No. 25 f. entered what appeared to be a false passage. High fever, with thrombosis of left femoral vein followed this examination, and no further mechanical treatment was undertaken until Sept. 26, when the deep stricture was found impassable to filiform bougies. The perineal fistula admitted a probe, which passed about an inch upward and backward toward the bladder. Sept. 28: Operation. Patient ætherized. Flexible bougie No. 5 f., entered the bladder with difficulty, encountering resistance in the perineum; meatus which admitted No. 25 f., incised, and with No. 22 f. strictures diagnosticated at 2½ and 4½ inches from meatus. These were cut with the dilating urethrotome to No. 37, *after which sound No.* 35 *passed without difficulty into the bladder*."

Another case, occurring in the service of Dr. Geo. A. Peters, and extracted from the records of the New York Hospital:

CASE III.—F. Whitehead, 33, April 20, 1878. Twelve years ago had gonorrhœa, followed by stricture. Relieved by bougies. No trouble until three years ago. Then gradual decrease in size and force of stream—spiral. Past year urinated only drop by drop. Before operation meatus admitted 18 f. to 3¼ inches; 14 f. passed through this to 4½ inches. Beyond that only filiform passed, with difficulty. Internal urethrotomy by Dr. Peters, April 26, 1878. Etherized. Meatus slit with bistoury. Urethra injected with olive oil and measured. Filiform passed into bladder, followed by Maisonneuve's director. Urethrotome (blade) with cutting capacity of 12 mm. passed, dividing only arterior stricture. As No. 25 f. would not pass the 4½ stricture, Maisonneuve again introduced. After which No. 25 F. passed down to 6 inches and stopped. Beyond this only No. 15 f. flexible passed.

Otis's urethrotome introduced, dilated to 40 mm., and anterior strictures divided, when No. 36 f. passed, without any difficulty into bladder, *showing that obstruction at* 6 *inches was only spasmodic and depended on strictures of large calibre, and anteriorly*."

Another case, this in my own practice:

CASE IV.—Mr. D. J., planter, aged 35, was referred to me June 19, 1877, by Drs. A. Y. P. Garnet and N. S. Lincoln, of Washington, with the following history. First and only specific urethritis in 1865; severe at the outset, but soon painless, and from that time has never been quite free from a urethral discharge. Two years after, [1867,] began to appreciate a lack of force in urination with dribbling after the act. In 1867–'68–'69 was in the railroad service, which aggravated his trouble. Nothing serious, however, until 1871, when after an enforced holding of his urine for several hours, he had an attack of retention. This, after eight hours of suffering, was reduced by the introduction of a catheter. No especial trouble again, except frequent urination, until in 1874, when, after overwork and neglect he had a second retention 12 hours—relieved by anodynes. Another a week subsequent, his physicians attemoted to pass catheter, but failed; bled him from the arm *ad deliquium*, when he urinated. After this retentions were frequent, accompanied by severe vesical tenesmus, which finally produced prolapsus of rectum, great pain in region of bladder and kidneys during attacks of retention, also severe pain in the eyes, from straining. Repeated and prolonged efforts, by various medical men to introduce a catheter, failed in every instance. Urination now every half hour and small in quantity, and inability to completely empty the bladder. This last *became much distended, and remained so*, notwithstanding frequent urination in small quantity. Suffered much from straining, in attempts to urinate, during subsequeni time, up to Feb., 1877, Although repeated trials had been made by various surgeons, no instrument had been passed into the bladder since 1871, and, for previous three years, bladder habitually distended; protuberant.

At this time, a surgeon proposed to dilate his stricture, which was supposed to be in the deep urethra. No. 14, steel sound, after gentle and prolonged efforts, every morning for three weeks, preceded by a hot hip bath, was finally passed into the bladder. About a pint of urine followed the withdrawal of the sound. To this

succeeded strong and painful twitchings of his limbs and severe pain in hips and over kidneys, also buttocks and thighs. This was followed, very soon, by a severe chill and fever and sweating. A similar attack of fever came on for four days succeeding, and he did not recover his usual health for five or six weeks. After this, any unusual fatigue brought on chills. May 19, 1877, he went to Washington, and came under the charge of Dr. Garnet. A careful attempt to introduce a small catheter failed. On the 22d, four days after, Dr. G. associated Dr. Lincoln with him, and the patient was put under the influence of chloroform and ether and careful, persistent, trials were made with a variety of instruments to enter the bladder, all of which were resisted. The bladder was then aspirated and over a quart of urine drawn off.

On the 31st, efforts under anæsthesia were again made, for three-quarters of an hour, with result as before. Bladder again aspirated, and about the same amount of urine drawn as before.

On the 5th of June another attempt under same conditions. Same result. On the 10th, again; three pints drawn off. On the 17th, same.

Thus all efforts which appeared judicious were made to enter the bladder, and the bladder was aspirated five times during the month. In the intervals the patient was out and able to take a little exercise, urinating every hour about a teaspoonful, sometimes with ease, at others with straining. Since August, 1876, has not been able to retain his urine when standing, and has worn a urinal habitually. Occasionally complete retention would occur, when, after application of hot cloths for a few hours, relief in the usual small degree would come. He left Washington for New York on the 20th of June, 1877, having been last aspirated on the 17th. During his railway journey he urinated with unusual ease and freedom, but had an attack of retention on his arrival in New York, which was as usual relieved by hot cloths. This was the history given to me by the patient. He was tall, spare, with an expression of habitual suffering and irritability. Examination showed a large penis, measuring 4¼ inches in circumference; meatus small and pouting; bladder protuberant and dull up to within an inch of the umbilicus. No enlargement of the prostate.

Examination with the urethrometer. This was carried into the bulbo-membranous junction, and turned without discomfort up to forty. Clear to this size for three inches, then required to be turned down to twenty-eight. Three bands of stricture of 28 were recognized within an inch. The urethra was then found free from that to within half an inch of the meatus, where it was twenty-five m.m. to the orifice. The history of the patient presented some points so similar to that of the case of chronic spasmodic stricture of seventeen years' duration (cited at page 470 et seq.), that I felt strongly inclined to consider the deep stricture, which was evidently in the membranous urethra, as spasmodic. I resolved to test this. I made no attempt to introduce an instrument into the bladder. Under the influence of the nitrous oxide gas, administerd by my associate, Dr. Bangs, I divided the meatus urinarius to 40 F., and in order to test the the influence of this procedure I did nothing else.

On the following morning, the patient announced that he had since the operation made his water more easily than for three years, but the amount was small, and the bladder was not perceptibly diminished in size. This result made me still more confident of the spasmodic nature of the deeper obstruction. On this day, June 23d, 3½ P.M., Mr. D. J. was placed fully under the influence of ether, and with the dilating urethrotome I divided the strictures, all of which were anterior to 4 inches (the smallest 25 m.) up to 42 m. I then passed what I supposed to be a 40 solid steel sound *with ease through the urethra and well into the bladder* simply by its own weight. I then passed a very large gum catheter and drew off two pints of urine. Dr. Bangs now called my attention to the fact that the first instrument passed was only 36. I then took No. 40 and passed it with perfect ease well into the bladder. Slight hæmorrhage followed the operation. No chill. At one o'clock A.M., Mr. J. got up and urinated in a large

stream, with complete ease, passing a full pint of urine and *completely emptying the bladder*.

From this time he had no further trouble, except the slight discomfort of urinating over the cut surface for a few days until it healed. At the end of a couple of weeks, he was to all appearances, and as he said, "as well as ever in his life." He remained practically well for nearly a year, when he returned with some difficulty of micturition, but had had no retention or pain.

Examination showed a recontraction of the meatus to 34, also two bands, one at 3½ and the other at 4 inches, also 34.

He was put under ether, and the recontractions fully divided. An attempt to pass a full-sized instrument was then made. No. 40 solid sound went easily to the bulbo-membranous junction, but was arrested there. No force was used. No. 36 was then tried in the same manner, gently and patiently. The same result both with and without a pressure in rectum. Then No. 30 was tried in the same way, then No. 20, then 10, finally down to fine filiform bougies in variety. This procedure occupied nearly an hour without success, when it was decided to make no further effort until healing of the wound had taken place, and all possible irritation from this source had ceased.

The patient passed a good night; no chill; urinated three times with ease. The stream gradually decreased in force, however, for the next five days, when on Sunday, April 28th, 1878, he called at my office. Urinated in my presence in a slow, hesitating stream, but without pain. Placing him in the recumbent position on a lounge, I attempted to pass a No. 5 filiform bougie. This, after a few minutes of gentle effort, slipped quickly and easily into the bladder, and then suddenly became *tightly hugged*. Recognizing this as a rare example of unmistakable spasmodic stricture, I at once sent for my distinguished surgical friend and neighbor, Dr. George A. Peters, to verify the correctness of my conclusions. Dr. Peters came, and appreciated the facts above stated, especially the distinct grasping of

the filiform bougie by the compressor urethræ muscles. Dr. P. withdrew the bougie with some difficulty. No farther procedure was instituted. On the following day, the patient complained of great nervous prostration, which, as he stated, came on soon after the withdrawal of the filiform the day previous. This, however, passed off during the day, and nothing worthy of note occurred until May 4th, when the wound of operation having healed, it was decided to anæsthetize the patient, and again attempt the passage of a sound. Dr. Bangs, my associate, and Drs. J. H. Swasey and W. T. Spencer were present. After bringing the patient to unconsciousness, although some spasmodic movement of the limbs was present, I attempted to pass a large sound. In this I failed. Smaller and smaller sizes were tried, until the small filiform, patiently used, was resisted. I then directed the patient to be put as thoroughly as possible under the influence of the anæsthetic. In about ten minutes, complete muscular relaxation took place for the first time. I then again took up the solid sound, No. 38, and passed it with ease well into the bladder. This was readily followed by No. 40. Urination with ease in full stream four hours after the passage of the instruments. Day following, urinating well; feeling well; temp. 101½. Record of May 13th says "Mr. J. feels well—vesical catarrh (from which he has been suffering for several weeks) declining. Makes his water readily in a full, strong stream every four or five hours." Before leaving for his home, Mr. J. was anxious to have another passage of the large instrument, and this was done without difficulty. It was followed by a severe urethral fever, however, which lasted for several days, prostrating him very much, but his urination was easy and natural, not oftener than once in five or six hours, and thoroughly emptying the bladder. He gradually improved in his general health, and left for Washington about the middle of May. About a week after, he wrote that he had had some return of his urinary difficulty, but was going South. A few months later, I received a letter from him commending a relative to my care. Since then,

although I have addressed a note of inquiry to him, I have not yet heard in regard to his condition.

The foregoing cases appear to me to prove, not only the reality of that form of chronic spasmodic stricture, which I have (from its analogy to *vaginismus*), venture to term "Urethrismus," but they also demonstrate its dependence upon anterior strictures, or even less prominent causes of irritation.

They demonstrate the fallacy of the claim that spasmodic stricture may be readily distinguished from organic stricture, and that the administration of ether necessarily causes the complete relaxation of reflex spasm.

LESSON LVII.

REFLEX IRRITATIONS THROUGHOUT THE GENITO-URINARY TRACT.

Reflex irritations now generally accepted as a cause of varied painful affections—Confirmation of this by eminent authorities—Incontinence of urine caused by contracted prepuce—Clinical cases in illustration—Incomplete erections, nocturnal emissions and various other troubles caused by phymosis—Dittels' case—Pitha's—Dr. Black's case of sympathetic irritation—Syncope caused by introduction of a catheter—Such accidents not rare—Dr. Brown-Sequard's case of supposed cerebral ramollissement caused by reflex irritation initiated by a contracted prepuce—Dr. Sayre's cases showing the pernicious influence of contracted prepuce—Cases by Sir Henry Thompson showing the influence of a contracted urethral orifice—Civiale's views on the influence of urethral contraction in producing varied reflex disturbances.

The influence of the irritation of peripheral nerves in producing centric disturbance in the spinal cord, which may thence be transmitted to distant parts of the animal economy (first claimed by Dr. Marshall Hall more than twenty years ago), has found corroboration in the testimony of every medical scientist since his time; and besides, so much clinical proof has been accumulated by the medical profession at large in support of this proposition that it is no longer a matter for discussion. Morbid reflex disturbances are now accepted as occupying an important place in the recital of human suffering.

Varied and grave disturbances, influencing the entire nervous system, are often ascertained to be dependent upon so apparently insignificant a cause as a decayed tooth, an indigestion, a simple erosion upon the cervix uteri, ceasing at once on the cessation of the cause. Dr. D. Campbell Black, of Glasgow, in his very interesting and valuable work on the renal and urinary organs, cites cases of retention of urine from reflex irritation, the result of an operation for hœmorrhoids. Trousseau has recorded cases of incontinence of urine