morning by a bath containing some dried carbonate of soda; and she was directed to take five drops of Donovan's solution (liquor arsenici et hydrargyri iodide) twice daily in a glass of water after meals. The diet was ordered to be vegetable and fatty. In ten days, the scales were completely removed, the mother remarking that the lotion seemed to dissolve them. The alkaline baths cleansed the skin, leaving faint reddish colorations indicating where the patches had been.

I saw her several months later, when the disease had not recurred; but it remains to be seen whether the cure is permanent or not.

ON THE USE OF GOULEY'S TUNNELLED INSTRUMENTS IN THE TREATMENT OF TIGHT STRICTURES OF THE URETHRA.

By REGINALD HARRISON, F.R.C.S.,
Surgeon to the Liverpool Royal Infirmary.

At the last meeting of the Lancashire and Cheshire Branch, I advocated the more general employment of Gouley's tunnelled bougies in the treatment of tight strictures of the urethra. I have recently had under treatment, in my wards at the Liverpool Royal Infirmary, three cases which well illustrate the observations I then made as to the great service these instruments were capable of rendering.

CASE I.—On June 27th, 1878, J. P., aged 27, was admitted suffering from stricture of several years' duration. On this, as well as on a previous occasion, it was found necessary by my house-surgeon, Mr. Hodgson, to tap the bladder above the pubes with the aspirator. This gave immediate relief. Two days after his admission, he again had retention whilst I happened to be in the Infirmary. I succeeded in passing one of the finest filiform bougies, and upon this a tunnelled catheter, which was retained for some hours; from this date, dilatation upon the same principle was gradually commenced, the size of the tunnelled instrument being increased from time to time until a No. 9 ordinary bougie passed easily, when the patient left the hospital.

CASE II.—J. W., aged 60, was admitted under my care on June 12th, 1878. Thirty years previously, he had a fall on his perinaeum, rupturing his urethra, for which perineal section was successfully performed by Dr. Evans of Belper. Unfortunately, the patient does not appear to have followed up the treatment of his own case by that regular introduction of bougies which in all cases of traumatic stricture is absolutely necessary, and occasional attacks of retention were the natural consequence. As I expected, I found a very tight stricture, which would only admit a filiform bougie. Upon this a tunnelled bougie was passed, and dilatation continued until a Holt's instrument could be introduced. On several subsequent occasions, I passed Holt's instrument, using it as a dilator on the principle of a glove-stretcher; by these means, the dimensions of the urethra were soon enlarged, and the patient was able to leave the Infirmary, passing urine in a good stream.

CASE III.—W. J., aged 42, was admitted on July 5th, 1878, suffering from retention of urine, which had existed almost completely for a week, it having been found impossible to pass a catheter. On admission, I could only get into the bladder the finest filiform bougie, upon which a catheter was passed. The urine was most offensive, and cystitis was present. Rapid dilatation was employed until a catheter was passed sufficiently large to allow of the bladder being washed out. In addition to the cystitis, there was a large suppurating pouch behind the stricture, with extensive kidney-disease. The condition of this patient illustrated the consequences which may arise where a stricture of the urethra is allowed to remain untreated. He gradually sank with symptoms of uremia, and died on July 14th. A *post mortem* examination showed what had been predicted—viz., a suppurating pouch behind what had been a very tight and extensive stricture, cystitis, and suppurative nephritis.

In commenting upon my remarks, Mr. Lund drew attention to an objection that can be raised to the use of these instruments—viz., that, on passing the metallic bougie along the whalebone guide, unless care be taken, the bougie is apt, on reaching the stricture, to double upon the guide, and then, if force be exercised, a false route may unintentionally be made. Short of failing to introduce the guide, this is the only accident that is likely to occur in the use of these instruments. It does not, in my opinion, detract from their efficacy, inasmuch as I can hardly imagine any surgical instrument being made without requiring in its use that skill and knowledge which can only be acquired by experience and observation. I admit the propriety of Mr. Lund's comment, and record it as a point to be remembered when using these instruments.

VACCINATION.*

By CHARLES E. STEELE, M.R.C.S.E.

VACCINATION is the term used to designate the process by which a disease derived from the cow, called "Variola Vaccinia," is introduced into the human subject as a protection against small-pox. Before the discovery of vaccination, namely, until the close of last century, small-pox was by far the most formidable and fatal of all diseases that afflicted mankind. Macaulay, the historian, describes it as "the most terrible of all the ministers of death. The havoc of the plague," he says, "had been far more rapid; but the plague had visited our shores only once or twice within living memory, but the small-pox was always present, filling the churchyards with corpses, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover."

In England, the annual deaths averaged about three thousand out of every million, a death-rate which, with the present population, would give an average of more than six thousand deaths a year. Its effects on those whose lives it spared were so serious, that we are told that two-thirds of the applicants for relief at the Hospital for the Indigent Blind owed their loss of sight to small-pox. The writings of physicians of that time show that it was frequently followed by deafness, and, in constitutions disposed to scrofula, by glandular swellings, obstinate ulcerations, and other evidences of the development of that disease.

An attempt was made, early in the last century, to mitigate the ravages of the disease by the practice of inoculation, which was introduced into England, in 1721, by Lady Wortley Montagu. The process consisted of introducing the disease into the system artificially, by rubbing the matter of small-pox into the skin, which had been previously pricked or scratched. The advantage which this method claimed for itself was, that the disease was contracted in a much milder and more tractable form than when it entered the system in the ordinary way, by breathing the infected atmosphere. But although the advantages which the individual derived from inoculation were so great, there was one serious and fatal drawback to its use; and this was that its effects on the general population were most disastrous, for, the disease produced by inoculation being just as contagious as natural small-pox, it was found to multiply the foci of contagion. Hence, the general mortality from small-pox, after the practice of inoculation had become diffused, instead of being diminished, was considerably greater than it had been before that practice was known. "However beneficial," say the Royal College of Physicians (London), in their report on vaccination, "the inoculation of the small-pox may have been to individuals, it appears to have kept up a constant source of contagion, which has been the means of increasing the number of deaths by what is called the natural disease. It cannot be doubted that this mischief has been extended by the inconsiderate manner in which great numbers of persons, ever since the introduction of vaccination, are still every year inoculated with the small-pox and afterwards required to attend two or three times a week at the places of inoculation, through every stage of their illness."

Such was the state of things when, towards the close of the last century, Jenner made known to the world that he had discovered and matured a process by which persons might be protected against small-pox, without any risk of infecting others; this discovery being what we now know as vaccination. When apprenticed to a surgeon in Gloucestershire, Jenner had observed that, in that county, where cow-pox was frequently met with among the dairies and where the milkers' hands were continually getting accidentally infected from sores on the cows' teats, the notion was widely diffused that such as had been thus infected were insusceptible of small-pox. This observation led him to make investigations into the subject; and, after pursuing his inquiries for many years, he conceived the idea that not only might the cow-pox be given at will to man by the process of inoculation from the cow, wherever opportunity offered, but that it might be transferred and continued by that process from one human subject to another, and that, in this way, protection against small-pox might be imparted to mankind in perpetuity. He believed that vaccination conferred upon individuals exactly the same degree of protection (neither more nor less) as small-pox itself; or, as he stated it in his own words: "Duly and efficiently performed, it will protect the constitution from subsequent attacks of small-pox as much as that disease itself will. I never expected it would do more; and it will not, I believe, do less." In fact, he believed that the human small-pox and the vaccine disease were products of the

* Read before the Liverpool Royal Infirmary Debating Society.