the fact that they are hospital-based in deciding which arrangement is the better. But I am certain of one thing: that there is need for experiment and that in this most important work policy based purely on departmental decree is not good enough. If, in the broadest sense, we are to get value for money this airing of the resettlement of the disabled should be followed by a planned comparative study.—I am, etc.,

H. J. SEDDON

London W.1

SIR,—Disabled men are discharged from this unit after burns, industrial, or road traffic injuries. When they leave they know to what work they may expect to return. They leave as wage earners not as invalids. We owe this state of affairs to Mr. J. W. Daniel (30 October, p. 277), our hospital rehabilitation officer. He sees our patients in hospital as soon after injury as they are lucid, and their employers within days, while both remember the patient as a fit man. Arrangements are made then for his return to the right job, at the right time. His convalescence is a preparation for work, and the return to work the beginning of the best form of physiotherapy and psychotherapy that exists—that is, reward for effort by money rather than by the compliment of a few degrees of added movement.

By contrast district rehabilitation officers fail, and must fail, because they are presented with a man who is already psychologically an invalid and then hopeless. Their liaison with hospital doctors is non-existent. Too often, patients fit for the right job do nothing, because the challenge of something new is too great for them. The district rehabilitation officer is too late to help, often too ill-formed to advise, and too remote to relate. How can he succeed?

Every hospital dealing with trauma should have a hospital rehabilitation officer. With such measures thousands of pounds would be spent and millions saved.—I am, etc.,

ROY SANDERS

Regional Plastic and Jaw Surgery Centre,
Mount Vernon Hospital,
Northwood, Middx

SIR,—The excellent article of Dr. D. A. Brewerton and Mr. J. W. Daniel (30 October, p. 277) prompts me to add the following comments.

I have known Mr. J. W. Daniel since 1959 in his capacity as a resettlement officer in Mount Vernon Plastic Centre. His contribution to our patients was not only to return them to work early. On many occasions both myself and my colleagues have discussed with Mr. Daniel suitability of the particular operative procedure for patients under our care. His opinion based on the detailed knowledge of patients' work requirement has always been invaluable.

I would like to point out one line in their discussion which to me underlines the basic principle: "It is a serious error to think that rehabilitation is a separate process divorced from other medical care."—I am, etc.,

M. F. STRANC

Mount Vernon Hospital,
Northwood, Middx

Sclerosant Injection for Varicose Veins

SIR,—We have recently been concerned with a case of accidental intra-arterial injection of sclerosant during the course of injection compression treatment of varicose veins. In this instance the operator was a skilled vascular surgeon with considerable experience of the method. The varicosities were in the left ankle and lower calf regions. After the first injection had been made on the inner side of the ankle, not far behind the malleolus, the patient experienced a burning pain in the ankle. The toes soon showed signs of ischaemia and though the accident was recognized, and correctly treated by the admission of the patient for infusion of low molecular weight dextran and heparin there was ischaemic damage to the great and second toe and a large slough along the course of the posterior tibial artery proximal to the point of injection. Arteriography subsequently confirmed that the posterior tibial artery was occluded over the area in question and that the lower end of the peroneal was also occluded most probably through the communicating artery not far from the injection point. Whether this injection was into the posterior tibial itself or into the medial malleolar branch is not certain.

The purpose of our writing this letter is to draw the attention of the profession to the risk of injecting varicosities by the empty vein technique or indeed by any other for that matter in the ankle region where arteries may be quite close to the varicosities in question. We understand from colleagues that there have been at least five other cases of similar accidents so we hope that the warning will be recognized as a possible hazard of this otherwise excellent treatment.—We are, etc.,

P. G. C. MARTIN
H. H. G. EASTCOTT

London N.W.1

Manpower and Financial Incentives

SIR,—Mr. F. J. Bramble (*Supplement*, 13 November, p. 34) is reported to have "no doubt that if a financial incentive to attract doctors to unpopular areas was introduced in the hospital service—as happened in general practice—it might be effective." This statement raises the interesting question of whether financial incentives in general practice have in fact resulted in a movement of general practitioners to unpopular practice areas. The results of a large-scale investigation which this unit has just completed into patterns of geographical mobility and residential settlement among general practitioners indicate that the financial incentives which existed from 1966 to 1970 acted as effective inducements under certain limited circumstances, but that non-monetary factors were much more significant in most decisions about where to practise.

Our study, which it is hoped will be published next year, describes in some detail the complex motivations involved in the residential mobility of doctors, and clearly warns against over-simplified prescriptions in manpower planning.—We are, etc.,

J. R. BUTLER
J. M. BEVAN

Health Services Research Unit,
University of Kent at Canterbury

Pupillary Mobility and Skin Colour

SIR,—Your leading article (30 October, p. 252) discusses the interesting work of Emiru,[1] who demonstrated that the pupils of Africans are less susceptible than those of Europeans to the mydriatic effects of homatropine and phenylephrine. However, your description of this research as a "pioneer study" is not correct. Readers may be interested in the study carried out by Obianwu and Rand in 1965[2] along similar lines.

The mydriatic effect of ephedrine eye drops was compared in European, Chinese, Indian, and African students. It was found that the mydriatic response was inversely proportional to the degree of pigmentation of the iris. There is evidence that this difference is due to a more powerful reflex miosis in subjects with pigmented irises. As suggested in your leading article, this may represent an adaptation to the environment. Since the decreased mydriatic response was observed in Africans residing in the United Kingdom, the adaptation seems likely to be genetic in origin and to have become general through natural selection.—I am, etc.,

A. S. D. SPIERS

Medical Research Council Leukaemia Unit,
Royal Postgraduate Medical School,
London W.12

1 Emiru, U. P., *British Journal of Ophthalmology*, 1971, **55**, 538.
2 Obianwu, H. O., and Rand, M. J., *British Journal of Ophthalmology*, 1965, **49**, 264.

Crystals in Skeletal Muscle

SIR,—In a recent publication Watts and collaborators[1] and now in your leading article (23 October, p. 185) reference is made to crystals of hypoxanthine, xanthine, allopurinol, and oxipurinol in "muscles of patients with gout who were being treated with allopurinol." The authors do acknowledge that the patients exhibit no symptoms associated with such crystals, and that "allopurinol can still be recommended,"[1] but suggest that studies more prolonged than the 8-9 years now available may be necessary to evaluate their accumulation and effects.

The data, however, show such crystals, not in muscle per se, but in specimens frozen in liquid nitrogen at −196°C or in hexane at −70°C and studied at −20°C. The elementary fact seems to have escaped attention that crystals can precipitate only when the concentration of solute exceeds the solubility point, and that the substances in question have rather high temperature coefficients of solubility. The reported levels of xanthine in specimens from xanthinuric patients may be close to the solubility limits (450 and 315 ng/mg *dried* tissue[2] (108 and 75·5 ng/mg wet weight) compared to 200 ng/mg in a saturated solution in plasma at 37°[4]), and precipitation may be plausible if one is willing to assume somewhat localized concentrations. Similarly, in untreated gouty patients, urate concentrations in muscle may reach levels where precipitation is possible. On the other hand, the concentrations of hypoxanthine, xanthine, allopurinol, oxipurinol, and uric acid in muscle biopsy specimens from allopurinol-treated patients are well below saturation levels in every instance, and only small fractions of the solubility in most instances. Thus, crystals of hypoxanthine are reported by Watts,[1] but