In February 1978 the patient went skiing with his school colleagues, and being afraid of taking drugs in the presence of his friends he stopped taking his immunosuppressive therapy for two weeks. Seen again at the end of March 1978 he was azotaemic, with a plasma creatinine of 884 $\mu\text{mol/l}$ (10.0 mg/100 ml). An open biopsy of the transplant showed the signs of an acute interstitial graft rejection. Under high-dose steroids administered in addition to his continuous immunosuppressive regimen the graft function improved again, and since June 1978 the plasma creatinine is stable at about 256 $\mu\text{mol/l}$ (2.9 mg/100 ml).

The history of our patient, showing an acute graft rejection episode five years after kidney transplantation, demonstrates clearly the danger of discontinuing immunosuppressive therapy in renal allograft recipients. We therefore would like to suggest that withdrawal of immunosuppressive therapy should be limited to cases of hazardous and life-threatening side effects of these drugs in this group of patients.

H GRAF
H K STUMMVOELL
W F PINGGERA

Second Department of Medicine,
University of Vienna,
Vienna, Austria

On-demand analgesia equipment

SIR,—Mr T Lind and his colleagues (1 September, p 548) in their letter about our paper (21 July, p 166) raise three important points in the assessment of apparatus which can be used by the patient to deliver analgesic drugs on demand.

Firstly, there is always the problem of the "phantom knob twiddler." Mr Lind's solution of covering the thumbwheel control of the Cardiff Palliator seems excellent; with the Janssen prototype, once the machine is started on its run turning the switches has no effect. Essentially they provide settings for the microprocessor and once the machine is "initiated" changing the settings does not alter the microprocessor settings.

Secondly, Mr Lind and his colleagues ask if the Janssen machine can be programmed to set a maximum total dose as well as a maximum dose each hour. The answer is no, except that such a maximum dose could be added initially to the infusion bag. The third point they raise is whether the performance of the printer is satisfactory, so that operators can determine easily when the drug was last given. In our hands the recorder has not let us down.

We did not mention the cost of the machine. This version is a prototype. Shortly we hope to look at the performance of a production model.

W D WHITE
D J PEARCE
J NORMAN

University Department of Anaesthetics,
Southampton General Hospital,
Southampton SO9 4XY

Unusual haemolytic-uraemic syndrome

SIR,—In my opinion the case of haemolytic uraemia that was discussed at the clinico-pathological conference (21 July, p 179) was unusual because it was very likely to have been exacerbated by the high-dose intravenous pyelogram that was performed after the onset of the illness. We are not given details of the patient's urinary output. It is now well

known that x-ray contrast medium will precipitate anuria in oliguric patients.¹ In part this is because it can cause some intravascular coagulation within the renal circulation. If this is the true explanation it would provide a salutary lesson. Moreover, such a sequence will explain why the patient had neither bruising nor an elevated bilirubin and why the anaemia and the red cell fragmentation only appeared some days later.

In retrospect we do not know whether the patient's renal endarteritis was caused by malignant hypertension alone or whether she actually had a Schwartzman reaction caused by a urinary tract infection. The white cells in the urine would favour the latter even though bacterial culture after admission was negative. Since gastroenteritis or urinary tract infection is a common accompaniment of the haemolytic-uraemic syndrome, which many believe to be a Schwartzman equivalent,² the correct way to make a retrospective diagnosis is to monitor such a patient's antilipid-A antitoxin antibody levels.³ When there has been a previous Gram-negative infection causing the haemolytic-uraemic syndrome the antibody titres will rise.

E N WARDLE

King's College Hospital,
London SE5

- ¹ Alexander, R D, Berkes, S L, and Abuelo, J G, *Archives of Internal Medicine*, 1978, 138, 381.
- ² Wardle, E N, *Clinical Nephrology*, 1974, 2, 85.
- ³ Wardle, E N, *British Journal of Hospital Medicine*, 1979, 22, 104.

Marital pathology and the choice of partner

SIR,—I am enjoying Dr J Dominian's series of articles on marital pathology.

According to Toman,¹ there is another important factor in the choice of partner—namely, position in the sibship. Thus, if the elder brother of a younger sister marries the younger sister of an older brother, a stable marriage is probable. In this case the man is used to leading and looking after a younger girl while the girl is used to being led and to understanding an older man. An example of a marriage likely to fail is between the oldest brother of brothers and the oldest sister of sisters—in this case there will be rank conflict and gender conflict.

There are, of course, many other combinations, which have various probable outcomes. Toman gives statistical evidence that these factors are important.

PETER TOMSON

Abbotts Langley, Herts WD5 0AL

- ¹ Toman, W, *Family Constellations: Effects on Personality and Social Behaviour*. New York, Springer Publishing Company, 1976.

Mechanical aids to ventilation for use in the field

SIR,—Dr M G Harries is to be complimented on a most useful review of emergency resuscitation equipment (18 August, p 426). However, his recommendations regarding ventilatory resuscitators are questionable. A recent evaluation¹ of seven gas-powered resuscitators, including the Marion Flynn series 3, found that all the devices failed according to at least one criterion of safety. Common problems were excessive airway pressure and falling inspiratory flow rates when used with a test lung.

It is apparent that resuscitators giving gas flow rates of over 100 litres a minute will generate high pressures at the airway in patients with normal lung mechanics. In the face of abnormal respiratory mechanics this will lead to leakage of gas at the pressure relief valve if fitted.

While I agree that pressure-cycled mechanical resuscitators are unsatisfactory, automatic time-cycled devices may have advantages in allowing cardiac massage to synchronise with artificial ventilation and in facilitating the transport of the patient.

R GREENBAUM

Department of Anaesthetics,
Frenchay Hospital,
Bristol BS16 1LE

¹ *Health Devices*, 1978, 18 (2), 24.

Diagnostic imaging

SIR,—Your leading article (22 September, p 690) on diagnostic imaging is indeed appropriate. However, the problems of obtaining and replacing radiological equipment must also be considered as this can have a significant effect on consultants' morale. The lack of modern equipment makes some departments unable to perform even renal angiography.

Radiological (and laboratory) equipment is expensive but, in my experience, health boards do not normally make any provision for the replacement of old equipment, merely relying on hope to come up with the cash when machines finally break down, with consequent reduction in services for several months while new equipment is being found—and all this despite numerous warnings and requests from radiologists with advice from appropriate scientific committees.

ROBERT H CORBETT

Hairmyres Hospital,
Glasgow G75 8RG

Cubital tunnel syndrome

SIR,—I read with interest Dr T G Wadsworth's letter on the cubital tunnel syndrome (22 September, p 736). Perhaps I may be allowed to report my unpublished observations.

A 14-year-old boy presented with a complete bilateral ulnar palsy. He said that he first discovered the condition of his hands at the end of a three-hour hill walk during which he had kept his thumbs tucked under the shoulder straps of his rucksack. My curiosity being aroused, I asked about antecedent forearm flexion in all subsequent cases. During the following year I diagnosed the condition in 16 patients and in all but one I judged prolonged forearm flexion to be the cause. The exceptional patient was later shown to have a ganglion. In 10 patients the forearm flexion had occurred during sleep and in five while awake.

Gowers¹ disagreed with the view of Duchenne that external pressure is a cause of ulnar palsy and stated, "It is much more common for the nerve to suffer in long-continued flexion of the elbow, without external pressure, and from this cause the nerve is sometimes paralysed during sleep. I have three times seen a sleep palsy of the ulnar nerve." An experiment suggested itself. I asked several students to roll up their

sleeves and press the elbow on an ink pad while resting the head on the hand. This is a posture commonly adopted by people sitting in a chair or at a desk. When the elbows were examined it was seen that the skin over the olecranon was stained in all, and also the skin over the medial epicondyle in some. In none was the skin over the ulnar nerve marked. A telephonist with an ulnar palsy was asked to hold a telephone to his ear and mouth while resting his elbow on the ink pad. When he had taken up his position it was clear that he had strongly adducted and externally rotated his arm so that the medial epicondyle and the ulnar nerve were lifted clear of the pad.

I learned from Feindel and Stratford² that when the forearm is flexed the aponeurosis of the cubital tunnel compresses the nerve. I hoped by further observations to come to some conclusions about prognosis but failed since, on first principles, the prognosis would depend on the duration and degree of forearm flexion, and neither could be estimated with accuracy. Unfortunately the need for brevity prevents a description of the 15 patients. Each had individual points of interest.

S RENFREW

Helensburgh, Dunbartonshire

¹ Gowers, W R, *Diseases of the Nervous System*, vol 1, p 88. London, J and A Churchill, 1892.

² Feindel, W, and Stratford, J, *Canadian Journal of Surgery*, 1958, 1, 287.

Recommended terminology of urinary tract infection

SIR,—The report of the Medical Research Council Bacteriuria Committee (22 September, p 717) makes some useful recommendations towards clarifying the nomenclature of inflammatory disease of the urinary tract. The proposal that the terms urethral syndrome and chronic pyelonephritis should be no longer used is most welcome. The main problem that the committee had to face was the difficulty in reconciling clinical, bacteriological, pathological, and radiological findings; and it might have been better to have established clear terminologies in each independently, as was done with the radiological terms. Clinicians certainly need a clear and unambiguous nomenclature for the conditions they regularly encounter.

The suggestion that "cystitis" should be discarded and replaced by the "frequency and dysuria syndrome" would be more helpful if dysuria had been defined. Its definition (the *Shorter Oxford English Dictionary* and *Chambers Twentieth Century Dictionary*) is "difficult or painful micturition," which is too imprecise for scientific use—the more so as it would fail to distinguish between the various different pains associated with micturition. The report defines urinary tract infection and bacteriuria separately, but does not seem to me to make a clear distinction between them. Infection, strictly speaking, is a tissue phenomenon, whereas bacteriuria signifies the presence of bacteria in urine. The distinction is important, because it is quite possible to conceive of tissue infection without bacteriuria and vice versa. Urinary tract infection should therefore not be used as a synonym for significant bacteriuria, as appears to be implied under the heading "Criteria for cure."

The clinician would find difficulty with "chronic interstitial nephritis," which is to

replace "chronic pyelonephritis," because it is defined in pathological and aetiological terms only. He has usually no access to pathological findings in his renal cases and may not be able to decide what clinical entities come under this heading. The section on response to treatment is presented in purely bacteriological terms. One is bound to reflect that a woman who loses her bacteriuria but retains her symptoms is, from a clinical point of view, not cured at all. Significant bacteria should be considered as only part of the evidence when assessing a particular patient.

In a general practice here 10% of my work for the past 33 years has been concerned with inflammatory disease of the urinary tract. Only a minority of these patients have significant bacteriuria and the majority would therefore be included under "abacterial cystitis" or "chronic interstitial nephritis." No guidance is offered in respect of criteria for cure in these cases, which constitute the bulk of one's clinical material.

N B EASTWOOD

Lowestoft, Suffolk

SIR,—In the Medical Research Council report "Recommended Terminology of Urinary Tract Infection" (22 September, p 717) the term abacterial cystitis is suggested as indicating "a syndrome consisting of frequency and dysuria in the absence of bladder bacteriuria. The use of the term 'urethral syndrome' is not recommended because there is no evidence of urethral disease in most of the patients."

In actual fact there is no evidence of bladder disease in most of the patients. Why "cystitis"?

HOWARD G HANLEY

London W1N 1DL

University examinations and the medical student

SIR,—Dr D McCracken (22 September, p 730) provided a searching and sympathetic account of his long experience of examination anxiety. He did not differentiate between students taking different courses but one wonders whether medical students may not be subject to special stresses under the prevailing system. The scathing criticism of Thomas Huxley, in his rectorial address in Aberdeen in 1874, of a system that produces students "who work to pass, not know. They do pass, and they don't know" still applies. Besides needing to *know* what have been called "the stories of basic science," more importantly in the long run the student needs to *feel* (medicine as an art) and to *do* (medicine as a craft).

From raw material to finished product the output of the medical school is not being matched to its avowed purpose—to train doctors. The selection of those with the best marks from school is inappropriate. The preclinical-clinical layering of instruction, including various token concessions, fails to serve the best interests of any of the three aspects of medicine. The imposition on some of our brighter and best-motivated young adults of the sole obligation, throughout five of their best years, to pass examinations is a grave insult to their intelligence and antipathetic to the spirit of doctoring.

One may wonder that so few appear to crack under the strain, but many do later when the die is cast.

DONALD S MCLAREN

Department of Physiology,
University Medical School,
Edinburgh EH8 9AG

Practical problems with the Clinitest

SIR,—Drs P A Aspinall and A R Hill reported (1 September, p 552) that both diabetic and normal subjects misread reducing sugar assays using Clinitest reagent tablets. It was stated that colours produced with "dextrose solutions" tended to be matched with colour blocks which were one or two higher than expected.

We understand from Dr Aspinall that the tests were performed using simple solutions of dextrose in tap water, that the same solution was used throughout the period of several weeks of testing, and that this solution was standardised by polarimetry. It is important to emphasise this use of a solution of dextrose in water because the Clinitest is specifically formulated for the assay of reducing sugars in urine, in the presence of other urine constituents, and at the specific gravities found in natural urines. In the absence of some of these other constituents different results will inevitably be obtained, and therefore the tests performed by Drs Aspinall and Hill are not relevant to the use of Clinitest in urine.

It has been confirmed in three laboratories that such tests carried out in water tend to be read one to two colour blocks higher than tests on the same concentration of glucose in urine. Moreover, the colours given by solutions of glucose in water are noticeably redder than the corresponding colours given by glucose in urine at the higher concentrations and must be expected to show some degree of metamerism throughout the range. It is not surprising therefore that subjects in the study of Drs Aspinall and Hill found difficulty in matching the colours yielded by solutions of glucose in water with colour blocks designed for use with urine. Nor is it surprising that these difficulties were accentuated in patients already suffering from a degree of impairment of colour vision. Patients suffering from certain defects of colour vision may experience difficulty in matching Clinitest colours even when the test is carried out correctly. Three of the papers cited by Drs Aspinall and Hill¹⁻³ report that such patients may be adequately controlled by blood tests using Dextrostix and one of the Ames meters or by using Diastix, which can be matched by comparison of hue.

It is clearly desirable that the ability of patients to carry out any self-testing procedure should be adequately checked at the time testing is initiated and at suitable intervals thereafter. This checking should include the ability to match colours correctly as well as the retention of adequate dexterity to carry out the test. The suggestion that diabetic patients should be regularly tested for impairment of colour vision is, we believe, a valuable one. However, it must be noted in interpreting the results that Thompson *et al*¹ reported that only moderate-to-severe deficiency led to difficulty in interpreting the Clinitest.

The Ames Division pioneered the development of convenient tests by which diabetic patients could control both their own urinary sugar levels and their blood glucose levels.