remedial exercises, and I can advocate this as a most valuable accessory to an electrotherapy department.

We were most interested in the many cases of injured main nerves sent in either for diagnosis or for treatment after operation. A casual census one day showed no less than 175 such cases under care at the same time. The method of diagnosis evolved and the results of treatment are given in a paper by myself and Capt. A. L. Home, which is now decently buried in the *Journal of the R.A.M.C.* (December, 1919). Altogether one finished this experience with a profound belief in the efficacy of the treatment in suitable cases, and not the least part of the value of an establishment such as we had at Summerdown was its contribution towards the happiness of the camp as a whole. The patients felt that something concrete was being done for them and co-operated in their treatment with interest and enthusiasm.—I am, etc.,

Cheltenham, Sept. 17. J. S. KELLETT SMITH.

Treatment of Nocturnal Incontinence

SIR,—I was interested in the report by Professor A. Rendle Short (*Journal,* September 9, p. 580) on his four cases of nocturnal incontinence, chiefly because it supports the theory that enuresis is associated with a pathological state—however trivial it may be—which is situated in the posterior urethra. I incline to this view as a result of observations I have made on several hundreds of enuresis cases during the past twelve years at the Children's Hospital with which I am associated. Like Professor Rendle Short, I also have had gratifying results by treating the posterior urethra in the male, and I hasten to add that equal success was obtained by the same means in the female.

My colleague from Bristol makes the suggestion that an examination of the posterior urethra might reveal a pathological condition here; such an investigation actually does show this state of affairs. If one of these children is cystoscoped in the lithotomy position usually a completely healthy state of the bladder is to be noted until the internal urinary meatus is closely inspected, where, as a rule, mild oedema is found to exist; a little experience is required to recognize this. It is one of the fortunate circumstances in cystoscoping children of either sex in the lithotomy position that a good view is always obtainable of the whole floor of the posterior urethra; and in these particular cases a close scrutiny of this part invariably reveals a mild inflammatory change, and this generally in spite of a report that the urine is free from pathological elements.

My method of treating these patients has been, principally, to gently dilate the whole urethra. There have been many cases in which associated conditions which probably predispose to the changes in the deep urethra have also been present; this is believed to be the case because of the satisfactory response of the principal symptom when such conditions were treated. The two chief of these are: in the male, narrowing of the external urinary meatus with its associated inflammation of the adjacent urethral mucosa, adherent foreskin with retained smegma, meatitis following circumcision; in both sexes, a generalized narrowing of the whole urethra. The latter state can only be determined by a knowledge of the normal urethral calibre according to age. In some children small amounts of residual urine are present in the bladder; no doubt these are a further consequence of the urethral state.

Professor Rendle Short has referred specially to the enuresis cases with diurnal frequency. My investigations have made it clear that this symptom is merely an indication that the inflammatory process has gone a step further and involved the internal meatus a little more severely. Moreover, experience shows that such cases respond more readily to the treatment I have indicated than those where this symptom is absent. As the patients in this group tend ultimately to have attacks of so-called pyelitis this tendency is also controlled by the urethral treatment. Generally speaking, the treatment I have followed in both male and female is simply gently to dilate the urethra under an anaesthetic. In many cases the result of doing this on one occasion only is an apparent cure of the incontinence. On the other hand, some cases require two or three dilatations at intervals of two or three months before any definite improvement occurs. It is true to say that some of the cases are not cured, but as a result of treating some hundreds of cases by this method the number which are not improved is quite negligible.

It certainly is interesting to speculate as to why there should be any response at all to this line of treatment. I believe the explanation is that the dilatation promotes drainage of the products of inflammation from the urethral wall generally by dilating the orifices of urethral glands and rupturing minute intra-epithelial inflammatory cysts. It is my intention at some time in the near future to publish the details of the large series of cases that have passed through my hands. In the meantime I would warn those who would be tempted to try this treatment that if metal instruments are used only those which are specially constructed for children should be employed; and that in any case urethral instrumentation in male children is a delicate operation, and it is wise to leave this branch of surgery to those who have opportunities for special experience of it. I would like to make this an occasion for saying that the data which have been forthcoming from observations on enuresis cases have made this branch of work for me one of the most interesting parts of urological practice. This is not only because of the striking results that are to be obtained from treatment, but because of the enlightenment I have received on the beginning of many cases of chronic disturbances of micturition which I have met with in adult life. —I am, etc.,

H. P. WINSBURY-WHITE,
Urologist, Princess Elizabeth of York Hospital for Children.

London, W.1, September 14.

SIR,—I read with interest Professor Rendle Short's letter (*Journal,* September 9, p. 580) on the treatment of bed-wetting by the injection of silver nitrate into the deep urethra. But I should like to point out that no evidence is adduced to favour the view that this treatment is more rational than any other. All that can be claimed is that it was successful in three out of four cases. Against this we must place (1) the notorious fact that bed-wetting is more readily relieved by a treatment which is dramatic irrespective of its nature, and here we have a very dramatic treatment; and (2) the fact that two of the cases were adolescent, an age when the spontaneous cure of the condition may be expected.

May I in conclusion suggest that it is the deep psyche rather than the deep urethra which is of fundamental importance in the cause and cure of bed-wetting.—I am, etc.,

London, W.1, September 14. W. PATERSON BROWN.

Spinal Anaesthesia

SIR,—I read Dr. C. E. Gautier-Smith's letter in your issue of September 9 (p. 579) with interest because I too have found "heavy" percaine a very efficient agent for producing spinal anaesthesia. I think, however, that Dr. Gautier-Smith's advocacy of its use in all degrees of spinal anaesthesia should not be allowed to pass unchallenged. The great disparity between the specific gravity of "heavy" percaine and that of the cerebrospinal fluid makes it an ideal agent for the production of anaesthesia in the lower limbs, the perineum, the pelvis, and perhaps in the abdomen below the umbilicus, particularly where a long period of anaesthesia is desired. For any operation above the umbilicus or in the lower abdomen when the steep Trendelenburg position is to be employed the high specific gravity of "heavy" percaine renders it not only unsuitable but unsafe. It is essential in all upper segment spinal anaesthesia to place the patient early in the Trendelenburg position and to maintain it throughout and after the operation. This can only be done with safety to the patient if a hypotonic or isotonic solution has been used as an anaesthetic agent.

The fixation times of the agents used to produce spinal anaesthesia vary not only among themselves but in different patients with the same agent. It is therefore unsafe to adopt the Trendelenburg position after using a hypertonic agent