

accidentally acquired, namely, by contracting the specific disease in question." He will, I am sure, be among the first to acknowledge that here he has not expressed himself quite happily—that it would have been more correct to have used the term "infection" in place of the word "disease." The introduction of a minimum number of virulent germs is required to produce disease; smaller quantities may affect susceptibility without giving rise to clinical symptoms; and similar effects may result from the introduction of germs of diminished virulence. All this is common knowledge. I have been greatly interested to find occasionally, in my examination of infected wool and hair, strains of anthrax bacilli of markedly diminished virulence towards mice. It may, I think, be permitted to conclude that these weakened strains, when introduced into the human body, will tend to produce milder and non-fatal forms of the disease—as described many years ago by Eppinger—or that, acting purely as vaccines, they will reduce the already moderate susceptibility of man to anthrax.—I am, etc.,

Bradford, April 10th.

F. W. EURICH.

SPA TREATMENT IN BRITAIN.

SIR,—In connexion with your note on spa treatment in the BRITISH MEDICAL JOURNAL of April 8th, page 832, I should like to say that a special diet chart such as you indicate was drawn up by the Buxton Medical Society several years ago and issued to all the hotels and boarding-houses.—I am, etc.,

Buxton, April 17th.

GEO. H. THOMPSON.

SIR,—If the article under the above heading which appeared in the JOURNAL of April 15th should lead to a discussion in detail on the merits and defects of our health resorts it will not have been written in vain. I take it, indeed, that its strictures on spa management and their limitation to a few points only are intended to elicit apology as well as to provoke further criticism.

Personally I hold that so fundamental are the differences between British and foreign spas that they better lend themselves to contrast than to comparison, and hence I doubt the wisdom of too close an imitation of exotic methods. The climate of our country, while immeasurably superior to that of Central Europe for some categories of invalids, is equally inferior for other categories. With us only in exceptional summers can patients count upon being able to sit in the open air day after day, from early morning till after sundown. On the other hand, our cooler weather practically compels active outdoor exercise while rendering it both beneficial and pleasurable. But there are days on which sitting and sauntering in a public garden is agreeable, and as there are some visitors whose chief demand is for that form of diversion we cannot entirely neglect its chief adjunct—music.

In view, then, of a less demand and of the absence of sources of revenue available abroad, I venture to affirm that British spas are, on the whole, deserving of praise rather than blame. Certainly at four of our health resorts, some dozen in number, commonly ranking as spas, excellent music is provided, while of the hundreds of spas in the wide expanse of Europe how many can be cited where music of ambitious character is rendered by orchestras of metropolitan calibre? Be it remembered, too, in fairness, that at each of the two foreign spas surpassing all others in this respect the number of visitors exceeds that of any two British spas taken together, while funds are provided by a *Kurtax* and the profits of gaming tables.

Though no doubt there are visitors to our spas who would welcome the introduction of aesthetic effects, I suggest that a reform of more capital importance would be the erection of adequate outdoor rain shelters, which would enable invalids to enjoy fresh air on rainy but moderately warm days.

A defect, shared however by our nearest Continental neighbour, is the want of large tracts of land belonging to the spa administration; but this disadvantage arises not from parsimony but from the state of our laws. Until there are facilities for the acquisition of land in advance of present requirements and at normal prices, with provision for recoupment by resale of properly selected sites

when values have become enhanced as the outcome of urban improvement, critics from the outside may well be chary in urging municipalities to incur lavish expenditure for the creation of a many-sided health resort.

A reason for lethargy at some of the smaller spas is the unsettled controversy between persons who lay chief stress on immediate gain from trippers, and counsellors who recognize the greater advantage of the deferred but more substantial revenues accruing to a well-equipped health resort. The issue of this conflict depends largely upon the attitude of the medical profession as a whole.

While strengthening the hands of the local practitioners in every effort for reform, let us not only recognize but also proclaim to our colleagues, at home and abroad, that our health resorts, whether spas, seaside, or inland climatic stations, already offer to numerous invalids, British and foreign, specific advantages which cannot be equally well obtained elsewhere.—I am, etc.,

London, S.W., April 18th.

NEVILLE WOOD.

RENAL CALCULI AND CALCIUM METABOLISM.

SIR,—We must be very grateful to Dr. Benjamin Moore for his valuable contribution to the analysis of renal calculi. I doubt, however, whether the ratio of oxalate of lime calculi to those of uric acid is such as he describes. It certainly does not agree with my own experience or with that of my colleagues at Vittel, where a very large number of calculi are passed each season. This is all the more so as unquestionably a certain number of the uric calculi are redissolved by the more dilute and improved urine during the cure. Some calculi that my patients have passed were stratified on an oxalic nucleus enclosed in a calyx or shell-like envelope of uric acid. If some chemical enthusiast will analyse a continuous series of calculi or their fragments removed, say, at St. Peter's Hospital, we may then gain some reliable statistics of the proportion of the two dominant constituents of renal concretions. Even then we shall only obtain the statistical values of calculus when this goes on to require operative measures of some kind.

When, however, we study the second part of Dr. Moore's paper I have no hesitation in saying that his conclusions are misleading. At the present time we practitioners are racked by the teaching of two schools of chemical pathologists. One group is urging us to give calcium in a number of different ailments, whilst the other tries to persuade us that calcium is one of the most pernicious substances that can be introduced into the human economy.

Because calcic carbonate is the usual substance of most rock concretions which show some resemblance to renal calculi in pre-chemical days, limy waters were supposed to be bad for people with a tendency to stone. Strangely, this superstition still prevails amongst the public, and with many medical practitioners.

The thesis that Dr. Moore holds is that lime should be withheld in oxalurias. That is "a consummation devoutly to be wished" by the chemist, but is impossible of achievement by the practitioner. No dietary can be planned that shall reduce the calcium element so low as to be insufficient to combine with the few centigrams of oxalic acid excreted daily, even by an advanced oxaluric. Surely if these few milligrams of oxalic acid that are daily excreted are neutralized by the lime salts of our food, any amount of additional lime cannot do further harm.

One of the problems that practitioners have to solve is not to prevent the introduction of calcium salts, but the absorption of exogenous oxalic acid in foodstuffs, or the perverted metabolism of carbohydrates from which the endogenous oxalates are derived. The other problem is to prevent the accretion of the calcic oxalates as a stone in the urinary passages, which will not be done by calcium starvation of our patients. It has been tried and failed.

Few hold in higher esteem than I the teachings of the laboratory, nor am I too recalcitrant to armchair deductions, but these must harmonize with clinical experience. This is not the case. There are two dominant facts that are clearly demonstrated at Vittel, where we use a non-chloride calcareous water. There large numbers of oxalurias resort yearly, and almost without exception the diurnal amount of oxalates is markedly diminished or very frequently disappears. I have patients now under observation who were marked oxalurias, but in whom no return