we have conducted a number of studies on the selenium content of teeth, placental tissue, and foetal cord blood, bovine milk, eggs, water, and human milk in relation to dental caries susceptibility in children.⁵⁻⁹

There is no doubt that the role played by trace elements in preventing dental caries requires further exploration. It is believed, however, that the study of trace elements that may be responsible for increasing the susceptibility to dental caries, such as selenium, should also be given serious consideration by research workers.—I am, etc.,

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Ettriol Trinitrate and Prenylamine Lactate in Angina Pectoris

SIR,—An effective method for the prolonged relief of severe angina pectoris is badly needed. Glyceryl trinitrate (trinitrin) relieves angina rapidly but its action is short-lived. And none of the many drugs claimed to produce prolonged relief have proved active when tested by acceptable methods of double-blind trial. The most widely prescribed, pentaerythritol tetranitrate, showed no effect even in doses of 180 mg. daily¹; and the various monoamine oxidase inhibitors have proved no better, as well as causing deaths from liver damage. The search continues, and I wish to report briefly double-blind trials of two recent drugs, claimed to be effective for the prolonged control of angina.

1. Ettriol trinitrate (E.T.T.N.) in experimental animals has shown actions on smooth muscle and coronary blood-flow similar to trinitrin. Sowton and Oram² found E.T.T.N. to be as effective as trinitrin for the rapid relief of anginal pain. Prolonged improvement of angina has been reported, though a controlled trial did not confirm this improvement.³ Twelve patients with typical severe angina took part in a double-blind trial; E.T.T.N. 10 mg. three times daily was given during the treatment period. Two patients improved on E.T.T.N., with more angina in the control period. The trial periods were repeated in both patients, when there was no difference between the E.T.T.N. and placebo periods. One patient improved during the control period, with more pain on E.T.T.N. Three patients showed moderate improvement in both periods, and four noticed no change in angina throughout the trial.

2. Prenylamine lactate increases coronary blood flow in animals, and the only double-blind trial⁴ showed moderate improvement with prenylamine in four out of six patients. Eleven patients, with severe angina, took part in a double-blind trial, receiving prenylamine in a dose of 30 mg. three times daily. Three patients showed slight improvement during the prenylamine period only, and two during the control period only. Three showed improvement throughout both periods of the trial, and in three angina persisted unchanged.

Neither ettriol trinitrate nor prenylamine lactate have proved more effective than control tablets for the prolonged relief of angina, when tested by a double-blind technique. Only one drug, trinitrin, is accepted as valuable for the relief of angina. The mechanism of

its action is uncertain. In normal subjects trinitrin causes coronary vasodilatation; but in patients with angina there is no increase in coronary blood-flow and occasionally even a decreased flow. Cardiac work is invariably decreased, owing to a fall in blood-pressure from peripheral vasodilatation, and this decrease in cardiac work may relieve angina. The coronary response suggests maximal dilatation of the coronary tree and collateral vessels even in the resting state, with no increase of coronary blood flow possible after trinitrin or exercise.⁵ It is doubtful whether the coronary arteries can be dilated by any drug more effectively than by the potent vasodilator stimulus of surrounding tissue ischaemia. And if coronary blood-flow does not increase with trinitrin, other coronary vasodilators with a more gentle and prolonged action are unlikely to dilate atherosclerotic coronary arteries.

Frequent disappointments in the past indicate that the spate of new drugs introduced for angina require formal testing before acceptance. At present we have no drug of proved value. Angina frequently improves with prolonged anticoagulant treatment,⁶ perhaps by prevention of recurrent small thromboses or by encouragement of collateral circulation; and the high incidence of infarction in these patients is considerably reduced by anticoagulants.⁷ Treatment of severe angina must therefore at present depend on general measures such as weight loss, reduction of smoking, and sedation; correction of precipitating factors such as anaemia, hypertension, or myxoedema; and anticoagulants if symptoms warrant. Fortunately, at least half these patients will improve with interest and enthusiasm alone.—I am, etc.,

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Hertfordshire.

DAVID N. PHEAR.

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Eaton Agent

SIR,—The author of your interesting leading article on "Respiratory Illness caused by Mycoplasma" (May 11, p. 1246) appears to have overlooked the recent work of Dr. Phyllis Pease.¹ She has produced convincing evidence that the Eaton agent is an L form of streptococcus MG, an observation which may prove to be of great biological importance.—I am, etc.,

Birmingham 15.

R. LANNIGAN.

REFERENCE

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Detection of Glaucoma

SIR,—In his letter Mr. R. A. Greeves (May 4, p. 1231) suggests that tonometric measurements on all persons over 40 are not practicable. I thought, therefore, that your readers might like to know that Drs. Mackay and Marg (of the School of Optometry, Berkeley, California) have developed a guard-ring electromanometer, 3 mm. in diameter, which gives an accurate recording of the pressure in the anterior chamber if touched against the eyeball for two seconds. No local anaesthetic is necessary. The contact area of the instrument is smooth and covered with a sterile rubber membrane, and its application to the eyeball is not uncomfortable. It is

the only tonometer which can be used by opticians, and over 200 cases of incipient glaucoma are said to have been detected and referred to ophthalmic surgeons through its use. Its routine use may well enable many patients to avoid the consequence of established glaucoma.

The principle of this instrument is the same as that of the guard-ring electromanometer developed in this hospital for obstetric work and described in the *Journal of Physiology*¹ and the *Journal of Obstetrics and Gynaecology*,² and it is made by Biotronics, Inc., Oakland 12, California, by agreement with the National Research Development Corporation.

It would be interesting to learn whether opticians in this country should be encouraged to screen patients for abnormal intraocular pressures with this type of device.—I am, etc.,

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University College Hospital, Medical School,
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Lead-poisoning

SIR,—It was with something approaching consternation that I read the article on the treatment of lead-poisoning with oral penicillamine by Dr. A. Goldberg *et al.* (May 11, p. 1270). While not quarrelling with their results, I must take exception to certain statements they make.

First, any worker who "finds it impossible to wear a mask constantly" can only be likened to the deep-sea diver who needs to take his helmet off occasionally—they are both in the wrong job. Secondly, the general standard of hygienic equipment should be of sufficiently high standard to allow the ignoring of drug prophylaxis. If drug prophylaxis is used there is no incentive to raise hygienic standards. I regard the use of drug prophylaxis as a frank admission of failure. Once it has been instituted it is not possible to ascertain the effectiveness of any new hygienic measures.

During the past eight years we have had no cases of lead-poisoning or intoxication in this factory, and it is five years since I have had to move a man off lead work. During this eight-year period some thousands of tons of soluble lead products have been manufactured. This record had been attained only by constant surveillance and high standards of hygiene.—I am, etc.,

I.C.I. Dyestuffs Division, G. I. BENSON.
Derby.

Smallpox Vaccination

SIR,—Dr. J. A. Dudgeon's reference to Dr. Charles West and vaccination at the Hospital for Sick Children, Great Ormond Street, in his paper on the development of smallpox vaccination (May 25, p. 1367) prompts me to make two observations. First, Dr. West learned his paediatrics at what is now known as the Royal Waterloo Hospital, founded in 1816 as the Universal Dispensary for Children. The extermination of "that most infectious and fatal of all diseases, the smallpox" and the promotion of vaccination were high on the list of objects drawn up by the founder, the enlightened and far-seeing physician, John Bunnell Davis.

Second, at the Foundling Hospital in November, 1800, "Dr. Mayo and Dr. Stanger were asked to report on the expediency of introducing the practice of

inoculating with the Cow Pox." In February, 1801, they recommended the vaccine disease as effective and a much milder and safer disease than smallpox. That the matter was not beyond dispute is shown by the suggestion in May, 1819, by the doctors at the hospital that they should return to inoculation with smallpox instead of vaccination. The committee found against the proposal.—I am, etc.,

London W.1.

ALFRED WHITE FRANKLIN.

Persistent Foreign Body

SIR,—It is generally realized that a foreign body can exist in various parts of the body for a considerable time without causing any symptoms, but the possibility of such a diagnosis is often apt to be overlooked, as it would seem to be improbable.

I should therefore like to report the case of a woman patient of mine, aged 62, who recently came to see me for a small ulcerating skin-lesion of the dorsum of the right foot in the region of the head of the third metatarsal. It had a hard base and slight serous discharge and was causing some pain, these symptoms having existed for only two or three weeks. Thirty-one days later she came to see me, thinking there was a piece of bone in the ulcer. There certainly was something hard to be felt, and I removed a splinter of glass over $\frac{1}{4}$ in. long (20 mm.), dagger-sharp, with a base of 4×2 mm. and weighing just over $\frac{1}{4}$ g.

There was no history of recent trauma, but I found that 12 years and 10 months previously I had attended her for a splinter of glass in the same foot between the heads of the third and fourth metatarsals, and had referred her to hospital after having failed to extract it. Whether or not a portion of glass was removed by the casualty officer I do not know. The patient told me she did have penicillin injections (and presumably the routine A.T.S.), but the fact remains that a splinter of glass remained for nearly 13 years in a restricted region subjected to continual heavy pressure, and yet it caused no symptoms whatsoever until very recently.

—I am, etc.,

Kirkby-in-Ashfield,
Nottinghamshire.

J. D. DURANCE.

Foreign Bodies and Operations

SIR,—The medico-legal memorandum printed in your edition of January 23 (p. 270), "Foreign Bodies Left in Patients at Operations," is a most timely and necessary summary of the present position as commonly understood, and no doubt the procedure is already carried out to the letter in most modern hospitals. But rigid adherence to these rules by no means guarantees freedom from conviction in the courts. A recent decision has cost a hospital and a surgeon in Kenya £2,500 damages and very considerable costs although all your criteria were religiously observed.

The story is as follows:

A woman had an operation for blocked Fallopian tubes at hospital "A." Twelve months later she was admitted moribund to hospital "B," where a desperate emergency operation was performed on her in her bed as she was too ill to be moved even on to the theatre table; at this operation a uterine ectopic pregnancy which had ruptured was found together with the polythene tubes from the previous operation. The surgeon removed all swabs of which he was aware and the swab count was reported correct by a very efficient senior theatre sister. Surprisingly enough the patient survived and left hospital very content.

Nine months later, however, she had a third operation for intestinal obstruction and at this operation a pack made of Turkish towelling was discovered in mid-abdomen and