Dr. W. A. M. Cutting's impressions in South India (February 16, p. 475) are that a high proportion of children and teenage patients die 24 to 48 hours after stings by small, pale brown scorpions, and that pulmonary oedema causing severe orthopnoea are the terminal features. These observations lend support to my thesis that death from scorpion stings is usually due to a toxic myocarditis causing cardiac failure and pulmonary oedema.

Local injections for the relief of pain were not given to the 45 patients in my series. Two six-hourly doses of "dramamine" (dimenhydrinate) 50 mg./ml. were usually adequate to control the restlessness, vomiting and local pain. Emetine has no pharmacological action as a local anaesthetic, and patients usually complain of pain and discomfort at the site of emetine injections given in the treatment of amoebiasis. Local reactions at the injection site are common, and they consist of aching, tenderness, and stiffness of the muscles even after subcutaneous injections, local eczematous lesions, and occasionally purpuric skin lesions.²

I agree with Dr. Cutting that plasma or saline should not be given to patients who develop shock after scorpion stings. The shock is not due to hypovolaemia, and intravenous infusions may precipitate acute pulmonary oedema by adding an extra burden to the damaged myocardium. The acute myocarditis is probably the important factor lowering the cardiac output and producing shock. It is our practice in Trinidad to treat the shocked patients with intravenous hydrocortisone 100 mg. diluted in 20 to 40 ml. of sterile water and injected slowly over 10 minutes. If the patient is still in shock at the end of an hour, the dose of hydrocortisone is repeated. There were no deaths in our series although nine patients were in profound shock on admission to hospital and remained hypotensive for 6 to 12 hours. The value of specific antivenene has been well documented, and I am surprised that Mr. Senapati had not heard of an antivenene to scorpion stings. Antivenenes for the more dangerous species are available. If specific antivenene is not available, antivenene to a related species of scorpion may be effective. The Brazilian antivenene for *Tityus bahiensis* and *Tityus serrulatus* seems to be effective against *Tityus trinitatis*, the common scorpion of Trinidad, which belongs to the same family (Buthidae).

Dr. Cutting gives morphine, atropine, and oxygen to his cases of scorpion sting, and he claims that his results are not satisfactory. Atropine would cause tachycardia and a further fall in the blood pressure by decreasing the stroke volume and the cardiac output. It would be interesting to see whether his results in South India would improve with the use of antivenene, antihistamines, or chlorpromazine and hydrocortisone before pulmonary oedema appears.—I am, etc.,

Vanderbilt Hall,
Harvard Medical School,
Boston 15, Mass., U.S.A.

T. POON-KING.

REFERENCES

- ¹ Holmes, M. McA., *Brit. med. J.*, 1957, 2, 353.
- ² Goodman, L. S., and Gilman, A., *The Pharmacological Basis of Therapeutics*, 1955, p. 1212. Macmillan, New York.

SIR,—Dr. W. A. M. Cutting's letter on this subject (February 16, p. 475) has interested me. I come from such a rural part of India where scorpion sting is very common, especially in the hot humid monsoon months. The agonizing condition of a person stung by a grown-up brown or black scorpion needs to be seen to be believed.

From personal experience of treating some 300 such cases of different ages and sex over a period of five years and evaluating the merits and demerits of various drugs used in the treatment, I would like to put on record the usefulness of the resinous exudate of an indigenous tree called Jēal or Jeewas in the dialect of North Bihar, and botanically, *Linea grandis*. It is a very common tree and the resin is easily available in the rainy season, when it is freely exuded from cut surfaces. It forms firm lumps when dried and can be cut into small rectangular pellets. In a person stung, the part—usually the finger or toe—is washed clean (the point of sting with its pinkish zone around can be found in over 95 % of cases) and one pellet of the resin is stuck on to the area after rubbing it moist with a drop of water against some rough surface. Relief, as I have found in even the very severe cases, is most dramatic and comes within half a minute. I am so impressed with the efficacy of this substance, and I shall be very willing to help in supplying the resin and any related information to those interested in its further trial and research into the possibilities of its being rendered into injectable form. This might ensure the successful treatment of those few cases in which the colour of the skin and severity of pain interferes with the localization of sting.—I am, etc.,

Royal Institute of Public Health and
Hygiene,
London W.C.1.

H. N. ROY.

Treatment of Snake-bite Poisoning

SIR,—While one hesitates to question the advice given by so eminent a body as the Council of the Royal Society of Tropical Medicine and Hygiene, quoted recently in your annotation (September 8, 1962, p. 661) certain of the statements made therein do not appear to be accurate, whilst others are misleading.

It is stated that the only antivenom available in this country is that prepared by immunizing horses with the venom of *Cerastes cornutus* (the horned viper). This is not so. The antivenom held in the casualty department of the Royal Gwent Hospital, Antiviperin E.R., is prepared by the Pasteur Institute, using the venom of the European vipers, *Vipera berus et aspis*, as antigen. It is available in many hospitals, and also from Messrs. Allen and Hanbury, who have stocked it since 1945 at least.¹ It is true that Schöttler² described this antivenom as being of low titre, but the neutralizing potency of all the antisera prepared by the Pasteur Institute is given as at least 20 units (M.L.D. mouse) per ml. It would appear, therefore, that the neutralizing potency of Antiviperin E.R. against the venom of the European vipers is much the same as the potency of antisera available against the venom of the more dangerous foreign snakes.

The statement that "the bite of the snake is less dangerous than the use of antivenom" is based, presumably, on the danger of reactions of an allergic nature arising as a result of injecting 10 ml. or more of horse serum. The death rate is admittedly low. Walker³ reported on 50 cases, and found only seven fatal cases recorded in the previous 50 years, of which he had been able to trace five. The number of recorded fatalities, however, is of little significance, since it gives no indication of the number of cases in which there had been a most unpleasant illness, followed by recovery, or of the number of cases in which antivenom had averted a fatal outcome. What is significant, however, is that

none of the five fatal cases had been given antivenom, and four of them were children.

Morton⁴ lists references to seven reports of cases in which reactions to antivenom were considered to have occurred. Roantree⁵ points out that there is a danger of ascribing reactions to the antivenom which are in fact due to the venom, and quotes a case in support of this view. In any event, it seems illogical to advise against the use of horse serum carrying an antibody against a toxin known to have been introduced into the body, while at the same time advocating the use of antitetanus serum against what is only a possible contaminant of the wound.

It has been stated that the venom of *Vipera berus* is of low toxicity,^{6,7} but Walker states that about half of his 50 cases gave rise to real anxiety, and other reports reveal that victims of snake bite in this country can be very ill indeed.^{4,8-11} The great value of antivenom is stressed by Morton,⁴ Whiteside,⁹ and also Lockett.¹² My own very limited experience of five cases certainly supports these views, and I am convinced that the withholding of antivenom would have resulted in the almost certain death of one patient and the possible death of a second.

The advice given in the annotation includes no measure to counteract the serious general effects of the venom other than the injection of hydrocortisone, but there is good evidence to support the use of anti-histamines,^{4,8} plasma transfusion,¹⁰ and blood transfusion.¹³ In small children, and in cases where collapse is present, it is essential that these measures at least should be adopted, and also possibly noradrenaline in an N/5 saline drip, which I found to effect some improvement in my own cases. Several observers have found that the rate of recovery is accelerated by the use of antivenom, and I found that this was certainly so in the two serious cases which came under my care.

The sweeping condemnation of the use of antivenom, based, as it seems to be, on inaccurate information, is liable to lead to a lack of a sense of urgency on the part of first-aid personnel and others which could be quite serious. The management of these cases should be such as to bring them under the care of an experienced senior clinician at the earliest possible moment, and it should be for him to assess the risks inherent in giving antivenom, and to weigh them against the risks attendant on withholding it.

If the *Vipera berus* is to be described as a "comparatively harmless snake," the standard for comparison should be stated. If this is taken as the krait (*Bungarus coetulus* and *B. fasciatus*), for instance, with its 88.9% mortality, then the description is acceptable, but taken out of such context it could produce a tendency to dismiss as unimportant the very severe, even if only rarely lethal, effects which can result from snake bite in this country in up to 50% of the cases.—I am, etc.,

Casualty Department,
Royal Gwent Hospital,
Newport, Mon.

R. VERNON JONES.

REFERENCES

1. Palser, J. E. J., *Brit. med. J.*, 1945, 2, 172.
2. Schöttler, W. E. A., *Amer. J. trop. Med.*, 1951, 31, 836.
3. Walker, C. W., *Brit. med. J.*, 1945, 2, 13.
4. Morton, T. C., *ibid.*, 1960, 2, 373.
5. Roantree, M. B., *ibid.*, 1957, 2, 236.
6. Manson-Bahr, P., *ibid.*, 1957, 2, 468.
7. *Ibid.*, 1957, 2, 961.
8. Matthias, H. H., and Ffrench, G. E., *ibid.*, 1947, 2, 146.
9. Whiteside, J. D., *ibid.*, 1950, 1, 1094.
10. Goddard, D. L. H., *ibid.*, 1951, 1, 1394.
11. Brewster, K. W., *ibid.*, 1957, 1, 1362.
12. Lockett, S., *Clinical Toxicology*, 1957, p. 451. Kimpton, London.
13. Reid, H. A., *Brit. med. J.*, 1957, 2, 942.

"Drop Attacks"

SIR,—I was most interested to read Lord Brain's Gowers Memorial Lecture (March 23, p. 771).

As a radiologist concerned with the investigation of patients with neurological symptoms associated with cervical spondylosis I should like to draw attention to the ease with which quite natural movements of flexion and extension may convert, temporarily, a partial or absent spinal block into a complete one if the available antero-posterior cord space is grossly limited. This complete block will be relieved instantly by reversing the causative movement.

It has been my practice to carry out myelography on these patients by cisternal puncture in the prone position with the x-ray couch tilted feet end downwards. After the "myodil" has been positioned in the cervical curve it is often found that extension of the head and neck will result in complete spinal block being produced at a level corresponding to that of the greatest restriction of available space. The couch and patient can then be tilted to a near vertical position without any descent of the contrast. Flexion of the neck will immediately relieve the block and the myodil will then plummet down into the sacral sac. I do not doubt that there are patients in whom flexion, which usually results in the greatest narrowing of the cord space at the level of the disk just above the disk or disks worst involved, can produce a similar temporary spinal block, but I am sure that this is more difficult to demonstrate myelographically.

In my opinion it would seem likely that this postural blockage effect has a direct link with the occurrence of "drop attacks" in some patients. Clinical investigation alone can confirm or refute this.—I am, etc.,

The Central Middlesex Hospital,
London N.W.10.

F. PYGOTT.

Rheumatology

SIR,—Your correspondent Dr. Marjorie M. Dobson (March 9, p. 682) appears to be under the impression that because there are relatively few doctors who style themselves "rheumatologists" patients suffering from rheumatic conditions are neglected. In fact, the study of the rheumatic disorders comes quite properly and completely within the sphere of activity of the physical medicine consultants.

In the *Annals of Physical Medicine* of May, 1962, it is stated:

"OUR RELATIONSHIP WITH RHEUMATOLOGY"

"In practice the rheumatic diseases constitute a numerically large portion of the medical disorders of the locomotor system referred to previously. In spite of major advances in our knowledge of these diseases, and notwithstanding the introduction of such drugs as the corticosteroids and phenylbutazone, the prevention of deformity and maintenance or restoration of function by physical methods remain among the physician's chief aims in treatment; in many cases social rehabilitation will need to go hand in hand with physical reablement. The specialist in physical medicine is fully equipped to deal with the total management of such patients.

"The clinician specializing in this group of diseases who prefers to be called a 'rheumatologist' presumably does so because he is not prepared to assume responsibility for the services required for the full management of these patients; it would surely be in the best interest of the patient to have one doctor responsible for the prescription of aspirin and a second for the management of wasted muscles and