present infection rate is one episode every nine patient months.

Finally, I would like to add that one of the major advantages of this technique is that it is a dialysis treatment which does not require a machine. This has been appreciated especially by those patients who have been converted from intermittent peritoneal dialysis or hemodialysis to CAPD.

D G OREOPOULOS

Toronto Western Hospital,
Toronto, Ontario M5T 2S8

¹ Oreopoulos, D G, et al, *Transactions of the American Society for Artificial Internal Organs*, 1978, **24**, 484.

Money and medicine

SIR,—Professor Rudolf Klein's commentary (21 July, p 220) is an interesting contribution to the annual pay struggle that exercises successive ministers of health and the medical profession in spite of the interposition of the Review Body. While I would welcome his facts and not argue with them, his views adhere more to the "mediaeval theologians" approach to a "just wage" than to the climate of today.

Society has regrettably become besotted with unsocial hours, a concept not introduced by doctors or nurses. My wife works Sundays as a midwife on time-and-a-half, but the domestic working with her is on double pay. Does Professor Klein really justify this because my wife reputedly likes her work and the domestic is in servitude? Junior doctors work many unsocial hours but their overtime pay is well below their standard rate—a state of affairs surely incomprehensible to most union members. Consultants remain "on-call" as part of their total commitment, and recall fees, agreed on four years ago, remain unfunded. When the Royal Commission on Doctors' and Dentists' Remuneration laid down its guidelines in 1960 the distortions created by the unsocial hours philosophy hardly existed, and the comparison of the medical profession with other professions, working few, if any, unsocial hours, urgently needs revision.

We still live in a free society and doctors have to pay the going rate for other people's services and commodities. In the real world of private enterprise a doctor has to pay a minimum call-out fee of about £10 for somebody to fix his television, yet most general practitioners charge about £5 for a private visit because they consider this more advantageous than losing the patient to the NHS. Another cause of anguish to doctors must be their total inability to obtain the quality of service from others that society demands from them. If the skills displayed by garages had been perpetrated by the medical profession we should all have been sued into oblivion by now.

Professor Klein appears to favour financial enslavement of a profession because there is a glut of those wishing to enter it. I think many students would willingly have gone into the other sciences had there not been a world recession and no market for their skills. Architects have suffered during recent times, but senior accountants, actuaries, barristers, solicitors, architects, surveyors, and engineers can all delegate work and derive personal income from it and when business is good they prosper greatly. Surely the selection, training, responsibility, and skills required of the professions must be taken into account and gain preference over job satisfaction, which is subjective and nebulous.

If Professor Klein seeks to regulate medical pay by supply and demand then he must admit that UK doctors in the NHS today are paid well below the free enterprise rate (the same issue of the journal carries an advertisement for an anaesthetist in Holland offering £25 000 a year plus single accommodation).

Differentials in society at large are changing and if the present trend continues the country will get the mediocre doctors and university teachers it deserves and is willing to pay for. Professor Klein's philosophy did not do much good for industry under Labour, and the new tax cuts are an attempt to get quality and not quantity back instead of an overdraft, frustration, and the search for emigration.

RICHARD MARCUS

Stratford-on-Avon CV37 7BA

Doubtful epilepsy in childhood

SIR,—Your editorial of 7 July (p 1) was well named and, with few changes, would cover this difficult ground for patients of all ages. Neurologists, like paediatricians, would agree that the distinction "between epilepsy and non-epilepsy" is sometimes impossible. No matter: the best of all investigators, time, brings the inexorable answer. How strange that you lost patience at the very last sentence but one and surrendered your clinical sense to a machine: "Thus headaches, vertigo, and abdominal pain may occasionally remain unelucidated until an EEG is performed."

Even the references betray you. Swaiman and Frank¹ described six children with paroxysmal headache, none of whom had had any episode of impaired, let alone loss of, consciousness although four of the six had spikes or spikes and waves in their electroencephalograms. To argue that such an EEG diagnoses epilepsy in these children because a similar pattern occurs in the EEG of another child with undoubted epilepsy is to fall into the logician's trap of the fallacy of the undistributed middle.² Nor should epilepsy be diagnosed because their headaches went away when the doctor prescribed phenytoin. Does anyone diagnose epilepsy because trigeminal neuralgia, the tonic spasms of multiple sclerosis, or toothache are relieved by an anticonvulsant?

Eviatar and Eviatar³ found that half of a group of 50 children with bouts of vertigo were epileptic. This was not altogether unexpected: gyrate epilepsy is well known; some say that it caused Julius Caesar's falling sickness. Eleven of their patients had unquestionably major fits, attacks with vertiginous prodromata "culminating at times in a tonic or tonic-clonic generalised seizure." Fourteen others had giddy spells with headache and vomiting which might progress to "loss of postural control and loss of consciousness with or without hypertonicity." Despite the spike and wave patterns in their EEGs, despite even the minor twitchings and drooling and loss of speech sometimes seen, some doubt must remain that these were truly epileptic attacks and not just syncopal episodes after vertigo—of whatever cause—accompanied by the occasional myoclonic jerk.

Papathoeophilou et al⁴ studied 50 children with recurrent abdominal pain and re-examined the 14 respondents from an equally sized follow-up group in the hope of "clarifying some of the above conflicting findings in the literature." The low yield of cases with epilepsy

—one from each group and two others with photosensitive epilepsy—was a warning against twisting any human frailty into the tidy categories of limbic-lobe and complex partial epilepsy. This is what they wrote: "It seems to us that only in a very small proportion of children is recurrent abdominal pain or 'periodic syndrome' an epileptic phenomenon and that the finding of 'abnormalities' in the EEG, other than spikes or spike and wave, should not be taken as evidence of epilepsy." Please note also that they call spikes and spike and wave evidence of epilepsy and do not equate the electrical sign with diagnosis.

CHARLES WELLS

University Hospital of Wales,
Cardiff CF4 4XW

¹ Swaiman, K F, and Frank, Y, *Developmental Medicine and Child Neurology*, 1978, **20**, 580.

² Fowler, H W, *A Dictionary of Modern English Usage*, 2nd edn, revised E Gowers, p 662. Oxford, Clarendon Press, 1965.

³ Eviatar, L, and Eviatar, A, *Pediatrics*, 1977, **59**, 833.

⁴ Papathoeophilou, R, Jeavons, P M, and Disney, M E, *Developmental Medicine and Child Neurology*, 1972, **14**, 31.

* * * To elucidate means "to throw light on." To say that the EEG may occasionally elucidate a clinical problem is not the same as saying that it proves a diagnosis of epilepsy. Dr Wells appears to have ignored the last sentence of the leading article: "Nevertheless the mainstay of diagnosis in the paroxysmal disorders remains the doctor's ability to take and analyse the patient's history and assess his symptoms in the context of his psychological make-up." We believe as firmly as does Dr Wells that the EEG, like all laboratory investigations, must be assessed critically by the clinician.—ED, *BMJ*.

Celtic and non-Celtic nostalgia

SIR,—Dr Dewi Davies's charming piece on nostalgia (18 August, p 433) includes mention of *The New Oxford Book of Light Verse*. Its editor, Kingsley Amis, chose a particularly good sample of Celtic nostalgia in a verse by Wynford Vaughan-Thomas, now with us here in Pembrokehire. It is called "*Hiraeth in N.W.3*" (*hiraeth* is Welsh for nostalgia). It begins:

"The sight of the English is getting me down,
Fly westward my heart from this festering town . . ."

and ends:

"Glorious welcome that's waiting for me,
Hymns on the harmonium and Welsh cakes for tea,
A lecture on Marx; his importance today,
All the raptures of love with a Bangor B.A."

When Dr Davies does come home to these parts, he will find that my next-door neighbour grew up with him on the next farm—also having spent a lifetime in south-east England.

So—Croeso.

J SPILLANE

Newport, Dyfed SA42 0NR

Reduction of catheter-associated sepsis in parenteral nutrition using heparin

SIR,—We read Mr M J Bailey's study (23 June, p 1671) with interest and were impressed by the reduction in the incidence of infection. However, we felt it important to draw attention to an effect of heparin, even at low dose, which he does not discuss. We have shown that through its ability to increase lipoprotein

Effects of heparin administration on free fatty acids (FFA).

lipase activity and hence circulating free fatty acid levels the administration of even small quantities of heparin (figure) can result in significant reduction in the plasma protein binding of a number of drugs.¹⁻⁴ As it is the free, or non-protein bound, fraction of the total drug in plasma which is responsible for a drug's effect, an increase in the free concentration will result in increased pharmacological effect with possible deleterious results for the patient. Without in any way detracting from the interest of Mr Bailey's findings we think it is important to alert clinicians to the possibility that the administration of even small quantities of heparin may result in a sudden increase in the pharmacological effects of concurrent therapy.

MARGARET WOOD
ALASTAIR J J WOOD

Department of Pharmacology,
Vanderbilt University,
Nashville, Tennessee 37232

¹ Wood, M, Shand, D G, and Wood, A J J, *Clinical Pharmacology and Therapeutics*, 1979, **25**, 103.

² Wood, M, Shand, D G, and Wood, A J J, *Anesthesiology*. In press.

³ Wood, A J J, *et al*, *Circulation*. In press.

⁴ Desmond, P V, *et al*, *British Journal of Clinical Pharmacology*. In press.

The Budd-Chiari syndrome

SIR,—Having just received the *BMJ*, I would like to comment on your leading article on the Budd-Chiari Syndrome (19 May, p 1302). It is stated that clinical diagnosis is often difficult: percutaneous needle biopsy specimens of the liver will show hepatic venous congestion with areas of centrilobular necrosis and haemorrhage.

This may be the case in some patients but in others the liver biopsy may perhaps be suggestive of the diagnosis. We have seen two cases of hepatic vein occlusion disease in children in the northern savanna of Nigeria, one of which has been reported.¹

The liver biopsies certainly showed centrilobular congestion but the centrilobular and sublobular veins were dilated and empty and compressed sinusoids containing few red blood cells were present. Towards the periphery of the lobules the sinusoids were widely dilated and trabeculae packed with red blood cells could be easily distinguished. This type of lesion was described in adults suffering from hepatic venous outflow block by Leopold *et al*,² who considered that this was a collateral extrasinusoidal circulation whereby the blood cells leave the central

sinusoids and enter Disse's space, becoming intermingled with the cells of the liver plates.

This note is prompted by the fact that this lesion would not appear to be widely known overseas and can be mistaken for the classical "nutmeg" liver. Indeed, I had some difficulty in convincing some of my colleagues in pathology of the genuineness of this histopathological picture.

G M EDINGTON

University of Maiduguri
College of Medical Sciences,
Maiduguri, Nigeria

¹ Edington, G M, and Haggie, M H K, *Nigerian Journal of Paediatrics*, 1977, **4**, 6.

² Leopold, J C, Parry, T E, and Storrington, F K, *Journal of Pathology*, 1970, **100**, 87.

Medicine and scientific method

SIR,—“General practice is not a scientific discipline. It cannot . . . take its place beside the other major medical specialties, whose foundation rests on a corpus of definable knowledge scientifically tested and proved,” writes Dr K B Thomas (7 July, p 39).

This assertion is incorrect. Medical practice, general or specialised, is founded on anatomy, physiology, pathology, and pharmacology, to name the basic scientific grounding. Daily we are encountering problems requiring knowledge of these sciences and it is hard to see what else Dr Thomas would require to make general practice what he would call “scientific.”

It would further seem that Dr Thomas is not familiar with the Karl Popper view of the nature of the scientific. Falsifiability is the criterion of the scientific, and actually clinical medicine, whether general practice or specialised, is a neat example of the scientific method. We are presented with problems for which we generate falsifiable hypotheses (or diagnoses); our decisions regarding treatment are likewise falsifiable. Doubtless the greater precision in the specialties leads to less falsification but there is obviously even less exactness in medicine than in areas such as physics, where Popper developed his ideas. Philosophy of science should be generally applicable and clinical medicine is entirely compatible with the Popperian scientific method.

R T FRANKFORD

Toronto, Ontario M4C 1L6,
Canada

Rickets in Asian immigrants

SIR,—In your leading article (30 June, p 1744) you stress the importance of a reduced dietary vitamin D intake in the aetiology of rickets and osteomalacia in the Asian immigrant population. Probably at least as important, however, is their high dietary fibre and phytate intake, which reduces the intestinal absorption of bile acids, calcium, and vitamin D.¹⁻³ In addition, a high fibre intake may reduce the absorption of 25-hydroxy vitamin D undergoing enterohepatic circulation, so that normal exposure to sunlight will not necessarily prevent the development of vitamin D deficiency; in support of this, we have seen severe histological osteomalacia in several young Asian women who wear Western-style clothes, go outdoors daily, and even sunbathe on occasions.

Thus the consumption of large amounts of fibre and phytate may considerably increase vitamin D requirements, and it is conceivable

that fortification of chappati flour with vitamin D might possess its own built-in safety device against the danger of vitamin D intoxication.

JULIET COMPSTON

St Thomas's Hospital,
London SE1 7EH

¹ Wills, M R, *et al*, *Lancet*, 1972, **1**, 771.

² Ford, J A, *et al*, *British Medical Journal*, 1972, **3**, 446.

³ Reinhold, J G, *Lancet*, 1976, **2**, 1132.

Reversible renal failure during treatment with captopril

SIR,—The paper by Drs P R Farrow and R Wilkinson (23 June, p 1680) described a case of reversible failure of a transplanted kidney with a significant stenosis of the renal artery during treatment with captopril (Squibb, SQ 14225) for resistant hypertension. It was concluded from the clinical course that the probable cause was the nephrotoxic effect of captopril rather than ischaemia from the fall in blood pressure. We have observed a similar case and have concluded, however, that the dramatic fall in blood pressure after captopril, as well as after minoxidil, was the primary reason for the reversible renal failure.

A female patient, born 1949, had had an operation in childhood for a myelomeningocele and suffered from dysfunction of the urinary bladder. She developed bilateral hydronephrosis and chronic pyelonephritis and became uraemic. She consequently had bilateral nephrectomy and chronic haemodialysis was initiated. After two years of haemodialysis, in December 1976, she underwent a transplantation with a cadaver kidney. A cutaneous ureterostomy was performed. The immediate clinical course was uncomplicated and the graft functioned well. Slight hypertension (160/100 mm Hg) developed four months later. After hepatitis in November 1978 her blood pressure increased to 235/135 mm Hg. Arteriography did not disclose any stenosis of the renal artery and medication of the hypertension was initiated. Despite combined treatment with α -methylglutamate 1 g, propranolol 520 mg, hydralazine 200 mg, prazosin 20 mg, and clonidine 125 μ g daily, the blood pressure remained high, with values up to 215/145 mm Hg. On 9 February 1979 minoxidil 10 mg daily was introduced. The blood pressure successively declined from 240/130 to 140/90 mm Hg. Simultaneously her kidney function deteriorated from normal values of serum creatinine up to 270 μ mol/l (3.1 mg/100 ml) on 2 March. The minoxidil treatment was discontinued. A kidney biopsy at that time showed no evidence of toxic damage or tubular necrosis. The blood pressure increased during the following few days to 220/120 mm Hg and during the same time the serum creatinine values returned to normal.

Captopril treatment was initiated on 19 April at a dose of 25 mg thrice daily. The blood pressure dropped dramatically during the first hour from 200/125 to 110/80 mm Hg. The captopril dose was reduced to 12.5 mg twice daily on 20 April. During this day the patient became anuric and developed uraemia. Captopril was withheld and peritoneal dialysis was initiated. Arteriography at this time revealed significant stenosis of the renal artery, with a reduction in the lumen to about 50%. During subsequent surgery the renal artery was successfully reconstructed with an autologous vein patch graft. During the following few days the blood pressure became completely normal, falling to 120/80 mm Hg, and has remained so until the present time.

The plasma renin activity in peripheral venous blood was analysed once before captopril treatment was initiated. It was 14.9 nmol/l/h (19.4 ng/ml/h), an extremely high value.

This patient was very sensitive to captopril, which could be anticipated from the high plasma renin activity. This was so despite