

Accident Prevention also recommends that drivers who have had a myocardial infarction should not hold an H.G.V. licence.<sup>7</sup>—I am, etc.,

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London N.W.1

- 1 Joint Working Party, *Journal of the Royal College of Physicians*, 1975, 9, 281.
- 2 Road Traffic Act 1972.
- 3 Raffle, P. A. B., *Transactions of the Medical Society of London*, 1974, 90, 197.
- 4 Weinblatt, E., et al., *American Journal of Public Health*, 1968, 58, 1329.
- 5 Peterson, B. J., and Petty, C. S., *Journal of Forensic Science*, 1962, 7, 274.
- 6 Gissane, W., and Bull, J., *British Medical Journal*, 1973, 1, 67.
- 7 Medical Commission on Accident Prevention, *Medical Aspects of Fitness to Drive*, 2nd edn. (revised). London, M.C.A.P., 1974.

### Prevention of Tetanus in the Wounded

SIR,—It was with some dismay that I read the paper by Dr. J. W. G. Smith and others (23 August, p. 453) advocating a wider use of human immunoglobulin in the prevention of tetanus. I fear that their views, if widely propagated, will lead to a vast and unnecessary increase in the use of human immunoglobulin and that we shall revert to its use for protection against medicolegal proceedings rather than the protection of the patient.

Though they emphasized that their views are to be taken only as guide lines, there are a vast number of people whose immunity status is unknown, who have not had a complete course of toxoid, or whose last booster was over 10 years ago. Similarly, there are a large number of wounds which are over six hours old when they reach the theatre, which cannot be adjudged wholly "clean," and which have more than "negligible tissue damage."

In an accident and emergency unit dealing with over 50 000 new patients a year, of whom 70% have suffered trauma, no patient with tetanus has been seen since the unit opened seven years ago. Adsorbed tetanus toxoid, either initiating a course or as a booster where necessary, is used routinely, combined with adequate surgical treatment of the wound. Antibiotics are used only for badly contaminated lacerations. This, to my mind, is the rational approach to tetanus in our society rather than endeavouring on rather vague premises to give better protection to the one in over 100 000 lacerations likely to be at risk.

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### Training for Overseas Graduates

SIR,—Drs. B. Senewiratne and M. Kanagarajah in their article on postgraduate training in a developing country (26 July, p. 213) stress that if Britain and other developed countries are to make a real contribution to medicine in developing countries they should accept some doctors for training with the emphasis on work rather than passing examinations.

In 1972 I had the good fortune to work for three months in Ceylon, teaching undergraduate and postgraduate students. Since that time I have had a succession of Ceylon graduates who have come to work in this

unit for a month at a time before going on to work in other parts of the country. As a result of this experience I wrote to the British Council saying that it seemed to me that one answer to the problem of training overseas postgraduates would be to establish specific training posts. For example, in this unit we have a fairly comprehensive training programme in neurology, but the posts are filled by direct competition and this makes it very difficult for overseas graduates. I suggested a fellowship which would be filled only by graduates who had been specially selected by their own country's doctors with a view to returning to a consultant post. The British Council were interested and sent this proposal on to the Overseas Development Administration, from which nothing further has been heard.

There must be many hospitals in this country where a training fellowship of the type visualized by Drs. Senewiratne and Kanagarajah could easily be established. If some relatively independent body such as the British Council or the British Postgraduate Medical Federation were to set up a register of such posts and send lists of these posts to medical schools in developing countries, then at least some of the problems raised by Drs. Senewiratne and Kanagarajah would be answered. It should be a simple matter to meet the cost of these training fellowships (which would simply be a registrar's salary) from money such as the Commonwealth educational co-operation funds of the British Council or some similar source. I would also suggest that once these travelling fellowships had been established an exchange scheme at registrar, senior registrar, and consultant level could be contemplated.

If anyone, in Britain or abroad, interested in setting up such a register would write to me I will undertake to present the information to the British Council and the British Postgraduate Medical Federation and to try to get such a register established on a formal basis.—I am, etc.,

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### Who Cares For Head Injuries?

SIR,—The neurosurgeon is the person best qualified to be responsible for the treatment of patients with head injuries (Professor Bryan Jennett, 2 August, p. 267). Their treatment should be carried out within the accident service, where such an organization exists. This is important in part because more than one-third of these patients with serious head injury have other injuries that require simultaneous treatment. The efficient treatment of this type of patient requires a well-organized team, and the neurosurgeon should also play an important part in deciding when other necessary procedures can be carried out. A small proportion of patients with head injury will need craniotomy. The quality of the decision as to when it is necessary is at least as important as the technical skill in carrying it out, and the neurosurgeon is best qualified to make this decision.

This was the view of the late Professor Sir Hugh Cairns. It was put into effect when the accident service was started in Oxford in 1942 and the policy has since been continued by a series of distinguished neuro-

surgeons. One graphic result of this policy was the reduction of the mortality rate from 9% in the first 1000 cases to just over 3% in the fourth. Though the 3% figure was achieved in Oxford about 20 years ago, I believe it is still well below the national average.—I am, etc.,

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### SI Units

SIR,—We write to protest at the general introduction of SI units into medicine without adequate consultation with those who have to interpret laboratory reports in the clinical situation.

In our experience this has already led to waste of time and effort, confusion, and danger; and even when we have got used to the units, which involves effort that would be more usefully employed in learning things of real relevance to patient care, the units are in many more instances inappropriate for the range of quantities met with in clinical medicine. It is noticeable when one visits the Continent how at producer and consumer level the old measures of weight etc. are still used instead of the metric system because they represent natural quantities rather than artificial concepts; for instance, a yard as the length of a step is easier to gauge than a fraction of a wrong measure of the circumference of the earth; and the same applies to many measurements used in clinical medicine. We have a particularly difficult task in paediatrics because there are different standards for children of different ages, size, and sex to which we have got used and only pathologists with paediatric experience understand.

There seems to be a kind of general law that when a committee recommends something foolish—like Salmon or Seeböhm—its recommendations are immediately put into effect to the detriment of the Service; whereas when it recommends something sensible—like Briggs—it is shelved.

When the tide is artificially induced there is something to be said for Canute trying to put it in reverse in the interest of efficiency, safety, and common sense.—We are, etc.,

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### Ischaemic Heart Disease, Vitamins D and A, and Magnesium

SIR,—Professor V. Lindén (14 September 1974, p. 647) has suggested that vitamin A, by protecting against the hypercholesterolaemic effect of vitamin D, may influence the incidence of myocardial infarction. His epidemiological study (in Norway) related to relatively high vitamin D intakes. Vitamin A also protects against the osteolysis and renal and arterial calcinosis of experimental hypervitaminosis D.<sup>1</sup> The risk of hypervitaminosis D in the United States, where the greatest source is fortified milk, may be even greater than in northern Norway, where most of the vitamin D derives from fish liver, which is rich in vitamin A.

Normal full-term infants require about 100 IU of vitamin D daily to prevent rickets and premature infants about 200 IU. The adult requirements may be so low as to be met by the amount in unfortified foods and exposure to sunlight.<sup>2</sup> A survey of American children (newborn to 17 years) showed that half ingest 400-800 IU daily; almost 10% consistently consume over 1000 IU daily.<sup>3</sup>

In contrast, in the past half-century magnesium intakes have fallen, whereas dietary contents of protein, fat, sugar, and calcium have risen.<sup>4</sup> High intakes of these nutrients, and of vitamin D, increase magnesium requirements and increase susceptibility to magnesium deficit.<sup>5,6</sup> Metabolic balance studies indicate that Occidental magnesium intakes are suboptimal.<sup>7</sup> The cardiovascular and renal lesions of experimental magnesium deficiency and experimental hypervitaminosis D are similar, as are those of infantile hypercalcaemia, an outbreak of which in England was related to excessive vitamin D—2000-4000 IU daily.<sup>8,9</sup> Increased magnesium intakes protect against cardiomyopathy produced by many agents, including excessive vitamin D.<sup>5,9</sup>

It may be the combination of excesses of most nutrients, with the exception of magnesium, that contributes to the high incidence of ischaemic heart disease in the industrialized countries. Perhaps the amount of magnesium provided by hard water<sup>10</sup> may be sufficient to correct a marginal deficit, thereby contributing to the lower death rates from ischaemic heart disease in hard-water than in soft-water areas.—I am, etc.,

MILDRED S. SEELIG

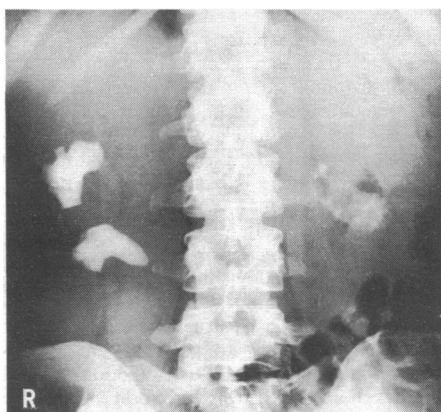
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### Wandering Gall Bladders

SIR,—I noted with interest your leading article (26 July, p. 193) and would like to report a further variation of the "left-sided gall bladder."

A 34-year-old woman presented at the outpatient clinic with a three-month history of epigastric pain, nausea, and vomiting. On examination she was found to have a large, mobile, non-tender mass in the right loin. Intravenous pyelography was performed but the preliminary plain abdominal film (see figure) provided the basis for the diagnosis. The pyelogram suggested that the three opacities seen on the right side of the abdomen in the plain x-ray were renal calculi lying in a large non-functioning right kidney. The oval opacity lying to the left of the third lumbar vertebra



and containing multiple filling defects was shown on the pyelogram to lie anterior to a normally functioning left kidney. An oral cholecystogram showed concentration of the dye in the oval opacity and confirmed it to be a gall bladder containing limey bile and multiple radiotranslucent gall stones. An erect film of the abdomen showed the stomach bubble to lie on the left side of the abdomen and thus discounted the possibility of complete situs inversus.

At laparotomy a huge hydronephrotic right kidney was found to have rotated the liver through 180° around the axis of the falciform ligament, bringing the gall bladder into a left-sided position. Right nephrectomy and cholecystectomy were performed, the kidney containing three calculi and the gall bladder multiple calculi of the mixed type.

Cholelithiasis occurs in 7-15% of the population of the United Kingdom,<sup>1</sup> some 10% of these stones being radio-opaque. Limey bile is a rare finding during biliary tract radiology with an incidence quoted as low as only one case in 6700 gall bladder examinations.<sup>2</sup> Urinary tract calculi develop in 2-3% of the population of the Western world, of which 90% will be radio-opaque.<sup>3</sup> The finding of a false left-sided gall bladder is a rare occurrence in itself, but for the diagnostic features detailed above to be present on a single plain abdominal radiograph seems extraordinary. Incidentally, no abnormality in the patient's calcium metabolism could be demonstrated.—I am, etc.,

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### Wastage from Training in Radiology

SIR,—A survey has recently been completed into the numbers of doctors leaving radiology either during or immediately after training. The survey was carried out retrospectively by asking the consultants in charge of training departments in the United Kingdom and Eire for the numbers of doctors entering training in the years 1968-73 inclusive and the numbers known to have left radiology. The overall wastage rate was 11% with some regional variations (see table).

At the end of 1973 there were 653 consultants in radiology in England<sup>1</sup> and 39 in Wales,<sup>2</sup> the total of 692 being 6% of all consultants. At the same time there were 97 consultant radiologists in Scotland.<sup>3</sup> In England and Wales the number of consultant

	No. Entering Training	No. Leaving Radiology
Scotland	97	12 (12%)
Wales	31	1 (3%)
Eire and N. Ireland	33	9 (27%)
England (excluding London)	303	27 (9%)
London	178	22 (12%)
Total	642	71 (11%)
Mean/year	107	12 (11%)

radiologists increased over the six years 1968-73 from 595<sup>4</sup> to 692, this annual increase of 2.7% being a little less than the 3.4% annual increase for all consultants over this period. The number of senior registrars in England and Wales increased from 79 to 150 and those in other training grades from 162 to 195 in the same period,<sup>5</sup> annual increases of 15% and 3.4% respectively. In the seven years up to 1974 an average of 18 consultant or senior registrar radiologists emigrated each year and this increased to 35 in 1974.<sup>6</sup>

Training programmes have to take into account the expected vacancies occurring from deaths, retirements, emigration, and expansion as well as wastage from training. There appears to be no previous estimate of this last factor.

I am most grateful to all those radiologists who completed questionnaires and to Mr. P. Powesland of the University Department of Psychology and Professor J. H. Middlemiss for their help.

—I am, etc.,

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### Treatment of Shoulder Subluxation in the Hemiplegic

SIR,—Your leading article on "Shoulder Pain from Subluxation in the Hemiplegic" (14 June, p. 581) rightly emphasized this common problem in hemiplegics. Until the present, treatment of such chronic painful shoulders has been inadequate. For patients who regain the motivation and ability to undertake household activities, indefinite application of a sling is annoying and may predispose to shoulder-hand syndrome.

Previously surgical treatment has been limited to shoulder fusion. In many cases such immobilization would further impair the limited function of a hemiplegic's upper extremity. A few models of total glenohumeral joint prostheses have been designed for resurfacing the degenerative articular surfaces in arthritic patients in whom the capsule of the joint is intact. These models have been contraindicated in the presence of a degenerative capsule or paralytic rotator cuff. Recently Fenlin<sup>1</sup> has described an operation for use in patients with degeneration of the rotator cuff which should be of great benefit to hemiplegics with chronic, painful, subluxing shoulders. It is a glenohumeral joint replacement with methyl methacrylate fixation wherein the "ball" is captive in the socket to provide mechanical