or in collaboration. Just over half of the senior registrars (N.H.S.) were so engaged, and for this latter group a major limiting factor was inadequate time, many not being able to take the one day a week for study and research to which they were entitled under the N.H.S. study leave regulations.

On the basis of the survey's findings it is clear that senior registrars in all regions should have the leave to which they are entitled in order to pursue research, while those with a major project which could not be undertaken on a part-time basis should be given long periods of full-time study leave. The Oxford Regional Board's enlightened action in this respect could well be universally adopted.

The complete report of the survey's findings "Psychiatrists in Training" is to be published as one of the Royal College of Psychiatrists' "Special Publications" later this year.—I am, etc.,

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SIR,—The difficulty of developing psychiatric research seems to be a universal problem. The personal account given by Dr. N. B. Malleson (29 April, p. 289) commenting on your leading article "Research on Psychiatry" could be signed by many Latin-American researchers, but it would have an even less happy ending. When they are faced with the bare fact that they also have "children to support" they plunge into private practice and not simply into another research subject. (It happens that social psychiatry, to give an example, is not a feasible private enterprise).

The scarcity of psychiatrists devoted to research in Britain (about 40 on a full-time basis, according to Shepherd¹) may be reasonably linked with the paucity of the available funds. There is a saying often heard in Latin America, allegedly said by Houssay, "Research is a privilege of rich men and free countries."—Could it partially apply to the free and highly developed England?—I am, etc.,

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¹ Shepherd, M., *British Medical Journal*, 1969, 4, 161

Speaking Valve for Attachment to a Tracheostomy Tube

SIR,—Most patients with long-term tracheostomies may be fitted with uncuffed silver tubes with standard speaking valves enabling them to converse. Short-term cases and those being weaned from ventilators may have their tube cuffs deflated when breathing spontaneously and be able to talk by occluding the tube with their fingers. In any case these patients can communicate by writing.

There is, however, a special problem with the patient who not only requires prolonged weaning but who also has paralysed limbs. One such case recently in this hospital was a patient with polyneuritis. As his respiratory muscles improved he could maintain spontaneous ventilation for periods of one to two hours, during which time humidified

Fig. 1

air was provided through a "cigar" type humidifying tube fitted into the Nosworthy end of a Portex tracheostomy tube. Communication was, however, limited to lip-reading. There did not appear to be an easily obtainable device which would enable him to speak while receiving humidified air, and allow ventilation during his times on the ventilator. It was decided, therefore, to adopt a non-return valve for this purpose.

The most convenient valve available was that on the Ambu bag, being of a flap principle, light, and easily adapted. The cap was removed from the expiratory port and the port occluded by a spigott (Fig. 1). The cuff of the tracheostomy tube was released and the valve fitted to the tube. This then enabled the patient to breathe in through the valve but expiration was through his larynx only. A Y-piece was connected to the inspiratory port with one arm leading to the humidifier (Fig. 2). The patient was able to talk adequately with this valve during his times of weaning from the ventilator.

This adaptation of the Ambu valve is simple to make and will fit any Nosworthy-ended tracheostomy tube.—I am, etc.,

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Effect of Intravenous Infusion of Acetylsalicylic Acid on Renal Function

SIR,—We report a study of glomerular filtration rate and para-aminohippuric acid (P.A.H.) clearance in eight healthy subjects given a new intravenous preparation of acetylsalicylic acid Aspegic (lysine acetylsalicylate 0.9 g, glycine 0.1 g).

Eight patients aged between 22 and 46 years recovering from a minor illness and having no signs of renal disease were studied. The nature of the trial was fully explained to them, and all gave informed consent. Priming doses of inulin and P.A.H., calculated according to body weight and diffusion space, were given at time t_0 , then a constant intravenous infusion at a rate of 2 ml/min (Braun perfusor) was given throughout the 130-minute period of the experiment to maintain the blood concentrations of inulin and P.A.H. at a steady level. The experiment was conducted in three phases:

Phase 1 or Control Period.—After a 30-

Fig. 2

minute equilibration period, three urine collections at 10-minute intervals were made (u_1 , u_2 , u_3).

Phase 2 or Experimental Period.—At 60 minutes an intravenous injection of 1 g acetylsalicylic acid was given and a constant infusion of acetylsalicylic acid at a dose of 1 mg/kg body weight/minute was started. Urine collection (u_4) corresponding to the time of change over from control to experimental period was not subjected to the chemical analyses set out in the protocol. Three urine collections were made at 10-minute intervals (u_5 , u_6 , and u_7).

Phase 3 or Post-experimental Period.—The intravenous infusion of acetylsalicylic acid was stopped and urine collections were made at 10-minute intervals (u_8 , u_9 , and u_{10}). 20 ml blood samples were taken before the start of the experiment (S_0) and then at 45, 60, 100, and 130 minutes (S_1 , S_2 , S_3 , and S_4).

Fig. 1

The volume of each urine sample was measured and expressed as ml/minute. The blood and urinary concentrations of creatinine, inulin, and P.A.H. were estimated, and blood salicylic acid was measured in samples S_2 , S_3 . The clearances of creatinine, inulin, and P.A.H. were calculated for each period.

Acetylsalicylic acid produced a significant reduction in the glomerular filtration rate and P.A.H. clearance as studied by these methods. Creatinine clearance and inulin clearance diminished by 30% and 32% respectively compared with the normal values obtained in the control period.¹ P.A.H. clearance dropped by 33% during the experimental period. This effect of aspirin on renal function was only transitory and it faded away after the intravenous infusion of acetylsalicylic acid was stopped (Fig. 2).

Fig. 2

The complete results are given in the Table.

m + Σ	Phase 1	Phase 2	Phase 3
Creatinine clearance ml/min	102.4 ± 8.5	72.4 ± 7.6	74.5 ± 8.8
Inulin clearance ml/min	126.4 ± 14.2	85.1 ± 8.8	89.7 ± 5.4
P.A.H. clearance ml/min	643.8 ± 53.0	429.9 ± 81.2	514.4 ± 70.5

The average blood salicylic acid level was 10.8 ± 6.7 mg/100 ml in sample S_2 and 12.4 ± 0.13 mg/100 ml in sample S_3 .

The exact mode of action of aspirin on renal function remains unknown. A vascular action with perhaps constriction of the afferent arterioles seems possible taking into account the reduction in glomerular filtration rate and renal plasma flow. In common with Beeley and Kendall¹ we found that the renal effects of acetylsalicylic acid were not constant: the glomerular filtration rate and P.A.H. clearance remained unaltered in one of our patients. This fact warrants further study using a greater number of cases. Indeed, it is possible to imagine that, at large, people have widely differing reactions, some being rapid inactivators of aspirin and others slow.²—We are, etc.,

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¹ Beeley, L., and Kendall, M. J., *British Medical Journal*, 1971, **1**, 707.

² Evans, D. A. P., *Pharmacogenetics, Annals of the New York Academy of Science*, 1963, **151**, No. 4, 723.

New Electronic Metal Locator

SIR,—George Bernard Shaw in *The Doctor's Dilemma* made one of the characters say that "all the best inventions are made regularly every 20 years." This appears to apply perfectly to the new electronic metal locator (15 April, p. 157).

In 1941 when in charge of the medical experimental laboratory set up by G.H.Q., Middle East Forces at the 63rd General Hospital in Cairo I discovered the existence of the highly secret mine detector project being developed by the Ordnance Corps. Eventually in collaboration with the late Lawrence Balls, F.R.S., director of the Cotton

Research Board at Giza, a metal locator was developed with two pairs of search coils. A large pair of coils about 5 cm in diameter were used to search for a foreign body over the skin surface. A very small pair of coils were inserted in a test tube and could thus be used under sterile conditions to relocate the metallic foreign body in relation to the actual incision.

I still have the prototype as a treasured possession, but the "production prototype" made by the Ordnance Corps at Abbassia was taken to the South African Casualty Clearing Station at Mersa Matruh and had no sooner been brought into use than General Rommel captured both C.C.S. and foreign body locator.

Mr. M. J. Roper-Hall¹ reinvented the device for use in ophthalmic surgery and now Dr. J. Watson and Mr. H. J. Hambury have invented it all over again. Major-General D. C. Monro, K.H.S., who encouraged the development of my original device, decided not to replace the captured one because he considered it was unwise to tempt surgeons in forward areas to remove foreign bodies. With the invention of antibiotics this still seems to be a sound attitude except within the eye, but there ultrasonic location is proving vastly more satisfactory and will detect non-metallic foreign bodies and pathological conditions as well.—I am, etc.,

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¹ Gibson, R., *Journal of Laryngology and Otology*, 1965, **79**, 23.

Prevention of Deep Vein Thrombosis

SIR,—Many have been the concepts concerning disease patterns in Africa. And many times we have seen that so-called non-existent diseases in Africa were in fact quite common. Surgeon Captain T. L. Cleave states (4 March, p. 629) that deep thrombosis and other venous conditions are rare among tribal (a rather unfortunate word) Africans living on unrefined carbohydrates. I do not know the investigations to support this statement, but I know that I see a surprising number of cases of thrombosis and pulmonary embolism—after operations and deliveries—as well as admissions for the symptoms of thrombosis and embolism only.

This notion comes from an isolated area in Kenya where half of the patients are Maasai, living on milk only, and half are

Kisii, living on unrefined carbohydrates only.

While arterial disease is rare indeed, venous disease is, in my experience, quite common, not least among those Africans living on unrefined carbohydrates.

It will be interesting to hear from other countries in Africa whether venous disease is as common there as it is here.—I am, etc.,

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Sotik, Kenya

SIR,—We are writing in reply to Dr. N. H. Hills and others (1 April, p. 49) about our letter (4 March, p. 628) concerning the use of intermittent calf compression as a prophylactic against deep vein thrombosis. As a matter of record, a preliminary report of our findings was formally presented at an international symposium on venous thromboembolism¹ which was held at King's College Hospital on 10 July 1971, one week before the Surgical Research Society meeting to which they refer.

We would agree that the statement in the report of our trial, that patients were "randomly selected" was misleading. All suitable patients (as defined in our trial report) were entered consecutively into the trial and the treated leg was selected by drawing a card from a pack. Dr. Hills's question on the technique we used for assessing postoperative thrombosis has already been answered in our paper (13 November 1971, p. 394).

The great advantage of our technique is that intermittent compression of the calf applied within the limits we have defined,² need only be applied during the operation. This is the most important finding of our four years' research into this problem.

At last we see hope of preventing a complication of surgery that kills many thousands of patients a year. Let us now stop splitting hairs and get on with conducting large multicentre trials to establish the value of the methods that are now available.—We are, etc.,

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¹ Kakkar, V. V., and Jouhar, A. J., eds. *Thromboembolism: Diagnosis and Treatment*. London, Churchill-Livingstone, 1972.

² Roberts, V. C., Sabri, S., Beeley, A. H., and Cotton, L. T., *British Journal of Surgery*, 1972, **59**, 223.

Parathyroid Hormone Production and Malignancy

SIR,—I read with interest Dr. R. A. Melick and others' Medical Memorandum (22 April, p. 204) on tissue assay for parathyroid hormone in hypercalcaemic states. May I add that the differentiation between hypercalcaemia due to malignant disease and that of hyperparathyroidism can be a difficult diagnostic problem, as is illustrated in the following case.

A housewife aged 46 presented with a fractured right neck of femur after a fall in August 1971. Three months before admission, she had back pain with generalized weakness. She also complained of anorexia, loss of weight, constipation, polydipsia, and poly-