walls of which, though distended, can be advanced caudally and united to the perineum.¹ The use of a free skin graft to line a pocket newly created between the bladder and rectum may be a simple procedure but an annular construction often develops at the site of union between the graft and vaginal epithelium, which necessitates the frequent use of moulds in order to retain vaginal patency.

Secondly, in the absence of a functioning uterus Williams's vulvovaginoplasty,² a form of long perineorrhaphy, is particularly easy to perform. The operation is not only brilliantly simple in design but healing usually occurs quickly and without the troublesome formation of postoperative granulation tissue. As soon as the perineal skin is united the new pouch is immediately functional as a vagina. It does not depend for its patency upon coitus or the insertion of vaginal moulds.

Any anatomical disadvantages which may attend vulvovaginoplasty are more theoretical than practical and are perhaps quite overshadowed by the singular advantage of the operation—namely, that it may safely be performed at a time which will assist the natural sociosexual development of the teenager. Free skin graft procedures, though resulting in a normally situated vagina, are best deferred until regular coitus is expected; otherwise vaginal patency must be maintained by the regular use of dilators, instruments which sometimes serve chiefly to remind the young female of her fundamental abnormality as a woman. While accepting Mr. Cobbett's comment that the use of a free skin graft to line a newly created pocket is a simple operation, I submit that in amenorrhoeic women a vulvovaginoplasty is simpler and preferable and that in patients with a functioning uterus advancement of the vagina is probably the treatment of choice.—I am, ec.,

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¹ Jeffcoate, T. N. A., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1969, **76**, 961.

² Williams, E. A., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1964, **71**, 511.

Adjustment of Plasma Calcium Measurements

SIR,—Dr. R. W. Marshall and Professor B. E. C. Nordin (29 June, p. 729) appear to misunderstand the way in which we derived our adjustment of total calcium concentration for albumin concentration (15 December 1973, p. 643). It was based on the calculation of "non-albumin-bound" calcium concentration. The slope of the regression of calcium on albumin in our patients was fortuitously very close to 1.0 (centre line in figure, $\theta = 45^\circ$), so non-protein-bound calcium (mg/100 ml) was calcium (mg/100 ml) minus albumin (g/100 ml). We added 4.0 mg/100 ml to these values to adjust them to the familiar normal range for total calcium. High ionized calcium values (x in the figure) give results which are higher than they should be and low ionized calcium values (z in the figure) lower results.

It is impossible to choose an albumin concentration for the "correction" of calcium which would be appropriate for all ages and

both sexes, as Dr. E. M. Berry and his colleagues have pointed out (6 April, p. 53). The calcium-albumin nomogram in preparation by Dr. Marshall and Professor Nordin would probably best be used to calculate non-protein-bound calcium.

We proposed our adjustment simply as a screening procedure to select from the many patients with abnormal albumin concentrations those who may need further investigation of calcium homeostasis. We believe it fulfils this function.—We are, etc.,

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E-rosette Inhibition Test of T-lymphocyte Sensitization

SIR,—Dr. N. R. Farid and others (30 March, p. 635) have suggested that the rosette inhibition test using antithymocyte globulin directly measures sensitization of thymus-dependent (T) lymphocytes. This assumption is based on the evidence that increased amounts of A.L.S. are necessary for spontaneous rosette inhibition during rejection of grafted kidneys in man.^{1,2} We have shown that this test does not solely detect sensitization of lymphocytes since similar changes have been noted in severely ill patients.³ Furthermore, these changes were not seen during rejection of skin grafts.⁴ We have suggested that these changes are seen during rejection of an internal organ because this is a major pathological process. Such processes have been shown to be associated with a requirement for increased amounts of A.L.G. to inhibit rosette formation.³ Therefore rejection of a grafted kidney does result in changes in this test but other factors are also involved. This is thought to account

for the over immunosuppression which resulted when this test was used routinely in the post-transplant period.²

Dr. A. Cantaluppi and others (30 March, p. 636) note that patients receiving azathioprine and prednisone do not demonstrate a correlation between the urinary electrolyte ratios and the results of the test. However, these agents are known to affect the urinary electrolyte ratios and no correlation would be expected in such patients. We found a positive correlation in burned patients who were not receiving treatment which would directly affect electrolyte excretion.³ In such patients we suggested that the results of the tests reflected intrinsic secretion of adrenal corticoids and other similar substances produced in response to stress. A dramatic change in the test correlated with a change in clinical status. We do not think that the modification of the test used by Drs. Farid and Cantaluppi, but not by Bewick *et al.*² or ourselves, significantly alters the interpretation of the test since Dr. Cantaluppi's results are similar to those of Munro *et al.*¹ and Bewick *et al.*²—We are, etc.,

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- ¹ Munro, A., *et al.*, *British Medical Journal*, 1971, **3**, 271.
- ² Bewick, M., *et al.*, *British Medical Journal*, 1972, **3**, 491.
- ³ Chapel, H. M., and Batchelor, J. R., *British Medical Journal*, 1973, **4**, 385.
- ⁴ Chapel, H. M., and Batchelor, J. R., *British Medical Journal*, 1974, **2**, 636.

Lawn Mower Injuries

SIR,—“Robust footwear” (Dr. J. R. Hulme and Mr. A. R. Askew, 13 July, p. 113) if made only of leather does not give adequate protection against injuries from rotary lawn mowers. Some years ago I persuaded a friend who uses such a mower extensively to buy a pair of steel-toed shoes. In due course he showed me one of these shoes after the mower had slipped on to it. The stout leather outer toecap bore a cut going right through it to the steel beneath. Without the steel he would probably have lost some toes.—I am, etc.,

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SIR,—I would add one point to Dr. J. R. Hulme and Mr. A. R. Askew's (13 July, p. 113) interesting letter. I would feel that even wearing some form of eye protection is indicated—for example, goggles. I am appalled to see the number of eye injuries today that could be avoided.—I am, etc.,

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Effects of Hyperthermia on Bladder Cancer

SIR,—I wish to comment on the interesting paper of Mr. R. R. Hall and others (15 June, p. 593).

During the past 15 years there has been an increasing amount of experimental work on the effect of hyperthermia on cancer. A natural and critical question is whether malignant cells behave differently from normal cells under heat stress. Experimental

work with normal and malignant cells of identical tissue origin has clearly shown that thermosensitivity is one of the early characteristics of the malignant cell transformation.^{1,2}

A paper, not cited by Mr. Hall and his colleagues, on the relationship of hyperthermia and radiation in the treatment of bladder cancer was published by Cockett *et al.* in 1967.³ Though heat alone can cure cancer in a few experimental systems^{4,5} many of the published papers report investigations into the use of heat as a "sensitizer" to radiation⁶⁻⁸ or chemotherapeutic agents.⁹⁻¹¹ Unpublished *in vitro* data of my own show that a temperature of 42°C applied for two hours enhances the killing effect of several chemotherapeutic agents by factors varying from 10 to 100.—I am, etc.,

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- 1 Giovannella, B. C., *et al.*, *Cancer Research*, 1973, **33**, 2568.
- 2 Chen, T. T., and Heidelberger, C., *International Journal of Cancer*, 1969, **4**, 166.
- 3 Cockett, A. T. K., *et al.*, *Journal of Urology*, 1967, **97**, 1034.
- 4 Overgaard, K., and Overgaard, J., *European Journal of Cancer*, 1972, **8**, 65.
- 5 Cavaliere, R., *et al.*, *Cancer*, 1967, **20**, 1351.
- 6 Crile, G., jun., *Cancer Research*, 1963, **23**, 372.
- 7 Har-Kedar, I., and Yerushalmi, A., *Israel Journal of Medical Sciences*, *In press*.
- 8 Cater, D. B., Silver, I. A., and Watkinson, D. A., *Acta Radiologica; Therapy, Physics and Biology*, 1964, **2**, 321.
- 9 Stehlin, J. S., *Surgery, Gynecology and Obstetrics*, 1969, **129**, 305.
- 10 Johnson, H. A., and Pavelec, M., *Journal of the National Cancer Institute*, 1973, **50**, 903.

Strongyloidiasis in Britain

SIR,—Brigadier J. Mackay-Dick (18 May, p. 389) draws attention to this scourge as affecting some of those who served in the Far East in the second world war. One may add that the possibility of this parasitic infection should also be kept in mind in expatriates living in Britain.¹ Indeed, as has been stated quite recently, "no immigrant from an endemic area should be treated with corticosteroids or other immunosuppressives until the stools have been examined."²—I am, etc.,

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- 1 Royle, G., Fraser-Moodie, A., and Wansbrough-Jones, M., *British Journal of Surgery*, 1974, **61**, 498.
- 2 Poltera, A. A., *Annals of Tropical Medicine and Parasitology*, 1974, **68**, 81.

Acute Respiratory Failure in Muslim Babies

SIR,—On three occasions in the last two years Pakistani babies have been sent to accident departments in this city extremely ill, with feeble, shallow breathing. In only one case was the cause of the illness known to the staff of the accident department on arrival: all had had an overdose of Nephthene before circumcision in a local doctor's surgery. One child needed prolonged artificial ventilation and another had several fits, presumably due to anoxia.

Nephthene would seem a very unsuitable drug for this purpose. Most standard books recommend that opiates should not be used for young babies. The smallest dose of Nephthene that can be measured with reason-

able accuracy, even with an insulin syringe, is one minim (0.06 ml), and this is the dose recommended for a 1-year-old child. This condition should be borne in mind by the staff of casualty departments in cities with large Muslim communities.—I am, etc.,

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Resuscitation for Students

SIR,—With reference to your leading article (23 March, p. 530), in hospitals there is usually no shortage of emergencies—accidents, cardiac arrest, overdose, post-operative collapse, and severe infections and burns. These patients need varying degrees of resuscitation advancing to intubation, central venous pressure monitoring, and careful assessment of urinary flow as well as the all-important total assessment and clinical supervision. Almost all these techniques can be learnt in a 6-10-week term of anaesthetics by first- and second-year graduates. Undergraduates (and others) fail to appreciate the importance of this term, but either by word of mouth or from the simple observation that those who have "done" anaesthetics are just so much more competent in the emergency, the early graduates have learned to demand such a term.

Because of a universal request, in our hospital we have cut the time in anaesthetics to five weeks, but from the second day the junior helps decide the drugs and mixes and injects and intubates. It is just no good at all if he simply sits at the feet of the great man. Thirty intubations a week for 5-10 weeks gives a lot of confidence. With this and his casualty experience—particularly night casualty—an average second-year graduate is more than capable of handling a severe chest or head injury with drip, tube, catheter, and chest drainage.

For the rest of the year the junior graduate spends set periods in medicine, surgery, casualty, and the other disciplines—that is, eye, E.N.T., psychiatry, obstetrics, etc. At various times during this period he would be dealing with emergencies either in the ward, in casualty, or in the intensive care unit. To an Australian graduate it seems incredible that in Britain only two or three of the major divisions of medicine are practised by the junior before his final decision to enter a special field. It is hard for us to imagine how people could practice everyday medicine either in a specialized unit or in general practice without having some personal experience in orthopaedics, paediatrics, psychiatry, and even possibly medicine or surgery. In this respect the most valuable of all is anaesthetics, as it gives a first-hand knowledge of human physiology and with it a sense of clinical security—particularly in case of emergencies.—I am, etc.,

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Certificate of Contraindication to Smallpox Vaccination

SIR,—If a traveller cannot be vaccinated against smallpox for medical reasons it is a great help to all concerned if his doctor

issues a brief "certificate of contraindication" stating this. No lengthy medical details are required and provided the traveller visits only those countries where smallpox is endemic the note can protect him from long delays at port health control stations. But should the traveller visit a smallpox-infected area his position is very difficult. Not only does he risk catching smallpox but on returning to this country he may be faced by the prospect of 14 days in an isolation hospital, which costs the traveller time and the country money, and causes much annoyance and distress.

Working at the Health Control Unit at Heathrow Airport I meet many passengers just arrived from infected areas to whom isolation comes as a complete surprise. They fondly imagine their "certificate of contraindication" substitutes for a valid International Certificate of Vaccination against smallpox and is all that is required. The travellers or their parents have not been told of the risks involved. So may I appeal to all doctors to draw a careful distinction between endemic and infected areas when advising on travel requirements, particularly if their patients intend visiting India, Nepal, Pakistan, Bangladesh, Ethiopia, or the French Territory of the Afars and the Issas? Up-to-date information on smallpox prevalence is printed in the *Weekly Epidemiological Record* of the World Health Organization or may be obtained by phoning the Health Control Unit at Heathrow. Until smallpox has been entirely eradicated, vaccination supported by a valid International Certificate of Vaccination will remain the safest course for travellers abroad and will ensure they end their holiday having enjoyed themselves instead of languishing in an infectious diseases hospital for an extra fortnight.—I am, etc.,

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Simulated Patients

SIR,—In your leading article (25 May, p. 399) you report that Dr. Howard Barrows, a neurologist from the new medical school at McMaster University, had recently visited London and had conducted a two-day workshop on the use of simulated patients.

I feel I must inform your readers that Casualties Union has been providing just this service over the past 32 years. The majority of our members simulate injuries for the purpose of training first aiders, but frequently we are asked to provide simulated patients for the purpose of training nurses in their general training and in the nursing of the mentally sick as well as other specialties. To achieve accuracy in the simulation of injuries and disease requires a long period of training in make-up, acting, and staging under the guidance of members of the medical and nursing professions, and it is certainly not a subject to be taken up without good training and without good briefing.

Further details of the work of Casualties Union can always be obtained from our headquarters.—I am, etc.,

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