SIR,—It is a pity that your otherwise admirable leading article (24 April, p. 181) had to be spoiled with the application to coroners' necropsies of the description, "hack operations" (which one hopes that they are not, in either sense). It surely is a debatable question whether the pathologists who perform them have in fact as suggested more important duties. It is inevitable that the great majority of deaths thus investigated should turn out to have been natural.

Suspicion of foul play makes necropsy mandatory, of course; but it is not the sole criterion to be applied in deciding whether or not one should be carried out. The other proper criterion is whether or not the death can without necropsy be attributed with reasonable probability to a given natural cause. Large numbers of sudden or unexpected deaths of persons not under medical care occur in circumstances free from suspicion of foul play, and considerable numbers of deaths occur of persons in hospital in whose case there has not been sufficient time to make a diagnosis or in whose case the signs and symptoms have been atypical or insufficient or inconclusive. In both of those categories it is proper to require necropsies. It does not seem to be any more probable that pathologists performing such work would regard themselves as hacks than would, say, those of us who spend much time in prophylactic work of another kind.—I am, etc.,

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Ophthalmoscope as Viscosimeter

SIR.—Your leading article on "Hyperviscosity Syndrome" (24 April, p. 184) fails, in my opinion, to highlight sufficiently the commonest and earliest clinical feature of this syndrome—namely, bilateral central retinal vein obstruction. When severe this may give rise to paroxysmal or enduring disturbances of vision. The ophthalmoscopic abnormalities are those typical of central retinal vein obstruction and, according to the degree of severity, comprise turgidity of veins, retinal haemorrhages, microaneurysms, cotton wool spots, and papilloedema. The central retinal vein is unique by virtue of having a flow resistance at the outlet in the region of the lamina cribrosa. This singular anatomico-physiological feature reduces greatly the ability of these veins to accommodate to rises of blood viscosity.¹ Increased cardiac output ensures that circulation elsewhere is maintained at a normal rate. Thus despite grossly elevated viscosity levels, arm to lung and arm to tongue circulation times in macroglobulinaemia remain within normal limits.^{2,3} Unlike the retinal veins, the choroidal, cerebral, renal and hepatic veins were found to be normal in a case of macroglobulinaemia.⁴

When sufficient plasma is removed to effect a significant lowering of viscosity the retinal venous obstruction is promptly and dramatically relieved, as has been confirmed by numerous published fundus photographs. Cardiac output is also significantly reduced by plasma pheresis.^{5,6}

Central retinal vein obstruction developing concurrently in both eyes—in the absence of diabetes—provides strong evidence of hyperviscosity of blood. Thus, properly interpreted,

the findings yielded by the ophthalmoscope are in agreement with those of the viscosimeter.—I am, etc.,

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- 1 Behrman, S., *British Journal of Ophthalmology*, 1962, **46**, 336.
- 2 Martin, N. H., *Quarterly Journal of Medicine*, 1960, **29**, 179.
- 3 Kok, D'A., Whitmore, D. N., and Ainsworth, R. W., *Journal of Clinical Pathology*, 1963, **16**, 351.
- 4 Ashton, N., Kok, D'A., and Foulds, W. S., *Journal of Pathology and Bacteriology*, 1963, **86**, 453.
- 5 Smith, E., Kochwa, S., and Wasserman, L. R., *American Journal of Medicine*, 1965, **39**, 35.
- 6 Kopp, W. L., Beirne, G. J., and Burns, R. O., *American Journal of Medicine*, 1967, **43**, 141.

Mind and Childbirth

SIR,—Dr. Jean C. M. Mason (1 May, p. 279) can be reassured that spinal anaesthesia in labour was mentioned within the first hour of the first scientific session on pain relief in labour at the Third International Congress of Psychosomatic Medicine in Obstetrics and Gynaecology (17 April, p. 120).

It is not surprising that for her five deliveries Dr. Mason's obstetricians refused to let her have spinal anaesthesia half-way through the first stage, because the pain-relieving effects of spinal anaesthetics are relatively short lived and a spinal anaesthetic cannot safely be repeated. On the other hand, epidural or caudal analgesia can be given at three or four fingers dilatation of the cervix and "topped up" repeatedly, as was pointed out at the Congress. If Dr. Mason missed the Congress as seems likely from her letter, she can still enjoy some of it in retrospect by reading the Proceedings (to be published). There she will find that there is no incongruity in psycho-physical preparation for labour and the use of the most modern aids to relieve residual pain and to speed the progress of labour.

A notable feature of the Congress was the absence of disagreement between different disciplines; and a new determination for communication to be as broad as possible between surgeons, obstetricians, paediatricians, psychiatrists, midwives, and physio- and psychotherapists to the common goal that all women of all ages may be helped to lead less stressful lives. There is something to be said for each of several methods of pain relief in labour be it by "preparation classes," by conduction or inhalational anaesthesia or by injection of hypnotic drugs to be used singly or together. They are not mutually exclusive—but nobody in their right senses now just asks anyone in labour "to continue relaxing;" so one hopes that Dr. Mason will not carry out her threat to do this to her daughters or her future daughters-in-law. If she does she will not need a survey to tell her that she will assuredly be asked to leave their labour wards.—I am, etc.,

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Unnecessary X-rays

SIR.—No one will doubt the contention of Mr. D. F. Thomas (10 April, p. 105) that better doctoring in casualty departments would result in fewer x-rays, because these are often taken by inexperienced doctors who lack the confidence to pronounce that a

limb fracture is so unlikely that an x-ray is not justified. When it comes to the diagnosis of depressed fracture of skull the story is more complicated, because the consequence of missing this diagnosis can be serious. We have previously reported¹ that the infection rate for this type of injury is much higher in civilian life than on the battlefield, and that this complication is associated with a significantly increased mortality and morbidity. Infection is most often due to a delay in primary treatment, and this is almost always the result of completely missing the diagnosis. We have recently completed a further study (in press) of 36 patients in whom the diagnosis of depressed fracture was initially overlooked. Of 28 who were referred directly to hospital 11 were sent home from the casualty department, while 19 (68%) either had no immediate skull x-rays taken or, if they did, the fracture was not reported in time to influence primary treatment. In eight of these patients major complications had already developed before the fracture had been radiologically recognized. Some of these patients died of intracranial infection, but would almost certainly have made a rapid recovery if the diagnosis had been made and appropriate treatment instituted.

Problems of logistics arise at two levels. The first is in the decision to x-ray the skull and the difficulty is that many of these patients are deceptively well, having lost consciousness only briefly or not at all. Indeed, we have shown that among the patients in whom the diagnosis was missed there is a higher proportion of these apparently trivially injured patients (Table).

Correctly diagnosed 323	Never unconscious	
	134	41.5%
Missed diagnosis 36	24	66.7%
P	<0.001	

But even when a film is taken there can be difficulties in interpretation on a 24 hours a day basis, and it is really not acceptable to put the onus on the head-injured patient to report next day, when the radiologist will have reported the film. It would be totally uneconomic to suggest that all patients with scalp lacerations and possible underlying fracture should be admitted, because of the very scale of this problem. A survey in this city showed that some 10,000 x-rays are carried out annually in the five teaching hospitals (J. K. Davidson, personal communication). In this regard the recent suggestion² that radiographers might be trained in pattern recognition is an interesting one.—I am, etc.,

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¹ Miller, J. D., and Jennett, W. B., *Lancet*, 1968, **2**, 991.

² Swinburne, K., *Lancet*, 1971, **1**, 589.

SIR.—I was heartened to read that no less a person than Mr. J. Charnley (1 May, p. 279) supports the view that accident services should be staffed by men making it a per-