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.

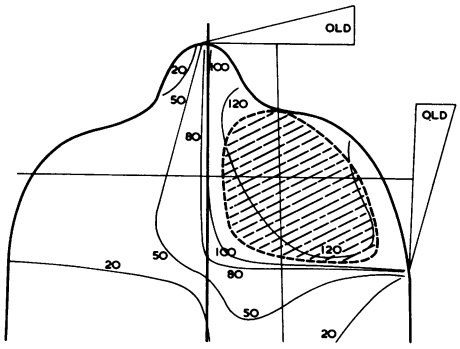
University Department of Infectious Diseases,
Ruchill Hospital,
Glasgow N.W.

REFERENCES

1 Grist, N. R., Ross, C. A. C., and Stott, E. J., *British Medical Journal*, 1967, 1, 456.
2 Grist, N. R., *Annali Sclavo*, 1970 (in press).

Body Contour for Radiotherapy

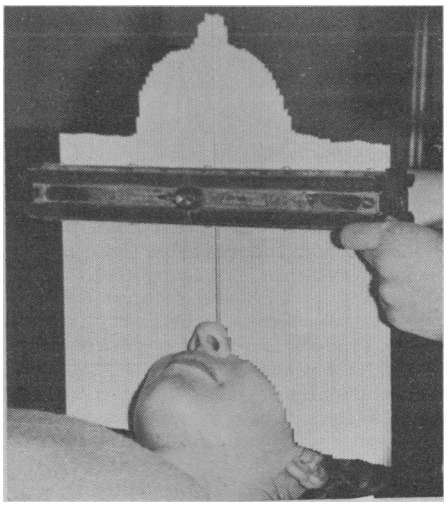
SIR,—To compute isodose plans (Fig. 1) for radiographers to give treatment to a patient with a tumour, the physicist requires an outline of the body contour in the plane of the tumour. For many years these outlines have been recorded with the help of flexible metal strips[1] or jigs cut



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 Formulator 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 12in. (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 Formulator 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 Formulator 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 Formulator is adequate for outlines of the head, neck, or limbs, but for most trunk outlines two or three Formulators can be clamped together, the increased weight being carried on a bridge.

The Formulator 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.

REFERENCES

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 ^{131}I is used. Because of its slower half-life, it is possible to have supplies of ^{131}I-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 childbearing 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

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hospital admission in order to determine which patients may wish and be suitable for I.U.D. insertion or tubal ligation at the time of pregnancy termination.—I am, etc.,

EDWIN F. DAILY,
Director,
Maternity and Infant Care Family Planning Projects.
New York, U.S.A.

Schistosomal Involvement of the Bowel

SIR,—I was most interested in the paper by Dr. S. M. Sherif (14 March, p. 671) on malabsorption and schistosomal involvement of the jejunum.

I agree with Dr. Sherif about the rarity of schistosomal infestation of the small bowel, but my experience does not accord with the statement "Rarely the appendix and the caecum are affected." Here, at least, massive infiltration of the appendix with ova of *Schistosoma mansoni* is very common in appendices submitted to histological examination, whether acutely inflamed or not. We admit an average of 75 cases per annum of acute appendicitis to this hospital of 1,000 predominantly acute beds.—I am, etc.,

J. M. MYNORS.
Department of Surgery,
University College of Rhodesia,
Salisbury, Rhodesia.

E.E.G. and Survival

SIR,—I should like to draw the profession's attention to the fact that the E.E.G. Society has a subcommittee to deal with the problem of the study of resuscitation and survival. This subcommittee has made some provisional recommendations regarding the recording from subjects whose survival is in doubt. These are provisional because it is felt that further evidence is needed before more dogmatic statements can be made, and the main recommendations, which are summarized below, are largely concerned with the technique of recording to demonstrate the absence of E.E.G. activity.

Electrodes of the "stick-on" type seem preferable to pad electrodes; needle electrodes may sometimes have to be used. Placement of electrodes should allow bilateral assessment of all major brain areas, and the minimum number of recording electrodes should be eight. Electrode resistances should not exceed 5KΩ per electrode (or 10KΩ per pair—6KΩ impedance). Where resistances appear less than 1KΩ per pair, the electrodes should be specially checked. It is desirable to include E.C.G. and other extracephalic leads.

Equipment with at least eight channels is recommended to permit simultaneous recording from as many areas of the scalp as possible, with a minimum of six channels of E.E.G. There should be the usual range of high frequency filters and time constants; and the noise level should be such that cerebral potentials of 2μV peak to peak could reasonably be recognized in the write-out.

It is advisable to use a time constant of at least 0·3 sec. for most of the recording, and a paper speed of 1·5 cm./sec. for at least part of the recording. The amplification should be such that 2μV signals could be readily identified; this may require increased gain to 3·5 or 2·5μV/mm. level. Montages should include long interelectrode distances (> 10 cm.) and preferably some monopolar/average reference derivations. The apparatus and connexions should be tested by systematic and deliberate touching of electrodes to produce extraneous potentials. It is desirable to demonstrate the absence of E.E.G. response to stimuli (e.g. pain, sound, light).

There should be 20 minutes actual recording though 30 minutes would be preferable. Attention should be paid to recording conditions to identify and eliminate extraneous signals. The record should be interpreted by a medically-qualified neurophysiologist / electroencephalographer, who has been present during at least part of the recording. Where satisfactory recording conditions cannot be obtained it may be impossible to provide a reliable assessment.[1]

It remains certain that the E.E.G. on its own cannot enable one to give a definite prognosis on survival. The whole clinical situation has to be taken into account, especially since certain factors (e.g., intoxications, hypothermia) can appear to abolish temporarily much of the electrical activity of the brain. Nevertheless, the E.E.G. is one of the useful tools in assessing the chances of survival of an individual.

One important point on which evidence is still lacking is the minimum time for which the persistent absence of E.E.G. potentials in scalp recording can be regarded as indicating irreversible inactivity of the brain. It seems likely that many hours are necessary, and that such an interval may be needed between "inactive" records before a definitely bad prognosis may be given.—I am, etc.,

ELMAN POOLE,
Secretary,
E.E.G. Society Subcommittee for Resuscitation and Survival.
Churchill Hospital,
Oxford.

REFERENCE
1 E.E.G. Society Subcommittee for Resuscitation and Survival, *Recommendations*, April, 1970.

Buruli Ulcer

SIR,—I was very interested to read your leading article entitled "Buruli Ulcer" (16 May, p. 378).

Last year I spent two months in Peru, and during my stay I spent some time in the humid jungle regions of the country in search of the Buruli ulcer. The climate of the Buruli district is similar to that of the Amazon basin in Northern Peru, and it seemed reasonable to suspect the existence of *Mycobacterium ulcerans* in this area. In Iquitos, situated on the Amazon and the largest town of Peru's jungle regions, I came across an interesting case which I would like to report here.

The patient was a boy aged 4 years living in the centre of Iquitos. He was brought to the dermatologist by his father who gave details of the history. The boy developed a small nodule above the right knee. The nodule grew until it reached the size of a pea when a small hole appeared in the centre and began exuding fluid. The ulcer grew in size as dead skin from the periphery sloughed off. No pain referable to the lesion had ever been experienced. After two months the boy was seen at the hospital. The ulcer was then 2 cm. in diameter, the skin was separated from the subcutaneous tissues, and a probe could be passed under the undermined edges of the ulcer. The surrounding skin was a pink-red colour and was not warmer than elsewhere. There was no pain or tenderness and no inguinal lymphadenopathy.

The ulcer was curetted and a considerable amount of abnormal adipose tissue evacuated. The destructive process extended deeply, involving the fascia of the quadriceps.

Unfortunately no pathological or bacteriological examinations were performed on the specimens because the necessary equipment was not available. The boy was Mantoux positive, and it was assumed that the ulcer was caused by *Mycobacterium tuberculosis*. The treatment for six months with P.A.S., isoniazid and streptomycin resulted in a complete cure leaving a well-formed scar.

In view of the history given and the nature of the ulcer it seems very likely that it may have been a result of infection with *Mycobacterium ulcerans*.—I am, etc.,

D. E. WARD,
Medical Student.
East Wing,
Guy's Hospital,
London S.E.1.

Home from Hospital

SIR,—I refer to your leading article (18 July, p. 119), discussing the home care of patients discharged from hospital, and how far their needs had been met.

The final paragraph contains the statement "Hospitals know little of their patients' home circumstances, doctors do not hear of their patients' hospital treatment. . . ." This is a generalization which is quite untrue of many hospitals. It is the practice in my own group to make every possible inquiry into home circumstances before the discharge of a patient, and every general practitioner receives two discharge reports—a brief interim one at the time of discharge, and a full copy of the summary within a week or two at the most.

Time spent on ward rounds at the bedside of patients whose hospital investigation and treatment are nearing completion and are shortly to be discharged is more concerned with the home circumstances and care available than with the clinical details. Consultants, residents, sisters, welfare officers, etc., are all involved, and repeated interviews with relatives are arranged, or attempted, in some cases without success. Obviously the results are not always satisfactory, but to imply that hospitals in general make no effort to this end is surely quite unjustifiable.—I am, etc.,

W. M. PRIEST.
Warneford General Hospital,
South Warwickshire Hospital Group,
Leamington Spa.

Oral Contraceptives and Hypertension

SIR,—I refer to your leading article (16 May, p. 378), just to hand.

It may be of interest to note that I first drew attention to this in 1963 and since then I have had three published references thereto.[1-3] May I draw attention to my comments at the World Congress,[2] and to the *Medical Journal of Australia*,[3] where I wrote "The table suggests . . . rise of blood pressure [is] more likely to occur in those who have had toxaemia of pregnancy."

In conclusion, may I state that the blood pressure levels may be very high. In two of my patients the readings were 220/120 and 210/110, and since I have seen two patients on the pill for up to 10 years with a diastolic pressure of 150. It would seem that there

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