several continuous infusions are being administered and accurate control is difficult. No significant fetal or maternal side effects have been observed in using this regimen for almost five years.

Ideally, prevention of eclampsia is better than treating the consequences of fits. During a study³ on sequential changes in electroencephalograms (EEGs) in pregnancy three cases of severe pre-eclampsia were observed. When these cases were in their most acute stage, with rising hypertension, the EEGs showed spike-and-wave activity such as is seen in patients with a convulsive diathesis. Intravenous chlormethiazole effectively abolished this abnormal pattern, replacing it with beta activity related to medication.

It would be interesting to see if screening more severe pre-eclamptics with electroencephalography would be valuable in the prevention of eclampsia by allowing the introduction of early therapy in those likely to convulse.

IAN C ALLEN
T EDGAR TORBET

Division of Obstetrics and Gynaecology

ANNE P MCGEORGE

Institute of Neurological Sciences,
Southern General Hospital,
Glasgow

¹ Allen, I C, *Scottish Medical Journal*, 1974, **19**, 158.

² Allen, I C, *Progress in EPH—Gestosis: Organisation*, p 157. Gestosis Press, 1975.

³ McGeorge, A, and Allen, I C. To be published.

SIR,—Experience of two recent cases prompts me to comment on your excellent leading article on eclampsia (19 June, p 1485).

Case 1. A primigravida aged 21 years was admitted at 26 weeks' gestation as an emergency with fulminating pre-eclampsia (blood pressure 170/120 mm Hg). Within 20 minutes she aborted and 10 minutes later had an eclamptic fit. Intravenous diazepam 10 mg was followed by chlormethiazole 0.8% at 70 drops/min for one hour and then reduced to 30 drops/min. Hydrallazine 20 mg was injected intravenously and repeated intramuscularly whenever the blood pressure rose to 160/100 mm Hg. Oxygen was administered and ampicillin injected. In three hours the urinary output fell to only 70 ml, so frusemide 20 mg was injected intravenously. Three hours later restlessness necessitated increasing the rate of chlormethiazole infusion to 35 drops/min. The restlessness was, however, due to a distended bladder and was relieved by changing the self-retaining catheter; 1 l of urine drained over the next two hours. Fifteen hours after the fit the chlormethiazole infusion was slowed to 15 drops/min, but two hours later the rate was again increased because of irritability. About the 22nd hour the infusion was discontinued because the patient had become deeply unconscious. Twelve hours later she was coughing. Hydrallazine was still required and the pulse rate remained at 130/min. After 48 hours she was conscious, the blood pressure being 140/100 mm Hg and the pulse rate still 120/min. It was another two days, however, before the patient was fully awake. The blood pressure has since settled and there were no lung complications.

Case 2. An unmarried primigravida aged 19 years was referred with prolonged pregnancy and mild pre-eclampsia (blood pressure 130/90 mm Hg). Amniotomy was performed, epidural analgesia provided, and oxytocin infused, governed by the Cardiff system. A living baby (4.21 kg) was delivered normally after a labour of seven hours. The blood pressure rose to 190/100 mm Hg and fell to 160/100 mm Hg after intramuscular papaveretum but later rose again, and three hours after delivery the patient had an eclamptic fit. Intravenous diazepam was infused continuously and hydrallazine 20 mg with frusemide 20 mg injected intravenously. There was gross proteinuria. An hour later another fit occurred. The diazepam was dis-

continued and an infusion of chlormethiazole 0.8% started at 60 drops/min. Large doses of frusemide were given and apresoline injected whenever the blood pressure rose above 160/100 mm Hg. A total of 600 ml of urine drained in 90 minutes. After 12 hours the rate of the chlormethiazole infusion was slowed to 20 drops/min and gradually reduced, being discontinued 24 hours after the last fit. After 36 hours the patient was conscious, although the heart rate was 130/min. The pulse rate gradually fell and the blood pressure settled to 130/90 mm Hg over the next seven days.

These two examples of eclampsia illustrate that the minimum effective dose of chlormethiazole is difficult to judge, even when the infusion rate is accurately controlled.¹ Both of our patients remained unconscious for much longer than was desirable.² The junior doctors were naturally reluctant to reduce the dose and even increased it when the patient became restless, whatever the reason. Fortunately, neither patient developed bronchopneumonia. The powerful diuretic frusemide at least proved that there was no acute renal failure and must be considered safe in the delivered patient.³ Hydrallazine causes brisk tachycardia and should be used with care in patients with heart disease. Epidural analgesia usually controls hypertension and, in the second case, the eclampsia was partly due to the effect of the epidural's fading and to failure to realise that papaveretum by itself was not controlling the hypertension.³ Perhaps prostaglandin E₂ should have been used rather than oxytocin in the Cardiff infusion system. The chlormethiazole and hydrallazine regimen could be standardised.² It is more important, however, to realise the great need for urgent treatment of severe pre-eclampsia. Eclampsia in the delivered patient should never occur but, should it do so, then intensive nursing and medical supervision is required to prevent complications not only of the disease but also of the treatment.

ALAN M SMITH

New Cross Hospital,
Wolverhampton

¹ Duffus, G M, Turnstall, M E, and MacGillivray, I, *Lancet*, 1968, **1**, 335.

² Pritchard, J A, and Pritchard, S A, *American Journal of Obstetrics and Gynecology*, 1975, **123**, 543.

³ McClure Browne, J C, and Dixon, G, *Antenatal Care*, p 175. London, Churchill, 1970.

Dangers of tinted glasses for driving

SIR,—Professor R A Weale (15 May, p 1212) and Mr M J Gilkes (3 July, p 42) have stressed that there may be danger in driving into a dark area while wearing sunglasses. Such danger as may exist can be averted by the driver either sliding the sunglasses down the nose or removing them, actions which most can accomplish without undue drama. If this is done then the man who has been wearing sunglasses will have eyes already partly adapted for the lower level of luminance and will therefore have an advantage over the driver who has just been in the bright sunshine without absorptive filters.

There are two other points worth considering. If it is accepted that a hazard exists then, for drivers, photochromic lenses have an advantage over "fixed tint" lenses. For a number of reasons they do not darken fully inside a closed vehicle. So photochromic sunglasses are always lighter in use than fixed tint sunglasses of the conventional optical density. Fixed tint sunglasses may not be too dark for the very brightest con-

ditions, but they are always too dark for every other.

Neither of your correspondents mentioned that the great majority of photochromic sunglasses manufactured specifically for drivers use heat-toughened lenses. Surely, since a significant proportion of penetrating injuries of the eye now result from road traffic accidents, the eye protection provided by these sunglasses ought to be recognised and applauded? British sunglasses are fitted with the Reactolite glass already mentioned by Professor Weale. Because of the superior technology of the British glass industry these glasses, in spite of having thinner than normal toughened glass lenses, conform to the robustness clause of British Standard 2092/1967, Industrial Eye Protectors, and are therefore as strong as industrial spectacles.

J B DAVEY

Department of Ophthalmic Optics and
Visual Science,
City University,
London EC1

Unexplained hepatitis following halothane

SIR,—Dr F C Shelley (10 July, p 111) suggests that overdose of halothane causing hypoxia, circulatory depression, and thus liver damage may be instrumental in producing the liver failure occasionally seen after halothane anaesthesia.

However, as Moul and Sherlock¹ have pointed out, the histological picture in this condition is quite different from that in which the liver circulation has been primarily affected. The essential feature after halothane is the presence of a hepatitis with an obvious inflammatory cell infiltrate. Thus even if we accept Dr Shelley's suggestion that, by virtue of its ease of administration, there is always a risk of profound hypotension and hypoxia in a patient breathing halothane spontaneously we still have to explain why the microscopic appearance differs so dramatically from that of livers subjected to hypoxia and hypotension in other circumstances.

JANE STANFORD

London SW13

¹ Moul, P J A, and Sherlock, S, *Proceedings of the Royal Society of Medicine*, 1975, **68**, 768.

Sarcoma after intramuscular iron injection

SIR,—Apparently Dr Gillian Greenberg (19 June, p 1508) believes that there might be an association between iron injections and sarcoma, but she has not stated her reasons.

Could it be the 4% of iron-treated patients in her series of 90 sarcomas of the buttock? If so, how many of her controls had been treated with iron injections? Could it be the close spatial association between the injection site and the sarcoma? If so, how reliable is the evidence when one considers the admitted lack of records, the disparity of volumes between the buttock and the injection bolus, the patient's memory of the location of an injection after an interval of years, and his inevitable ignorance of the depth and direction of the needle point from the skin puncture? Could it be the high incidence of sarcoma in iron-injected patients? If so, what is the