between the ulcer and the cardiac orifice. The ulcer was irregular in shape with a 1-cm proximal lesion on the anterior wall and a distal 4-cm lesion immediately below it which encircled most of the oesophagus and which communicated with the aorta through a channel 0.3 cm in diameter. It was thought that the entrance to the aorta was at the site of an intercostal vessel which had been involved in the ulcer base. There were adhesions between the aorta and the oesophagus. Altered blood was present which was adherent to the ulcer base and the stomach contained a cast of clot. No radiographs of the oesophagus were available. At necropsy the ulcerated area appeared to occupy the midline.

The necropsy was performed in 1967, and, though it was realized that distortion of the oesophagus by the enormous left atrium must have determined the site of the ulceration, it was assumed that this was peptic ulceration and the significance of Slow-K administration was not realized until Drs. Howie and Strachan's article led to re-examination of the case-sheet. No doubt pulsation of the aorta augments the damage to the oesophageal wall that results from any firm object arrested between the aorta and an enlarged left atrium.—I am, etc.,

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Haemoglobin Binding Curve and Oxygen Transport

SIR,—Dr. D. C. Flenley and his colleagues refer (15 March, p. 602) to the potentially adverse effects on oxygen delivery to the cells of a shift to the left in the oxyhaemoglobin dissociation curve. They envisage that advantage may accrue, in patients with fixed low cardiac output, from the use of a drug (should one be developed) which will return the displaced curve to the right.

Such drugs exist; they act by producing acidosis. No doubt Dr. Flenley and his colleagues dismiss this as a practical way of treating patients with shock, and very properly so. Nevertheless, acidosis has been deliberately induced for a precisely similar purpose, to counteract the leftward shift of the dissociation curve in hypothermic total body perfusion. Edmark¹ and Carson *et al.*² advocated the addition of hydrochloric acid to the perfusate, or perfusion at raised PCO_2 , to maintain a pH of 7.3 in arterial blood at 30°C.

This practice was rather transient, and there is now ample evidence that perfusion at pH 7.5–7.6 at 30°C is not harmful, though temperature and pH combine to shift the dissociation curve to the left.³ Indeed, an extracellular pH of 7.6 may be the appropriate one to secure cellular neutrality at 30°C.⁵ We have shown¹ that during bypass, whether normothermic or hypothermic, mixed venous PO_2 and saturation are inversely related to the availability of oxygen to the cells—the lower the PO_2 for a given rate of perfusion, the better, in general, is the delivery of oxygen. The position of the dissociation curve is apparently of far less importance than the state of the microcirculation. If blood can be brought within reach of the cells, so to speak, they will take up oxygen at a very small driving pressure. During the postoperative period, Kirklin and Theye⁶ found that arteriovenous oxygen content difference was unreliable as a guide

to the adequacy of cardiac output; this means that mixed venous PO_2 is very poorly related to oxygen delivery in these circumstances.

I recognize that cardiac and other forms of "medical" shock may present different problems. Yet I think that here, too, it is easy to overstate the importance of the position of the dissociation curve at the expense of more vital considerations. I am sure that Dr. Flenley and his colleagues are well aware of the pitfalls in imposing what we suppose to be "normal" conditions in patients with complex disturbances of function. While nature does not always make optimal compensations, she does so often enough to make us look before we leap.—I am, etc.,

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Breast Cancer in Young Women

SIR,—I read with interest your excellent leading article (21 June, p. 649). I agree that it would seem unwise for women to have further children once the diagnosis is made, especially where there are grave prognostic signs such as extensive axillary node deposits. Because supraphysiological doses of oestrogen on occult disseminated foci of established cancer may promote growth, tubal ligation is advised rather than oral contraception. It has the added advantage of being permanent.

I feel brief mention should be made regarding the small place of oophorectomy. Where there is axillary node involvement, distant metastases, particularly with bone pain, or suspected ovarian tumours removal of the ovaries should be considered as a possible alternative. The principal disadvantage is the likely premature menopausal symptoms which add to an already distressing situation for both wife and husband. Information about the effects of synthetic and natural oestrogens in various concentrations on such parameters as DNA synthesis in vitro in breast cancer could be helpful clinically. Certainly in some patients intractable bone pain may be gratefully alleviated by oophorectomy.—I am, etc.,

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Digoxin and Confusion in the Elderly

SIR,—While discussing the drugs which cause confusion in elderly people Dr. H. M. Hodgkinson (5 April, p. 23) has omitted an important drug which is commonly used in medical practice both inside and outside the

hospital. I refer to digoxin, which is known to cause confusion in elderly people. The neuropsychotic effects of digoxin include disorientation, confusion, aphasia, and even delirium and hallucinations. They are especially likely to develop in elderly arteriosclerotic patients.¹ Confusion may be the presenting feature; it occurs in about 25% of cases of digitalis intoxication.^{2,3}—I am, etc.,

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"Orthopaedic Beds"

SIR,—There is a great vogue at the moment for unyielding beds. They are advertised to the public with the suggestion, backed up by diagrams, that a hard bed keeps the backbone beneficially straight. It is the contrary: the softer the bed, the straighter the spine, so long as the resiliency of the mattress is uniform. Since the body is so much wider at the shoulders and pelvis than at the waist the thoracolumbar spine can be kept straight only if these two prominences are accommodated by yielding springs. On a hard bed the sleeper's spine is held in side-flexion away from the side he lies on. The same applies to the supine sleeper, whose thoracic and gluteal curves cannot sink into a hard mattress; he thus has his lumbar spine maintained in slight flexion all night. What is of course harmful is localized sagging at the centre of a mattress, whereby the sleeper's lumbar spine droops into kyphosis, as it would in a hammock.

The only mattress that can usefully be called "orthopaedic" is one with a small hump right across it, level with the sleeper's waist. On that, if he lies on his back, his normal lordosis is maintained; if he lies on his side his spine is supported horizontally.—I am, etc.,

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Risks of Total Hip Replacement

SIR,—Professor J. Charnley's recent letter (31 May, p. 498) on the risks of total hip replacement may lead the unwary to believe that the operation—excellent though it is—carries no risk of intraoperative circulatory collapse. An unbiased reading of the final report to the Department of Health and Social Security of the Working Party on Acrylic Cement in Orthopaedic Surgery¹ leads inescapably to the conclusion that such a risk is real and has, in the past, led to fatalities.

It is important, as Professor Charnley suggests, to benefit from hindsight and to set the record straight from the historical point of view. In the four years that have elapsed since fatalities were first reported nothing much has changed so far as the characteristics of the patients, the application of the cement, or the operative techniques are concerned. What has developed, however, is an increasing awareness of the risks involved and an understanding of their