against re-exposure to the same virus in later years. Approximately every decade a major antigenic variant of influenza A virus appears which can infect those immunized by experience of the previous subtype; these individuals have also been sensitized by their previous exposure to the many antigens shared by the new variant with its predecessors of the same type.

Thus an allergic element in the response to infection of the older cohort may be responsible for the typically febrile "influenzal" illness and for the fulminating haemorrhagic pneumonias and encephalitis found particularly in later childhood and early adult years. Most older adults may have acquired sufficient protective immunity from a series of infections with sequential new influenza A subtypes to inhibit the more damaging cross-sensitization effects of infection with the latest subtype.—I am, etc.,

NORMAN R. GRIST.

University Department of Infectious Diseases,
Ruchill Hospital,
Glasgow N.W.

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Body Contour for Radiotherapy

SIR,—To compute isodose plans (Fig. 1) for radiographers to give treatment to a patient with a tumour, the physicist requires an outline of the body contour in the plane of the tumour. For many years these outlines have been recorded with the help of flexible metal strips¹ or jigs cut

laboriously in cardboard. Recently, there have been described elaborate electrical devices for achieving this end, using either a moving "dip-stick"² or a light and television arrangement.³

The Temco Formulor is designed to record shapes or outlines, and is a rather simpler and more portable instrument for recording these outlines than these other devices (Fig. 2). It consists of a 12 in. (30.5 cm.) row of 93 parallel free-moving aluminium sensing needles; each 9 in. (22.8 cm.) needle is mounted between rollers in such a way that it moves independently and does not influence its neighbours. A wing-nut tightens the needles between bars so that the recorded contour can readily be transferred to paper.

The Formulor is held in one hand over the desired plane of the patient; it is then brought down on to the skin when the pins either slide accordingly or can be gently pushed with the other hand to touch the

surface. The wing-nut is tightened, and the Formulor removed to a table or board, where the outline is traced on to paper

behind the instrument by a pencil following the tips of the pins. As can be seen, the outline can be read at either end of the needles. One Formulor is adequate for outlines of the head, neck, or limbs, but for most trunk outlines two or three Formulors can be clamped together, the increased weight being carried on a bridge.

The Formulor can be obtained from Temco Tools Ltd., 14 Liverpool Gardens, Worthing, Sussex. The photograph was taken by Geoffrey Morris, and the isodose plan prepared by Ann Radzins of this Radiotherapy Centre in Stoke-on-Trent, whose valued help is hereby acknowledged.—I am, etc.,

D. E. MEREDITH BROWN.

North Staffordshire Regional
Radiotherapy Centre,
Stoke-on-Trent.

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- 1 Walter, J., and Miller, H., *A Short Textbook of Radiotherapy*, p. 346. London, Churchill, 1969.
- 2 Clarke, H. C., *British Journal of Radiology*, 1969, 42, p. 858.
- 3 Thompson, D. J., 1970. Communication at the Faculty of Radiologists Spring Meeting, York, March 1970.

Diagnosis of Pulmonary Embolism

SIR,—In her article on the diagnosis of pulmonary embolism (27 June, p. 773) Dr. Celia M. Oakley states that lung scanning cannot be used in the diagnosis of the sudden emergency. The first reason given is that the time taken to prepare the radioisotope labelled macroaggregates of human serum albumin (H.S.A.) is half to one hour. This is true for technetium but not where ¹³¹I is used. Because of its slower half-life, it is possible to have supplies of ¹³¹I-labelled macroaggregates of H.S.A. available for immediate use in any centre where routine lung scans are being regularly performed. The second reason given is the need for posturing and co-operation of the patient. Ideally he should be lying flat at the time of injection and during the scanning procedure, but this is not essential in the detection of gross abnormalities such as are found following massive pulmonary embolism. However, it is necessary to use a scanner, the scanning plane of which can be tilted.

In this hospital we use a Scintiscanner (NE 8270, Nuclear Enterprises Ltd.), which is mounted on wheels and can be easily moved to the patient's bed-side within five minutes. A formal anterior lung scan can be done in ten minutes, but where the patient is restless or there is extreme urgency gross impairment of perfusion can be detected within two to three minutes by manually operated passage of the scanner over both lung fields. Hence it is possible to obtain a result within 15-20 minutes.

Lung scanning can thus be used as a preliminary screening investigation in the diagnosis of massive pulmonary embolism, especially in circumstances where pulmonary angiography is not readily available. Its diagnostic value has already been established by Wagner *et al.*¹—I am, etc.,

B. H. R. STACK.

Chest Unit,
City Hospital,
Edinburgh.

REFERENCE

- 1 Wagner, H. N., Sabiston, D. C., McAfee, J. G., Tow, D., and Stern, H. S., *New England Journal of Medicine* 1964, 271, 377.

Family Planning Counselling

SIR,—Your leading article and middle article about the Abortion Act (30 May, pp. 491 and 529) are interesting and valuable to those of us in New York studying the effects of our even more liberal abortion law.

Abortions are largely the result of three failures of the health professions and governments—that is, failure to provide all women of child-bearing age and their consorts with detailed accurate information about methods of conception control; failure to provide free and readily available conception control methods for all women of child-bearing age and their consorts; and failure to devise methods of conception control which are both failure proof and fully acceptable to sexually active partners.

Since such a Utopia of conception control is in the far distant future, we have sought new ways of reaching large numbers of women with conception control methods at minimal cost. The New York City Department of Health in the past year has selected, trained, and assigned 75 women who are the peers in every way of those they counsel as family planning counsellors to 26 voluntary and municipal hospitals. These counsellors discuss family planning methods with women of childbearing age hospitalized for delivery, abortion, or other reasons. Over 3,000 women per month are currently interviewed, and 91% request initiation of a conception control method prior to hospital discharge. Most of the women state that they have not previously discussed family planning except with neighbours or friends. The Pill, the I.U.D., and tubal ligation are the methods desired by 86%. Follow-up family planning appointments are made in the hospital family planning clinic or in one of the 28 Department of Health family planning clinics. We believe these intensive in-hospital efforts will prevent many future unwanted pregnancies.

We endeavour to counsel abortion patients during the medical evaluation visit prior to