scopy (12 February, p. 411). During the past 12 months I have anaesthetized 75 patients for either laparoscopy or laparoscopic sterilization, during which carbon dioxide has been used to inflate the peritoneal cavity. Continuous electrocardiographic monitoring has been carried out throughout each procedure and no cardiac arrhythmias have been observed.

All patients are premedicated 1½ hours prior to operation with Pamergan S.P. 100 (pethidine 100 mg, promethazine 50 mg, and hyoscine 0.43 mg) and anaesthesia is induced with methohexitone in a dose of 2 mg/kg body weight to which D-tubocurarine in a dose of 25-30 mg has been added. Intubation using a cuffed Oxford tube is then performed and anaesthesia maintained with nitrous oxide and oxygen 8:5 litres per minute in a semi-closed system with an absorber using intermittent positive pressure respiration with a Commonwealth Industrial Gases auto-hand respirator. Atrophine and neostigmine in doses of 1.2 mg and 2.5 mg respectively are administered routinely to all patients at the conclusion of the operation.

Under the conditions which exist when laparoscopy is performed—that is, gross distention of the peritoneal cavity and considerable degree of tilting of the table—one is not surprised that some arrhythmias will occur if the patient is subjected to the added trauma of spontaneous respiration without intubation, and I would suggest that cardiac arrhythmias observed are not due to the laparoscopy but are iatrogenic.—I am, etc.,

T. R. MORLEY

King Edward Memorial Hospital for Women,
Western Australia

Erythropoietin

SIR,—It was with interest that I read your leading article "Erythropoietin" (29 January, p. 263) in which you refer to one of our articles.¹

However, I disagree with the following quotation about the results of these studies: "Such a bioassay has obvious disadvantages, but papers⁴⁻⁶ presented at a conference in Tel Aviv in 1970 showed that search for a satisfactory alternative in vitro method had been unsuccessful." In fact, in the article we stated:¹ "The immunochemical technique is exquisitely sensitive allowing measurement of quantities in the 2 milli immunochemical range. This permits the determination of ESF levels in normal plasma or serum: a procedure which is not routinely possible by bio-assay. As a consequence, investigations of normal or decreased circulating levels of the hormone are possible with the use of hemagglutination inhibiting (HAI)."

"The HAI technique is a relatively simple, reproducible method, and an experienced technician in a single day can easily determine the ESF units in two dilutions of 100 test materials. By contrast only 20 to 30 determinations can be carried out in a week-long bio-assay. Although many more laboratories need to evaluate the HAI technique for the assay of ESF, we think that the method fulfills the criteria for the ideal assay as outlined by Jacobson *et al.*"² We certainly do not feel that our efforts have been unsuccessful. The HAI method is

now being used in other laboratories for the routine testing of clinical samples.

It may be of interest that we have extended our studies and developed an in vitro screening test for erythropoietin. The results were presented at the International Conference on Erythropoiesis last year (in press). It would seem that a reasonably simple in vitro method of estimating erythropoietin is available. Thus, the exploration of the role of erythropoietin in many conditions can most certainly proceed.—I am, etc.,

ROBERT D. LANGE

Memorial Research Center and Hospital,
University of Tennessee,
Knoxville, Tennessee, U.S.A.

¹ Lange, R. D., McDonald, T. P., Jordan, T. A., Mitchell, T. J., and Kretschmar, A. L., *Israel Journal of Medical Sciences*, 1971, 7, 861.

² Jacobson, L. O., Gurney, C. W., and Goldwasser, E., *Advances in Internal Medicine*, 1960, 10, 297.

Methotrexate Hepatotoxicity in Psoriasis

SIR,—Dr. M. G. C. Dahl and others (11 March, p. 654) suggest that fibrosis of the liver is an invariable consequence of methotrexate when given by mouth in frequent small dosage if sufficiently prolonged. Methotrexate is still the best of available drugs for the very few severe cases that need systemic therapy, and it is important to ascertain the safest schedule. We believe that terms such as invariable are not yet justified, and not even Dahl *et al.* have sufficient evidence to rule out low-dosage oral regimens. We were the first to publish a detailed account of the hepatotoxic effects of methotrexate in live psoriasis patients,¹ but it has not deterred us from continuing to prescribe 2.5 mg methotrexate daily for 6-8 days with 3-7 days' rest. Of our original series we have reinvestigated four patients who have been on this regimen for almost 10 years. This is presumably sufficiently prolonged to fulfil the criteria of Dahl *et al.* The reason why some patients develop cirrhosis and others escape fibrosis must be clarified before frequent small-dosage regimens are blamed. Two patients show no fibrosis, one of whom has an alcohol intake of 6 pints (3.5 l.) of beer per week. Of the other two patients one presented with a full picture of cirrhosis one year ago and the other has histological evidence of cirrhosis.

Four other patients who showed abnormal liver function tests in our original series have been on parenteral methotrexate since that time. In spite of their initial oral low-dosage regimen for over two years their present liver histology shows no fibrosis.—We are, etc.,

T. J. RYAN
G. H. M. SADLER
C. GUERRIER
H. R. VICKERS

Radcliffe Infirmary,
Oxford

¹ Ryan, T. J., Vickers, H. R., Salem, S. N., Callender, S. T., and Badenoch, J., *British Journal of Dermatology*, 1964, 76, 555.

Pulmonary Disability in Coal Workers' Pneumoconiosis

SIR,—I was surprised that the article on the above subject (18 March, p. 713) did not cite Dr. Anthony Caplan's classical paper "Correlation of Radiological Category with Lung Pathology in Coal-workers

Pneumoconiosis."¹ This publication is pertinent to the present article, and I quote briefly one of its several findings to confirm the relevancy.

Dr. Caplan recorded that all category O cases showed very little evidence of simple pneumoconiosis at necropsy and most category 1 cases showed little evidence of the disease (amounting at the most to moderate numbers of dust foci in 14.8% of cases and sparse numbers of fibrotic modules in 11.1%). The findings of this recent investigation revealed differences as: (1) A few category O cases showed a comparatively substantial degree of pneumoconiosis at necropsy; (2) several category 1 cases had similar pathological findings. Additional quotes from Dr. Caplan's comprehensive paper would emphasize further that its recognition would be only quantum meruit.—I am, etc.,

G. B. MURRAY

Salisbury, Cheshire

¹ Caplan, A., *British Journal of Industrial Medicine*, 1962, 19, 171.

Sustained Relief of Hemiballismus

SIR,—I was interested in Dr. J. Shafar's letter on the sustained relief of hemiballismus by thiopropazate hydrochloride (25 March, p. 806). I have been using thiopropazate hydrochloride in doses of 5 mg twice a day increasing to three times a day for the past 15 months for the relief of hemiballismus with equivocal results.

In Huntington's chorea I have found it of little value. But in two cases of hemiballismus following a contralateral lesion of the pyramidal tract there was improvement within seven days. One lady of 85 whose throwing movements of the arm (of wide amplitude) had resulted in considerable traumatic bruising against the restraining cot side of the bed, showed amelioration within 72 hours, and it became possible to feed her orally. To avoid induced parkinsonian syndrome I have kept to a small dosage (5 mg three times a day) and have discontinued the drug after six weeks. I would agree that there has been no effective therapeutic approach to the problem of hemiballismus until last year, when thiopropazate hydrochloride (Dartalan) became available.—I am, etc.,

I. P. ROWLANDS

Newbridge, Wrexham

Alginate Casting Method for Recording Dermatoglyphs

SIR,—A major drawback of conventional methods for recording dermatoglyphs is the possibility of smudging prints. Hand or foot deformities create additional problems. These difficulties may be overcome by making impressions of the hands or feet in an alginate compound. A rubbery mould is obtained from which plaster-of-Paris casts may be made. The fine details of the epidermal ridges are recorded and distortion of the shape of the hands or feet or of the pattern configurations is avoided. A casting technique using latex materials has already been described,¹ but it is much more expensive than using alginate. Of the many dental-impression alginate samples tested Zelgan gave specially good results.

To make an impression of a hand alginate

powder and water are mixed as quickly as possible to a smooth thick paste. Suitable quantities for an adult are 70 g alginate powder with 240 ml water (or 11 g alginate powder to every 40 ml water). The hand is cleaned with surgical spirit to remove grease and smeared firmly with a little paste to prevent the formation of air bubbles. An impression mould is then made either by gently pressing the hand into the alginate paste or by applying the paste to the up-turned palmar surface. The alginate sets to a rubbery gel and the hand is then easily removed. After a mixing time of one minute the alginate mix is usable at a working temperature of 25°C for up to 90 seconds, and it takes one minute to set. The total working time is therefore 3½ minutes.

Using blockboard receptacles roughly fashioned into hand and foot shapes saves material. The receptacles may be lined with a thin, smooth layer of preset alginate. The plaster-of-Paris casts should be made within a few hours if possible, though the alginate moulds seem to last indefinitely when stored in a damp container in a refrigerator. The advantages of the alginate casting method are speed, cleanness, and ease of execution causing minimal discomfort to the patient. It thus has many advantages over printing methods when difficult subjects such as very young children, patients with deformities of the hands and feet or suffering from diseases such as Parkinsonism, and patients with faint print patterns are encountered. The technique could probably be developed to make hand moulds from newborn infants.

I am grateful to Drs. D. J. Hamblen and J. Blake for helpful discussion, and to Mr. A. C. Roberts, St. Luke's Hospital, Bradford, for valuable technical advice. Zelgan was supplied through the courtesy of Amalgamated Dental Chemicals Limited, Weybridge, Surrey.

—I am, etc.,

MARGARET E. SANDS

Postgraduate School of Studies in Biological Sciences,
University of Bradford,
Bradford, Yo:ks

¹ Tips, R. L., Shiner, F. S., and Perkins, A. L.,
Human Biology, 1964, 36, 1.

Hospital Staffing

SIR,—We the undersigned general surgeons wish to make the following comments in relation to the staffing of hospitals.

All hospitals dealing with the admission and care of surgical emergencies and the treatment of major surgical problems require the presence of someone of registrar status throughout the 24 hours to maintain the proper and adequate care of patients. We therefore condemn the irresponsible freeze of registrars applied throughout the country by the Department of Health and central committees that accepted it.

In all future plans made by the Central Manpower Committee the need of such responsible medical care must be accepted and put into practice.

In the redistribution of junior staff, the senior registrar is similar to a registrar post from the viewpoint of responsible cover. There should be either one or the other acting in an intermediary position. Alternatively, there should be one national grade of registrar with yearly increments of seniority and salary over six years.

There must be no direction of labour imposed by the Central Manpower Committee

by the selective closure of more attractive areas. Inducement awards should be applied as a compensation to those taking up unattractive appointments.—We are, etc.,

Hitchin, Herts
Dewsbury, Yorks
Gateshead-on-Tyne
Wexham Park, Slough, Bucks
Workop, Notts
Keighley, Yorks
Winchester, Hants
Brighton, Sussex
Kettering, Northants
Burnley, Lancs
Sheffield, Yorks
Brighton and Mid-Sussex
Selly Oak, Birmingham, Warks
Lelant, Cornwall

J. J. SHIPMAN
H. H. BARST
A. R. BEARN
M. LEE
B. F. MACFARLANE
E. T. MCCARTNEY
J. S. MOUSLEY
H. PARK
J. H. S. PHILLIPS
A. F. ROBINSON
J. T. ROWLING
P. G. SOMERVILLE
N. E. WINSTONE
J. R. A. WHITE

Superannuation

SIR,—There appears to have been considerable discussion of superannuation recently. A comparison with the private sector of industry made in an article by Dryden Gilling-Smith in the *Financial Times* of 1 February might be of interest to your readers.

Superannuation rights for 25 years service—final pay £6,000

	Company Director in Good Top Hat Scheme	Hospital Doctor
Personal pension	£3,000 ¹	£1,875
Capital sum at retirement	10,000 ¹	nil ²
Widow's pension	2,000	938 ²

(1) Gross pension £4,000 (¾ final pay) of which £1,000 commuted for a capital sum of £10,000.
(2) Where a 50% widow's pension is elected no capital sum is payable.

[with acknowledgement to the *Financial Times*]

The title of the article was "Industry's Poor Relation."—I am, etc.,

F. W. JOHNSON

Wigan, Lancs

Cash for Hospitalization

SIR,—I wonder how many hospital medical staff have noticed recent advertisements for commercial health insurance that offer cash payments for the period that those covered are in hospital. This kind of insurance is quite different in principle from those that reimburse fully or partially the actual expenses incurred on health care. Payment is made in the words of one advertisement, "as long as you are in hospital." (London and Edinburgh Life Insurance Co. Ltd., *Daily Mirror* 24 March; a similar scheme is also being advertised by a Lloyds firm, *Radio Times*, 9 March.)

Medical practitioners who have either worked in countries such as Canada or the U.S.A., or who have studied the effects of this kind of insurance, will be fully aware of the additional pressures upon those who have to decide whether to admit or discharge patients with this type of insurance. In these countries it is not infrequently held that insurance considerations interfere with clinical decisions. The phrase "clinical freedom" implies, incorrectly, that a freedom exists in which practitioners can and do judge solely from a clinical (that is health) viewpoint. Clearly, all sorts of external

pressures currently influence clinical decisions, from legislation (such as that concerning abortion) to the employment and financial problems of the patient. However, in the commonly accepted meaning of the phrase, cash payments for hospitalization constitute a real and unnecessary threat to clinical freedom.

Finally, one wonders what the Department of Health and Social Security's policy is in relation to artificial pressures that tend to increase the higher and inappropriate use of inpatient facilities. If the Department is worried by this type of commercial health insurance, which incidentally seems to have invaded us from North America—possibly because markets there are likely shortly to be substantially reduced, what is it proposing to do? Equally, how can professional bodies counteract this threat?—I am, etc.,

PETER DRAPER

Department of Community Medicine,
Guy's Hospital Medical School,
London S.E.1

A Junior View of the S.H.M.O.

SIR,—It has recently been said the expansion of the consultant grade will result in consultant appointments going to those who are a good deal less experienced than for instance that generation of consultants appointed between 1946 and 1956 on their appointment. In many regions preregistration and postregistration house officers are now working less hours, with that much less practical experience, than if they had been undertaking a similar job five years ago. So it seems to me that people reaching senior registrar status in, for example, a surgical speciality, unless they have four years or more in this grade, will have much less under their belts than their chief when he was in their position.

Grabham¹ has suggested that there is likely to remain a very real need for permanent appointments to be available in a "subconsultant grade." There are perhaps two possible ways such a person could progress. Either he could continue in activities which might be more likely to enable him to achieve a consultant appointment, possibly research projects in the appointment of senior lecturer, or he might be content to carry on permanently in clinical practice at a level comparable with the present S.H.M.O. grade; indeed he might prefer such an appointment (if offered reasonable remuneration) rather than looking, for example, for a research job.

Perhaps now is the time to offer an attractive alternative to the consultant grade (in terms of remuneration and type of work undertaken) for those who wish to undertake permanent hospital clinical practice but who for one reason or another are unable to attain consultant appointment without undertaking a further appointment not of their choice, or would prefer an S.H.M.O.-type of appointment. I think there are those who would be happy in this situation, and indeed it would alleviate some of the present staffing problems in the National Health Service today.

—I am, etc.,

RICHARD W. GRIFFITHS

Llandough Hospital,
University Hospital of Wales,
Cardiff

¹ Grabham, A. H., *British Journal of Hospital Medicine*, 1971, 6, 45.