for granulomata in serial sections none were found. Further, we are not aware of sub-total villous atrophy occurring in those parts of the jejunum otherwise uninvolved in small-intestinal Crohn's disease.—We are, etc.,

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M. H. GLEESON

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¹ Goulston, K. J., Skyring, A. P., and McGovern, V. J., *Australasian Annals of Medicine*, 1965, 14, 57.

² Bayless, T. M., Kapelowitz, R. F., Shelley, W. M., Ballinger, W. F., and Hendrix, T., *New England Journal of Medicine*, 1967, 276, 996.

³ Pink, I. J., and Creamer, B., *Lancet*, 1967, 1, 300.

⁴ Wall, A. J., Douglas, A. P., Booth, C. C., and Pearse, A. G. E., *Gut*, 1970, 11, 7.

Seat Belts

SIR,—As the proposer of the successful motion at the Annual Representative Meeting at Folkestone in June on the need for improvement in the design of seat belts and the advisability of their compulsory use in cars (*Supplement*, 16 June, p. 94), I was gratified to see the letter from Mr. E. S. R. Hughes of Melbourne (29 September, p. 695) on the experience in Australia of the lowered mortality and reduced incidence of injuries resulting from their legislation.

How right Professor W. Gisane (30 June, p. 772) was in commending the action of the Australian legislature in introducing compulsory belt-wear! Let us hope that our own legislators will be as discerning and perspicacious.—I am, etc.,

R. COVE-SMITH

London W.9

Hypotension in Tetanus

SIR,—I was interested to read the article by Dr. J. L. Corbett and others (25 August, p. 423), and would like to make two suggestions:

(1) Rather than leave the patients with an alarmingly low blood pressure for 15-20 minutes, to try immediate infusion of 500-1,000 ml of plasma or other fluid. A heart pumping at a control venous pressure of only 1-5 mm Hg as described in case 1 can be expected to respond to increased filling pressure with an increase in cardiac output and blood pressure, because of Starling's law of the heart. Increasing the blood volume is more effective than head-down tilt, and is surely safer than giving alpha-, beta-, or ganglion-blocking drugs to patients with hypotension. Patients on mechanical ventilation are likely to need a greater than normal blood volume, especially if autonomic function is impaired.

(2) Why not keep the patients sedated as well as paralysed? Reflex depression with barbiturates, diazepam, droperidol, or narcotics may well prevent these episodes of hypertension, which are quite common during light general anaesthesia. Perhaps normal subjects, without tetanus, would react in a similar way to prolonged curarization and mechanical ventilation as these three patients.—I am, etc.,

JAMES JUDSON

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Hypergastrinaemia in Rheumatoid Arthritis

SIR,—We read with interest Dr. K. J. Fraser's reply (29 September, p. 696) to our preliminary communication (30 June, p. 752) concerning elevated concentrations of plasma gastrin in rheumatoid arthritis. Dr. Fraser's initial comments on our lack of awareness of the literature on the incidence of achlorhydria in rheumatoid arthritis are perhaps unfortunate as no reference is made to the work of Armstrong,¹ who demonstrated no increase in incidence of parietal cell autoantibody in rheumatoid arthritis. He also demonstrated the organ-specificity of the antibody by means of gastric function studies. The omission of reference to this work carried out in this centre is out of step with Dr. Fraser's kindness elsewhere in referring to our work in the field of Sjögren's syndrome. We would like to point out in addition that the increased incidence of hypergastrinaemia may prove to be of much more fundamental importance if it is not due to gastric atrophy.

Our preliminary studies would suggest normal acid secretory status in rheumatoid arthritis in the presence of hypergastrinaemia, and recently have shown that the induction of adjuvant arthritis in rats is associated with a concomitant elevation of fasting plasma immunoreactive gastrin.² The significance of these observations remains unclear to date, but it seems unlikely that they merely reflect the presence of atrophic gastritis.—We are, etc.,

PATRICK J. ROONEY

WILLIAM CARSON DICK

Centre for Rheumatic Diseases,
Glasgow

¹ Armstrong, E. M., *Annals of the Rheumatic Diseases*, 1967, 26, 499.

² Rooney, P. J., Dick, W. C., Buchanan, K. D., and Imrie, R. C., *Nature New Biology*. In press.

Making Hospital Geriatrics Work

SIR,—Under this heading Drs. H. M. Hodgkinson and P. M. Jefferys (2 December, 1972, p. 536) discussed the work of a new geriatric department and advocated a policy of high turnover and no waiting list. They suggested that this policy was a matter of choice by the geriatricians.

Experience at Greenwich over recent years indicated that the work of a geriatric department is not quite such a matter of choice as Drs. Hodgkinson and Jefferys state. The figure shows the changes that have occurred over a 10-year period. From 1963 to 1968 the service at Greenwich was very similar to that at the Northwick Park unit with no waiting list, direct admission on general practitioner or Emergency Bed Service request, and high turnover (five patients per bed yearly), and the wait for transfer from other wards and hospitals was less than a month. At that time the work of the department was in equilibrium with the needs of the area served.

In 1968 22 beds were closed out of a total of 200 (11%) and the admission rate has fallen from 1,000 per year to 450—a drop of 55%. This disproportionate fall stems from a simple error. When the beds were closed it was argued that an 11% reduction in beds would act as a stimulus to the efficiency of an over-bedded department (200 beds for 18,000 over-65 population). What

was overlooked was that the department had taken on a high long-stay commitment to help out other agencies under stress. There were 150 long-stay patients, including a 33-bed psychogeriatric ward with demented patients who in many parts of the country would have been placed in a psychiatric hospital, and 26 patients had been accepted from welfare accommodation for whom Greenwich would not normally have been the responsible geriatric hospital. There were therefore only 50 admission and rehabilitation beds through which 1,000 admissions were passing each year. Within these 50 beds were about 25 very-high-turnover beds and about 25 slower-stream beds with a stay of three months or more before discharge, death, or transfer to long-stay accommodation. Clearly none of the long-stay or slower-stream beds could be closed and the department was left with virtually no high turnover beds.

My choice in this situation was to accept preferentially those patients whose stay was likely to be short and to give low priority to those referrals who were likely to need a prolonged stay. Nevertheless, the department has functioned over the last five years as a low-turnover/long-waiting-list unit. In spite of not now taking ambulant demented patients and in spite of now adopting a "legalistic" approach to the geographical catchment area the number of long-stay patients is now 141 (the total bed number having fallen this year to 171). There are signs, however, that a new equilibrium is being established since the number of patients in other hospital beds waiting for transfer to the department has fallen from a maximum of 70 in 1972 to 20 in September 1973. During the whole period the staffing (medical, nursing, and paramedical) has remained substantially the same in numbers but, as would be expected, morale has plummeted.

The suggestion by Drs. Hodgkinson and Jefferys that the work of a geriatric department is a matter of choice therefore appears to be an over-simplification. Given positive attitudes and adequate staffing, there appears to be a critical number of beds in any area with which a high-turnover/no-waiting-list service can be given. An important lesson that comes out of the Greenwich experience is that the total number of beds in a geriatric department is a misleading figure. In planning changes the number of admission and rehabilitation beds is a key

figure and can be reduced only with disastrous effects upon the total service.—I am, etc.,

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London S.E.10

Loud Knocking on the Back Door

SIR,—The advertisement in the *B.M.J.* (6 October, p. liii) for a medical school place referred to by your correspondent, Mr. John Squire (20 October, p. 172), is indeed a matter for concern. It reveals the frustration caused by medical schools imposing an arbitrary "A" level barrier to the selection of tomorrow's doctors. In fact the general educational level necessary to pursue the medical curriculum successfully is not exceptionally high. Therefore to set a standard of academic achievement in excess of what is necessary before other qualities are given consideration is, to say the least, illogical.

If one were to list the necessary ingredients of a good doctor it might read as follows: (1) above-average intelligence; (2) physical and mental stamina; (3) human compassion; and (4) the ability to communicate with people from all walks of life. This list is by no means exhaustive but serves to illustrate that high performance at "A" level is an inappropriate means of preliminary screening. It is true that the profession always has, and always will, have a need for a small number of brilliant people but one wonders how many potentially first-class doctors fail to gain even an interview for medical school.

I would share Mr. Squire's anxiety about back-door entry to medical school and would suggest that some attention be paid to the front door.—I am, etc.,

M. F. H. BUSH

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Breast-feeding

SIR,—The fact that a group of skilled scientific workers should feel it necessary to spend time, energy, and money in devising a breast milk substitute (13 October, p. 67) makes one wonder what is happening to the real stuff which to our certain knowledge has important biological advantages to the infant besides the production of a "correct" bacteriological flora and pH in the infant gut. Many tons of this unsurpassed infant food must be lost annually by failure to make proper use of human lactation.

The whole subject of the natural feeding of human infants is surrounded by an aura of abject defeatism. Many members of the professions concerned with child health appear to regard the promotion of breast-feeding as a lost cause, and much thought and effort are spent in concocting more elegant and expensive unnatural substitutes for human milk. There are clearly many factors in determining why women refuse to recognize that "breast is best" for their children; one factor at least in their denial of breast-milk for their children is a widespread lack of knowledge of the benefits of human milk for human babies and of the demerits of cow's milk as an infant food. Another is the obvious lack of interest in and support for natural feeding shown by many doctors (family doctors, obstetricians,

and paediatricians alike), midwives, and health visitors. If one can manage to rekindle or arouse interest and enthusiasm among health professionals the results can be startling and the situation can be transformed in quite a short time.

May I quote our experience in Cheltenham? The percentage figures for breast-feeding on discharge (about 150 discharges take place monthly) serve as a crude but effective index of maternal motivation to breast-feed and have been rising steadily over the past few years—from 45% in March 1970 to 64% in September 1973. This increase has coincided with an impressive improvement in staff attitudes towards natural feeding; much remains to be done to improve postnatal support for breast-feeding mothers, but a good start has been made in achieving a swing back to natural feeding. This must surely in time produce benefit to the infant health and in particular deter the occurrence of infant obesity with its potential sequelae. One would hope that other areas of the country are experiencing this recrudescence in breast-feeding. Where this has not yet begun I can only suggest that a trial of a positive and encouraging attitude may be confidently expected to improve matters and will be greatly welcomed by both parents and staff alike. If the young child could be consulted I am in no doubt that he also would approve of this increased concern for his welfare.—I am, etc.,

R. D. G. CREERY

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Anaesthetic Safety Devices

SIR,—With reference to the correspondence on this subject (22 September, p. 635; 13 October, p. 105; 20 October, p. 167) I would like to point out that a warning device of empty oxygen cylinders was introduced over 30 years ago.¹

This consists of a T-shaped assembly in which brass tubing through which oxygen passes en route to the patient is joined at its middle point by a vertical limb containing a valve kept shut by a phosphor bronze spring (see fig.). This valve opens when the

oxygen pressure falls below 5 lb/in² (0.35 kg/cm²), thus rerouting the oxygen through the vertical limb, which has a conductor's "pitch pipe" at its distal orifice. Oxygen flowing through this emits a musical note which is easily audible.

Advantages claimed for this device are that only oxygen is used and that it is simple and cheap to manufacture. The only

disadvantage is that the spring-loaded valve must be inspected regularly to make sure that corrosion is absent.—I am, etc.,

MASSEY DAWKINS

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¹ Dawkins, M., *British Medical Journal*, 1943, 2, 548.

SIR,—The recent correspondence concerning the efficacy of anaesthetic safety devices presents a timely warning that fairly sophisticated alarm systems can be bypassed under certain conditions. For this reason one cannot help but wonder why it is necessary to install a warning system which is activated by low oxygen pressure at the manifold of the anaesthetic machine, when a safer method would be to monitor the actual inspired oxygen concentration delivered to the patient.

Previous writers have stressed the danger of empty cylinders going unrecognized. However, disconnections and leaks within the closed anaesthetic circuit can also lead to hypoxia, and this situation would not be detected by a pressure-activated system such as the Bosum. It is surely better to install a warning device at the "delivery" end of an anaesthetic circuit which will raise the alarm if an unacceptable inspired oxygen concentration occurs.

Many anaesthetists in Canada and the United States have realized the importance of this principle and have equipped their anaesthetic machines with suitable measuring equipment. These devices use a polarographic sensor and usually display the partial pressure of oxygen within the reservoir bag. The alarm circuit can be triggered at any present level, thus allowing an audible alert of a falling oxygen concentration. This equipment is not unreasonably priced and it is to be hoped that more anaesthetists will recognize its suitability for regular clinical use.—I am, etc.,

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New Hampshire, U.S.A.

SIR,—I have read with interest the letter from Dr. R. Parfitt (12 September, p. 635) and the subsequent correspondence. This company has manufactured and supplied for some time an oxygen warning and patient failsafe device. The oxygen warning system utilizes only the oxygen supply for operation—no taps, batteries, or other gases are required. The patient failsafe system shuts off all other gases when the oxygen supply fails or runs out and opens the patient circuit to atmosphere.

The oxygen warning device consists of a specially constructed spring-loaded valve with a manual push button. The valve operates when the oxygen supply falls to a predetermined pressure (which can be set initially but cannot be tampered with or altered without dismantling part of the valve). When the valve operates it causes the pressure remaining in the cylinder or pipeline to entrain air in a venturi device to sound a whistle. When a new cylinder (or pipeline pressure) is connected to the anaesthetic machine and oxygen turned on the whistle sounds. The operator silences the whistle by pressing the reset button. When oxygen runs out or pipeline pressure falls the whistle