Total faecal calcium is then given by

$$f = (d + s)(1 - \alpha) + s' \quad (1)$$

The discussion is simplified by taking $s + s' = 287$ mg./day, the value found by Dr. Rose and his colleagues, and $s' = 40$ mg./day, the value derived by Heaney.¹ Equation (1) then reduces to

$$f = (d + 247)(1 - \alpha) + 40$$

$$\text{or, } \alpha.d = (d - f) - 247.\alpha + 287 \quad (2)$$

Equation (2) is plotted for various values of α and d in the Figure. At constant α values $\alpha.d$ on $(d - f)$ is a family of straight lines with gradient unity. The line degenerates to a point, V, at $\alpha = 0$. XY and UT represent the lines for $\alpha = 1$ and $\alpha = 0.5$. At constant d values $\alpha.d$ on $d - f$ is a family of straight lines radiating from V ($\alpha = 0$). VW and VY represent the lines for diets of 300 and 1,000 mg./day and α values from 0 to 1.

As the figure shows, $\alpha.d$ on $d - f$, when both α and d vary, represents an area, not a single line. This area shrinks to a straight line if s is independent of α . The line then obtained is VZ, the regression line of Dr. Rose and his colleagues.

$$\alpha.d = d - f + 287$$

The two interrupted lines represent the upper and lower deviations of the data of the authors.

The authors did not give the range of d studied nor the values of α found, but if d ranged from 300 to 1,000 mg. and α between 0 and 0.5, then all the results obtained would be included in the small shaded triangle, most of which falls within the lower deviation from the mean line. So, two radically different assumptions about the secreted calcium are about equally well confirmed by the data when they are presented as a regression of $\alpha.d$ on $d - f$. Therefore, it seems unjustified to accept the conclusion of Dr. Rose and his colleagues.

The danger of trusting correlation coefficients is well illustrated by the other correlation demonstrated by the authors (see their Fig. 5, line B). The correlation coefficient is again 0.95 but the correlation is spurious because it leads to an impossible conclusion. The equation of line B is

$$\alpha.d = 0.82(d - f) + 250 \text{ mg./day}$$

When $\alpha = 1$ —i.e., when dietary absorption is complete—the equation reduces to

$$d = 0.82d - 0.82f + 250$$

$$\text{or, } f = 300 - 0.22d.$$

—i.e., f is still dependent on d . This is absurd because if all the dietary calcium is absorbed none can appear in the faeces—i.e., if $\alpha = 1$, f cannot be dependent on d . This does at least suggest that the correlation in Fig. 4 which is equally good is equally spurious.

It is interesting and possibly significant that Dr. Rose and his colleagues' Fig. 5, referring to isotope given with a whole day's milk seems more compatible with my hypothetical figure than their Fig. 4. The gradient of VY is 0.80; line B in Fig. 5 (really a narrow triangle) has a gradient of 0.82. This may suggest, and I put this forward very tentatively, that absorption measured after an overnight fast is an overestimate compared with that averaged over a whole day. The authors may be able to confirm this.

I conclude that the results of Rose *et al.*, when presented differently, are likely to be quite compatible with those of the authors I quoted.—I am, etc.,

Medical Unit,
St. Mary's Hospital,
London W.2.

RICHARD MARDELL.

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Hookworm Infections Acquired in Britain

SIR,—The letter from Professor J. J. C. Buckley and Mr. F. R. N. Pester (10 July, p. 106) recording hookworm infection in two children acquired in this country compels a reappraisal of the possibility of its more widespread dissemination. In a consecutive series of 139 adult male immigrants applying for employment I found 49 (approximately 36%) were excreting hookworm ova.

When washed hookworm ova are placed in 5% formol saline growth and active movements of the embryos continue for five hours or more at room temperature. If the ova were protected by being embedded in a mass of faeces their survival would presumably be much longer.

It therefore seems a possibility that temporary camping sites, construction sites, or any place where the contents of pail or chemical closets are dumped or buried could be potential sources of infection under suitable climatic conditions.—I am, etc.,

London N.W.7.

R. D. MACLEAN.

Absence of Carcinogenic Properties of Propranolol in Mice

SIR,—Alderlin (pronethalol) has been shown to produce thymic lymphosarcomata and reticulosos in mice,¹ and it has been suggested that this may be related to the production of a reactive ethyleneimine as a transient breakdown product.² Inderal (propranolol) is probably broken down in much the same way, but the resulting intermediate product would be expected to be much less reactive and therefore might not produce tumours. This hypothesis is supported by an experiment on similar lines to those of Alcock and Bond¹; there is no significant difference between mice treated with propranolol and a control group.

Specific pathogen-free mice of the Alderley Park strain were used. The drug was given by stomach tube for ten months and for a further nine months was administered in the diet as follows: 30 male, 29 female mice given 150 mg./kg. by tube for 10 months and 0.2% in diet for nine months; 28 male, 28 female mice given excipient only by tube for 10 months and control diet for nine months.

During the 19-month period of treatment there was no significant difference between the animals given propranolol and the control group. The incidence of tumours was equal and fitted into the pattern with which we are familiar in this strain of mice. In the series reported by Alcock and Bond¹ thymic tumours began to appear 75 days after the start of treatment with pronethalol and by the end of the experiment 11.1% of the animals had died with thymic tumours.

With the observation that pronethalol caused tumours in mice its use in man was necessarily restricted, although there is no evidence that any species other than mice are susceptible. No tumour attributable to it was seen in rats dosed with the drug (0.2% in the diet) for 18 months. Apart from giving reassurance that propranolol is free from this hazard, these experiments highlight how relatively minor structural changes can alter toxicity as well as pharmacological activity.—We are, etc.,

M. J. TUCKER.

S. J. ALCOCK.

S. B. DE C. BAKER.

Research Department,
I.C.I. Pharmaceutical,
Alderley Park,
Macclesfield, Cheshire.

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Scared to Death?

SIR,—We would like to report a case of an apparently healthy middle-aged woman dying with massive adrenal haemorrhage, following a relatively minor operation, who was subsequently found to have had forebodings of death.

Mrs. A. B., aged 43, mother of five children, was admitted to North West River Hospital, Labrador, on 18 March 1965. She had been complaining of severe stress incontinence for several months. She had been treated during the past three years for anxiety which responded well to reassurance and mild sedation with phenobarbitone, 30 mg., three times daily. There was no relevant past medical history. On examination she was found to be in good health. Vaginal examination revealed a moderately large cystocele and urethrocele. On 19 March anterior colporrhaphy was performed under general anaesthesia. The premedication was pethidine, 100 mg., and atropine, 0.65 mg.; induction with intravenous thiopentone, 400 mg., and Flaxedil (gallamine triethiodide), 40 mg.; maintenance with nitrous oxide, oxygen, and a trace of trile, accompanied by intermittent intravenous pethidine to a total of 80 mg. The operation, which lasted less than one hour, was straightforward with minimal blood loss. Her blood-pressure remained around 120/70 throughout the operation, and pulse and respiration were normal. She regained consciousness before leaving the theatre. One hour later she became shocked and her systolic blood-pressure fell to 70 mm. Hg. She remained conscious, but shortly afterwards complained of severe pain in the left hypochondrium. Methedrine (methamphetamine) was immediately given, 15 mg. intravenously, and 15 mg. intramuscularly, and the foot of the bed was raised. As the blood-pressure showed no response Aramine (metaraminol), 10 mg., was given intramuscularly. An infusion of dextran, 500 ml., with hydrocortisone, 100 mg., was started. Despite continuous infusion with metaraminol and hydrocortisone no improvement was obtained and intranasal oxygen was required as the patient became cyanosed. The pain was partly controlled by injections of morphine, 16 mg., given on three occasions. The E.C.G. was normal. Her condition deteriorated and her temperature rose to 103.6° F. (39.8° C.) by midnight, when she became comatose. She died at 5 a.m. on 20 March.

At post-mortem examination the adrenal glands showed extensive haemorrhage. Petechial haemorrhages were found in the stomach, ileum, liver, and in the skin of the nose. There was no other pathology.

Subsequently we learned that this patient had had her fortune told at the age of 5 years, when she was informed that she would die when she was 43 years old. She had told her daughter for many years that she would die at this age. Her forty-third birthday was one week before operation. On the evening before operation she told her sister, who alone knew of the prophecy, that she did not expect to awake from the anaesthetic, and on the morning of operation the patient told a nurse she was sure she was going to die. These fears were not known to us at the time of operation.

We would be grateful to hear from any reader who has had experience of a patient dying under similar circumstances. We wonder if the severe emotional tensions of this patient superimposed on the physiological stress of surgery had any bearing upon her death.—We are, etc.,

A. R. ELKINGTON.
P. R. STEELE.
D. D. YUN.

Grenfell Labrador Medical
Mission,
Ottawa, Canada.

Television in Psychotherapy

SIR,—We were most interested to read the paper by Professor G. Smith and Dr. J. H. Wyllie (10 July, p. 99) concerning the use of closed-circuit television in the teaching of medical students. In view of the increasing use of television in medicine to-day we feel that it may be of some interest to record briefly our own experiences in the use of closed-circuit television in a psychotherapeutic setting.

Following the installation of the television equipment at Uffculme Clinic it was decided to make a preliminary assessment of its effects on one of our weekly out-patient psychotherapy groups. Despite some initial anxieties concerning the possible effects on the group, the question was raised in the group session some six weeks before the proposed use of the equipment to see if the group would be prepared to accept its use. The seven group members—four women and three men—who were fairly sophisticated in group methods, discussed their feelings regarding the use of the equipment and expressed their main concern as being the fact of who would be watching the monitor. This point was fully discussed and the group went on to express an opinion that they would prefer the use of the television to having other doctors sitting in on the group, especially if the doctors were to change at fairly frequent intervals. The whole question of the use of the equipment was raised in the group by the therapist from time to time over the period before actual commencement of its use. No further concern or anxieties were expressed by the group. It must be pointed out, however, that we feel strongly that the equipment should never be used in a psychotherapeutic setting unless the patients are fully in agreement with its use, are aware of when it is actually being used, and adequate safeguards are taken as to the persons viewing. In a therapeutic community such as at Uffculme Clinic it is particularly important to emphasize to patients that indiscriminate use in the sense of their being observed without their knowledge and consent will not occur.

During the first televised session the therapist (C. D. N.) felt that possibly group interaction was less than usual, but that this may have been due to other causes. Subsequent sessions did not appear different in any way from those before the use of the television equipment, nor when the assessment was finished did any change result. The observer (E. R. S.) felt strongly aware of a feeling of

non-involvement in the group proceedings and did not feel he could be as sensitive to the affective responses of the group.

We felt that in view of the fairly ready group acceptance the closed-circuit television could be used with benefit as a teaching medium. Prospective therapists would be able to gain some knowledge of how a group interacts and the type of work done in a psychotherapeutic group. Disturbance caused by visiting doctors to the group would be avoided by the use of the television equipment.

One of us (E. R. S.) attempted to use a tape recorder in a similar group to that under discussion. This resulted in an almost total failure of group work and interaction, so that the instrument had to be withdrawn.

In conclusion, it would seem on the basis of our preliminary assessment that closed-circuit television is much better accepted by an out-patient psychotherapeutic discussion group than either the use of a tape recorder or the prospect of having other visiting doctors sitting in on the group.—We are, etc.,

E. R. SETHNA.
C. D. NEAL.

Moseley, Birmingham.

Africa's Need

SIR,—May I be permitted to comment briefly on Dr. S. McClatchie's letter (10 July, p. 109), since it can perhaps be concluded there will be little further correspondence on this subject for the present arising out of your admirable leading article (10 April, p. 939). He will, I trust, accept the following blunt observations:

(1) Unquestionably there has been a spate of quick surveys from this country by experts mainly of professorial status whose expenses have ultimately been borne by the British taxpayer. It would be unreasonable to infer that the Ministry of Overseas Development, the British Council, and other interested bodies have found all these surveys uniformly worthless, though it may be concluded they have now served their initial purpose, and should diminish. When my wife and I visited East Africa last year it cost the British taxpayer nothing; it cost me several hundred pounds. We were warmly welcomed everywhere, even in Nairobi, and never gained the impression we were wasting the time of heads of departments and others locally. Admittedly we might have been received differently were we not primarily on holiday.

(2) If he reads my letter again (15 May, p. 1308) he may agree that some form of secondment on a proportionate basis from each hospital region in the U.K. to include specialists of all grades, nurses, midwives, and auxiliaries, is appropriate for the foreseeable future, bearing in mind the acute shortage of man-power here in almost every branch.

(3) It should be well known there is already an acute shortage of technicians to meet our own requirements, and secondment of some of these overseas will obviously impose still further strain. If, for instance, there is to be a cervical cytology service for all women in this country from an early age, as in British Columbia, this alone will require some additional technicians.

(4) Dr. McClatchie's remarks on the training of African postgraduates in this country are obviously intended to be facetious, though

admittedly it is absurd at this juncture they should be engaged on complicated unrealistic research projects as part of their postgraduate training. As regards postgraduate medical training he will be aware that present aims are to train Africans in postgraduate teaching departments within their own countries. In this way alone Africa will ultimately obtain people who fit into the existing conditions and fill primary needs in the country's economy, as is very rightly stressed. He also knows the difficulties met with by African postgraduates from all the newly independent countries who have studied in this country or in the U.S.A. or the Soviet Union. On a few occasions this has already proved very unsatisfactory.

(5) At the forthcoming Commonwealth Medical Conference in Edinburgh in October the Minister of Overseas Development will doubtless lay down specific terms of reference. Despite these there will be a lot more talk, and, once more, insufficient action. Some headway is bound to be made. A little cold comfort might derive from reflecting that as in Kenya we also suffer from too much talk and too little action.—I am, etc.,

Liverpool 1.

H. VINCENT CORBETT.

SIR,—The letters from Drs. J. L. O'Sullivan and J. R. Purser on "Africa's Need" (24 July, p. 235) lead me to the conclusions that "Africa's Need" could also supplement the experience in this country.

I have pointed out to some members of the Council of the Royal College of Obstetricians and Gynaecologists that, as far as abnormal midwifery is concerned, Africa can supply a wonderful experience never seen in this country. For example, how many members of the College have ever had the experience of performing a craniotomy or a decapitation, or have seen those huge obstetrical vesico-vaginal and recto-vaginal fistulae, at times large enough to admit two fingers, and have had the experience of having to repair such damage? This applies to other branches of the profession—for example, I recall an incident when on holiday in an out-station in Kenya I was asked to deliver a woman with a full-term extrauterine pregnancy and invited an anaesthetist who was on vacation there to administer the anaesthetic; but when she arrived at the hospital and found there was no anaesthetic machine, flatly refused her assistance, and was very surprised and full of praise when the anaesthetic was administered by an African hospital assistant with the result of a live mother and baby.

I have suggested on occasions it would be well worth while giving due consideration to my idea that it would give invaluable experience to all postgraduates, sitting the higher examinations, if they were made to do a tour, say one or two years, working among the inhabitants of the "developing" countries. Such an exchange would benefit "Africa's Need" and be an invaluable experience for future medical practitioners in this country.

I am convinced that any doctor who has served for any considerable period in Africa would endorse my opinion and, like me, could give many instances of really successful work performed in very primitive conditions and, of necessity, as a result of improvised methods.—I am, etc.,

Colchester, Essex.

P. G. PRESTON.