Correspondence

Letters to the Editor should not exceed 500 words.

Tuberculosis in Developing Countries

SIR,—Having worked for eight years in Nigeria I have reached conclusions¹ almost the same as those of Dr. Wallace Fox (18 January, p. 135). I disagree, therefore, with Dr. W. J. Bell and Dr. P. P. Brown (22 February, p. 501), who consider that the problems in West Africa are very different from those in Madras, and are concerned that Dr. Fox's views "may be accepted as something of a blueprint for underdeveloped tropical Africa."

The one thing which does cause me disquiet is that Dr. Fox's article may be interpreted as recommending isoniazid alone as an acceptable alternative to combined chemotherapy in developing countries, thereby lessening the pressure to provide effective treatment. The only reference to the results of treatment with isoniazid alone is that the maximal effectiveness is 70% (obtained under the highly specialized conditions of the Madras Chemotherapy Centre). If our experience at University College Hospital, Ibadan, is any guide, the proportion of satisfactory results at the conclusion of twelve months' treatment under service conditions is likely to be less than 40%²—and the facilities available in Ibadan are better than can be expected in most clinics in tropical countries. In addition, the clinic using isoniazid alone finds itself burdened with an increasing load of treatment failures for whom nothing effective can be done. Our experience has been that these unfortunate people neither die nor disappear rapidly—they remain to exert a depressing influence on morale.

I fully agree with Dr. Fox that "the cost of anti-tuberculosis drugs is a very important consideration in developing countries"; but drugs are by no means the only item of expenditure in a tuberculosis clinic, and the cost of treatment must be related to its efficacy. Dr. Fox quotes the cost of clinic treatment in India as \$42 per patient a year. Treatment is presumably with isoniazid alone, so staff and other expenses account for nearly \$40. The addition of streptomycin 1 g. thrice weekly and P.A.S. 12 g. daily, during the critical first three months of treatment,³ would cost approximately \$10, but would probably double the proportion of satisfactory results (from 35% to 70%)—100% improvement in results for 25% increase in cost. In India, where funds for the treatment of tuberculosis are severely limited, the allocated money cannot all be spent, largely because of lack of staff.⁴ Further, as Dr. Fox himself points out, India is contemplating a large expansion of tuberculosis beds. I am therefore reluctant to accept that initial triple drug therapy could not be provided in the great majority of clinics throughout the underdeveloped countries, provided that effective ambulatory chemotherapy for all patients is the outstanding priority.

I cannot agree with Drs. Bell and Brown, who urge the necessity of some form of in-

patient accommodation in order to exercise control over drug-taking. Such treatment is bound to be relatively costly, while the disadvantages of "therapeutic detention" as they call it, which have been demonstrated in Madras,⁵ have been confirmed in our experience in Ibadan. Where money is inadequate, the only justification for in-patient treatment is that the disease renders the patient physically incapable of obtaining out-patient treatment. But even this provision must take second place to the provision of effective ambulatory chemotherapy.—I am, etc.,

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J. R. LAUCKNER.

REFERENCES

- ¹ Lauckner, J. R., *Bull. int. Un. Tuberc.*, 1964, in press.
- ² —, *W. Afr. med. J.*, 1959, 8, 285.
- ³ Canetti, G., *Tubercle (Lond.)*, 1962, 43, 301.
- ⁴ Nagpal, D. R., *XVII International Tuberculosis Conference*, Rome, 1963.
- ⁵ Tuberculosis Chemotherapy Centre, *Bull. Wld Hlth Org.*, 1959, 21, 51.

Venereal Disease and Young People

SIR,—I am grateful indeed for the wise and forthright report of the Committee on "Venereal Disease and Young People," on which you comment (7 March, p. 575). It is fitting that the medical profession, with its peculiarly intimate knowledge of the moral problems of our times, should give a lead to the nation in its honest approach to these matters and its sound recommendations. If the suggested conferences are convened I hope that they will give consideration to the positive incentives which will make purity attractive to young people.

Fear of disease is an inadequate motive for clean living, as is "being good for the sake of being good." A vital religious faith, coupled with a challenge to moral courage, to great living, to the patriotism that will help to make Britain a pattern nation—these are the incentives that youth would understand.

Purity has been described as a positive vibrant force that arrests the decline of civilization and sets men and women free. Can we get this conception into our educational and national thinking?—I am, etc.,

Hove 4, Sussex.

OLIVE K. BURNETT.

SIR,—I have not read the B.M.A. publication "Venereal Disease and Young People," and can only hope your review of it (7 March, p. 575) does not do it justice. You mention the committee's "stout defence of standards of sexual morality," but standards change, and whose are they defending? Evidently not those of most young people, whose mores certainly now include premarital intercourse. Why is this not a "sensible" preliminary to marriage, and why

is the exercise of self-control during engagement in itself a valuable preparation for marriage? Since marriage is probably the most important event in life after childhood is passed surely it is "sensible" to explore sexual and personal compatibility as completely as possible before getting married. I would defend any serious relationship, which might include sexual intercourse, before marriage as an enriching experience for the two concerned. This is not to defend promiscuity, which is a physical rather than a total personality experience.

Each generation seems to condemn the mores of the next generation, but if this was justifiable the human race would be going steadily downhill morally. We may not progress much, but I do not believe we are steadily regressing spiritually and morally.

Rather than condemn young people, parents, teachers, and others should help them to work out the best way of dealing with the complications that changing views entail. Religious faith may be "a potent source of moral behaviour," but these days many people have no religion. Discussion of the disadvantages and dangers of early sexual experience without love, and above all contraceptive advice, will help many. To me, the greatest immorality is to bring an unwanted child into the world.—I am, etc.,

London N.W.3.

PHYLLIS M. DOBBS.

SIR,—As a general practitioner I am indeed most grateful for your leading article on the report on "Venereal Disease and Young People" (7 March, p. 575). Reactions in the press and radio to the report have so far been overwhelmingly to welcome it, but there is a long way to go before public opinion is really aroused on the subject. Hence the importance of the recommendations that central and local meetings be convened (presumably by the B.M.A.) to discuss with other professions and responsible groups how best its proposals could be carried out.

Many in general practice are noting with concern these days the depressing results of the nation's failure as a whole to inspire its young people to live for more than "kicks" and vandalism. The answer is not more tolerance with the individual, as the V.D. figures mount higher and higher, but to take every opportunity to reawaken the public conscience on the one hand, and on the other to uphold and apply religious faith and standards personally—for through them is found an excellent way to inspire youth to throw its energy with self-discipline into the mighty possibilities of the age we live in.—I am, etc.,

Birmingham 30.

D. L. KIRK.

Fluoridation Falsified

SIR,—It is surprising that Dr. H. M. Sinclair (29 February, p. 554), in his letter to the *Journal*, should confuse the issue regarding the toxicity of fluorides in the drinking-water.

In order to emphasize the safety of drinking-water containing 1 part per million of fluoride, which is present naturally in many waters throughout the world, the statement has been made that it would be necessary to drink two and a half bathfuls of such water to ingest a toxic amount. Whether this amount of water is taken at one time or over a period is irrelevant because it does not require an authority on human nutrition to appreciate that it is just not possible to drink such a gross amount.

If Dr. Sinclair had chosen to understand the statement correctly, he would have appreciated that $1\frac{1}{2}$ g. of sodium fluoride would have to be ingested in water containing 1 part per million sodium fluoride. The relevant point, of course, being that two and a half bathfuls of water would have to be ingested. I am sure that Dr. Sinclair will concede this elementary point.

He will also concur, I am sure, with the view that in issuing a challenge of this sort it should be performed under recognized clinical procedure and that we should have a control. Will he be prepared, therefore, in the first instance to ingest just two bathfuls of unfluoridated water per day to test the safety of such a procedure, before asking me to drink a similar amount of fluoridated water?—I am, etc.,

W. STEWART ROSS,
Chairman, Dental Health Committee,
London W.1. British Dental Association.

SIR,—My own paper, quoted by Dr. H. M. Sinclair (29 February, p. 554), dealt with public relations and fluoridation, and an attempt was made to analyse the psychology of the anti-fluoridationist movement.

The statement on the safety margin of the fluoridation of water supplies was made in the context that it seems relatively easy to arouse fears about fluoridation, whereas no minority opposition to immunization procedures has succeeded in shaking the public's confidence, notwithstanding that some of these procedures carry a risk which is definite even if it is minimal. For example, 160 cases of generalized vaccinia occurred in England and Wales in 1962,¹ but there has never been a single case of illness which could be attributed to consumption of water containing one part per million of fluoride. The conclusion is that there is a specific emotional attitude to water supplies, and studies by social anthropologists confirm this.

However, Dr. Sinclair has chosen to cite another prophylactic procedure which is directly analogous with fluoridation. His challenge appears to me to be based upon a fallacy. Who would be prepared to consume four times the dose of morphine as against four times the dose of aspirin? Safety margins involve the mechanism and circumstances of administration of the substance concerned, and it is these that provide the basis for valid comparison. It could even be argued, for example, that the safety margin in the use of morphine was greater than that of aspirin because morphine is less likely to be in non-professional hands—suicide by morphine is rare compared with suicide by aspirin.

Similarly in the case of fluoridation of water supplies the optimum daily dose is rather less than one-thirtieth of that which taken over many years will cause chronic poisoning, and more than forty-two times less

than that administered daily to patients with Paget's disease (*B.M.J.*, 29 February, p. 547).

Fluoridation plants can deliver the optimum dose with accuracy, and their operation is under control. In such circumstances it would be difficult for an individual to consume three times the daily optimum dose of fluoride, quite apart from the thousand times mentioned by Dr. Sinclair. Dr. Sinclair's dramatic challenge will no doubt give pleasure to militant anti-fluoridationists, but in declining to accept it I am not prepared to retract my statement in respect of prophylactic procedures in general, as this was framed in terms of sociology rather than biochemistry or pharmacology.—I am, etc.,

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Central Council for Health Education,
London W.C.1. Medical Director.

REFERENCE

¹ The Annual Report of the C.M.O., Ministry of Health, for 1962, p. 48, 1963. H.M.S.O.

Schistosomiasis in the West Indies

SIR,—In your issue (23 December, p. 1592), under the title "Schistosomiasis in the West Indies," my old friend Dr. P. A. Clearkin writes on the absence of schistosomiasis in British Guiana, in sharp contrast with Surinam, our eastern neighbours, where it is common. He might have added that the disease is even more common in Venezuela, our western neighbours.

The coastlands of British Guiana are irrigated by a truly immense network of canals. The two prevailing cultivations are sugar cane (91,000 acres) and rice (240,000 acres). At certain seasons a large proportion of the rural population could appropriately be described as "amphibious." Yet up to date schistosomiasis has never been recorded. Traffic across the Corentyne river, which marks the frontier with Surinam, is considerable; there can be little doubt that opportunities for the introduction of this infection have been many and frequent. Immigration from the island of St. Lucia, another endemic focus, used to be considerable before the last war.

Though the general ecology of British Guiana and Surinam may superficially appear similar this is certainly not the case when one focuses on surface waters, soils, and on the distribution of bilharzia: in Surinam, schistosomiasis occurs in very restricted localities, aggregating only 1,200 square kilometres, or 0.75% of the territory. In some areas around Paramaribo, the capital, over 12% of the population is affected; on the lower Saramacca river the rate is 23%. All endemic areas are characterized by extensive calcareous deposits of weathered sea-shell; the surface waters in this formation are alkaline, hard, and lime-rich. In this environment the vector snail, *Australorbis glabratus*, thrives. Bilharziasis does not occur over the vast majority of the country, including coastal areas, characterized by acid, alluvial clays of marine origin, and in the interior, where equally acid and lime-free quartz sands and lateritic soils prevail.

In Venezuela, schistosomiasis is also restricted to a densely populated but relatively very small area comprising the federal district, the States of Miranda, Aragua, and part of Carabobo, all situated within the Costo-Cordillera, a limestone formation. The

disease is not found in the alluvial soils of Western Venezuela, towards the Orinoco delta or in the interior, where calcareous formations do not occur.

In British Guiana we have neither limestone nor weathered-shell deposits: our surface waters range from very acid to acid. The common range of pH in irrigation-canal waters is 4.5 to 5.5. Waters are practically devoid of lime. Water-snails are common, but a proper malacological survey has never been made; this is a job which can only be carried out adequately by an expert. Such a survey would be most desirable; a wider and detailed study in respect to ecology and the distribution of vector snails and schistosomiasis in these three neighbouring countries should be rewarding.

The establishment of schistosomiasis in British Guiana would obviously constitute a major disaster for our agricultural industries. If we consider that over the past years the disease has not become established, in spite of abundant opportunities for its introduction, and moreover that the characteristic ecological conditions associated with the strictly circumscribed foci of schistosomiasis in neighbouring countries do not exist in British Guiana, we are led to conclude that there are good grounds to presume that our environment is not suitable for the development of this disease. The exact mechanism by which this is brought about remains, however, to be discovered: is the environment hostile to the snail, the schistosome, or both?—I am, etc.,

Georgetown,
British Guiana.

G. GIGLIOLI.

SIR,—Dr. P. A. Clearkin (21 December, p. 1592) is not quite correct when he writes that ova of both *S. mansoni* and *S. haematobium* have been found in St. Lucia; only *S. mansoni* has been detected. It is true that among the British Islands schistosomiasis is now reported only from St. Lucia; such was not always the case, as it was prevalent in St. Kitts some 25–30 years ago, where ova were also found in wild monkeys; *S. mansoni* occurs also in the French island of Martinique and in Puerto Rico.

As Dr. Clearkin points out, it is curious and interesting that schistosomiasis is not more widespread in the islands where climatic and topographical features are almost identical with those found in St. Lucia. What is even more interesting is that for many years infestation in St. Lucia was confined to the little town of Soufrière. The first recognized case of schistosomiasis in St. Lucia was in a European in 1925; the patient had spent a few weeks in Soufrière and bathed almost daily in the fresh-water streams there. From then on to 1956 *S. mansoni* ova were found only in persons who lived, or had lived, in Soufrière. In 1956, however, ova were found for the first time in a few persons who lived in another part of the island and who had never lived at Soufrière. This caused some concern to the health authorities, but little was done at the time as the health department was fully occupied with a malaria-eradication campaign, and no one was available to investigate the schistosomiasis situation.

In 1960, when the malaria-eradication campaign was practically completed, an island-wide investigation into schistosomiasis was carried out, and it was found that all the