slightly hypertrophied prostate. Urethral suppositories were ordered, containing extract of belladonna and opium. The bowels were nearly regular.

On February 12th the bladder was washed out and gradually dilated. It would not tolerate more than one ounce and a half of urine. The urine was allowed to accumulate in the bladder by stopping the drainage-tube with a cork; when enough had accumulated, it was let out. During the night the water was let off four or five times, between which the patient enjoyed a good sleep.

On February 13th he had some voluntary micturition by the urethra. This was the first voluntary micturition in a year. He could hold three ounces and a half in the bladder. A No. 23 catheter was passed easily over the prostate into the bladder. The urine ran out at eight inches, but at seven and three-quarters the water stopped.

On February 16th, galvano-cautery applications were made to the prostate at different places; four flashes were given without pain. On February 18th there was improvement. The endoscope was used, and showed an almost healthy bladder.

On February 20th the galvano-cautery was applied to the prostate, three prolonged flashes. The patient felt the cautery, but no pain or inconvenience therefrom. On March 2nd I had a consultation with Dr. Hutchison, who approved the treatment and mapped out the boundaries of an enlarged prostate. The galvano-cautery was repeated. On March 9th and 13th two more galvano-cautery applications were made to prostate. The patient discontinued the treatment. He was improving steadily, and I knew of no reason for the discontinuance. On April 3rd, 1886, he went to Brooklyn Hospital, where Dr. Hutchison performed perineal section and prostatotomy. The patient was on the operating-table about half an hour. Two hours after the operation he began to bleed quite freely, and was in great pain, and required morphine.

On April 4th he passed a very restless night, having a great many spasmodic contractions of the bladder. The bladder was washed with borax solution and a large rubber tube was inserted, but it did not seem to work very well, much of the urine coming through the old opening.

April 5th. He continued to have very violent contractions, occurring every half-hour, and not controlled by morphine. Temperature 103°. The appetite was poor.

On April 19th the patient was much worse, delirious during the night, face flushed, perspired very freely, pulse weak and rapid; the hyosciamus was stopped.

On April 20th he was not quite so delirious, the spasms were less frequent, but the general condition not so good.

On April 24th he continued to improve, the spasms were very infrequent and not severe. Most of the urine passed through the tube.

May 24th. The tube was removed altogether, and the urine was allowed to drain away through the lower opening. The spasms were less, and the patient felt much better.

June 1st. Commenced to-day to draw the urine every two to three hours through the lower opening; the suppositories were continued.

June 2nd. The above plan worked admirably, the patient retained all the urine and nothing drained away either above or below. The catheter had to be passed every two and a half to three hours, the suppositories were continued.

June 4th. No urine had passed through the upper opening since the last plan was adopted. The urine which was drawn was very clear, and the cystitis and the spasms had entirely subsided.

June 5th. The patient got up to-day for the first time, and felt first-rate in every way.

From this time the patient continued to improve steadily. He passed urine through the natural channel on June 17th without inconvenience, some escaping through the perineal incision.

July 1st. The wound had entirely closed. He remained here till July 13th, when he took his discharge.

For the above record from the Brooklyn Hospital I am indebted to Dr. Raynor, the house-surgeon of the hospital.

August 19th, 1887.—Dr. Breswith, who assisted Dr. J. C. Hutchison in the operation, kindly informed me that it consisted in external median prostatotomy. The prostate was incised in the median line, but no portion of it was removed. The patient wore a large silver tube for several weeks until the upper opening left from the suprapubic operation was closed.

I have further information up to date from the son of the patient, as well as from his family physician, that he has enjoyed pretty good health since.

This case illustrates three points: 1. That prostatotomy by perineal section was a success, the patient remaining well; 2. That my first

method of treatment by the galvano-cautery sound was a success, and devoid of any danger, as was proved by the subsequent operation; and 3. That the suprapubic operation is not dangerous, as was formerly believed.

The next question to be considered is, which operation is better for our purpose, perineal section or the suprapubic? Several contributions considering these points have lately been added to our literature, and the latter operation has been much improved and simplified. According to Dr. Dennis's statistics (*Exploration of the Bladder by the Suprapubic Method*, by F. S. Dennis, M.D., *Journal American Medical Association*, May 28th, 1887, p. 604). The mortality since 1879 has been reduced from 30 to 9 per cent. in cases of the largest stones. There is less danger if the operation be simply prostatotomy, than for large stones, and with antiseptic precautions there is every reason to believe that the danger may be still further reduced by galvano-caustic prostatotomy.

The foregoing shows a decided progress in prostatotomy, and I believe I am justified in regarding galvano-caustic prostatotomy by the suprapubic method a further advance, for which I propose the following *modus operandi*. The rectum should be prepared and the rubber water-bag introduced, which is dilated with sufficient water to bring the bladder upwards and forwards. The bladder may be injected, but in most cases this will be impossible, as the operation is performed when the urethra is impassable. The opening in the abdomen is made in the usual way, through the linea alba, and avoiding the peritoneum. When the bladder is reached, sutures should be introduced to be used as retractors to avoid inflammation. As the bladder could not have been emptied before, the urine is now drawn off by a trocar and cannula, and then through the cannula the bladder is well washed out and disinfected. Then the bladder is opened, and the prostatotomy performed either by the galvano-cautery sling or burner. Drainage is established, and a tube introduced for after-treatment and washing out of the bladder to combat cystitis. Further details of the operation are omitted, as such can be found in recent articles on the subject of suprapubic cystotomy, etc.

The advantages of this operation must be considered in two parts: 1st, suprapubic method over perineal section; and secondly, galvano-cautery in preference to the knife or scissors.

I. The advantages of the suprapubic operation above the perineal section are:—

1. The ducts and ureters are not wounded.
2. Perineal fistula is prevented.
3. The operator sees what he is doing, and does not work in the dark.
4. The after-treatment is easier, and cystitis can be better combated.

The former drawbacks in the suprapubic operation are now much reduced, and with care the peritoneum will not be wounded nor infiltration allowed, and antiseptic precautions will prevent sepsis.

II. The advantages of galvano-cautery above the knife are: 1. That it avoids hæmorrhage, both primary and secondary; 2. It leaves no raw surface exposed; 3. It heals better; and 4. Avoids septiciæmia.

The statement of some reporters that in prostatotomy with the knife bleeding does not take place, cannot be accepted, as the history of cases shows that primary as well as secondary hæmorrhage does occur, both of which are entirely avoided by galvano-cautery.

Such an operation may be decided upon according to circumstances, but is imperative when the patient's death is certain without it. This operation gives him at least 91 per cent. of chances for a new lease of life.

THE TREATMENT OF STRICTURE OF THE URETHRA, AND URINARY PENILE AND SCROTAL FISTULÆ BY ELECTROLYSIS.

By EDWIN MORTON, M.B., C.M. EDIN.,
Resident Medical Officer, Newark Town and District Hospital.

My attention was first drawn to this subject by the very instructive papers of Dr. Steavenson and Mr. Bruce Clarke, read before the annual meeting of the British Medical Association at Brighton in 1886, and reported in the *JOURNAL* for November 27th of last year. Owing to the great kindness of these gentlemen, I was shown over the electrical department of St. Bartholomew's Hospital, and had the process demonstrated to me.

CASE.—P. G. shoemaker, aged 46, had always been healthy until

June 1st, 1886, when he was treated for cystitis. In a short time abscesses in the perineum, scrotum, and penis appeared.

He was admitted as an in-patient to the Newark Hospital on September 2nd, and was treated with "fixation of catheter" and "washing out the bladder with warm boracic lotion." He was discharged September 10th, 1886, feeling much better.

On October 12th he was readmitted, suffering from a large perineal abscess, which was opened on October 13th. He was treated by fixation of a catheter and washing out the bladder as before, and was discharged on November 4th. He came at intervals as an out-patient to have the bladder washed out and the catheter cleaned until the latter end of November, when he found that he could not pass the catheter, and that the urine, instead of coming down the urethra, escaped in three places, namely, scrotum, perineum, and penis, at the sites of the abscesses above referred to. A catheter was passed after some difficulty, and fixed in the bladder.

On January 6th, 1887, he was again admitted into the hospital with five fistulae, one on either side of the penis, two in the raphe of the scrotum, one in the perineum. He improved slightly under catheterism and washing out the bladder, and was discharged on March 15th. On leaving the hospital, the penis and scrotum were very much indurated owing to the callous state of the fistulae, and the patient expressed himself as feeling "matted together."

On April 18th I commenced electrolysis; the bougie electrode (No. 7) attached to the negative pole was passed down the urethra for about three inches, where a stricture was encountered; the pad attached to the positive pole was applied to the inner side of the thigh and abdomen, being moved from time to time. No pressure was used, the bougie simply resting on the stricture; after five or six minutes the bougie glided through the constricting band; no pain was caused. Another stricture in the bulbous portion was encountered, but further treatment was discontinued for that day. The strength of the current employed was from 8 to 9 milliamperes.

April 21st. The electro-bougie passed easily down to the bulbous portion of the urethra, where the last-mentioned stricture was felt. After five or six minutes' application, the bougie glided into the bladder.

April 23rd. The Bougie again passed into the bladder.

April 25th. I examined him again, and found that the discharge from the fistulae had lessened very much, and that a hard substance about the size of a large almond on the side of the penis had rapidly decreased in size since the electrolysis had been applied (this was an inflammatory exudation, the remains of an old abscess track). The patient said the parts felt "much looser."

Encouraged by this absorptive action set up, I continued to pass the bougie with the idea of removing the induration in the penis and scrotum. By passing the electro-bougie down the urethra attached to the negative pole, and applying a sponge connected with the positive pole to the external orifices of the fistulae, I thus passed the current from one end of the sinuses to the other. This had a most striking effect, causing the discharge to lessen very considerably, and at the same time removing a great deal of the induration.

April 28th. The electrolysis was again applied.

April 29th. He again presented himself. A current of 12 milliamperes was employed, which, however, proved too strong, as it set up slight inflammation in the scrotum and penis, which, however, subsided rapidly on the application of evaporating lotion.

The next application was made on May 5th, and in a few days all the fistulae had completely healed up, and scarcely any induration remained.

For a few weeks he drew off his urine with a soft catheter. He now passes it in the usual way.

What I consider the most interesting feature of the case is the great absorptive action of electrolysis in inflammatory thickening and induration. The exact method of its action is disputed; my own opinion is that it acts through the trophic nerves, and sets up an increased vital action in the tissues.

In conclusion, I have to thank Mr. R. T. Matterson (the surgeon on duty) for his great kindness in putting the patient under my care.

NEUROLOGY AND ALIENISM AT THE WESTMINSTER HOSPITAL.—In the approaching winter session Dr. Mercier will deliver at the Westminster Hospital Medical School, a course of lectures on Neurology and Alienism. The course, which will be post-graduate in character, will include a review of the general functions of the nervous system, setting forth the nature and varieties of co-ordination, inhibition, etc., an account of the manner in which conduct is affected by the action of the higher nerve centres, and a description of the ways in which the mind may become disordered. The lectures will be given at four o'clock on Friday afternoons from October to Christmas.

COLLINSONIA CANADENSIS.

Read before the Section of Therapeutics of the International Medical Congress.

By JOHN V. SHOEMAKER, A.M., M.D., Philadelphia.

COLLINSONIA Canadensis, commonly known as "stone root" or "[knob root," is one of the most valuable of indigenous American [medicinal plants. It is widely distributed, being found in richly-wooded soils from April to October in all sections of the United States. It possesses a rank aromatic odour, and is hot and somewhat pungent to the taste. Its principal medicinal constituent appears to be a volatile oil, which is driven off by boiling or drying.

All parts of the plant may be used in medicine; but the root is the most powerful, and the portion usually employed. As it yields its virtues to water and alcohol, it may be administered in the form of a powder, or as the tincture, the fluid extract, or the infusion. The dose of the powdered root varies from 10 to 60 grains; that of the tincture from 20 drops to 2 drachms; the fluid extract from 15 minims to a drachm; the infusion from 1 to 4 ounces.

The physiological action of *collinsonia* has not been accurately studied. Small doses do not appear to produce any effect upon healthy persons, except a sensation of warmth in the stomach and bowels; large doses produce diaphoresis and nausea, followed in some cases by repeated but painless vomiting.

Collinsonia is highly esteemed in many sections of the country as a domestic remedy for gravel and other urinary affections. Clinical observation indicates that its power is not limited by any means to this class of disorders. It appears to be especially valuable as a sedative and anti-spasmodic. It is also possessed of considerable astringent and tonic properties. The popular belief in its efficacy in promoting the expulsion of urinary calculi is well founded. It relaxes the spasm of the ureters or of the urethra, and, by increasing the flow of urine and by lessening the sensitiveness of the genito-urinary membrane, facilitates the expulsion of small concretions. When they are of large size, *collinsonia* is powerless to either dissolve or expel them; but it will alleviate the sufferings of the patient by diminishing the irritability of the bladder and urinary canal until complete relief is afforded by surgical methods.

Acute cystitis can be more quickly relieved by *collinsonia* combined with aconite and morphia than by the administration of any other remedial agents. In two cases of this painful affection treated by me during the last four months in this manner, the patients were free from pain and fever on the fourth day, and discharged cured, one on the eighth and the other on the eleventh day. Cases previously treated without *collinsonia* invariably lingered from two to three weeks, and suffered for six or eight days from pain or vesical tenesmus.

I have not had an opportunity to try this remedy in chronic cystitis; but, reasoning from analogy, it should be similarly efficacious in that tedious and troublesome affection. Incontinence of urine in children, due to spasmodic contraction of the bladder, can be permanently relieved by the administration of one drachm of the tincture of *collinsonia* after supper and at bedtime for several nights in succession.

Nervous individuals, who may or may not have suffered from gonorrhoea, not infrequently complain that, one or two minutes after having urinated and readjusted their clothing, several drops of urine will involuntarily ooze out, staining their clothing and producing an unpleasant odour, which they imagine everyone around them can perceive. This trivial but annoying affection is due to hyperæsthesia of the prostatic urethra or of the neck of the bladder, and can be effectually removed by the persistent use of the fluid extract of *collinsonia* in 20 drop doses four times a day. In chronic gonorrhoea, when cupaiba cubebs and oil of sandalwood have failed to arrest the discharge, or have been rejected by the patient's stomach, drachm doses of the fluid extract of *collinsonia* given every four hours will not infrequently effect a cure. Leucorrhoea and prostaticorrhoea may be relieved or cured in the same manner.

Constipation, hæmorrhoids, rectal neuralgia, and vague pelvic or abdominal symptoms are due more frequently than is generally supposed to spasm of the sphincter ani. Dr. J. M. Matthews, of Louisville, Kentucky, has shown that prompt relief can be obtained in such cases from division or forcible dilation of the refractory muscle. My experience, though limited to three cases, leads me to believe that the persevering employment every night of suppositories containing from