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.,

A. J. MCCALL

Central Pathology Laboratory,
Hartshill,
Stoke-on-Trent, Staffs

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.⁴ 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.,

E. A. HARRIS

Clinical Pathology Department,
Green Lane Hospital,
Auckland, New Zealand

- 1 Edmark, K. W., *Surgery, Gynecology and Obstetrics*, 1959, **109**, 743.
- 2 Carson, S. A. A., *et al.*, *Circulation*, 1964, **29**, 456.
- 3 Harris, E. A., Seelye, E. R., and Barratt-Boyes, B. G., *British Journal of Anaesthesia*, 1970, **42**, 912.
- 4 Harris, E. A., Seelye, E. R., and Barratt-Boyes, B. G., *British Journal of Anaesthesia*, 1974, **46**, 425.
- 5 Rahn, H., in *Symposium on Development of the Lung*, London, 1965, ed. A. V. S. de Reuck, and R. Porter, p. 3. London, Churchill, 1967.
- 6 Kirklin, J. W., and Theye, R. A., *Circulation*, 1963, **28**, 1061.

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.,

D. W. CHARTERS

University Department of Obstetrics and Gynaecology,
New Medical School,
Liverpool

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.,

MASUD ANWAR

Department of Geriatric Medicine,
General Hospital,
Hartlepool

- 1 Goodman, L. S., and Gillman, A., *The Pharmacological Basis of Therapeutics*, 4th edn., p. 694. New York, Macmillan, 1970.
- 2 King, J. T., *Annals of Internal Medicine*, 1950, **33**, 1360.
- 3 Dall, J. L. C., *Lancet*, 1965, **1**, 194.

"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.,

JAMES CYRIAX

London W.1

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

aetiology, largely as a result of the many publications on the subject to which the working party's report refers. Any reduction in the incidence and severity of the intra-operative cardiovascular disturbances is principally due to the careful preoperative assessment and preparation of the patients, the use, when indicated, of alternative operations which do not require methylmethacrylate, and the meticulous care and vigilance exercised by the surgeons and anaesthetists during the procedure itself. If the importance of these simple but effective steps is overlooked again, then plainly the risks of total hip replacement will increase once more.—I am, etc.,

RICHARD H. ELLIS

Department of Anaesthesia,
St. Bartholomew's Hospital,
London E.C.1

¹ Department of Health and Social Security. *Report of Working Party on Acrylic Cement in Orthopaedic Surgery*. London, H.M.S.O., 1974.

Treatment of Alcoholism

SIR,—The recent review by Dr. E. B. Ritson (19 April, p. 124) of the methods of treatment for alcoholism is timely reading in view of the progressive increase of the disease. He mentioned that outpatient facilities are likely to increase and I write to comment that our experience in the community-based group at Lewes during the past three years suggests that there is much to be gained by moving therapy away from the hospital to the community.

The group considers that it has dealt at least as effectively with every patient who otherwise would have been admitted to hospital, and in some instances we have seen more progress than was ever observed during sustained inpatient care. Most inpatient units have a preselection procedure that occurs when the patient has been dried out, and this is aimed at selecting those patients who genuinely seek help and are resolved to refrain from drinking. Assuming that abstinence is desirable and that the detoxification has occurred, it is questionable whether the moment of a crisis is a suitable time for this decision to be made.

Unless one is dealing with alcoholism superimposed upon primary psychiatric disease requiring inpatient therapy there would seem to be no indication for admitting an alcoholic to a psychiatric hospital. Indeed there is evidence to show that the condition can be made worse, as this procedure very often prevents the on-going resolution of social and personal problems, and the secondary regressive effects of the institution begin to bite as each day passes. To admit a patient having forced out of him a pledge which may be inappropriate or which he is not ready to fulfil is not sound therapy.

In constructing our group we have established three basic principles, an identity with the problem, a desire to learn, and a "no rejection" clause. We have learnt that by our existence in the community we have had many more early referrals than was ever achieved under the traditional outpatient/inpatient referral system, thus making prevention of physical dependence a potential goal. Being far removed from the institution it is more acceptable to the sufferer and encourages contact at an earlier stage in the natural history of the disease. However, we have also recognized that if our therapeutic

potential is to be realized, then more facilities are necessary—such as a Samaritan-style answering service—together with facilities for providing hot soup, occupation, and a befriending service.—I am, etc.,

RONALD MAGGS

Hellingly Hospital,
Hailsham, E. Sussex

Carcinoma of the Oesophagus with "Swallow Syncope"

SIR,—We were interested to read the report of carcinoma of the oesophagus with "swallow syncope" by Drs. I. W. Tomlinson and K. M. Fox (10 May, p. 315). In 1972 a similar case came under our care at this institution.

The patient, a man of 71, presented with a 10-month history of loss of consciousness while eating his evening meal. Initially this consisted of his "head falling back" momentarily, but for two months he had been having complete "blackouts." These lasted a few seconds, were not epileptic in character, and were followed by a quick full recovery. They appeared to be induced particularly by eating heavy particles of food and were not caused by liquid. To avoid the symptom he had largely stopped eating solids and had lost a considerable amount of weight.

Barium studies at another hospital had shown a hiatus hernia with reflux and some spasm of the gastro-oesophageal junction, but oesophagoscopy demonstrated a stricture in the lower third of the oesophagus and biopsy of this revealed carcinoma. The E.C.G. showed atrial fibrillation (110/min) and T-wave changes suggesting inferolateral ischaemia. A possible connexion between the tumour of the oesophagus and his syncope was considered and an E.C.G. was recorded while he was eating his dinner. The ingestion of solids was associated with considerable belching and retching and during these events severe bradycardia with asystole lasting 5.1 s was observed. Recordings were made again while the patient was belching but after the administration of atropine 0.6 mg intravenously, and no bradycardia then occurred. Oesophageal manometry showed a normal peristaltic wave in the body of the oesophagus, but there were spastic and prolonged contractions of abnormal amplitude in the lower 12 cm.

At operation a small carcinoma was found at the junction of the middle and lower thirds of the oesophagus. This was excised and oesophago-gastrostomy performed below the aortic arch. Histological examination revealed an adenocarcinoma with involved lymph nodes. Recovery from operation was uncomplicated. The patient was seen in the outpatient clinic over a period of eight months and had no further blackouts, but he did develop a minor degree of stricture at the anastomosis and required three separate endoscopic dilations. He died of metastases shortly after his last attendance.

This is therefore a further case in which a carcinoma of the oesophagus presented with syncope on swallowing. This symptom was relieved by resection of the tumour and did not recur despite the fact that there was still some degree of obstruction to the passage of food through the oesophagus following surgery. It seems likely that this was due to interruption of a vagal reflex mechanism by division of the two vagus nerves during removal of the oesophagus.—We are, etc.,

J. K. B. WADDINGTON
H. R. MATTHEWS
C. C. EVANS
D. W. WARD

Liverpool Cardio-Thoracic Surgical Centre,
Broadgreen Hospital,
Liverpool

Appliances for the Disabled

SIR,—I am glad to read of your interest in the pleomorphic nature of the services concerned with appliances for the disabled (14 June, p. 579). As with many problems in the health and social services, reports are prepared from several sources but with no one accepting responsibility for ensuring continuous review or implementing their recommendations. The present situation for aids is not unlike that of a decade ago in another expanding branch of therapeutics—drugs, though without the prompting emotive force of prominent adverse effects.

I venture to suggest that what is required is a "Dunlop" who will produce an organization with terms of reference akin to those of the Medicines Commission. Obviously the emphasis should be on evaluation of effectiveness to solve clinical problems, noting that these include aspects of the patient and of his environment as well as of the appliance. Standard skills for clinical trials are required, but with the engineer replacing the pharmacologist. Closer relations need to be established, from those involved with initial development of a new appliance through to those responsible for its maintenance in routine service. Only the Departments of Health have the means to solve this real need, and I hope they can be prompted to have the will to do so.—I am, etc.,

CAIRNS AITKEN

Rehabilitation Studies Unit,
University Department of Orthopaedic Surgery,
Princess Margaret Rose Orthopaedic Hospital,
Edinburgh

Breast Feeding and Maternal Nutrition

SIR,—The D.H.S.S. report on "Present-day Practice in Infant Feeding"¹ expressed the unanimous opinion of the working party that the best food for babies is human breast milk and recommended that steps be taken to encourage all mothers to breast-feed their babies, preferably for the first four to six months.

The problem of achieving this desired aim was recognized as complex, yet as Dr. P. L. Sousa (1 March, p. 512) reminds us, it is not confined to the sophisticated communities. He recommends the use of metoclopramide as a potent stimulator of prolactin release and this would seem reasonable if there was a hormonal problem. Gunther² claims that if breast-feeding fails it is mainly for nutritional or psychological reasons. We would be concerned if metoclopramide were to be used where the cause of lactation failure was nutritional. We have already reported evidence that, under extreme conditions, nutrition appears to affect the milk lipid both quantitatively and qualitatively.^{3,4} Such effects can be observed in both African and European mothers and will be reported in detail elsewhere, but in the meantime we wish to suggest that a pharmacological forcing of the mammary gland would not be in the best interests of the mother or child. Before resorting to pharmacology to correct a premature failure of lactation it would seem wise to examine the nutritional status of the mother and her milk.

For example, lipid is the principal energy component of the milk and its quantitative determination is simple.⁵ Though single determinations can be misleading because of