the chest or abdomen, and no sign of fluid in either. Neither tenderness nor swelling could be made out in the kidney regions, and there was no oedema anywhere apart from the puffiness of the face. The urine contained a considerable cloud of albumin, and was of a strong colour. The patient had no photophobia, or double vision, or squint, and his mentality was practically normal except for tardiness. While lying down he could lift his legs to any position, and was able to turn over quite well, and to support himself half recumbent on his right side while micturating. He was also able to stand up when supported on one side but seemed very nervous about it. The knee-jerks were slightly less brisk than normal; there was marked tenderness of both calves on being grasped moderately firmly, as in alcoholic neuritis, but no evidence of numbness or anaesthesia. On the possibility of the case being cerebro-spinal meningitis the medical officer examined for Kernig's sign in the usual way by trying to fully extend the leg on the thigh after first bending the thigh to a right angle with the trunk. On neither side could the leg be completely extended owing to rigidity of the calf muscles and intense pain produced in them. According to the patient's own statement, no pain was produced in the muscles of the back of the thigh as is described in a typical Kernig's sign.

The patient was removed, with a temporary diagnosis of possible acute nephritis with neuritis of the legs, to the field ambulance, where the medical officer, at 4 p.m., found the temperature to be 100.8° F. The medical officer agreed with the possible diagnosis of acute nephritis, and the subsequent watching of the case gave neither he nor his colleagues any reason to change their opinion up to the time (forty hours later) when the patient was transferred to the motor conveyance. He was given calomel gr. iv, aspirin gr. x, and a slight diet of fluids. The temperature at 10 p.m. was 101.4° F., and the cheeks were flushed. During the next day the temperature, taken every four hours, was 100.8° F., 101.4° F., 101.3° F., 99.4° F. About 6 a.m. the patient vomited, and then gradually became quite unconscious and developed fits. At 10 a.m. the medical officer found him very restless, struggling convulsively, and unconscious. His condition was such as could be explained by uraemia. The face had now become pale as well as puffy, and there was slight oedema of the ankles; purpuric spots had developed on the forearms and lower limbs. The reflexes were normal. The pulse was rapid, but not of high tension. He was ordered hot packs, 1 pint saline per rectum every four hours, and a dose of pilocarpin gr. ½.

By 8 p.m. the patient's general condition had improved a good deal, and he had ceased struggling. There was no definite head retraction. As no urine had been passed since admission a catheter was used, and 4 ounces of urine were withdrawn; it was almost solid with albumin on boiling. The treatment was continued as before, with caffeine citrate gr. vi every four hours in addition, and another dose of pilocarpin gr. ½.

On the morning of the third day the temperature was 100.2° F., and pulse 68. His general condition had further improved, and he had recovered consciousness to the extent that he would protrude his tongue on loud demand; 3½ ounces of urine were withdrawn by catheter, making a total of 7½ ounces for over two and a half days. A spinal puncture two or three hours later revealed cerebro-spinal meningitis.

Points of interest in the case are the early deafness and paresis of the legs, with exceptional type of Kernig's sign and marked tenderness of the calves; the marked puffiness of the face, the marked urinary changes, and the improvement under treatment for acute nephritis.

ACUTE GONORRHOEA TREATED BY ELECTROLYSIS.

By CHARLES RUSS, M.B.LOND., M.R.C.S.ENG.

ON account of the prevalence of gonorrhoea in the military Continental hospitals I have been requested to publish this article. Before doing so it was my intention to complete the treatment of 100 cases, but in order that its advantages might be available for the allied forces I bring forward a study of 28 private and hospital cases of gonorrhoea under my care treated by electrolysis.

Hitherto the treatment of acute gonorrhoea has been unsatisfactory and that of chronic gonorrhoea more so. Remembering that chronic cases were once acute I decided to work at the disease in its early stage. If the disease can be promptly cured we shall see few (if any) of the depressing pictures which occur so often in the chronic stages. I have already published sufficient on the treatment of suppuration by electrolysis,¹ and shall therefore avoid repetition of the experimental and other work on which its principles are founded. During 1914, by the courtesy and interest of Mr. J. E. Lane, I had access to the patients in the wards of the Lock Hospital, Dean Street, W. Patients are only warded if they suffer from some complication of gonorrhoea—for example, arthritis,

ophthalmia, epididymitis—which hinders their occupation. After an encouraging study of some of those cases, all chronic and with complications, I decided, as above-mentioned, to deal next with the acute disease. During the last few months the out-patients' staff have favoured me with uncomplicated cases of acute gonorrhoea—the discharge not having existed more than fourteen days—and I have treated these patients in an annexe of the hospital out-patient department.

The Method.

The patient is made to retain urine for a few hours and the rate of discharge is visible on a disc of cotton-wool retained within the prepuce. A Gram-stained smear is made of the discharge at the outset of the treatment. The patient is directed to pass about half of the urine he is retaining, and keep the rest back. This preliminary urination washes the urethra from behind and is the only lavage I employ. He then reclines on the couch and a platinized catheter is lubricated and passed gently down to the compressor urethrae. This catheter is quite smooth, has numerous perforations, and it is furnished with a stylet of platinum wire and a rubber collar which just enters the meatus. I also use rubber perforated catheters. A lint-covered pad lined by a flexible metallic core is wrung out in warm saline and applied to the perineum, scrotum, and root of the penis. A 2 per cent. solution of sodium iodide is then gently injected into the catheter. The rubber collar prevents its flowing away between the instrument and the urethra. The pad is connected to the negative, and the stylet (within the catheter) to the positive pole of the battery. A current of one to two milliamperes is passed for twenty-five minutes and the catheter is kept full of the solution from time to time by means of a syringe. The current being turned off, the catheter is withdrawn and placed in a glass of water. After the first few treatments the perforations in the catheter will be seen choked with masses of yellowish muco-pus which are laden with gonococci and these have been drawn from the urethra. On shaking the catheter in the water, most of these masses become detached from the instrument and soon settle at the bottom of the vessel. The patient now passes the rest of the urine, and similar masses of muco-pus will be seen in it. As the patient progresses this harvest diminishes, and when the discharge has ceased there is nothing visible in the perforations at the end of such treatment.

I have applied this treatment every day to these cases of acute gonorrhoea, and the signs of progress are: (1) The abolition of the scalding during urination. (2) Reduction and disappearance of the discharge. The amount of the discharge can be visibly measured by comparison of the patient's disc of wool from day to day, provided the number of hours' abstinence from urination is the same. When the discharge has ceased the battery is applied every other day, and after three to six more applications the urine is free from purulent threads. The treatment is painless, and apparently produces no bad effects. Provided the patient receives this treatment whilst avoiding alcohol and other abuse, I expect to cure him in three to four weeks. The present prospect is that this period will become shorter after more extended application.

In comparing this with other treatments I have noticed the following advantages:

1. Its effect is more certain than by other methods.
2. After arrest of the discharge, the threads and flakes disappear more rapidly from the urine.
3. There is marked absence of complications.
4. It is a powerful controller of gonorrhoea, to be administered by qualified experts. This is a desirable contrast to the casual or over-zealous self-administration of some treatments which is so frequently permitted in this disease.

REFERENCE.

¹ Royal Society's *Proceedings*, 1909; *Lancet*, 1909; *Lancet*, 1914 (February and October).

M. LOUTREUIL, a French engineer, has left £284,000 for the promotion of the advancement of science. The sum is distributed as follows: The Académie des Sciences, £140,000; the University of Paris, "in aid of scientific work in every direction," £100,000; to the fund for scientific research, £40,000; the Pasteur Institute, £4,000.