House late at night. While accident mortality in Great Britain is lower than in Northern Ireland, such a measure would still result in the saving of very many deaths and serious injuries. At a time when the National Health Service is crippled from lack of finance it is very difficult to see any other measure which could so quickly release many resources in hospitals. Mr Rodgers, the Minister for Transport, is well aware of the advantages and is keen to introduce an official Government Bill. If Mr Ennals does not recognise the implications for the Department of Health and Social Security they should be explained to him.

In Northern Ireland surgeons are now playing their part in mobilising understanding among the community at large and among MPs in particular. In Great Britain the public may well be deprived of the benefits of similar legislation for two or three years unless doctors and surgeons give a similar lead. Until we acted we were unaware how widespread and how strong medical opinion was. One would not question the ability of surgeons in Great Britain to persuade the community. The question is whether the will is there.

W H RUTHERFORD

Accident and Emergency
Department,
Royal Victoria Hospital,
Belfast

Investigation of preclinical iron overload

SIR,—Your recent leading article (12 November, p 1242) drew attention to the inadequacy of present methods for the detection of preclinical iron overload, a condition which should be sought in the relatives of a symptomatic patient with haemochromatosis if affected individuals are to be offered prophylactic treatment. Although they may be abnormal in some cases, the lability of plasma iron and transferrin saturation and the delayed increase in serum ferritin reduce the value of these non-invasive techniques as screening tests.¹⁻⁴

We have recently described a 74-year-old Englishman (case I in the accompanying table) who had thalassaemia minor, developed iron overload in the absence of exogenous iron therapy, and died of a hepatoma.⁵ We have investigated the iron metabolism of three of his children, all of whom have raised liver iron concentrations. One of them (IIC) has normal plasma iron, transferrin saturation, and stainable iron, but his liver iron concentration is high. Another (IID) has a raised transferrin saturation and high liver iron concentration, but normal ferritin and hepatic stainable iron.

These findings suggest that the systematic evaluation of adult family members of patients with iron overload should, as suggested by Feller *et al*,⁴ include a percutaneous liver biopsy with quantitative measurement of liver

iron content. A recent conference on iron metabolism and thalassaemia has accepted the necessity for liver biopsy to evaluate body iron load.⁶

P S PARFREY
ADAM TURNBULL
DAVID J POLLOCK

Medical Unit and Department
of Morbid Anatomy,
The London Hospital,
London E1

MYRA D BARNETT

Department of Haematology,
St Bartholomew's Hospital,
London EC2

¹ Wands, J R, *et al*, *New England Journal of Medicine*, 1976, **294**, 302.

² Crosby, W H, *New England Journal of Medicine*, 1976, **294**, 333.

³ Edwards, C Q, *et al*, *New England Journal of Medicine*, 1977, **297**, 7.

⁴ Feller, E R, *New England Journal of Medicine*, 1977, **296**, 1422.

⁵ Parfrey, P S, and Squier, M, *British Medical Journal*. In press.

⁶ *Iron Metabolism and Thalassaemia*, ed D Bergsma, *et al*, p xv. New York, Liss, 1976.

Tourist hepatitis

SIR,—Although a little late, we wish to comment on your leading article on this subject (22 January, p 189) and the subsequent correspondence (30 April, p 1158; 11 June, p 1534). We have evaluated 221 cases of traveller's hepatitis occurring within the Zürich area,¹ of which 80% were in tourists, 7% in businessmen, and the remaining 13% in foreign aid volunteers, other staff abroad, airline personnel, travel agency employees, and alien workers entering Switzerland. HBsAg was found in 53% of the cases presumably contracted in other European countries, the corresponding proportions being 6% for Africa, 12% for the Americas, and 34% for Asia.

The probable places of origin of the hepatitis were compared with the numbers of Swiss immigrants there, as published by the World Tourism Organisation, the Organisation for Economic Corporation and Development, and other sources. This allowed us to extrapolate approximate minimum incidences per entry as follows:

1/50 for overland trekkers to the Middle East;
1/350 for West Africa and Mexico;
1/750 for Algeria, India/Nepal, Indonesia, North-east Africa, Near East (excluding Israel), and South America;
1/850 for Middle East (all travellers);
1/1200 for Morocco and Tunisia;
1/1500 for East Africa, Sri Lanka, Turkey, and Thailand and the rest of the Far East;
1/3500 for Israel and South Africa;
1/9000 for Southern Europe; and
1/150 000 for Northern Europe, Canada, and the USA.

Our rate for Southern Europe is only one third of that reported by Iwarson and Stenqvist.² This may be partly explained by statistical uncertainties within both studies;

possibly differences in the prevalence of hepatitis between Göteborg and Zürich and different national behavioural patterns abroad may have played an additional role.

On the basis of the collected hard data and after consideration of the economic and ethical positions, we decided to recommend that standard immune globulin should be given—if necessary repeatedly—to all trekkers, foreign aid volunteers, and other persons with an adventurous travelling style going to any developing country and furthermore to anybody visiting West Africa or Mexico (for exceptions see below). For all other travellers to areas with an incidence exceeding 1/1500 the duration, style and frequency of travel, eating patterns (oysters, etc), personal risk factors, and indispensability in family and profession ought to be taken into consideration in making the decision. It is our belief that at least for our population such immunoprophylaxis is not indicated for trips within Europe. Nor is it necessary for persons going to areas of the Third World for a very brief duration at an exceptionally high living standard, as is the case for diplomats, airline crews, etc. Prophylaxis with the expensive hepatitis-B hyperimmune globulin must be reserved for special situations.

R STEFFEN

Zollikon, Switzerland

¹ Steffen, R, Regli, P, and Grob, P J, *Schweizerische medizinische Wochenschrift*, 1977, **107**, 1300.

² Iwarson, S, and Stenqvist, K, *Scandinavian Journal of Infectious Diseases*, 1976, **8**, 143.

Effects of levodopa on "frontal" signs in Parkinsonism

SIR,—The fortuitous observation in a 74-year-old non-demented woman with Parkinson's disease of symptoms attributable to frontal lesions led us to investigate systematically a further series of 37 patients for the following signs: (1) bilateral grasping reflex; (2) inability to reproduce a series of three gestures; and (3) inability to react to an audiovisual stimulus by a defined opposite gesture (it was previously established that the patients understood and remembered the code). None of these signs could be explained by akinesia, apraxia, or a defect of memory, attention, or watchfulness.

Among the 38 patients, 10 presented one or more of these signs. All the patients were treated with a combination of levodopa with a peripheral decarboxylase inhibitor in usual doses. Under treatment nine patients improved. In some of them there was a parallel improvement in the Parkinsonism and the "frontal" signs. In most patients only one or two of the three signs disappeared—grasping reflex in 7 out of 8, failure of gesture reproduction in 3 out of 7, and failure to produce a "coded answer" in 3 out of 5. Since the patients were examined only at four-week intervals it appears likely that the improvement was due to the drug itself rather than to learning through repeated examinations.

This improvement is in contrast with a lack of effect of levodopa found in several patients with frontal lesions (infarcts, tumours) and similar symptomatology in the absence of Parkinsonism. The explanation is not clear. It is possible that these features can be diagnosed and treated with success only during a limited phase of Parkinson's disease, perhaps in relation to the extension of the neuronal loss. On the other hand in some Parkinsonian

Iron metabolism in family with thalassaemia minor and iron overload

Case	Age	Sex	Plasma iron (μmol/l)	Total iron binding capacity (μmol/l)	Transferritin saturation (%)	Plasma ferritin (μg/l)	Liver iron disposition	Liver iron concentration (μmol/100 mg dry tissue)
I	74	M	37	40	93	3593	4	9.8
IIB	46	F	18	55	33	66	0	2.5
IIC	44	M	20	41	49	125	0	10.2
IID	42	M	39	50	78	100	0	7.9

Mean normal liver iron concentration = 1.4 μmol/100 mg dry tissue; normal plasma ferritin = 15–250 μg/l.

Conversion: SI to traditional units—Iron: 1 μmol/l ≈ 5.6 μg/100 ml; 1 μmol/100 mg ≈ 56 μmol/100 mg.

patients the depletion in dopamine could affect not only the nigrostriatal synapses but also other tracts of the accessory motor pathway.

A MOREL-MAROGER

Department of Neurology,
Corbeil-Essonnes Hospital,
Corbeil-Essonnes, France

Reptilase test in cirrhosis and hepatocellular carcinoma

SIR,—I read with interest the report by Dr P J Johnson and others (1 October, p 869) of their experience with the reptilase test in patients with various liver diseases, in which these authors contrasted their data with those which I had recorded in a group of Africans with primary liver cancer.¹ Pursuing the latter studies on a group of British patients I became aware of striking differences, particularly in regard to dysfibrinogenemia. Unfortunately Dr Johnson and his colleagues do not appear to have evaluated this phenomenon. In my experience the reptilase test has been consistently abnormal in British and African patients with primary liver cancer, with and without coexistent cirrhosis, in contrast to the normal results obtained in patients with carcinoma metastatic to the liver. However, the corresponding information in cirrhosis uncomplicated by tumour does indicate that many of these patients do have an abnormal reptilase test in the absence of dysfibrinogenemia. These data have been presented on a number of occasions,²⁻⁴ and a detailed account is to appear shortly.⁵ It includes a description of the modified reptilase test and a putative explanation for the racial differences and the apparently discrepant findings in cirrhosis.

RONALD D BARR

Faculty of Health Sciences,
McMaster University,
Hamilton, Ontario

¹ Barr, R D, *et al*, *Quarterly Journal of Medicine*, 1976, **45**, 647.

² Barr, R D, Allardyce, M, and Brunt, P W, *Proceedings of the American Association for Cancer Research*, 1977, **18**, 15.

³ Barr, R D, Allardyce, M, and Brunt, P W, *Scottish Medical Journal*, 1977, **22**, 242.

⁴ Barr, R D, *et al*, Meeting of Pathological Society of Great Britain and Ireland, Aberdeen, July 1977.

⁵ Barr, R D, *et al*, *Journal of Clinical Pathology*. In press.

Confidentiality and life insurance

SIR,—As a general practitioner I am becoming progressively more concerned by the requests made by life insurance companies for information on the medical histories of our patients, particularly as they appear to be more and more interested in any history of mental disturbance, however trivial.

When a patient talks to his doctor in the privacy of his consulting room he does so with the assumption that this privacy will be maintained in every respect, and future life insurance is probably the last thing on his mind. If it were, then important information such as previous mental problems and alcohol and tobacco consumption might well be withheld for fear of future repercussions.

It does not appear to be general knowledge among the public that any information given to their doctor might be divulged to an insurance company; nor does it appear to be general knowledge that when a proposal for life insurance is signed the "life" is giving the

insurance company permission to obtain information from his general practitioner. I am surprised by the number of patients who are astonished when they discover that I have let an insurance company have details of their previous illnesses or operations.

It therefore seems that we either have to abandon the pretence of "patient confidentiality" and continue to treat patients' notes rather like vehicle registration documents, disclosing their contents without the knowledge of many of our patients, or this whole insidious business should be made public knowledge so that the public themselves can decide what they want their doctors to know and what they want life insurance companies to know.

In the meantime perhaps we should all display notices in our waiting rooms letting our patients know that whatever they say to us in private will be taken down and may be used in evidence against them when they come to apply for life insurance.

T M PICKARD

Great Waltham,
Chelmsford, Essex

Circadian rhythms and affective disorder

SIR,—Nikitopoulou and Crammer¹ refer to the need for a neurological theory to account for the disturbance in circadian rhythms seen in endogenous depression, a theory that views this illness as a disturbance in brain centres or organ function rather than in synapses or cellular function. They nicely demonstrate a disorganisation in diurnal body temperature rhythm in those kinds of depressive episode which are also characterised by early morning waking and by a diurnal variation in depth of depression.

Temperature regulation, sleep, and mood have all been shown to be influenced by hypothalamic stimulation or destruction.² The possible diencephalic integration of brain centres thus implied was in fact elaborated into a neurological theory,³ further developed⁴ under the general concept of a central nervous reticular autonomy pervading and co-ordinating such multicellular organisms as ourselves from an emotive hormonal core or heart, through a neural "circulation"^{5,6} in which visceral efferents are "arterial" and visceral afferents "venous" and synapses play the role of one-way valves.

Less certainly recognised than the diurnal variation in the depth of mood in endogenous depression is a similar diurnal swing in the intensity of some anxiety states. It has been observed⁷ that depressed patients occasionally feel worse towards the latter part of the day if anxiety is a prominent part of the clinical picture; but may it not be that this is a manifestation of a certain kind of anxiety itself and that such anxiety may sometimes complicate or be mixed with depression (rather than be an intrinsic occasional feature of the latter) somewhat as other mixed mental states occur? This would be in better keeping with the different diurnal patterns of sleep disturbance seen in depression and anxiety. Thus early morning waking is followed by greater depth of depression in the morning decreasing as the day wears on, whereas anxiety increasing towards the latter part of the day is followed by difficulty in getting off to sleep at night. It would be interesting to see if a disturbance in diurnal body temperature rhythms occurs in such states of anxiety,

which are perhaps as much endogenous as the equivalent kind of depression. The former do seem, however, to be less subject to the regular swings of mood over periods of weeks to months seen in manic depressives, and this might make a significant change in body temperature rhythm difficult to observe.

J P CRAWFORD

Stone House Hospital,
Nr Dartford, Kent

¹ Nikitopoulou, G, and Crammer, J L, *British Medical Journal*, 1976, **1**, 1311.

² Fulton, J F, *Physiology of the Nervous System*, 2nd edn. London, Oxford University Press, 1943.

³ Crawford, J P, *Proceedings of the Royal Society of Medicine*, 1957, **50**, 704.

⁴ Crawford, J P, *American Journal of Psychiatry*, 1962, **118**, 741.

⁵ Crawford, J P, *Medical Press*, 1960, **244**, 525.

⁶ Crawford, J P, *Medical Press*, 1961, **245**, 139.

⁷ Rees, W L L, *Short Textbook of Psychiatry*, 2nd edn. London, Hodder and Stoughton, 1976.

Anxieties and fears about plutonium

SIR,—I write, as one with more interest in the politics of plutonium than in the technology of its production, in response to correspondence which you have printed (12 November, p 1288) about the article by Dr R H Mole (17 September, p 743).

It seems strange that in an article written to explain the background of the plutonium controversy to busy doctors Dr Mole should go to such trouble to review the literature about the possibility of plutonium causing lung cancer among those who work with it while dismissing what to many people is the important case against the mass production of plutonium and the much more toxic radioactive waste products with the unsupported words, "Nowadays the hypothesis that increased mutation from radiation could threaten the survival of the human race has lost scientific credibility."

If this statement can be supported then it should be supported. Otherwise it will be dismissed as rhetoric unless, of course, it means that Dr Mole's opinion is that a level of radiation high enough to threaten the human race with extinction by mutation would be high enough to kill us all from radiation sickness or render us all sterile.

J DAVID WATTS

Dundonald, Ayrshire

Lecithin: sphingomyelin ratio and presence of vernix in amniotic fluid

SIR,—We would like to report the results of a study relating the lecithin: sphingomyelin ratio (LSR) to the presence of vernix in the amniotic fluid. We felt that if a relationship could be established the maturity of the fetus would be better assessed by viewing the amniotic fluid through an amnioscope, a less invasive technique than amniocentesis.

Amniotic fluid from 79 consecutive successful amniocenteses was studied. The fluid was held against a good light and classified subjectively as clear, cloudy with doubtful presence of vernix, or vernix definitely present. The LSR was then measured.

The number of cases in each category is presented in the accompanying table. A strong association between the presence of vernix and a mature LSR is seen. This association is probably due to the common factor of gestational age. Although a mature