thromboembolism. Four of these patients had normal pulmonary "wedged" pressures (indirect left atrial pressures) and in one there was a slight increase. In the remaining six patients the pulmonary "wedged" pressure record could not be analysed because of difficulty in identifying an appropriate wave form. This could have been due to technical imperfection, but an alternative explanation might be pulmonary venous hypertension without left atrial hypertension. The occurrence of pulmonary venous constriction following experimental pulmonary embolism was demonstrated by Daicoff *et al.*⁵ This mechanism could account for pulmonary oedema in the absence of left heart failure and might also account for the difficulty in obtaining an adequate pulmonary "wedged" record.

Although in man the mechanism is obscure, there is no doubt that pulmonary oedema can occur as a result of pulmonary thromboembolism.—We are, etc.,

W. J. WINDEBANK
F. MORAN

Centre for Respiratory Investigation,
Royal Infirmary,
Glasgow

- 1 Sasahara, A. A., Cannilla, J. E., Morse, R. L., Sidd, J. J., and Tremblay, G. M., *American Journal of Cardiology*, 1967, 20, 10.
- 2 Smith, G. T., Dexter, L., and Dammin, G. J., in *Pulmonary Embolic Disease*, ed. A. A. Sasahara and M. Stein, p. 120. New York, Grune and Statton, 1965.
- 3 Megibow, R. S., Katz, L. N., and Steinitz, F. S., *Surgery*, 1942, 11, 19.
- 4 Dexter, L., *Bulletin of the New York Academy of Medicine*, 1965, 41, 981.
- 5 Daicoff, G. R., Ranniger, K., and Moulder, P. V., *Surgical Clinics of North America*, 1968, 48, 71.

Pathology of Malignant Hyperpyrexia

SIR,—There are two minor inaccuracies which should be corrected in your otherwise excellent leading article (3 February, p. 249).

Firstly, malignant hyperpyrexia was first recognized as a complication of general anaesthesia in the 1930s.¹ At that time ether was probably the agent most frequently responsible. Secondly, Bradley and Murchison² studied muscle biopsy specimens from six patients at risk in two families, not four as stated. At a recent meeting of the Royal Society of Medicine³ the pathological and biochemical studies performed on malignant hyperpyrexia were discussed in greater detail.—I am, etc.,

W. G. BRADLEY

Newcastle General Hospital,
Newcastle upon Tyne

- 1 Guedel, A. E., *Inhalation Anaesthesia; a Fundamental Guide*, p. 133. New York, MacMillan, 1937.
- 2 Bradley, W. G., and Murchison, D., *British Medical Journal*, 1972, 4, 108.
- 3 *Proceedings of the Royal Society of Medicine*, 1973, 66, 63.

Thiocyanate Metabolism in Human Vitamin B₁₂ Deficiency

SIR,—The letter from Dr. A. G. Freeman (27 January, p. 231) has reminded me of an article entitled "Optic Atrophy and Pernicious Anaemia; with Special Reference to Sex Distribution and Aetiology," published in 1951.¹ Two cases were described and the sex, age of onset, and smoking habits in 21 others reported in the literature were analysed. Of the total, 22 patients were males; in the only female the diagnosis was

in doubt. A positive history of smoking was obtained from 11 males; in the remaining cases no details were given. In the paper attention was drawn to the fact that this rare complication of pernicious anaemia predominantly affects males, and the aetiology of this chronic form of retrobulbar neuritis was discussed with special reference to the role of tobacco.

Its publication in an obscure and short-lived journal (under my editorship) provides ample reason why this article has passed unnoticed.—I am, etc.,

DOUGLAS MCALPINE

Marnhull, Dorset

- 1 McAlpine, D., and Goldsmith, A. J. B., *Archives of the Middlesex Hospital*, 1951, 1, 109.

Medical Aspects of Ambulance Design

SIR,—I was very interested in the article on ambulance design by Dr. Roger Snook (2 September, p. 574). Recent experiences have underlined what he says about the motion of the vehicle affecting the condition of some patients and the inadequacies of many vehicles in respect of patients requiring life-support treatment. It would seem that giving a shocked patient a ride in a modern ambulance may well finish him off. How often do we read in the paper "The patient died on the way to hospital"? I know there are many problems attached, and money is not the least of them, but in this age of science could we not design an ambulance?—I am, etc.,

R. N. SEYMOUR

Street, Somerset

Staffing of Accident and Emergency Departments

SIR,—I was interested by the suggestion of Mr. J. C. Scott (3 February, p. 292) that casualty work should be an essential prerequisite for entry into general practice. Had such service not been a requirement for the F.R.C.S., then the staffing crisis of casualty departments would have occurred many years sooner, and such improvements in the conditions of work of casualty officers as have taken place recently would have been inevitable 20 years ago. Accident departments should be staffed by doctors keen to work there, not by men compelled to do six months' servitude in inadequate departments with inadequate training and cover.—I am, etc.,

R. K. HOLDSWORTH

Rugby

SIR,—My friend Mr. P. A. M. Weston (13 January, p. 114) must have been living in Tannochbrae if he believes that the typical family doctor's work consists in caring for the patient as a whole and in continuity. The stresses put upon the general practitioner by the open-ended commitment of the N.H.S. have tended to have quite the opposite effect. Many doctors will reluctantly agree that they have time only to treat the presenting symptom. With regard to continuity, witness the large group practice where, out of office hours, the patient must be content with the service of any doctor. Witness the town doctor system where on a Wednesday after-

noon, one doctor is on call for the community. And witness the lock-up surgeries where the agency doctor has no access to the patient's records.

Mr. Weston agrees that G.P.s are suitable to staff small hospital accident units. This is a move in the right direction but, as I argued in my letter (9 December, p. 607), I believe that the only solution to the staffing problem is the universal use of doctors of this genre.

Mr. Weston's main point is that senior staff (and I presume he means casualty consultants) should be in the bigger accident departments to train the G.P.s. I believe that all departments need doctors with the G.P.-type of training who will be sensible enough to call upon the skills of the consultant staff to deal with the seriously ill or injured. No special training is necessary beyond that learned as an undergraduate and as a house surgeon, except perhaps some advanced first-aid techniques such as the confident passage of an endotracheal tube.—I am, etc.,

J. P. TURNEY

Whitehaven, Cumberland

Disappearance of Diphtheria

SIR,—We appreciated your leading article on "Infectious Disease" (13 January, p. 63) and welcome the series it introduces. In the light of our experience in a laboratory with a special interest in diphtheria we feel that the observations on that disease merit some further comment. It is a common assumption that the disappearance of diphtheria was due to immunization, but we do not know why diphtheria declined so rapidly, nor do we know what part was played by changes in the prevalent types of strain.

The isolation of atypical and non-toxicogenic strains first became fairly common about 1935, before either extensive immunization or chemotherapy could have played a major role. Two changes are noteworthy. There has been a steady fall in the incidence of virulent strains of each type isolated¹ and a change in the incidence of the biotypes, so that today endemic *mitis* strains, the majority of which are non-toxicogenic, are commonly found, but epidemic *gravis* strains are uncommon and *intermedius* is rarely seen.

There is a familiar ring about the prediction that with continuing immunization diphtheria must cease to exist. The hope expressed by Logan² in 1952 that diphtheria could disappear within 10 years was not realized. If we examine the situation in the United Kingdom, we find that the most vulnerable group, the underprivileged, have the poorest acceptance rate of immunization.

Experience in areas such as Alberta, Canada, drew attention to the presence of diphtheria bacilli in the skin of a section of the population, with occasional cases of fatal or classical diphtheria in their associates. Moreover, some of the patients with typical toxic diphtheria have apparently been fully immunized.^{3,4} Although the declining world incidence of classical diphtheria is a hopeful sign, we must remember that as the incidence of the disease has fallen, the mortality rate has risen steadily from 5% in the 1930s to 20% in 1970 in the United Kingdom. Since many laboratories became aware of the importance of looking for the organism, it appears that the diphtheria