school in every region of the Health Service. I am sure that it would not be very difficult to draw up a programme so that the junior staff working in peripheral hospitals could attend regularly postgraduate lectures and demonstrations in the nearest medical school. Provision of such facilities for further training would attract doctors in the hospital service and benefit both sides of the service. —I am, etc.,

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New Clinical Schools

SIR,—I can readily sympathize with those Brighton warriors Dr. S. P. Hall-Smith and Dr. R. I. K. Elliott battling for a new medical school (29 October, p. 1071), although I have considerable reservations about the suggestions of Dr. Malleson on how it might be organized. I write, nevertheless, to question what they boldly represent as fact. They write that "there is a surplus of suitably qualified school leavers who cannot obtain acceptance by a medical school." The fact is that we do not know whether this statement is true or not. We shall not know the facts until after next autumn, when the Universities Central Council for Admissions will have, for the first time, the figures for the whole country. I have a sneaking feeling, however, that the number of the suitably qualified to be disappointed will be found to be very few. On the other hand, there are many suitably qualified, or who could be so qualified, who do not seek a place in medicine. The reasons for this are many and some only too obvious. Let medicine once more be seen to be the interesting life which it is, let the various "charters" be fulfilled and there will be no more shortage of the suitably qualified. —I am, etc.,

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Blood Transfusion and Infectious Hepatitis

SIR,—There are at present no specific tests for virus hepatitis, but the serum transaminase levels have proved a sensitive index of liver damage, particularly the ratio of serum glutamic oxaloacetic transaminase to serum glutamic pyruvic transaminase.[1,2] These tests have not been carried out in the small series of patients reported by Dr. J. Shafar and Dr. J. P. Midgley (22 October, p. 1009), and it should be difficult to draw any valid conclusions from their results on the absence of anicteric post-transfusion hepatitis in 82 patients who received 222 pints of blood. Moreover, it is hazardous and misleading to attempt to translate these results into national figures. Estimates of the risk of hepatitis in blood recipients in the U.S.A. vary from 0.3 to 4.13%, and from a number of reports it was estimated that the over-all mortality from post-transfusion hepatitis could be as high as 27.5%. Even more significant is the fact that although infectious hepatitis cannot be considered a major cause of death it nevertheless ranked in 1959 in the U.S.A. second only to influenza among the deaths attributed to acute virus infections.

In this country an estimate of the size of the problem of hepatitis cannot be made, since hepatitis is not notifiable on a national basis. Nevertheless, it should be a matter for considerable anxiety that there are indications that the number of deaths from hepatitis after cardiac surgery in some centres exceeds the mortality from surgery. Therefore, before we can aspire to undertake any preventive measures the first step should be the notification of hepatitis and the establishment of a follow-up system for all patients who have received blood transfusion. The problem is surely of such importance as to preclude any attempts to guess the actual figures for hepatitis.

The incidence of post-transfusion hepatitis can be significantly reduced by the judicious selection of patients for transfusion by the avoidance of the one- or two-pint transfusion of whole blood, by the concurrent administration of gammaglobulin to high risk patients —for example, cardiac surgery, artificial dialysis—or by the use of hepatitis-free plasma. The supply of human gammaglobulin cannot at present allow its free use with every blood transfusion. At the same time the current schedules of administration of gammaglobulin require more precise definition. The use of suitable preparations of gammaglobulin mixed with the donated blood before transfusion merits close investigation.—I am, etc.,

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REFERENCES

1 Horn, H. D., and Amelung, D., *Dtsch. med. Wschr.*, 1957, 82, 619.
2 Zuckerman, A. J., *Mth Bull. Minist. Hlth Publ. Hlth Lab. Serv.*, 1965, 24, 340.

Prescribing Costs

SIR,—As manufacturers of Panadol we would like to give Dr. R. J. Dinsmore (8 October, p. 891) the explanation he requests.

More than a decade ago we concluded that *N*-acetyl-*p*-aminophenol, a substance which had been synthesized many years previously and was, therefore, unpatentable, was likely to possess superior analgesic properties. Subsequent clinical investigation confirmed our belief, and after elaborating what we considered to be adequate standards for its pharmaceutical presentation we introduced Panadol tablets. No batch of tablets was released, nor is it today, without passing 92 control analyses during manufacture. During the next few years, as a result of our technical information programme, physicians confirmed our claims in practice and Panadol became one of the most widely prescribed analgesics.

As is common when a research-based pharmaceutical company has created a demand for a substance which is unpatented, copy products soon appeared. Such preparations were rightly cheaper than Panadol, because the firms producing them had not incurred the same research, development, introduction, reaction monitoring, and other expenses. The copyists were not maintaining a long-term research programme aimed at providing even better analgesics. Many were not expensively engaged in building an export business. Moreover, the copy products were not identical with Panadol.

Not until 1963 did a monograph appear, setting standards for the manufacture of paracetamol tablets. Even then the *B.P.* specification implied only 32 control tests, compared with Panadol's 92. Naturally, we could not reduce the standards for Panadol upon which physicians had come to rely. Furthermore, we were, as we are today, continuing our research programme and gaining exports. The price of Panadol has always justified its price under the Voluntary Price Regulation Scheme agreed between the industry and the Ministry of Health. The price has been reduced five times and currently is 35% *lower* than at the time of introduction. During the period retail prices have *risen* by 35%.

There is a prevalent tendency to refer to pharmaceutical preparations in terms of their active chemical ingredients. Particle size, excipients, compression pressures, *p*H, contaminants, quality control, and the like are disparagingly dismissed as "pharmaceutical elegance." Such factors can and do have considerable therapeutic significance, as the literature testifies. Gwilt *et al.*[1] were able to show, after the *British Pharmacopoeia* monograph had appeared, that there were marked differences in blood levels following the ingestion of paracetamol tablets produced by different manufacturers.

The prices that we can obtain in export markets are inevitably linked with those that rule at home. A saving of a few thousand pounds to the N.H.S. can literally cost tens of thousands of pounds in foreign currency earnings. Most of the advances in therapeutics have come from research-based pharmaceutical companies. This research can only be financed out of current profits. There are no subsidies. And because of the lead-time and competition even the patented discoveries of today are the "standard" drugs of less than 10 years hence. A dogmatic or misinformed determination to enforce a "cheap drugs" policy could, with a loss of quality, result in a short-term economic gain. Inevitably it would cripple British research and exporting activity and in the long run would result in higher prices having to be paid for advances in therapeutics made abroad.—I am, etc.,

C. R. B. WILLIAMSON, Managing Director.

Bayer Products Company, Surbiton.

REFERENCE

1 Gwilt, J. R., Robertson, A., Goldman, L., and Blanchard, A. W., *J. Pharm. Pharmacol.*, 1963, 15, 445.

Burkitt's Tumour in Pregnancy

SIR,—I wish to report an unusual case of Burkitt's tumour in pregnancy. The patient was a 36-year-old Nigerian woman, first seen nine days after the delivery of her sixth infant.

She presented with enormous painful swelling of both breasts (Fig. 1) with no secretion, pyrexia, and increasing muscular weakness. On admission her temperature was 102° F., she had signs of right facial nerve palsy, and was too weak to walk. There were sibilant rhonchi in both upper zones of the chest, the pulse was 136 per minute, and blood pressure 145/60 mm. Hg. Investigation showed haemoglobin 10 g./100 ml.;