when prescribing monoamine oxidase inhibitors we should not only consider dietary amine intake.

L D GARDNER

West Baldwin, Isle of Man

Air embolism after removal of intravenous catheter

SIR,—I was interested to read the report from Dr Sheena M Ross and others (14 April, p 987) concerning a case of fatal air embolism occurring after the accidental removal of a central venous catheter. I suggested that air embolism might occur via the introducing cannula last year¹ and unfortunately my prediction has proved correct. There have now been about 34 reported cases of serious air embolism occurring when central venous catheters are used and the common cause at the present time is accidental disconnection of the administration sets from the catheter hub. The complication has been noted during dressing changes and also the insertion procedure. Ordway² has shown in animals that fatal quantities of air can rapidly enter the venous circulation through fine-bore cannulas.

I think that the introducing cannula should be withdrawn clear of the skin in order to remove the hazard of air embolism and to minimise the risk of infection from the sequestered blood lying between the central venous catheter and the introducing cannula. Finally, air embolism has been reported to occur via the track of a recently removed catheter³ and an occlusive dressing should be placed over the wound when catheters are removed.

J L PETERS

University College Hospital,
London WC1E 6AU

¹ Peters, J L, and Armstrong, R, *Annals of Surgery*, 1978, 187, 375.

² Ordway, C B, *Annals of Surgery*, 1974, 179, 479.

³ Paskin, D L, Hoffman, W S, and Tuddenham, W J, *Annals of Surgery*, 1974, 179, 266.

Motorcycle accidents

SIR,—I wish to take issue with Dr J G Avery (10 March, p 686) and his interpretation of motorcycle accident figures.

I submit that it is meaningless to apply the figures for the United States to Britain as driving conditions and habits there are very different from those in this country (for example, there is no limitation on the size of a motorcycle purchased by a novice save his resources, and he may buy an enormously powerful, unstable, and almost frighteningly vulnerable machine with little or no experience). It is not therefore surprising that accidents of primary effect, such as loss of control while cornering, are comparatively common. In England, however, there is a limitation on the capacity of the motorcycle one may buy until one has passed the test, providing a small benefit in terms of safety; far greater safety is inculcated by taking the RAC/ACU (Royal Automobile Club/Automobile Union) training course; this, sadly, is not compulsory.

A fairly recent survey¹ indicated that, of all accidents involving motorcyclists aged 17 and over, blame of any sort could be attributed to the motorcyclist in less than 33%. In another survey,² reported in this journal (6 January, p 39), one-third of the motorists actually

failed to see the motorcycle. What is more, of the 120 accidents examined in detail, 31 were caused by another vehicle leaving a minor road into the path of the motorcyclist and another 13 were caused by another vehicle turning across the path of an oncoming motorcyclist—in neither case, patently, could any blame be attached to the unfortunate rider. These two types of accident contributed almost three times as many to the total as the next major cause, loss of control while cornering, and were six times more frequent than the number of crashes caused by a motorcyclist turning into the path of another vehicle. This sheds a different light on Mr Eugene Hoffman's "menace on the roads" (p 686); and Dr Avery's comment that there seems to be no other method than helmet compulsion for "significantly reducing the carnage" seems positively pathetic in its inadequacy.

The fault does not lie with the poor, much-maligned, and all-too-often dead or seriously maimed motorcyclist, and it does not lie with the legislator who believes that polyurethane and fibreglass cocoons immunise against C3-4 dislocations (the commonest cause of death in instantly fatal accidents is cervical cord rupture). It lies with the multitudes of motorists of questionable visual ability who notice nothing less than five feet across. I'm not surprised that the poor motorcyclist has had enough. He was been monumentally long-suffering, he has donned his helmet, turned a tasteful day-glo orange (new colour seen recently—nausea green), dutifully put his headlamp on permanently, and swathed himself in reflective tape. All to no noticeable avail.

Legislation that compels people to do things must be bad legislation—if I wish to take up an NHS bed being rescued from my own Bacchanalian or nicotinic excesses that is "socially acceptable," but should I choose a motorcycle (primarily a fuel-and-resources-efficient way of transport, let us not forget) parliamentarians obediently rear up like Bateman's horrified guardsmen. I hope that it is clear from the foregoing that the answer lies in re-educating the car driver by making the driving test more stringent, so that people are more aware of the smaller vehicles on the road. To be fair, I would like to see the RAC/ACU test made compulsory since the Government seems unlikely to set up a sensible training scheme.

So the answer? Train everybody better; and, incidentally, let us have some action on drunken driving—a motorcyclist friend of mine was in an orthopaedic ward for three months after being mown down by a drunk driver travelling the wrong way round a roundabout.

R COTTINGHAM

St Thomas's Hospital,
London SE1 7EH

¹ Transport and Road Research Laboratory, *Motorcycle Accidents and Injuries*. Crowthorne, TRRL, 1973.

² Transport and Road Research Laboratory, leaflet LF 576. Crowthorne, TRRL, 1975.

Coronary artery spasm

SIR,—A clue to the nature of the "perverted internal secretion which favours spasm of the arteries" mentioned in your leading article (14 April, p 969) may lie in a relationship between coronary artery spasm and migraine.

Twelve patients who suffered from both

migraine and chest pain of an anginal nature were investigated by Leon-Sotomayor.¹ In six of them coronary arteriograms were carried out, four showing segmental spasm accompanied by anginal pain, which was promptly relieved by nitroglycerine. In four of the six the angiogram precipitated migraine. These and other observations and investigations led him to suggest that the underlying mechanism was an exaggeration of sympathetic activity. A similar but opposite alteration in vasomotor tone affecting both cranial and cardiac vessels is suggested by Ekblom² to explain the remission of anginal pain during periods when his patient suffered from cluster headaches. If migraine and coronary spasm share a common pathology this association is unlikely to be always innocent. Leviton³ has shown that the risk of a fatal heart attack is apparently increased in people with migraine, particularly in the younger age groups.

If there is such an association it is surprising that there are so few observations in the literature, for if it exists it should be fairly common. These pilot studies suggest that it is worth looking for. Much migraine can be avoided by appropriate management. Perhaps the same can be done for cardiac spasm.

WILLIAM COPPINGER

Reading,
Berks RG7 6NT

¹ Leon-Sotomayor, L A, *Angiology*, 1974, 25, 161.

² Ekblom, K, and Lindahl, J, *Headache*, July 1971, 157.

³ Leviton, A, Malvea, B, and Graham, J R, *Neurology*, 1974, 24, 669.

Proteinuria at high altitude

SIR,—It will be fascinating to read the account by Drs A R Bradwell and J Delamere of 17 trekker-doctor-scientists collecting 24-hour urine samples (2-3 litres each?) for 14 days in the Himalayas, which they refer to in their letter (21 April, p 1083). Presumably aliquots were preserved and analysed back in Birmingham and details of the methods used will be vital.

Preservation and transport present immense difficulties in the tropics. Aliquots I took at heights of up to 7500 metres on a technically easy climb in the Hindu Kush showed strong protein reactions to Bili-Labstix but variable results in laboratory analysis in London, because of deterioration during transport despite keeping them as cold as possible.¹ Aliquots I took at 6000 metres in the Andes were ruined by defective refrigeration in a British Airways plane. Most other "field" investigators have similar experience. So, though Bili-Labstix estimations are crude they compensate by allowing freshly taken samples of urine to be assessed on the spot, by contrast with the inevitable deterioration in samples brought back to the UK for analysis.

Obviously ordinary trekking to moderate heights is very different from difficult high-altitude mountaineering in activity, exposure, and ease of collection of samples. Mountaineers would give a very "blue" answer to requests to collect 24-hour specimens of urine during technically difficult, dangerous, long, and exhausting climbs. My data do give a fair picture of physiological trends in the particular circumstances, though with the small numbers of climbers differences could not be valid statistically.

Rennie and Joseph's paper² will still be considered a model study by most until