as it obviates the necessity of operating through the scar tissue of the previous procedure.

Although Mr. Buchanan feels that the insertion of a prosthesis is unnecessary I am sure he would agree with me from his experience of the preperitoneal approach that the most striking feature of the operative findings is the defect in the fascia transversalis. My own investigations into the anatomy and dynamics of the inguinal canal lend support to the notion that restoration of the integrity of this deep layer is the keystone of the surgical treatment of groin hernia. While I agree with him that at the time of operation this layer is capable of receiving sutures, I feel it imprudent to assume that this layer, having failed the patient once, will not fail again sooner or later; this in my opinion justifies the insertion of a prosthesis, which in effect gives the patient a new deep layer to his abdominal wall.

Emphasis has been placed on the necessity of avoiding tension when approximating the conjoint tendon to Poupart's ligament in the performance of a standard repair, and as a basic surgical tenet this is indisputable. However, I have not been entirely satisfied that this object is achieved to the extent desired and assumed. While absence of tension may be demonstrable at operation with the patient under anaesthesia, when the relaxing influence of anaesthesia wears off can one be certain that tension does not supervene? With repairs using a prosthesis such doubts regarding tension do not arise.

The point Mr. Gibbon makes about the low midline incision is well taken, and I have anticipated the possibility of incisional herniation by suturing these wounds with monofilamentous nylon. The postoperative recovery of these patients differs in no way from that of the standard procedures, and the period of hospitalization is about the same.

A film has been made of preperitoneal prosthetic herniorrhaphy as part of a larger documentary on groin hernia and will shortly be available for viewing.—I am, etc.,

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REFERENCE

- ¹ Murley, R. S., in *Clinical Surgery*, 1966, Volume 10, p. 21, edited by C. Rob, R. Smith, and C. N. Morgan. London, Butterworths.

Dose of Heparin

SIR,—In the article on anticoagulant drugs (8 February, p. 365) the author advocates the very common practice of giving heparin in too small a dose. For full therapeutic effect it is generally agreed that the whole-blood clotting time should be prolonged to at least twice the pretreatment time. In practice this means that one tries to maintain the clotting time between $2\frac{1}{2}$ and $3\frac{1}{2}$ times the normal level.

Using continuous intravenous infusion 20,000 units of heparin given over 24 hours will not achieve the desired prolongation of clotting time. In most patients 40,000 units must be given over 24 hours.^{1,2} If heparin is to be given by intermittent intravenous injection, dosage should be adjusted so that the clotting time is twice normal immediately before another dose is given. After 10,000 units the clotting time falls to twice normal after four hours.³ It is necessary, therefore, to give either 10,000 units four-hourly or

15,000 units six-hourly. A check on the preinjection clotting time will assess the patient's individual sensitivity to heparin.—I am, etc.,

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REFERENCES

- ¹ Harden, R. McG., *Brit. med. J.*, 1963, **2**, 1106.
- ² Handley, A. J., *Brit. med. J.*, 1967, **2**, 482.
- ³ Bauer, G., Boström, H., Jörpes, E., and Kallner, S., *Acta med. scand.*, 1950, **136**, 188.

Tumoral Calcinosis

SIR,—I have read with interest the article on "Tumoral Calcinosis—an Unrecognized Disease" by Drs. S. McClatchie and A. D. Bremner (18 January, p. 153). Although the condition is rare, I wonder if they are justified in describing it as an unrecognized disease.

The term "tumoral calcinosis" was first used by Inclan¹ in 1943 to describe the deposition of dense calcareous masses in the tissues about the hips, shoulders, and elbows, sometimes with smaller masses adjacent to the spine, feet, wrists, sacrum, and ischial tuberosities. The great majority of patients reported as being cases of "tumoral calcinosis" in papers published within the last 20 years have been of the coloured races. However, it is by no means uncommon in the white races. I have seen three such cases within the last three years in the west of Ireland, all in white females. The diagnoses in these cases were confirmed by my colleagues in the departments of pathology and radiology. Though the shoulder region has been described as a common site for the occurrence of these rare tumours, it is interesting to note that in the relatively large series of 26 cases reported by Dr. McClatchie and his colleague there were no cases occurring in the shoulder or scapular region. One of my cases, a lady aged 58 years, had a large tumour mass excised from the right shoulder in December 1966. She later developed a small calcified mass on the left shoulder which was removed surgically in March 1968. It is also generally accepted that the cases of lipocalcino-granulomatosis, also known as Teutschlaender's² disease and described by him in 1935, are the same condition.—I am, etc.,

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Merlin Park, Galway.

REFERENCES

- ¹ Inclan, A., *J. Amer. med. Ass.*, 1943, **121**, 490.
- ² Teutschlaender, *Klin. Wschr.*, 1935, **14**, 451.

Gastric Ulcer in Jamaica

SIR,—I believe the difficulty Dr. E. M. Bateson (1 February, p. 317) finds in accepting antral stasis as a cause of lesser curve gastric ulcer can be resolved. The common association of gastric retention and gastric ulcer cannot be denied. References to it in the literature of earlier days are much too numerous to mention here; some of them have been recorded in my monograph on vagotomy.¹

In London today we are not seeing the advanced disease of even twenty years ago. When these papers of the past were written disease was more advanced and persistent retention in patients with gastric ulcer was more common and more obvious. Since pyloric channel or duodenal disease causing a lesser curve gastric

ulcer heals and relapses according to its natural history the gastric retention is transient, unless longstanding distal disease produces fibrotic stenosis at the pylorus or in the duodenum; then we may see persistent gastric retention and sometimes, though rarely, persistent gastric ulcer. However, even persistent gastric retention is seldom complicated by gastric ulcer. This we must explain, I believe, by understanding that genetic factors are important in the aetiology not only of duodenal ulceration and pyloric channel disease but also of gastric ulcer. Indeed, in duodenal ulceration it would seem that genetic factors—for example, blood group and blood group substance secretor status—are as important as cephalic phase acid secretion. In many patients with duodenal ulcer the fasting acid never seems to be high. So too in gastric ulcer, there are probably not one but many genetic factors which play a part in its aetiology, some perhaps racial. Nevertheless, gastric retention, usually transient, is important, otherwise why should so many authors in the 1920's and 30's have sought the significance of it?

Our ideas of the aetiology of lesser curve gastric ulcer are important in so far as they make reason of our treatment. Unfortunately there is no medical treatment of gastric ulcer which prevents this recurrent disease. Each lesser curve gastric ulcer heals not according to its own natural history but to that of its causal duodenal or pyloric channel disease. If, as I believe, lesser curve gastric ulcer is always secondary to such distal disease, then vagotomy and pyloroplasty should cure both the gastric ulcer and the disease at the pylorus and in the duodenum. It does.

In my view benign gastric ulcer at any site in the stomach should be treated not by gastric resection but by vagotomy and pyloroplasty. If the pyloro-duodenal disease has not progressed to organic stenosis it may well be that selective vagotomy can be used without any drainage operation in the treatment of gastric ulcer, as it can in duodenal disease. Experience to date supports this view. Dragstedt has taught that lesser curve gastric ulceration is caused by a hormonal phase of gastric acid secretion augmented by retention. To this I would add: in a patient genetically prone. Gastric ulcers cannot occur in the absence of free acid. Perhaps incomplete vagotomy is an important cause of recurrent ulceration when vagotomy is used for gastric ulcer, as it is when used for duodenal disease.—I am, etc.,

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REFERENCE

- ¹ Burge, H., *Vagotomy*, 1964. London, Edward Arnold.

Needles for Haemodialysis

SIR,—The practicability of Cimino arterio-venous fistulae in home dialysis work has been well demonstrated by Dr. Stanley Shaldon and Sheila McKay (14 December, p. 671). They mention three types of stainless steel thin-walled needles, one also being available siliconized, but they do not indicate their preference. Such needles must be critically sharp and are used once only. A throw-away item of this type should be as inexpensive as is compatible with efficiency.

In hospital haemodialysis we have found the Bardic needle to have these characteristics. With the shank bonded at the hilt with Araldite (Ciba) each needle costs 2s. 0d. unsiliconized and 2s. 1d. siliconized. In our hands the unsiliconized form has proved

entirely satisfactory. Cannulation with 14 gauge Bardic needles is greatly facilitated when they are used in conjunction with a presterilized plastic extension tube. When the needle is inserted into the arterialized vein the emergent blood is contained within the extension tube, and by both its presence and pulsation therein provides an excellent indicator of adequate insertion of the needle. Moreover, the extension tube need not be clipped with a haemostat, for elevation of the tube provides sufficient hydrostatic pressure to counter arterial pressure, and allows the air to be displaced. In doing this we prevent any spillage of blood.

To use Bardic needles on the venous line a short polyethylene extension tube is required, to be used in conjunction with a haemostat. This tube is conveniently fashioned from the 3 in. (7.5 cm.) tubing supplied with the intravenous needle from the Capon Heaton disposable recipient set which is also used during haemodialysis. To the tube are fixed a male/male nylon adaptor at one end, and a male/female adaptor at the other. The assembled adaptors and tubing can be sterilized by heat. The two needles and extension tubes required for connecting the patient to the dialyser cost in total 6s. 7½d. This compares favourably with the other alternatives: Argyll needles

cost 5s. each and Travenol needles 7s. 6d. each.

We believe that this inexpensive method facilitates the procedure, and, almost equally important, prevents spillage of blood, with consequent decreased risk of hepatitis in the attendants.—We are, etc.,

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Is it a Record?

SIR,—It is now 44 years since the late Sir David Wilkie, whose house-surgeon I had been, performed a gastroenterostomy on me.

Is this something of a record? At the time my contemporaries made cheerful noises to the effect that I should develop carcinoma of the stomach within 20 years. In point of fact Wilkie, who had undergone the same intervention when he was a house-surgeon, did have a carcinoma and died at the age of 58 following further surgery.—I am, etc.,

KENNETH BROWN.

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Malta.

Immigrant Doctors

SIR,—A British Educational Council for Foreign Medical Graduates (E.C.F.M.G.) would surely not help the "heartbreak and frustration of unemployment" as Dr. M. K. Datta suggests (15 February, p. 448), if such a state really exists. If the problem is an excess of immigrant doctors, then this can be remedied by controlled immigration or ensuring posts are available, perhaps through an advisory body, before the native shores are left. An examination would only limit numbers initially. What other value would it have? It would certainly not reveal the practical ability so necessary in the peripheral hospitals where the majority of such doctors will be employed.

There have been times when a hospital knew that prospective employees were aboard an aircraft U.K.-bound, and requested the time of arrival so that no delay occurred in making contact and arranging an interview. Hardly a "heartbreak" situation.

Dr. Datta's second point about universities controlling appointments probably indicates the real reason for his plea—a progressive career for the immigrant doctor. After training posts have been completed and a higher qualification obtained, what next after registrar level? It may be impossible to get into a teaching hospital circuit after years in the periphery. Competition in the major specialties for the higher jobs in undoubtedly very great. But this applies to us all. There is no "sense of security" at all for the British doctor; he has to keep moving around hoping for the best, so can the immigrant really expect anything different?

Immigrant colleagues readily admit that it would be impossible for British doctors to obtain the higher jobs in their countries, which surely is fair enough.—I am, etc.,

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University of Cambridge.

Review Body Award

SIR,—I am amazed at your comment (15 February, p. 395) on the recent pay awards that "doctors are unlikely to quarrel with the awards, since they seem fair but not generous." At the time of the Seventh Review Body Report of May 1966¹ the B.M.A. recommended that house officers should start at £1,200, registrars at £2,000, and senior registrars at £2,400.² Nearly three years later only housemen have reached these levels. Registrars and senior registrars are still more than 10% below these figures.

As a senior registrar my net salary now rises by 6.7%. Last year alone the cost-of-living index went up by 5.8%, and since the last pay award *should* have come into effect (that is, May 1966) it has risen by about 14%. My pay rise is therefore less than

half the rise in the cost of living. The figures for other grades are almost the same apart from house officers.

How the B.M.A. can view the situation with such complacency is beyond me. What is one to make of a body which recommends reasonable increases and then accepts very much smaller ones without a murmur? Presumably you recommend comparatively large increases knowing that they won't be accepted on the grounds that if you ask for nothing you get nothing, but if you ask for sixpence you might get twopence. In other words your recommendations are not to be taken seriously.

As one doctor who does *not* see the awards as "fair," but rather as an insult to the profession, I feel it is time that we had a Repre-

sentative Body which would stand by its recommendations.—I am, etc.,

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REFERENCES

- ¹ *Review Body on Doctors' and Dentists' Remuneration, Seventh Report*, 1966, Cmnd. 2992. London, H.M.S.O.
- ² *Brit. med. J. Suppl.*, 1966, 1, 1224.

General Practitioner's Place in the Hospital

SIR,—As one who has devoted much time to a consideration of the general practitioner's place in the hospital, may I congratulate the subcommittee on hospital staffing structure on their realistic report (*Supplement*, 22 February, p. 75)? In particular it is most gratifying that after many appeals—some through the courtesy of the *B.M.J.*^{1,2}—at long last a grade of respectable status is proposed which is geared to the needs of the general practitioner who wishes to make hospital work a part of his career. The plain sanity of the views expressed about "responsibility" are positively refreshing. The report is so helpful that I am encouraged to suggest three minor additions in the belief that they are in keeping with its spirit.

Firstly, that there should also be a part-time training grade of limited tenure. This would enable general practitioners to increase their knowledge and experience in particular subjects either to correct any deficiency in their training or to enable them to qualify for a hospital practitioner post later.

Secondly, that there should also be a plan for the "assimilation" of the current clinical assistant grade. Doctors in this hotch-potch grade would fall readily into either the hospital practitioner grade or into the training grade suggested above.

Thirdly, that the pay scale for the hospital practitioner should be longer than the three years proposed. It is suggested that a ten-year scale might be more appropriate. If the maximum on the scale was made slightly higher (and the bottom of the scale rather lower) than equivalent general practitioner earnings, this would put the incentive where it is needed, encouraging the more senior doctor to stay on in the hospital service when he had become more experienced, and probably therefore more useful to the hospital.—I am, etc.,

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REFERENCES

- ¹ Evans, E. O., and McWhinney, I., *Brit. med. J.*, 1964, 1, 688.
- ² Evans, E. O., and McEwen, E. D., *Brit. med. J.*, 1969, 1, 172.

Employment of Women Doctors

SIR,—Hospital authorities are being urged to employ more women doctors who have domestic responsibilities. Most such women would prefer part-time sessional work such as clinical assistantships, but they frequently do not know when existing posts are available. When a vacancy occurs invitations to apply are usually sent only to general practitioners already on the executive council's list. A few are beginning to appear in the *B.M.J.* recently, but not many.

I myself hold a clinical assistantship, and I held one in the Midlands when I lived there,