

frankly I believe it would tend to a state of affairs which, as a teacher of midwifery, I shudder to contemplate.—I am, etc.,

University College, Dundee, July 23rd.

JOHN MCGIBBON.

SCHOOL PREVENTIVE MEDICINE IN RURAL AREAS.

SIR,—As chief school medical officer of an agricultural county I read the article by Dr. A. C. T. Perkins in the *Journal* of July 20th (p. 95) with an interest which was enhanced as I found that the problems encountered in Suffolk resemble, in many respects, those which confront us in Dumfriesshire.

I need not detail the many points on which I heartily agree with Dr. Perkins, but turn rather to that on which I disagree, with equal cordiality. The abolition of rural schools and their replacement by large central institutions for at least 1,000 pupils would doubtless simplify medical inspection and after-care, and might, I admit, have other real advantages, but it would give the *coup de grâce* to what remains of the rural culture of these islands. This, I submit, would be not only a matter for sentimental regret, but a hygienic catastrophe. It is in the national interest that we should retain a strong and vigorous country life, and anything which might tend to increase rural depopulation is to be avoided. Not only is the country child generally superior physically to his town-bred fellow of the same age group, but the mentality induced by bucolic life, albeit somewhat lethargic, provides counterpoise to that of the urban intelligentsia and thus is not without its value in the national economy.

Dr. Perkins points out, very justly, that school occupies only a small part of a child's time, and that home conditions are of paramount importance. I fear that schools of the kind he proposes would develop an atmosphere so alien to that of the pupil's domestic environment that any influence they could exert on the home life of future generations of country dwellers would be very small. Inevitably pupils would leave them less attracted by the prospects and the "cultural accessories" of country life than by those of the town. But many of the public health problems which the nation has to face to-day are sequelae of the uncontrolled development of towns at the expense of the country during past generations. City life for the masses has become so strenuous and so specialized, so detached from tradition and, in consequence, so easily affected by the catchword of the moment, that the steadying influence of the countryside is almost essential to national sanity. So while the ambitious country lad, convinced that a clerk in an office lives more nobly than a rural blacksmith, sees his Mecca in the town, and the disillusioned townsman seeks tranquillity in the country, successive Governments, by "small holding" schemes, and social workers, through such agencies as rural institutes, are endeavouring to salvage something of the life and art which are in peril of disappearing in the clash of urban and rural cultures.

I admit that the medical supervision of a number of small and scattered schools is wasteful of time and temper, and that most country schemes are in need of improvement and development, but this is only one aspect of a much larger question. Rural hygiene can be made to justify itself, not by imitating that of towns, but by developing its own methods to suit its own needs. I think we must stop short, meantime, of Dr. Perkins's schools with their thousands of infant rustics, and inquire whether we cannot make the desired reforms without taking quite so long a step towards universal urbanization.—I am, etc.,

Dumfries, July 23rd.

JOHN RITCHIE.

PHYSIOLOGY AND PHYSICO-CHEMICAL REACTIONS.

SIR,—The address on "Physiology the Basis of Treatment," by Professor W. E. Dixon (July 27th, p. 138), and your leading article on that address are obviously of great importance. But you head your article "The Neglect of Pharmacology," which seems to me a partial consideration of Professor Dixon's problem, which might be just as aptly entitled "The neglect of physiology."

"Physiology," writes Professor Dixon, "in the broad sense in which it was used by Claude Bernard and Huxley has given place to a new physiology of physico-chemical reactions: I might go beyond this and say that physiology is getting further and further from practical medicine, and this is the more regrettable as most of the chairs in physiology are connected with the medical schools and because the science of treatment is largely dependent on experimental physiology."

I am afraid many modern textbooks are apt to give the impression that there is arising a new physiology of physico-chemical reactions. But those whose hobby it is to follow in the tracks of investigators who glibly apply physico-chemical reactions to elucidate the working of the body, know that their triumphs have been very short-lived. For example, there is a monograph on the function of the kidney which might be called an example of "the new physiology of physico-chemical reactions." A few ugly facts discovered by physiologists in the broad sense used by Claude Bernard and Huxley have shattered the underlying theory of that work, but not its usefulness.

There is another work on the fluids of the body which might be called an example of the new physiology of physico-chemical reactions. Some more ugly facts discovered by physiologists in the broad sense used by Claude Bernard and Huxley have left very little of that excellent and most stimulating monograph standing.

There is ample room for both schools of physiologists, because the ill-equipped school is the school of exponents of physico-chemical reactions. Any schoolboy can take a physico-chemical law and apply it to phenomena in the body, but it requires physiology in the wider sense which embraces, or attempts to embrace, all data, whether physico-chemical or otherwise, to revise the application of physico-chemical law. But the real regret in Professor Dixon's mind is that those who apply exclusively physico-chemical laws are in many of the chairs of physiology in this country. A far greater danger to advance in physiology and in the treatment of disease lies in the extraordinary document I received from a university desirous of electing a new professor of physiology. It was an essential condition that a photograph of the applicant should be sent in with his application. Consequently I see signs that physiologists of the future must visit the beauty parlours, and, if this example spreads, physiologists will be chosen not because they are devotees of physico-chemical law or followers of Claude Bernard and Huxley, but because they can with credit compete with the leading man of a musical comedy.—I am, etc.,

Halesowen, July 27th.

JAMES M. McQUEEN.

A PHYSIOLOGICAL STUDY OF ASTHMA.

SIR,—The abstract of Brodie and Dixon's paper which you published lately (July 13th, p. 68) is a very valuable piece of work, but I would like to point out that though the writers say that "previous workers had established the fact that the motor nerve to the bronchial muscles was the vagus," yet in 1885 the late Professor Roy and Dr. Graham Brown discovered that the vagus contained fibres which caused expansion of the bronchi.¹ They employed a new method of experiment, and say that "section of one vagus usually causes a marked expansion of the bronchi of the corresponding lung," and that "frequently, and especially in non-curarized animals, narcotized with ether, stimulation of the central end of one cut vagus, the other being intact, causes a powerful expansion of the bronchi"; and "in these animals stimulation of one uncut nerve, the other being cut, causes often a marked expansion of the bronchi," etc. Such and other facts given indicate that "the vagi contain centripetal fibres which can cause both contraction and expansion." Discussion is given of the centres, direct or reflex, in the cerebro-spinal tissue, and of the drugs which can influence the bronchi, and they ask whether the bronchial contractions are vermicular or rhythmic, which they have reason to believe they occasionally are.—I am, etc.,

London, W.1, July 24th.

A. GUNN AULD.

¹ *Proc. Physiol. Soc.*, May 10th, 1885, p. 21.