etc. Your article points out that the scratching finger is likely to introduce secondary infection into the affected auditory canal.

Difficulties concerning treatment of infected external otitis stem from the possibility of hypersensitivity reactions which can be induced by almost any topical agent and which may convert an idiopathic eczema into an allergic contact eczema (dermatitis). This change may not be clinically obvious, except in the failure of the treatment to clear the condition.

Your article rightly lists the antibiotics chloramphenicol, penicillin, and tetracycline as commonly inducing such hypersensitivity reactions, but later recommends neomycin for treatment of the secondary infection. Yet neomycin (and the related) framycetin must be added to the list of frequent offenders.¹⁻³ A recent series of 70 cases of allergic contact dermatitis due to neomycin and framycetin included 13 patients in whom these antibiotics had been used topically in the treatment of external otitis.⁴

Responsibility of a topical agent for a hypersensitivity reaction is best determined by patch-testing. Although the technique is simple there are snags, and perhaps it is wiser to refer patients to a skin clinic where patch tests are regularly used in the diagnosis of contact dermatitis. Our experience suggests that it is probably wise not to use neomycin and framycetin in treatment of secondarily infected otitis externa.—We are, etc.,

MICHAEL FEIWEL.
DONALD MUNRO-ASHMAN.

St. Mary's Hospital,
London W.2.

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- ² Epstein, S., and Wenzel, F. J., *Acta derm.-venereol.*, 1963, 43, 1.
- ³ Munro-Ashman, D., *Brit. J. clin. Pract.*, 1963, 17, 537.
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Tetracycline Hepatotoxicity

SIR,—Your discussion of "Tetracycline Hepatotoxicity" (19 December, p. 1545) in relationship to pregnancy brings up some significant questions:

(1) What evidence has been presented that tetracycline *per se* caused the fatty livers found in pregnant women dying of Gram-negative septicaemia?

(2) Since all these cases reported from public hospitals in the U.S.A. were in women from our lowest socio-economic class, is it not reasonable to suspect that some of them may have had nutritional deficiencies leading to impaired liver function, perhaps even fatty livers before their infections?

(3) Could not this fatty metamorphosis be possibly related to the effects of the Gram-negative septicaemia itself—that is, endotoxaemia, shock, acute starvation superimposed upon chronic malnutrition which made these particular women less resistant to overwhelming infections?

(4) Are there not more effective antibiotics than tetracycline available for treatment of Gram-negative septicaemia?

(5) In reporting clinical cases for research purposes should obstetricians neglect one of the most effective tools in modern scientific medicine: a thorough clinical history?

Since tetracycline has been used so widely in a broad spectrum of infections without "hepatotoxicity," it seems reasonable to study carefully all the biological factors known to be associated with both fatty metamorphosis of hepatic cells and infections in general. In epidemiology we are taught that the resistance of the host is often as significant as the virulence of the organism in determining the clinical manifestations of infectious diseases.

From over 10 years' obstetrical experience with women in the lowest socio-economic class in our southern states I have learned that malnutrition plays a basic role in causing several common complications of pregnancy, including decreased resistance to common clinical infections.—I am, etc.,

Martinez,
California, U.S.A.

TOM BREWER.

Bullous Lesions

SIR,—I was interested to read Dr. G. W. Beveridge and Dr. A. A. H. Lawson's study (27 March, p. 835) of bullous lesions occurring in barbiturate intoxication. I was disturbed at their attempt to show that these lesions may be specific in barbiturate intoxication, as this may lead to mis-diagnosis.

They too easily discard the suggestions that similar lesions occur in other types of poisoning. I have seen similar bullous lesions of the fingers in a comatose patient, an old lady who had been given an injection of morphine gr. $\frac{1}{2}$ (32.5 mg.) for trigeminal neuralgia.—I am, etc.,

Paddington Clinic and
Day Hospital,
London W.2.

E. LEWIS.

Transfusion in Severe Anaemia

SIR,—In your recent leading article (20 March, p. 744) you stress the danger of blood-transfusion in severe anaemia. You mention exchange transfusion as a method of managing these difficult situations but tend to damp enthusiasm for the procedure by describing it as "elaborate."

However, exchange transfusion for anaemia can be achieved simply, effectively, safely, and reasonably quickly by using the same apparatus as is commonly used for exchange transfusion in the neonate, and substituting the antecubital vein for the umbilical vein.

Mrs. M. C., aged 26, was admitted as an emergency in cardiac failure due to anaemia

28%. She was now in a fit state to tolerate a straight transfusion with packed cells given slowly. She was delivered of a healthy infant a week later.

The apparatus worked well and no difficulties were encountered. No anticoagulants were used, but the syringe was washed out in citrate from time to time. The new plastic disposal exchange transfusion sets now available (No. 910 Pharmaseal) have a 20 ml. syringe and are so light and compact that the whole apparatus could be strapped on to the patient's forearm (see illustration).

In doing the exchange by this method 5-10 seconds should be allowed between injecting and withdrawing blood, as the Intracath ends in a medium-size vein only. The bigger 20 ml.

(Hb. 30%). She was 32 weeks pregnant and was having irregular painful uterine contractions. She was hypertensive (blood-pressure 150/100) and had an acute pyelonephritis. She was digitalized and an exchange transfusion performed. 100 mg. of pethidine and 50 mg. Phenergan (promethazine hydrochloride) were given prior to exchange, to allay anxiety and reduce the chance of a "febrile" reaction to the blood. An 8 in. (20 cm.) 14-gauge "intracath" was inserted in the antecubital vein, and this was connected to a simple 3-way tap and a 10 ml. syringe. In two hours 1,030 ml. of the patient's blood was exchanged for 1,050 ml. of packed cells, 10 ml. at a time.

During the exchange, the patient's general condition improved dramatically; respirations dropped from 36/min. to 24/min., her pulse from 80/min. to 68/min. Her Hb rose from 30 to 50%; P.C.V. rose from 17% to

syringe would enable a longer Intracath to be used. The "dead space" in the apparatus actually used meant a loss of 50 ml. of effectively exchangeable blood per litre. A 20 ml. syringe would waste 25-30 ml. per litre, and so could tolerate twice the length of Intracath—hence increasing the speed of exchange.

The blood withdrawn could be collected in a cooled sterile citrate blood collecting bottle and transfused to the patient as packed cells later.

This method is simpler but slower than the method described by Fullerton and Turner.¹ It is much faster than Ward's method.² The end result is just as good however. In two hours, using as little as 1 litre of packed cells, a patient's condition can be improved dramatically. It is hoped that by the simplicity of the method technical considerations will cease