experience with the very slow and unsatisfactory improvement in urethral conditions due to gonorrhea under the treatment they received in the army and navy during the late war will doubtless agree that there is room for improvement in the treatment of this disease as conducted by the average practitioner.

The dissatisfaction with the results of our treatment of urethral gonorrhea has led me to interest myself very considerably in the pathologic conditions involved. From this interest there has arisen a classification of lesions and of the treatment of these lesions, notably in the case of chronic gonorrhea, which has been of assistance to me in helping such cases. Practical as these deductions seem to me, however, I find it almost impossible to translate them into words. I fear to mislead you, and in the hope of misleading you at least as little as possible, I place in the forefront of my remarks the following rule—the only rule in the treatment of gonorrhea to which I admit no exceptions:

All local treatment of urethral gonorrhea implies a certain mechanical violence. Even the gentlest injection or irrigation of the canal implies a trauma to its walls. Now, the success or treatment by local measures

requires one of two consequences from this trauma. Either it must be in itself beneficial (e. g., by sounds and dilators) or at least the bad effect of the trauma must be counterbalanced by the good effect of other elements in the treatment.

The evidence that the other elements in the treatment are counterbalancing the bad effects of trauma is shown in general by an improvement in the local condition, a lessening in discharge and discomfort. There are, however, certain forms of local treatment employed specifically for the purpose of exciting an acute outbreak in a chronic condition, and other treatments employed with the knowledge that they are irritating and with the hope that they will prove beneficial in spite of that irritation. Under these conditions the improvement is, of course, not immediate. The patient suffers an acute exacerbation for a brief period following the more severe treatment. During this period he is treated by measures calculated to soothe the urethra, and it is expected that after a few days he will be in a better condition than he was before the severe treatment was given.

Under the foregoing conditions we may, therefore, lay down the absolute rule that a local treatment of urethritis that makes the urethritis worse is bad treatment; and as a corollary, that the treatment of gonorrheal urethritis will succeed in direct proportion to the gentleness of the manipulation.

TREATMENT OF ACUTE GONORRHEAL URETHRITIS

Hygiene.—Experience in the army, as compared with civil life, has left some practitioners convinced that the patients with acute gonorrhea should be put to bed and kept on a very light diet, while others feel that the patient's morale is better when he is permitted to be about, and that this reacts on the course of his disease. On the whole, it did seem that in the army the average case of gonorrhea was rather milder and of shorter duration than in civil life. If this is the case, it is doubtless due to the restrictions which forbade indulgence in alcohol and prohibited exercise, physical or sexual.

Such prohibitions are of the essence of the hygiene of the treatment of acute gonorrhea. The patient should also be prohibited from eating any highly seasoned food, since spices are passed through the kidney in an irritating form, as expressed by the familiar phrase that "what burns the mouth going in will burn the urethra coming out."

Medication.—Prevalent opinion as to medication may be classed under four headings:

1. The nihilist system, which gives no attention to general medication.
2. Diuresis, effected sometimes by drugs, but usually by making the patient drink as much water as he can
3. Alkalization, which some prefer to carry only to a moderate degree, while others prefer an excessive alkalization.
4. Balsamic treatment, which is, on the whole, the least popular form of treatment in the United States today.

The supporters of each of these methods of general treatment adduce clinical facts in support. I have no evidence to decide between them, though I incline to favor moderate alkalization, as obtained by the administration of about 2 gm. of sodium bicarbonate four times a day, and the drinking of six or eight glasses of water a day.

Local Treatment.—So great is the variety of local treatments applied to acute gonorrheal urethritis that

* Read at a meeting of directors of Massachusetts Venereal Disease Clinics, Boston, April 14, 1920.

one might almost say that no two practitioners employ exactly the same method. Manifestly the success of the treatment depends more on the method by which it is applied, the gentleness in the treatment of the acutely inflamed urethra, and the avoidance of mechanical trauma, than it does on the exact nature of the drug employed.

It has been my impression that the familiar permanganate irrigation treatment has the advantage of rapidly clearing up the discharge, but often fails to get at the gonococci in the deeper layers of the mucous membrane and often permits urethritis to become chronic. My best results have been obtained by the use of 10 per cent. argyrol, four times a day, and retained five minutes each time. The newer remedies—acriflavine and mercurochrome-220—have not been sufficiently tried out to warrant any definite convictions as to their value. It would seem, however, that we are at present obtaining excellent results by irrigating the anterior urethra with acriflavine, 1:5,000, once a day, and, if this is not sufficiently efficient, adding one irrigation with potassium permanganate a day.

If the urethra is considerably inflamed, and the meatus swollen and urination painful, local treatment of any kind usually fails to control the attack until in the third or fourth week its intensity has begun to wane. The reason for this is the obvious fact that the infection has gone too deep for the antiseptic to reach it. In borderline cases the rule to follow is that the patient who is not rapidly improving under local treatment is actually soon going to get worse, and all local measures should be discontinued. Any increase in pain is also a signal for discontinuing local treatment.

TREATMENT OF ACUTE POSTERIOR URETHRITIS

If it is understood that acute infection of the posterior urethra often occurs without symptoms and evidenced only by the appearance of a little pus in the second urine passed, one will recognize such a posterior urethritis in a great proportion of gonorrheal cases. It certainly does not require that any instrumentation of the posterior urethra shall be attempted. Quite the contrary: the passage of any instrument through the acutely inflamed urethra is certainly contraindicated. The posterior urethra may be perfectly well medicated by injections into the anterior urethra. A little of the injection always trickles into the posterior urethra, and this is usually all the treatment required. If potassium permanganate is used, the tank is elevated and large quantities of the drug washed into the bladder and then urinated out again.

As in the case of the anterior urethra, if subjective symptoms of pain and frequency of urination appear or grow worse under treatment, this should be immediately stopped.

TREATMENT OF ACUTE PROSTATITIS

The physical evidence of acute infection of the parenchyma of the prostate consists in the appearance of pus in the second flow of urine, often accompanied by at least a slight swelling of the prostate, palpable by rectum; pus can also be squeezed from the gland. Severe palpation or massage of the prostate gland is to be discouraged for obvious reasons. Irrigation of the rectum with the double current tube and a quart or two of water about as hot as the finger can bear it is often very soothing in such cases. This should be continued even should the prostate apparently go

on to suppuration. Indications for more active interference are three:

1. Retention of urine not relieved by the single passage of a catheter.
2. Continued fever.
3. Palpable gross suppuration as recognized by the finger introduced into the patient's rectum.

The treatment of such conditions is surgical. The pus must be evacuated. The suppuration in the prostate begins in the form of multilocular miliary abscesses. These subsequently break down and coalesce. Occasionally the impatient surgeon will get into such a prostate and will not obtain any gross pus. It is of course preferable to wait until gross pus can be evacuated. Discussion of the form of operation would lead us too far afield.

TREATMENT OF ACUTE EPIDIDYMITIS

The formula for the treatment of acute epididymitis is as follows:

1. The higher the testicles are elevated, the sooner the patient will get well. The best way to elevate them is by a good solid adhesive plaster bandage. None of the bandages to be bought in shops are sufficiently strong to achieve the elevation desired.
2. If the patient has any fever, he should be confined to bed until his temperature has been normal for forty-eight hours.
3. During the course of the epididymitis it is wiser to refrain from treatment of the urethral and internal genital inflammation.
4. If decubitus and elevation of the testicles do not promptly relieve the condition at the end of a week or so, operation according to Hagner's technic should be performed.

TREATMENT OF GONORRHEAL RHEUMATISM

Systemic gonorrhea is a rare complication of localized gonorrhea. It is not generally appreciated that the reason for the extreme susceptibility to recurrence of joint lesions with each gonorrhea, in a patient who has once had arthritis, is a susceptibility in the joint, not in the urethra. At its onset the use of vaccines or serum may be worth while. Two or three doses of antigonococcus serum at the moment when a joint is beginning to become inflamed may abort the infection, as may also a heavy dose of gonococcus vaccine; this usually by the systemic reaction produced.

But once the joint infection is established, vaccines are not to be relied on. I have tried all the specific and nonspecific forms that have been commended to me, including horse serum and typhoid vaccines administered intravenously. If these are employed in sufficient dose to give a systemic reaction, a temporary benefit may be obtained, and occasionally a permanent benefit. But the rule is that these treatments do not appreciably influence the course of the disease.

Vesiculotomy and vesiculectomy, both in my own hands and in the hands of the members of my staff at Bellevue Hospital, have been most discouraging. Good results are only occasional and are not to be relied on either as to completeness or to permanence.

On the other hand, we are now getting excellent results from the old-fashioned treatment of the affected joints with very heavy casts, so heavy that the patient is absolutely anchored to his bed. Under such treatment it takes from six weeks to three months to cure a joint, but this compares favorably with the other treatments, which in our hands have not cured them at all.

During the course of this cast treatment it is inconvenient to bother with the urethral gonorrhea, and the treatment goes along quite as successfully if nothing is done toward curing the local focus.

TREATMENT OF CHRONIC URETHRAL GONORRHEA

It is generally believed that the cause of chronic urethral gonorrhea is the persistence of the gonococci in the glands or scars or ulcerations about the urethra. Quite the opposite is the case. The persistence of the gonococcus is the effect of the chronic gonorrhea, not the cause of it.

Let me explain.

We may agree that gonorrhea is divided by its victims into two classes: the kind that gets well, and the kind that does not. Now, the kind that gets well is the gonorrhea in which the lesions due to the gonococcus have been so superficial as not to cause grave scars or to excite chronic catarrh. In other words, the gonococcus infection in such a urethra leaves the urethral glands and walls in a condition of good surgical drainage, wherein spontaneous recovery is possible.

On the other hand, the chronic gonorrhea, the kind that does not get well, is the gonorrhea in which the acute process has resulted in a stricture or an abscess or a grave involvement of the prostate or vesicles or other urethral glands, which are left with infiltration about the orifices of their ducts, and dilatation of their acini. In the ulcerations or scars or glands of such a canal the gonococci linger. But although the acute gonorrhea is the cause of these lesions, it is these lesions that are the cause of the chronic gonorrhea (whether the gonococci actually persist there, or whether they are replaced by other bacteria).

Such a doctrine may perhaps strike some as revolutionary; but I believe that it is a revolution in the direction of the hands of the clock, and that unless we get our minds set to look at the chronic inflammations of the urethra in this mechanistic way we shall not be in a position to treat them intelligently.

Chronic urethritis, whether or not due originally to gonorrhea, may be divided for purposes of diagnosis and treatment into two classes: the chronic urethritis in which the gonococci persist, and that in which they do not. We commonly speak of these two classes as gonococcic or nongonococcic chronic urethritis.

The treatment of these cases is the treatment of the urethral lesion plus that of the gonococci if these are present. As the presence of the gonococci often interferes with the treatment of the lesion, let us consider first the treatment of a case of gonococcic urethritis.

Treatment of Gonococci.—The presence of gonococci in the urethra, one may remark parenthetically, makes itself known by the fact that the urethra may not be tampered with. A chronic nongonococcic urethritis will, to be sure, resent trauma, if the trauma is violent enough. But a gonococcic urethritis will resent mild trauma and show this resentment by an acute urethritis, prostatitis or epididymitis, identified as gonococcic by the microscope and the complement fixation test.

In the treatment of gonococcic chronic urethritis, the first question to be considered is whether the patient is not in a fair way to get well of himself. It is surprising how often the consultant achieves brilliant results by simply (1) removing the irritating treatment

that some enthusiastic physician has been employing; (2) improving the patient's general condition, and (3) diagnosing systemic chronic maladies, such as nephritis, diabetes or tuberculosis, that have a bearing on the patient's vitality.

If something more seems proper, we may profitably begin our acquaintance with the patient by a gentle massage of the prostate for diagnostic as well as therapeutic purposes, and by irrigating the urethra by gravity with a 1:4,000 solution of potassium permanganate daily, the massage being repeated not oftener than two or three times a week, and gently so long as there is a possibility of the presence of gonococci. If such a course of treatment does not hasten the parting guest, it is futile to continue it for an indefinite time.

Obstinate gonococci must be driven forth by more violent measures. The violence employed may be the passage of the urethroscope to locate the exact position of the lesions in the anterior and posterior urethra. More frequently one passes a moderate sized steel sound, not with the idea of overdilating the urethra, but with the belief that any foci containing gonococci are likely to be infiltrated if not sclerosed, to resist dilatation by the sound more than the surrounding canal, and therefore to be cracked and bruised by even the most gentle passage of this instrument. If the patient's urethra contains gonococci, one may expect that next day there will be a fine purulent urethritis. But one or two irrigations with potassium permanganate are likely to cure this. Then one jogs along with daily permanganate and twice a week massage of prostate (unless by chance there is no pus in this), and at the end of a week or so from the cessation of the acute relapse to the passage of the sound one passes another sound, not necessarily any larger, perhaps somewhat smaller, and solely with the idea of gently violating the refuge of the gonococcus. Three or four such treatments followed by three or four outbursts of acute urethritis should result in a cure, the first index of which is the fact that the acute urethral reaction does not follow the sounds. Of course, exceptionally such a treatment will result in an outbreak not in the urethra but in the epididymis, and if this has once occurred one may well fear to repeat the experiment. Under those circumstances I know no answer to the problem excepting that universal refuge of the physician, that is, sending the patient away to the country. Let him get a change of air, and a good rest, if his position in life permits that, and at the end of six weeks he will come home either well, or in a condition in which he can readily be rid of his gonococci.

DIAGNOSIS OF CURE OF GONORRHEA

So much for the gonococci, though perhaps one should add a word or two as to what indicates their absence from the urethra. First of all, put a negative reaction to the sound and urethroscope test. If you can pass these instruments into the urethra and the following day in whatever pus is collected find no typical aggregation of gonococci crowding the cells, there are doubtless no more gonococci in the urethra. You should control this observation by massage of the prostate with smear negative for gonococci, and a complement fixation test. The last is sometimes a little slow to become negative, and, especially if there have been systemic complications or epididymitis, may remain positive for months after the urethral gonor-

rhea has cleared up. Nevertheless, one does not feel justified in permitting a patient to marry unless he shows no reaction to local treatment, no gonococci in his urethral and prostatic smears, and a negative complement fixation test.

Let us delay a moment to compliment the gentlemen who are able to diagnose the presence of gonococci in the urethra by the finding of a few intracellular gram-negative cocci. Scattered organisms, whether intracellular or not, whether gram-negative or not, do not mean anything. Even when the cells are packed with gram-negative organisms, the certainty is not complete. These gram-negative organisms packing the cells may be staphylococci.

You note my doubts, both of the microscope and of the complement fixation test. We prefer that they should all agree, but we found our opinion on the clinical features of the case. Should clinic and laboratory disagree, the laboratory may be defied to cultivate the gonococcus. Positive gonococcus culture is positive proof of the presence of gonococci, and takes precedence over all other evidence. Unfortunately, for technical reasons it is extremely difficult to obtain this evidence; and if the clinic and laboratory agree, there is no need to attempt it.

On the other hand, should clinic and laboratory disagree and the cultivation of gonococci prove negative, this does not show that the patient has not gonococci in the urethra, but leaves the dispute open until the lapse of time shall reconcile it.

PRINCIPLES GOVERNING THE TREATMENT OF NON-GONOCOCCIC CHRONIC URETHRITIS

The patient is slow to recognize the difference between a chronic urethritis due to gonococcus and one from which the gonococci have disappeared or in which they have never been present. But to the hygienist or to the physician the difference is of the last importance. For purposes of treatment it is essential, first of all, to establish the presence or absence of gonococci. Once we are sure these are *not* present (as, indeed, they are not in the majority of truly prolonged cases), we may proceed to the treatment of the lesions which, as we have said above, are of the essence of chronic urethritis, undisturbed by the presence of the gonococcus.

Lesions of chronic gonorrhea are usually multiple and complex. For purposes of analysis they may be divided into three types, respectively, the lesions of the mucous membrane, the lesions of the submucosa, and lesions of the glands.

Lesions of the Mucous Membrane.—The mucosa may be infiltrated, eroded, ulcerated or the seat of granulations.

Infiltration is interesting chiefly as affecting the submucosa, and will be dealt with in that connection.

Erosions and ulcerations are revealed by the urethroscope, usually at points in the anterior urethra where there is considerable infiltration. The treatment of them is that of the infiltration.

Exuberant granulations are not often seen in the anterior urethra, but the posterior urethroscope commonly discloses them on the floor of the urethra in the region of the verumontanum. They have often been described as polypi or papillomas, and are usually present in chronic posterior urethritis, seemingly as an index of the catarrhal condition of the glands emptying into the posterior urethra.

Lesions of the Submucosa.—Infiltration is the gonococcal lesion of the submucosa. It may extend to the surrounding tissue, and in an acute condition result in phlegmon, abscess and gangrene. Under ordinary circumstances of chronic urethritis, the infiltration causes redness and perhaps erosion or ulceration of the mucosa of the urethra, and destroys the elasticity of the anterior portion of the canal so that the bulbous bougie detects a hitch as it passes over the infiltrated region. Such infiltration, existing for years, finally results in scar formation. Let us remember, however, that though scar is the result of chronic infiltration, the infiltration may be considerable, extensive and extremely obstructive without the formation of any scar. Consider the difference between a so-called traumatic stricture and a gonorrheal stricture. The former is all scar, and by definition cannot be treated by sounds; the scar will not stretch. But the gonorrheal stricture contains relatively little scar, and consequently it can, as we say, be stretched; i. e., it can be softened by the massage of sounds if that massage is conducted with such gentleness as to excite the absorption of the infiltration. There is no more excuse for brutality in the passage of sounds than for brutality in the passage of catheters. There is no more advantage in tearing a stricture open with a sound than in breaking up the so-called adhesions in an inflamed joint. The inflammatory lesions in either case can be better managed by gentle manipulation; the cicatricial lesion cannot be cured by mere brutality.

Lesions of the Glands.—Certain practitioners especially interested in urethroscopy recognize and treat inflammatory lesions of the glands of the anterior urethra to their satisfaction through the urethroscope. It has not been my good fortune, however, either to note such lesions frequently, or to have any success with the treatment of them excepting as they form one feature of the infiltration of the surrounding mucous membrane. This infiltration naturally obstructs the ducts of the glands and causes retention of purulent secretion within them.

In the posterior urethra, however, the prostate and seminal vesicles form a special problem of drainage in complicated gland structures. The infiltration of their ducts causes retention on a grand scale which we treat by the familiar method of prostatic massage.

Many of you, I am sure, have asked yourselves what prostatic massage accomplishes. It empties from the prostate a secretion which the microscope shows to be more or less purulent. It empties this secretion apparently rather less efficiently than does an emission or a constipated movement of the bowels. It is beneficial to some patients, though often not nearly so beneficial as regular sexual intercourse. The necessity, social or hygienic, for prohibiting sexual intercourse to sufferers from chronic infections of the prostate is one of the reasons why many of them are so hard to cure. We put the internal sexual organs into the most unphysiologic situation possible. We endeavor to bring the internal genitals back to a normal condition by the occasional pressure of a finger introduced into the rectum.

The elements of the problem have been suggested—the social and hygienic ones, of course, take precedence over the dictates of physiology. Nevertheless, the incongruities of the situation should be recognized, and dealt with as honestly and intelligently as possible in each individual case.

Massage should usually be gentle, for the gland is by definition inflamed. Occasionally, however, more severe massage will succeed when the gentler pressure fails. Generally speaking, there is no need to rub the patient's prostate in a way that scandalizes his nerves.

Prostatic massage is preferably not repeated oftener than twice a week.

In the foregoing paragraphs what has been said of the prostate applies to the seminal vesicles.

TREATMENT OF NONGONOCOCCIC CHRONIC URETHRITIS

Let it be noted that the essential pathologic lesion of the chronically inflamed urethra is an infiltration of its submucosa. On this depend the ulcers and granulations of the mucous membrane as well as the retention of pus in the urethral glands, and from it results the scar which is stricture.

The essential treatment of chronic urethritis is therefore dilatation—dilatation which shall be made to simulate massage as nearly as possible—dilatation applied both to the anterior and to the posterior urethra so far as the inflammation affects both portions of the canal. Dilatation should not cause bleeding; for bleeding is evidence of laceration, laceration is the occasion of infiltration, and infiltration is the lesion that we are seeking to relieve.

Dilatation should not attempt to stretch scar tissue, because scar tissue cannot be stretched.

The anterior urethra may profitably be dilated to from 28 to 32 F.; the posterior urethra (by means of the Kollman dilator) to from 33 to 38 F. The intervals between treatments should be from five to ten days.

The application of injections and irrigations, however antiseptic, to the surface of the urethral mucosa can have but little effect on its pathologic processes. A mild urethral discharge may be controlled by a mild injection, but it will be noted that for this purpose astringent injections of zinc sulphate and similar substances are far more efficacious than are the antiseptics. An astringent that will produce an infinitesimal diminution in an infinitesimal urethral discharge will cheer the patient, though it will not materially change the lesion.

It is customary to use such antiseptics, following treatment by sounds and massage. They may be used with discretion. If the treatments are gentle, it is often quite as well not to introduce any antiseptics into the urethra; but when beginning with a patient, or if there is any possibility of a reaction following the treatment, an antiseptic which washes out the major number of bacteria and tends to diminish the vitality of others is worth while.

Massage of the prostate and seminal vesicles is the best substitute the physician can offer for the processes of nature, and has the added advantage of being conducted in a relatively calm spirit. The need of rubbing the prostate and seminal vesicles until the last pus cell has disappeared from them has never been clear to me. It is often possible after a short time to reduce the amount of pus from these organs to such an extent that clumps of pus cells are uncommon in the expressed secretion. When this state is reached, patients may be dismissed, to return for observation several months later. If conditions have grown no worse, they may be disregarded.

The urethroscopic treatment of granulations in the posterior urethra by the application of chemicals has

seemed to me most useful in cases that resist treatment by dilatation. But the urethroscopic treatment is not to be considered one of choice to replace dilatation—dilatation is always of the essence of the treatment of chronic urethritis.

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DUODENAL DIVERTICULUM WITH PYLORIC ULCER *

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The most recent contributions on the subject of duodenal diverticula are by Secher,¹ Basch,² Ritchie and McWhorter,³ and Siegrist.⁴ Secher reports the case of a diverticulum of the stomach found at necropsy, and one of the duodenum also discovered after death, the latter being situated near the papilla of Vater. The diverticulum found by Basch was at the beginning of the third part, while that described by Ritchie and McWhorter was in the first portion of the duodenum, and was further associated with a duodenal ulcer. The diverticulum of Siegrist, discovered at operation, was near the papilla of Vater, as was that of the first mentioned author. Siegrist quotes Linsenmayer, who states that "duodenal diverticula are found in two typical places: in 8 per cent. at the beginning of the duodenum and in 92 per cent. in the region of the papilla of Vater," and who also asserts that "the first are always congenital." The case here reported was like that of Ritchie and McWhorter, situated in the first part of the duodenum. In their search of the literature they could find reports of only seven such cases, as against ninety diverticula distributed in the second and third portions. This rarity makes the report of such cases of rather academic than clinical interest and importance, and it is further true that they may function normally, as shown in the present case. That applies, however, only to true diverticula, as opposed to the false variety.

REPORT OF CASE

History.—Nov. 6, 1917, L. B., a man, aged 32, entered the service of Dr. Frank J. Sladen in the Henry Ford Hospital, Detroit, complaining of pain in the stomach. His family history was negative. He had acquired syphilis in about 1909, and was given mercury for a year and then one intramuscular injection of arsphenamin. A blood Wassermann test a year before and also on his admission to the hospital was negative; likewise, spinal fluid Wassermann, cell count, Pandy and colloidal gold tests were negative. Finally, there were no clinical signs of syphilis. About the time of the syphilitic infection the patient was inclined to excessive alcoholism, but stopped drinking four years later. The present illness began three years before, with pains in the lower abdomen and obstinate constipation. After a short time epigastric distress appeared, with nausea, vomiting and pain, which was chiefly referred to the right lower abdominal quadrant and was related to meals. The symptoms increased steadily in frequency and severity up to the time of admission, when he was partially incapacitated for work. Except for very slight

* From the service of Dr. Frank J. Sladen, Department of Medicine, Henry Ford Hospital, Detroit.

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2. Basch, Seymour: Diverticula of the Duodenum, *Am. J. M. Sc.* 153: 833 (June) 1917.

3. Ritchie and McWhorter: Duodenal Diverticula, *Surg., Gynec. & Obst.* 25: 485 (Nov.) 1917.

4. Siegrist, Hans: A Contribution on the Case Reports of Duodenal Diverticula, *Cor.-Bl. f. Schweiz. Aertze* 49: 47 (Jan. 11) 1919.