hence reduce greatly the cerebral blood-flow, but it will not raise the arterial pO_2 adequately. One of our patients became unconscious on the ventilator as soon as 100% oxygen was no longer used to ventilate him, even though his arterial pCO_2 was quite normal.

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CONVULSIVE EFFECTS OF TRANYLCYPROMINE AND IMIPRAMINE IN COMBINATION

SIR,—Recent clinical reports by Babiak [1] and Bateman [2] prompt us to draw attention to the convulsive electroencephalographic effects we have observed in laboratory animals treated with imipramine and tranylcypromine.

Tranylcypromine (' Parnate ') has been shown to produce immediate E.E.G. desynchronisation, similar in characteristics and intensity to that observed after giving amphetamine. In contrast, imipramine (' Tofranil ') tends to synchronise rather than desynchronise the E.E.G., and its E.E.G. effects are similar to those observed with the phenothiazines (chlorpromazine and trifluoperazine).

When these two compounds (imipramine 10 mg. per kg. and tranylcypromine 5 mg. per kg.) are given in combination, the E.E.G.-activating effects of tranylcypromine dominate the recording. If the animal is pretreated with imipramine (10 mg. per kg. per day) for 5 days or more, and is then given tranylcypromine (5 mg. per kg.), bursts of high-voltage activity are seen in the E.E.G. These soon give way to alternating periods of convulsive activity followed by periods of postictal depression and eventual death. Such abnormal E.E.G. effects are not observed if no imipramine has been given for at least 7 days before first giving tranylcypromine.

These observations are of particular interest in view of recent fatalities [1 3] following accidental and intentional use of these two drugs. It is clearly hazardous to give these compounds without allowing sufficient time for one drug to be completely eliminated from the body. The possible mechanisms of these convulsions remain to be clarified.

Our investigations were carried out under a Federal Mental Health Grant.

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G. M. LING
M. NAGAI
S. HANSEN.

A NEW IRON LUNG

Dr. W. H. Kelleher writes:

" Although implied, it was not made clear in my article of Nov. 18 that the manufacturers of my new respirator were the Cape Engineering Company Limited, whose works are in Warwick, England."

DISTAVAL

Mr. D. J. Hayman, managing director of the Distillers Company (Biochemicals) Ltd., writes:

We have just received reports from two overseas sources possibly associating thalidomide (' Distaval ') with harmful effects on the fœtus in early pregnancy. Although the evidence on which these reports is based is circumstantial, and there have been no reports from Great Britain, either clinical or pharmacological, we feel that we have no alternative but to withdraw the drug from the market immediately pending further investigation. We are also withdrawing ' Valgis ', ' Valgraine ', ' Asmaval ', and ' Tensival ', all of which contain thalidomide. We will continue to carry out pharmacological and other studies of our own, and the medical profession will be kept fully informed of developments.

1. Babiak, W. *Canad. med. Ass. J.* 1961, **85**, 377.
2. Bateman, C. R. *ibid.* p. 959.
3. Robertson, D. S. *ibid.* p. 711.

Public Health

Routine Immunisation

THE evidence that immunisation against diphtheria with alum-precipitated toxoid (A.P.T.) slightly but definitely increased the risk of paralytic poliomyelitis led the Ministry of Health in 1957 to replace the issue of A.P.T. by that of formol toxoid (F.T.). For the same reason it frowned—but without severity—on the use of combined prophylactics for children. This September it issued to local authorities some suggestions on immunising procedure which amount to a right-about-face.[1]

There is some evidence that F.T. is not a satisfactory agent for primary immunisation; and poliomyelitis is at the moment a rare disease. Moreover, vaccination against poliomyelitis makes infection after other immunising procedures unlikely. Many local authorities are already using combinations of prophylactics against diphtheria, whooping-cough, and tetanus without obviously disastrous consequences. There may be theoretical advantages in single inoculations; but mothers do not care to have their infants treated as pin-cushions, and there is evidence that some combinations give no worse, and perhaps give better, immunity. For these reasons the Ministry recommended in September the use of a combined diphtheria-pertussis-tetanus prophylactic (three doses), Salk vaccine (three doses), and vaccination against smallpox—all in the first two years of life. Immunity against diphtheria, tetanus, and smallpox can be reinforced at school and B.C.G. given after the age of 12. Two alternative schedules are suggested. In schedule P whooping-cough vaccine (in combination with diphtheria and tetanus prophylactics) is given early in life, since fatalities from this disease are commonest in the first six months. The disadvantage of this schedule is the risk of paralytic poliomyelitis induced by two toxoids and a bacterial vaccine. Schedule Q begins with vaccination against poliomyelitis and defers immunisation against the other diseases until the age of six months or more, by which time antibody production nears its maximum. The responsibility for the choice and provision of prophylactics will in future lie with the local authorities.

These proposals were no doubt welcomed both by those who hold the needle and by the mothers of those who receive it. We hope that further attention will be given to the problem of marking permanently those who have been immunised against tetanus. A serum reaction is a cheap price to pay for avoiding that disease, but active immunisation is designed to prevent both these misfortunes. The Ministry made it clear that its circular was liable to modification; and already it has authorised routine use of attenuated-virus vaccine, administered by mouth, for immunisation against poliomyelitis.[2]

Among the questions most often asked of a medical officer of health are those concerning immunisation, and some of these are not easy to answer pat. As a comprehensive source of accurate information we know nothing better than the *Memorandum on Immunological Procedures*, now issued by the War Office in a new edition.[3] It is, of course, primarily concerned with the health of the soldier, but the needs of camp-followers of all ages receive attention. It lists those parts of the world where the traveller must be inoculated against yellow fever. It describes in detail the intradermal administration of T.A.B., which will be new to many and which must have saved a lot of discomfort. There are excellent descriptions of the various kinds of reaction which may follow immunisation and adequate directions for prevention and treatment. There are admirable suggestions for picking up the thread of an interrupted course of prophylaxis. There is a useful table of the expected life of immunising substances stored in the cold and at room temperature. It is, indeed, difficult to find a question which cannot be answered with the help of this very cheap book.

1. Ministry of Health: circular 26/61. See *Lancet*, Sept. 16, 1961, p. 653.
2. See *Lancet*, Nov. 4, 1961, p. 1021.
3. Memorandum on Immunological Procedures. W.O. Code 13161. H.M. Stationery Office, 1961. Pp. 79. 4*s*. 6*d*.