

thereof seems to have produced a marked psychological improvement in the patient. Suicide by burning among the peoples of the Middle East is apparently not infrequent.

I wish to thank Mr. Jack Penn for his advice in planning the plastic procedures on this patient.—I am, etc.,

Haifa.

B. HIRSHOWITZ.

### Liver Injury by Antibiotics

SIR,—Attention has been drawn in your annotation (*Journal*, April 4, p. 777) to reports of changes seen in liver tissue associated with a large dosage of antibiotics. The comment has been made that "this evidence from human and animal studies shows that aureomycin, and probably terramycin, are mildly injurious to the liver when given in large doses, especially parenterally."

Among the references given, as regards terramycin, Lepper *et al.*<sup>1</sup> reported the effects of large doses of antibiotics on the livers of mice. They found that "the effect of terramycin was similar to that of aureomycin, although less marked." They also emphasized that the dosages of both antibiotics were much higher than those which are recommended for the treatment of human infections. Nevertheless, the very mildness of the possible liver injury subsequent to excessive antibiotic therapy is summed up in the first article quoted in the annotation<sup>2</sup>: "Excessive amounts administered therapeutically, for instance, may act in a manner analogous to that of excessive amounts of dextrose given by the intravenous route." Again, in the same article, the authors considered that the liver damage would seem to be reversible if administration of the drug was stopped soon enough. The seven patients in this article are reported as having shown definite clinical signs of liver damage after aureomycin, but the authors emphasize that six of them, from whom they had obtained liver tissue for examination, had evidence of potential or demonstrable liver damage prior to any treatment.

Lastly, the discovery of the structural formula of terramycin has shown it to be both unique and devoid of dangerous chemical radicals which are known to provoke serious toxic reactions. This new knowledge helps to explain the high degree of safety of the drug, an experience which has been amply confirmed by many thousands of clinical trials in which terramycin is shown to be free of toxic effects in blood and blood-forming organs, liver, heart, and other vital organs.—I am, etc.,

R. K. PHILLIPS,

Folkestone.

Director of Medical Services, Pfizer Ltd.

## REFERENCES

- <sup>1</sup> *Arch. Intern. Med.*, 1951, 88, 284.
- <sup>2</sup> *Ibid.*, 1951, 88, 271.

SIR,—In your annotation on "Liver Injury by Antibiotics" (April 4, p. 777) you state that the evidence from human and animal studies shows that aureomycin and probably terramycin are mildly injurious to the liver when given in large doses parenterally, and that there is a remarkable absence of such toxicity when given orally in the usual dosage.

Lepper and his associates in the paper which you quote<sup>1</sup> mention that the dosages of aureomycin which produced evidence of liver dysfunction in patients were excessive. Lepper further states that intravenous doses of aureomycin totalling less than 2 g. a day were not accompanied by evidence of liver dysfunction or injury. In more than 1,300 patients to whom they administered aureomycin orally, no evidence of liver injury was noted.

Kalz and his co-workers<sup>2</sup> and Knight *et al.*<sup>3</sup> have found aureomycin useful in chronic liver diseases and particularly in the chronic residua of acute hepatitis. It appears also to be of definite value in hepatic failure and in the fulminating type of acute hepatitis (Kimbrough<sup>4</sup>).

Long<sup>5</sup> states that every year since its introduction the dosage requirements of aureomycin have been decreased and are now about 50% less than those suggested two years ago. The present recommended dosage of aureomycin of

12 mg. per kilo of body weight, or 1 g. daily for the average adult, does not produce injury to the liver.

However, your annotation emphasizes the possible ill-effects of administering doses of antibiotics parenterally in excess of therapeutic requirements, and is a timely warning on the misuse of these substances.—I am, etc.,

A. T. MENNIE,

London, W.C.2.

Medical Director, Lederle Laboratories Division,  
Cyanamid Products, Ltd.

## REFERENCES

- <sup>1</sup> *Arch. intern. Med.*, 1951, 88, 271.
- <sup>2</sup> *Canad. med. Ass. J.*, 1949, 61, 171.
- <sup>3</sup> *J. clin. Invest.*, 1949, 28, 1052.
- <sup>4</sup> *J. Tenn. med. Ass.*, 1951, 44, 412.
- <sup>5</sup> *Trans. Amer. Acad. Ophthal. Otolaryng.*, 1951, 524.

### "Efocaine" and the Relief of Pain

SIR,—Referring to Dr. T. H. Howell's note (*Journal*, April 4, p. 785) giving his results with "efocaine" for the relief of pain in fibrositis, my personal experience is that the chemical constitution of the solution injected is quite immaterial, provided that all the myalgic spots where the pain originates are successfully located. The relief then given should last for months.

In a recently published series<sup>1</sup> I described a carefully controlled experiment in which the objective effect of injecting normal saline was the same as that of injecting procaine. The advantage that normal saline has over any of the anaesthetic solutions of which procaine is the prototype lies in the fact that there is never any reaction. For the last two years I have used nothing else.—I am, etc.,

London, W.1.

H. WARREN CROWE.

## REFERENCE

- <sup>1</sup> *Lancet*, 1952, 2, 1133.

### The Metric System

SIR,—I have read with great interest the correspondence on the metric system. I have been working in Zurich for two years, and therefore have had ample experience of the practical side of this question. I can wholeheartedly agree with the opinions expressed by Dr. C. Langton Hewer in his letters (*Journal*, February 21, p. 450, and April 4, p. 782), and Dr. John Primrose (*Journal*, April 4, p. 782) seems to have arrived at the happy compromise. My personal experience is that in practice it is by no means the excellent system that theory would lead one to expect.

When the dosage is in grammes the metric system works well, but when it is in milligrams or fractions of milligrams then it is often corrupted and becomes confusing. For example, when I wish to order 1/150 gr. I must say to the sister the equivalent of: "Please give nought comma nought nought nought five" (this is an approximation, 1/150 gr. = 0.00044 g.). For some reason of habitual usage I cannot say the equivalent of, "Please give half, or 0.5 mg.," or confusion might be worse confused. 1/100 gr. is 0.0006 g., but who would argue that the mental picture of the difference between 1/150 gr. and 1/100 gr. is not more quickly appreciated than the metric 0.00044 g. and 0.0006 g.?

The difficulty is largely overcome here by the simple but very undesirable system of ordering drugs in "whole ampoule" or "half ampoule." Apparently this is a local expedient to overcome the practical difficulties, adopted by those who have been brought up on the metric system all their educational lives. The disadvantages and, indeed, dangers of such an expedient are self-evident.

Touches of the magic wand of mathematical nicety cannot change human mental processes. Ever since the days when we were little boys and girls and gave our playmate half an apple (and gave or kept the "bigger half" for ourselves) fractions will have a clearer mental picture for the average adult than a metric system. So far I have never heard my small son come in and say: "Daddy, Hans gave me 0.5 of his apple." And in our hospitals we must work with the average practical individual who gets on with the work, rather than the adherents of a beautifully correct mathematical system.—I am, etc.,

Zurich.

R. A. C. HERRON.