

although haemolysis is to be expected if copper is indeed involved in the aetiology of Indian childhood cirrhosis, its presence has yet to be adequately documented and we are grateful to Professor Ozsoylu for the opportunity of discussing this point.

Neither caeruloplasmin nor reduced glutathione was measured in our patient, although the former (as copper oxidase) was elevated in the patients of Kapoor *et al.*²

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¹ Gopalan, C, in *Diseases of Children in the Sub-tropics and Tropics*, ed D B Jolliffe and S P Stanfield. London, Edward Arnold, 1978.

² Kapoor, S K, Singh, M, and Ghai, O P, *Indian Journal of Medical Research*, 1971, **59**, 115.

Squints

SIR,—The illustrations to Mr P A Gardiner's article on squints (25 November, p 1480) are most confusing. The difference in position of the light reflections in the eyes of the non-squinting child is greater than that in the squinting child, and this can be confirmed by measurement.

Surely the point should be made that this test is only accurate when the observer's eye, the light source reflected, and the patient's point of fixation are all approximately equidistant from the patient's eyes.

N J C TREGENZA

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* * * We sent a copy of this letter to Mr Gardiner, whose reply is printed below.—ED, *BMJ*.

SIR,—The corneal reflex test is described in Duke Elder's *System of Ophthalmology* (vol VI) as "a simple though inaccurate procedure of considerable value." Our illustration designed to show epicanthic folds did not make allowance for the necessity that the reflex test should always be performed with the eyes in the primary position—that is, looking straight ahead—and the source of illumination in the midline. To omit these essentials increases the inaccuracy.

P A GARDINER

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Contamination of metronidazole discs with penicillin

SIR,—During an investigation into the sensitivity to metronidazole of certain carbon dioxide-dependent organisms present in the vagina it was noticed by chance that a 5- μ g metronidazole disc inhibited the growth of a strain of *Neisseria gonorrhoeae* grown in 10% carbon dioxide in air. As this seemed rather an unusual phenomenon the metronidazole discs concerned (Mast Laboratories Batch No 40006) were tested against six further strains of *N gonorrhoeae* and all showed zones of inhibition. Of 42 discs tested against the original strain, 40 gave zones ranging from 12 mm to 30 mm in diameter. This activity was not apparent when 1000 U of penicillinase was added to the discs. This observation, together with the fact that metronidazole discs

of a different batch (No 40307) were not active against these strains, suggested contamination with an antibiotic of the penicillin group. Elution of 50 discs for 5 h in distilled water followed by microbiological assay using the Oxford staphylococcus indicated that the 50 discs contained the equivalent of 0.6 μ g of benzylpenicillin (penicillin G). This is not an isolated problem, as two other batches of metronidazole discs produced by Mast Laboratories have been shown by this laboratory to be similarly affected.

Quite apart from the fact that the discs may give a false result, by suggesting that metronidazole might be suitable for the treatment of infections due to organisms which are really metronidazole-resistant these observations are of further practical importance, since sensitivity to metronidazole is frequently taken to indicate that an organism is an obligate anaerobe.

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* * * A copy of this letter was sent to the manufacturers of the discs concerned, whose reply is printed below.—ED, *BMJ*.

SIR,—In admitting the correctness of the statements contained in the letter from Dr Ingham and his colleagues we would like also to acknowledge the co-operation we have received from Dr Ingham, which has resulted in the introduction of a more sensitive test system for the detection of trace contaminants in antibiotic-containing susceptibility discs such as those used for metronidazole.

It should also be pointed out that lot 40006 was withdrawn from issue and all recipients were informed immediately this problem was recognised.

A E BROOKFIELD
Production Director,
Mast Laboratories Ltd

Bootle, Merseyside

"Safety of Medical Electrical Equipment"

SIR,—As a director of a manufacturing company engaged in the production of medical equipment I must take issue with Professor J M A Lenihan's attempt to ridicule IEC Publication 601, *Safety of Medical Electrical Equipment* (30 September, p 948).

To dismiss this publication as a "non-book" does a gross disservice to the members of the medical profession, physicists, and engineers from many countries who have laboured together to produce this standard. It is essential that a safety standard common to the whole of Europe (and hopefully the world) is available so that equipment once tested and certified in any one country will be accepted by other countries without the problems of checking numerous standards together with the subsequent inspection and testing of each individual piece of equipment.

Although most UK manufacturers will agree that *Hospital Technical Memorandum No 8* has been a useful document for many years, it cannot now really be considered as "adequate" for present-day equipment produced for an international market. What the IEC publication has given us is a document

which lays down the general requirements for safety of electromedical equipment that can be accepted internationally by the user without the need for "monitoring" each individual item. The technical resources available in the various hospital regions to verify compliance would then be released for more useful work in maintaining and improving the Health Service without waste of time and effort.

D E OLIVER
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Electro-Medical Supplies
(Greenham) Ltd

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Treadmill exercise test for predicting coronary disease

SIR,—Dr R M Boyle, (25 November, p 1494) has asserted that the "exercise index" as described by us (15 April, p 958) is not a reliable predictor of coronary disease. We suggest that the reason he was unable to confirm our finding is because he did not follow the regimen we described. Indeed, by recording the blood pressure after exercise and not during the last 30 s of exercise his methodology differed so fundamentally from ours that his lengthy speculations on his discrepant findings are irrelevant.

We have prepared for publication an analysis of the blood-pressure changes immediately following maximal treadmill exercise. We have found that the rapid and progressive fall in blood pressure which characterises normal people may be absent or reversed in patients with coronary artery disease. This non-uniform blood-pressure response destroys the usefulness of the technique used by Dr Boyle. Our continuing experience and that of others is that our "exercise index" remains a useful method of quantifying the important haemodynamic changes observed during diagnostic subjective maximal treadmill testing.

K BALNAVE
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Postoperative pain

SIR,—We agree with Dr J V Stapleton and his colleagues (25 November, p 1499) that in the relief of postoperative pain the optimal mode of administration of analgesic drugs is not used. They have met with some success in overcoming the problems by using a continuous intravenous infusion of pethidine.

That solution has been taken one stage further in Cardiff with the development of a patient-operated apparatus which delivers preset increments of analgesic intravenously. As mentioned in your leading article (19 August, p 517), this method¹ has proved a valuable improvement for obstetric analgesia and has now been extended into the post-operative period, in which pethidine, buprenorphine, and ketamine show improved pain relief compared with conventional methods. The Cardiff Palliator (Pye Dynamics Ltd) is connected to an intravenous catheter and has built-in safety features to avoid overdosage, accidental or otherwise. When connected to a recorder the Palliator also