an atonic state of the urethral membrane, is according to Ricord's formula, namely—to commence with two parts of rose-water to one of red wine, and to continue increasing the latter until pure wine can be used, unless the discharge cease meanwhile. Glycerine may be combined with any of the above formulæ, as may also morphine, although the latter is rarely of any service.

The substances just mentioned have been proved by long and general experience to be best adapted to the treatment of urethral inflammation. Three points must be remembered in regard to injections:

1. That the old false idea about burning out the disease is absurd, and that the aim must not be to use an injection as strong as can be borne, but, on the contrary, to use as weak a one as will do any good.

2. That, when a gleety discharge ceases under the employment of a given injection, the latter should be continued for at least ten days longer, and given up gradually.

3. That in certain cases the discharge becomes reduced to a minimum, but will not wholly cease. In these cases the injections are probably maintaining a condition of hypersecretion of urethral mucus, and their discontinuance will cause the discharge to cease.

Deep urethral injections may be performed by the surgeon, but they are rarely called for. From one to three times weekly is often enough

Fig. 22.—Bumstead's Deep Urethral Syringe.

to use them. The syringe of Bumstead (Fig. 22), or that of Bigelow (Fig. 23), is easily applied, especially Bigelow's, on account of an extra tube which indicates when the bladder is reached, so that, by withdraw-

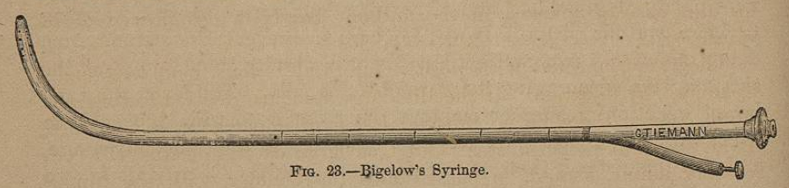

Fig. 23.—Bigelow's Syringe.

ing it a determined distance, great accuracy of injection may be attained, regarding particular localities of the urethra.

Any of the solutions already mentioned may be employed in deep urethral injection. The beak of the syringe is passed through the triangular ligament (there is no reference here to prostatic disease), and the injection made while the instrument is being slowly withdrawn. This plan occasionally succeeds where ordinary injections fail.

In a general way, it may be said of injections that they are among our best weapons for fighting gleety discharges, if used correctly, of a proper strength, and at the right time.

Like all good things, they may be abused. Any injection strong enough to bring blood may be the starting-point of stricture. Any injection, thrown too deeply into the canal, may light up epididymitis or cystitis of the vesical neck. No injection should cause actual pain. A sense of smarting and warmth, lasting a few minutes, is not objectionable.

The direct application of tannin bougies, made with glycerine, has lately been advocated. A much more accurate method is the use of a tanno-glycerine paste in the cups of the cupped sound (Fig. 130), applied directly to the spot whence the discharge comes. This expedient yields excellent results in very chronic cases, the patient having an altered patch of urethral membrane, thickened and congested.

Another style of injection, called isolating, highly praised by Caby,[1] is still occasionally resorted to. It consists in throwing in bismuth, or calamine, or chalk, suspended in a sticky fluid, or as soluble suppositories—the object being to coat over the walls of the urethra with one of these insoluble powders. They sometimes act effectively, but often cause a good deal of discomfort from the collection of little hard lumps of bismuth and mucus along the canal. The following is a good type of this style of injection:

℞. Bismuth. subnitratis, gr. x–xx.
Glycerini, mucil. acac., aquæ, āā ʒ ijss.
M. Shake thoroughly before using.

Milton is loud in praise of blistering the penis externally, combined with mild astringent injection; but this treatment is altogether too severe for general adoption. Electricity, both the continued and the induced currents, internally and externally applied, has been vaunted for the cure of gleet. In the authors' hands it has proved of no value.

Gleet, unconnected with positive urethral lesions, gets well under treatment by injection. If the discharge remains gleety a fortnight or more, even if there be no urethral lesion of importance, a well-oiled, blunt, smoothly-polished steel sound, as large as the meatus will comfortably admit, should be passed into the bladder, with the utmost gentleness and slowness, and withdrawn at once with the same deliberation and care. This simple operation, repeated every third or fourth day, will rarely fail to cure the discharge. The sensibility of the canal becomes blunted by contact with the instrument, its irritability overcome by the slight distention to which it is subjected, while the tonic effect of the cold metal is also probably a factor in producing the good

[1] "Nouveau Mode de Traitement de divers Affections génitaux chez l'Homme et chez la Femme par l'Emploie de Sous-nitrate de Bismuth." Thèse, Paris, 1858.

effect. A steel instrument is much better than a soft bougie. There is no object in leaving the instrument longer in the canal than it takes to pass it slowly into the bladder, and as slowly withdraw it. The instrument must fill without stretching the meatus. The meatus may be congenitally small, and this alone may keep up a discharge. In such a case a little pouch can be felt, with a bent probe, formed behind the lower commissure of the meatus. Such a condition may be promptly relieved by incising the meatus. This simple operation occasionally cures a gleet of long standing.

Finally, in regard to instruments, the greatest care and gentleness should be employed. Used too often or clumsily, they do harm by increasing the grade of inflammation, or possibly bringing on an attack of epididymitis. In the cases under consideration, no instrument should be reintroduced until all irritation and *temporary increase of discharge*, produced by its previous use, have subsided for twenty-four hours.

Where patches of urethral congestion keep up a discharge, they may be detected by passing a full-sized bulbous bougie into the bladder. When the head of the instrument reaches the altered spot, the patient will complain of slight pain, which will disappear as the bulbous head of the instrument passes on to the healthy urethra beyond. Any little thickening in the walls of the canal is recognized at the same time. Furthermore, if a patient with one of these patches makes water into a glass vessel, and the fluid be held up to the light, one or more thready filaments may be seen gradually sinking through the urine. If one of these is caught and placed under the microscope, it will be found to consist of pus-corpuscles adhering together; in other words, it is a soft scab, and indicates that a portion of urethra is not covered by healthy epithelium, but is abraded (not ulcerated), and covered by soft, round leucocytes. These cells are swept away by the torrent of urine, and rolled over and over in their passage along the canal, in this way becoming drawn out into the little thread-like shreds which come away at every emptying of the bladder. These shreds are always found in cases of forming stricture, in every stage of the complaint, coming most frequently from the distended urethra behind the stricture, and detected only in the first few ounces of urine voided.

When these signs of urethral lesion exist, the gentle use of the steel sound becomes the first requisite of treatment. The balsams may be discontinued, and injections become of secondary importance. Urethral hygiene (p. 40), and the gentle, persevering use of a full-sized conical steel sound, will effect a cure, and bring healthy epithelium upon the congested and abraded surface more surely than any other means.

The endoscope is of some service in treating obstinate cases, but its aid is very rarely required. Thompson's remark about its usefulness is a fair criticism: "If a man has a good and tolerably practised hand, with a fair share of intelligence, I do not think he will gain a great deal by the endoscope; and, if he has not, I think it will be of no use at all."[1] Yet the altered spots of urethral membrane can be very clearly seen through the endoscope, granulations can be detected where they exist, and local applications of considerable strength made, which could not be applied with safety by any other means. The expensive and complicated instruments of Desormeaux, Cruise, and modifications of the same, are but little if at all better than a simple straight urethral tube, blackened inside and furnished with an obturator. The tube known as Otis's urethral speculum answers well. All the illumination required for these tubes may be obtained by reflection from a concave mirror strapped to the forehead. For examining the deep urethra, however, the large instruments are decidedly preferable.

To make a thorough inspection, the tube should be introduced well into the membranous urethra, the obturator withdrawn, the oil and mucus wiped away from the membrane presenting at the bottom of the tube, and then, the illumination being brought to bear, each successive portion of membrane may be inspected as the tube is withdrawn. The healthy mucous membrane has a pale pink color, and contrasts strongly with congested spots which are of a vinous red without polish. Such spots can be plainly seen as they come across the end of the tube, and any granulations upon them are readily recognized by the practised eye. The topical remedy for granulations suggested by Desormeaux, and which can be very accurately applied through the tube by means of a little cotton twisted upon a long probe, is a solution of nitrate of silver of from ʒ ij to the ℥ j up to the saturated solution. The latter should be only used in the case of large granulations, and then is to be very sparingly applied. Iodine, sulphate of copper, tannin, carbolic acid, etc., used as local applications, give fair results. The advantages of treating by the endoscope are, that the spot to which an application has been made may be inspected from week to week, and the effect of treatment critically observed. This topical treatment is to be repeated at first twice a week, then weekly for several months. Success is pretty sure to attend the prolonged intelligent use of the endoscope, but it is only the most obstinate cases that require it.

SEQUELÆ OF GONORRHŒA.

Certain unusual sequelæ of gonorrhœa may be mentioned here before entering into a detail of its complications. After discharge has absolutely ceased, the patient is usually as well as he was before; but there are exceptions. Among the most frequent of these is pain on passing water, ranging from an itching up to an absolute burning; and this neurosis may last from a few months up to many years.

The pain may be confined to erections and ejaculations, the latter

[1] *Op. cit.*, p. 181.

depending upon some disturbance at the prostatic sinus. There may be urethral pains independent of erection or urination, sometimes severe in character—perhaps paroxysmal—and known as urethral neuralgia.[1] These different kinds of pains disappear, as a rule, in a few weeks or months. No treatment, except the observance of urethral hygiene, seems to be of much service. If they persist, there is probably some lesion of the canal, even although there be no discharge. Where there is no lesion, a resumpfion of the physiological exercise of the organ tends greatly to reduce the abnormal sensibility of the urethra. The judicious use of steel sounds at intervals, and the local employment of electricity, seem to hasten a cure. Where the trouble persists, a careful search should be made for stricture. The following case illustrates this necessity:

Case XIV.—An unmarried gentleman of twenty-two complains of "burning in the channel just where it enters the body." It comes on at 10 A. M., and continues more or less constantly throughout the day, except just after eating and when the attention is distracted by full and absorbing occupation. Five months previously he had gonorrhœa, for which he took injections so strong as to cause him "pain for hours afterward;" then he took "capsules," and got well in about a month. A month later, after drinking beer, he got a relapse, attended by "lumpy feelings" around the anus "like piles." This feeling was shortly followed by the "burning," the discharge having been arrested by capsules and injections, but the neuralgia continuing. He is troubled by sexual desires and frequent erections. Steel sounds had been passed by his physician without benefit. On exploration, the meatus admitted No. 15, but a bulbous bougie detected a linear stricture at three and a half inches, admitting only No. 13. This stricture had not been suspected. It proved very resilient, but the neuralgia got entirely well after dilatation. This patient had a curious reflex symptom—namely, distinct soreness of the mammæ, without structural change. This also got well as the urethra improved.

A condition of irritability of the neck of the bladder is sometimes left behind by gonorrhœa, attended by frequent desire to urinate, and sometimes a spasmodic action of the detrusor during micturition (neuralgia of the vesical neck). The urethra sometimes remains inelastic, causing a little dribbling. Both of the above sequelæ are overcome by hygiene and the steel sound.

Castelnau[2] mentions a singular condition of prostatic and urethral anæsthesia—the patient having no orgasm, and being unconscious of the passage of semen—left behind by gonorrhœa, and coinciding with an inflammatory engorgement of the urethra. The normal sensation returned after several months.

Various other unimportant functional troubles have been mentioned as sequelæ of gonorrhœa.

[1] The disease formerly known as "*dry gonorrhœa*" is simply urethral neuralgia, coming on alone without any antecedent gonorrhœa—the canal not being inflamed, nor the malady, in any sense, a gonorrhœa.

[2] "Observation de Blennorrhagie suivie de Douleurs et d'Abolition de la Sensation agréable pendant le Coit" (Ann. des Mal. de la Peau et de la Syph.), 1844.

CHAPTER IV.

COMPLICATIONS OF GONORRHŒA.

Folliculitis.—Inflammation of Lacuna Magna.—Cowperitis.—Peri-urethritis.—Adenitis.—Lymphitis.—Gonorrhœal Rheumatism; Hydrarthrosis, Inflammatory; affecting Sheaths of Tendons; Bursæ.—Diagnostic Table of Simple and Gonorrhœal Rheumatism.—Gonorrhœal Ophthalmia.—Gonorrhœal Conjunctivitis.—Diagnostic Table of Gonorrhœal Conjunctivitis and Gonorrhœal Ophthalmia.

Folliculitis.—During the acute stage of gonorrhœa, sometimes there appear along the urethra, especially in the region of the fossa navicularis, one or more small, round tumors, slighly sensitive to pressure, varying from the size of the head of a large pin to that of a pea. These tumors are cysts by occlusion of the mouths of the lacunæ of Morgagni. Inflammation seals the orifice of the follicle and the lacuna is converted into a cyst containing pus. As the latter continues to be produced, the cyst enlarges. The pain accompanying it is insignificant, and the little lump is detected by accident. It feels like a hard ball moving under the skin and attached by a pedicle. This pedicle is the obliterated neck and orifice of the follicle. The little tumor tends to remain stationary for some time, and then suddenly to enlarge, soften, involve the integument, open externally (very rarely into the urethra), and, after discharging, remain fistulous for a long time; not, however, communicating with the urethra. These tumors have been compared by Ch. Hardy,[1] who has described them very accurately, to wens of the scalp. The best treatment consists in incising the skin and enucleating the cyst entirely, or excising a considerable portion of its wall, allowing the wound to heal by granulation.

Another form of lacunal inflammation is where the lacuna magna in the roof of the urethra continues inflamed, perhaps after all the lining membrane of the urethra has returned to its normal condition. The mouth of this lacuna is too large to become obliterated, and the result is a gleety discharge, which tends to run on indefinitely. This condition may be relieved by introducing a fine director along the roof of the urethra until it is caught in the lacuna, and slitting open the pouch as recommended by Phillips.[2]

Cowperitis.—Inflammation in and around Cowper's glands is rare. It seems to occur only in connection with urethral inflammation. Gubler[3] has written exhaustively on the subject. Cowperitis rarely comes on before the third or fourth week of gonorrhœa. Sexual intercourse,

[1] "Mémoire sur les Abcès blennorrhagiques," Paris, 1864.

[2] "Maladies des Voies urinaires."

[3] "Des Glandes de Méry (vulgairement Glandes de Cowper), et de leurs Maladies chez l'Homme." Thèse, Paris, 1749.