psychiatry and surgery. It has been suggested that a higher qualification in psychiatry should be awarded by the Royal College of Physicians. Anything below the standard of its present membership examination would be completely unacceptable. Such an examination is clearly best held by the College of Psychiatry. The suggestion that the College of Physicians should take this step at this moment harks back to the establishment of a qualification in obstetrics by the existing colleges in 1929 at the formation of the College of Obstetricians and Gynæcologists, and its subsequent withdrawal as the new college got under way.

Ipswich and East Suffolk Hospital, Ipswich. JOHN G. HOWELLS.

REGIONAL CURARISATION

SIR,—We cannot let Dr. Jones's article of Sept. 7 pass without comment, for it now appears that a straightforward orthopædic manœuvre is to be converted into a complex pharmacological exercise.

Of many meniscectomies (the commonest knee-joint operation) that we have performed, some have indeed been tight. It has been those small compact knees that were most difficult, because of the closer proximity of the inelastic structures. Although we agree that the quadriceps and hamstring muscles acting on an extended knee tend to closely oppose the bony surfaces, this does not arise when the knee is flexed to a right-angle over the operating-table. In fact a more relaxed knee cannot be wished for.

Our technique uses light anæsthesia, tourniquet, and no relaxants at all. We aim to have our patients back in their beds and conscious within half an hour of leaving them. They are then able to begin exercising at once—which is essential in a unit that practises early mobilisation to get quick return to Service duties.

In our view regional curarisation merely increases unnecessarily the operating time, adds nothing to relaxation, and is an unjustifiable risk to the patient.

The conclusion that such a technique will permit a relatively inexperienced anæsthetist to give operating conditions of such a high standard seems to us to be an ill-advised recommendation. Intra-arterial puncture is not a familiar technique to the inexperienced anæsthetist unless he works in a unit in which blood-gas measurements are performed.

Our own observations of several experienced radiologists using the percutaneous approach to the femoral artery for diagnostic procedures have not convinced us that such a procedure is as easy as has been suggested.

Royal Air Force Hospital, Nocton Hall, Lincoln. J. G. MANDER
H. D. JONES.

SPINAL INJURIES

SIR,—I was interested to read the comments by Squadron-Leader Beatson and Mr. Holdsworth (Aug. 24).

The main difference of opinion rests with the indications for immediate surgery in cases associated with spinal-cord injury. When one carefully studies the pathology of such cases, over 80% of all cervical injuries unite with sound body fusion and/or ligamentous healing. Of my own series of 70 cervical cases with cord damage, 19 fall into the category of group III, as classified by Beatson; of those 19, 12 were treated conservatively, 3 having been operated on (unnecessarily, I believe) and 4 cases dying early after admission. Of the 12 treated conservatively, 9 fused with anterior bony bar, 2 healed with soft-tissue healing and were stable, and only 1 proved to be unstable—this in a complete quadriplegic.

2 patients in Beatson's series died within twelve hours of operation from respiratory complications, which must have been thus aggravated by such surgery. I do not regard cases 1 and 4 as being an indication for immediate spinal fusion, because my own experience is that at least 80% of cases become stable spontaneously. I agree they have late indication for surgery. Between 10% and 15% of cases are known to recur with and without cord lesions, and these would have definite indication for spinal fusion; but this is a late problem and not an early one.

I should like to answer Mr. Holdsworth's question with another: how does he treat his unstable lumbodorsal dislocations when internal fixation is technically impossible because of fractures of the spinous processes, and what percentage of cases have suffered therefrom? In one of his early papers, of 47 cases, only 19 were fixed of 30 subjected to operation. He clearly selects his cases and thus this method is clearly only used, according to these figures, in just 60% of his unstable cases.

Comparison between unstable fractures of the tibia and fibula and fractures of the spinal column is not practicable, for the anatomy and physiology of these two areas is so completely different, and, as Nichol has recently pointed out, generalisations should not be taken to such extremes.

When the pathology of the injury is carefully studied, the fact emerges that 80% of cervical injuries and 100% of lumbodorsal injuries will inevitably heal with only moderate displacement after careful conservative reduction, leaving a small number in the cervical area where, without cord lesions, operative interference may be required. I feel we should come back to basic facts before making a dogmatic statement about treatment, and I believe Squadron-Leader Beatson's contribution to be of real assistance in this matter.

Royal Perth Hospital, Perth, Western Australia. G. M. BEDBROOK
Director, Department of Paraplegia.

TEACHING IN THE REGIONAL HOSPITALS

SIR,—Dr. Shackleton's paper (Sept. 21) is essential reading for all consultants and medical administrators whose work is centred on regional hospitals and who profess interest in the development and prestige of the hospitals they serve.

The record of the pioneering effort of the Wessex Regional Hospital Board and their consultants, backed by the Nuffield Provincial Hospitals Trust, is of historic importance in the development of medical teaching in this country. The building of a teaching unit in most of the hospital groups in the Wessex region and the description of the Portsmouth Medical Centre should be an inspiration and stimulus to other areas where such ideas have not progressed beyond the stage of the committee room.

Hove, Sussex. PATRICK HALL-SMITH.

PARATHYROID INSUFFICIENCY

SIR,—In the controversy on the incidence of parathyroid insufficiency after thyroidectomy, there is one feature of Dr. Rose's results (July 20) which has not yet received any comment—the striking difference in distribution of plasma-calcium levels between her symptomatic and asymptomatic groups.

Of her 100 cases, 70 had no symptoms at all, 23 had symptoms of the kind supposed by Fourman and his coworkers to be related to parathyroid insufficiency, and of them 20 were available for inclusion in a trial of calcium therapy. The remaining 7 had symptoms which were considered by Dr. Rose to be without relation to the parathyroids. The initial fasting plasma-calcium levels of the groups which can be isolated are as follows (all calculations based upon the frequency-distribution charts given by Dr. Rose, since more precise data are available only for the "symptomatic" group of 20 patients):

	Mean	*Range*	*Standard deviation*
	(mg. per 100 ml.)		
Whole series of 100 patients	9·663	8·8–10·6	0·294
70 symptom-free	9·733	9·3–10·6	0·256
20 patients with symptoms related to parathyroid insufficiency	9·345	8·8– 9·7	0·222

By Student's t test, the difference between the groups is highly significant ($P < 0.001$). Thus the "symptomatic" group is highly selected for a relatively low plasma-calcium (even though almost all the levels fall within the accepted normal range). Ideally the calculation should be done for all the 23 patients who admitted to relevant symptoms. The plasma-calcium levels of the 3 patients who were not included in the trial are not specified, but must lie among those for the 10 patients not included in the above groups. From the data given by Dr. Rose, it is possible to state that, whichever were the actual levels relating to these 3 patients, the conclusion of the t test is not altered ($P < 0.001$).

Although this association is interesting, confirmation should be sought from other centres before it can be accepted as of general validity. In the series reported by John and Wills (Aug. 24), the frequency distribution of plasma-calcium levels shows considerable spread—and is probably not a representative sample from a homogeneous, normally distributed population. The data of Jones and Fourman (July 20) may bear re-examination in this light: their attempt to demonstrate a correlation for individual symptoms has not convinced everyone.

Pathology Department,
General Hospital,
Newcastle upon Tyne. T. R. C. BOYDE.

A GENETIC THEORY OF INFLAMMATORY POLYARTHRITIS

SIR,—We have no wish to inflict on your readers a long argument about algebra, so we will be brief. Dr. Burch was wrong in his original paper, as we pointed out before (Aug. 17), because amongst other things he assumed $1-(1-p_t)^s = sp_t$ even when $sp_t = 1$. He now claims this to have been a valid approximation, but how an approximation which involves the equation $0.63 = 1$ can be valid escapes us.

His algebra is also wrong in his latest contribution (Sept. 21). His equation (1) should read:

$$\frac{dN}{dt} = KD_0\, t^{r-1}\, e^{-ct}$$

where K and c are constants dependent on r and the mutation-rate per cell. It follows that his estimate of the population at risk is wrong.

We have some sympathy with Dr. Loxton's strictures (Sept. 21) on academic algebra. Our only reason for intervening was our feeling that if there must be algebra it might as well be right.

University College London,
Gower Street,
W.C.1. SHEILA MAYNARD SMITH
J. MAYNARD SMITH.

PHENYLKETONURIA IN THE NEWBORN

SIR,—In reply to Dr. Komrower (Aug. 3), in the bloods so far tested we have encountered only 1 infant out of 95,000 with a reading above 20 mg. per 100 ml. who failed to be confirmed as a phenylketonuric on subsequent serum-phenylalanine determinations by the LaDu technique at an independent hospital laboratory. Borderline elevations from 6 to 15 mg. per 100 ml. are interpreted only as indicating the need for further studies with later specimens. This is because it is not possible to know in a newborn aged four or five days whether a mild rise in the blood-phenylalanine level is a transient elevation (occasionally present during the first week or so of life in a healthy child) or an elevation in a phenylketonuric baby who has not yet ingested sufficient protein to exhibit a truly positive level.

These borderline levels are really not "false-positives" at all, since they actually indicate the phenylalanine level when the blood was taken. They have not been troublesome to us, because they have appeared only about once in 700–800 specimens of blood, and because interpretation is withheld pending checks on later specimens. Every test that is positive by the Guthrie screening technique[1] is confirmed by LaDu blood-serum studies before the child is diagnosed and placed on treatment as a phenylketonuric.

We now have 10 confirmed cases out of about 95,000 newborns tested.

Department of Public Health,
Jamaica Plain,
Massachusetts. ROBERT A. MACCREADY.

HISTAMINE-FAST ACHLORHYDRIA AND IRON ABSORPTION

SIR,—I was very interested in the article of Dr. Goldberg and others.[2]

Some doubt remains about their conclusion that "where iron deficiency anæmia is accompanied by achlorhydria, the gastric lesion is a primary factor in the development of the disease", since their two groups of patients differ in more than one respect.

Not only had the patients in group A free acid in the stomach but the mean total iron-binding capacity was considerably higher than in group B. Even if we leave out the patient in group A (patient 1) with the highest total iron-binding capacity, because her iron deficiency seems questionable (normal serum-iron, almost no anæmia, and borderline value for mean corpuscular hæmoglobin concentration), I calculated the mean total iron-binding capacity of the patients in group A at 465 μg. per 100 ml. against 365 μg. per 100 ml. in the patients in group B.

Perhaps Dr. Goldberg has later experiments from which he can exclude the possibility that the higher absorption of iron of the patients in group A is related to their higher transferrin concentration of the plasma rather than to their having free acid in the stomach.

Department of Internal Medicine,
Binnengasthuis, Amsterdam. R. GOUDSMIT.

DIABETES PREVALENCE SURVEYS

SIR,—We were very interested in the paper of Dr. Stewart and Dr. Robertson (July 27) and should like to comment on the "classical" method of conducting diabetic prevalence surveys and particularly their use in diabetics in the tropics and subtropics.

This "classical" method is to estimate blood-sugar after a glucose load, *only* in those who have postprandial glycosuria on preliminary screening. This must yield low figures, since people with the high renal thresholds common in some racial groups will be missed.

In Natal Indians upon whom we have been conducting extensive screening surveys we have found that: (1) renal glycosuria is very uncommon; (2) that "lag" curves can reach very high peaks, and are palpably latent diabetic phenomena; (3) that fasting blood-sugars in recently diagnosed or undisclosed diabetics are often very low; and (4) that renal thresholds are commonly very high—in 2 recent patients without glycosuria blood-sugar levels of 380 and 480 mg. per 100 ml. were found in the 2-hour 100 g. glucose-tolerance tests. Our diabetes surveys now include 11,000 people, and we have come to regard any Natal Indian with glycosuria as having a 99% chance of being a diabetic: hence in any survey of such people or of similar tropical groups the persons who should have further investigations are those who *do not* have glycosuria after glucose loading or after the main meal of the day.

In one of our surveys 1652 middle-class Natal Indians were tested for postprandial glycosuria, and we found a prevalence of 7·2% in those over the age of 10 years—exactly twice that found in a survey of 3254 in a poorer class. In two glucose screening surveys on the middle-class social group we found that:

(1) In 194 Natal insurance proponents (who were the remainder of those already screened by conventional insurance

1. Guthrie, R. *J. Amer. med. Ass.* 1961, **178**, 863.
2. Goldberg, A., Lochhead, A., Dagg, J. H. *Lancet*, 1963, i, 848.