note supposed to be translated into Arabic as "*Allah kebir*"; but this (which in any case would be ordinarily phrased "*Allah hu akbar*," "God is most great") means "*God is great*," and the phrase to which John of Würzburg is alluding is *Allah al-'ālī*, الله العلي, "God the Exalted," one of the hundred beautiful names of God. In a review of the first part of Mr. Beazley's work which appeared in these columns five years ago (vol. lv. p. 555), comment was made on the curious manner in which the author often spelt oriental, and especially Arab, names; in the present volume he seems to have taken the hint then given him, and does his best to avoid Gallic misspellings of the "Jesus Jabus" or "Doul-Karnain" type, but we still find such an unscientific transliteration as "Shaykh" (p. 239) for *shēkh*, and such a distinct mistake as "Magreb" (p. 264) for *Māghrib*; the word is spelt with the guttural *Ghain*, not with a *Gim*. Most English writers will spell Semitic names correctly enough, but will go irretrievably wrong over a Russian or Polish appellation; Mr. Beazley, however, apparently finds Arabic or Syriac words difficult, while his spelling of Slav names is always unimpeachably correct.

In fact, when he returns to subjects with which he is thoroughly familiar, we find Mr. Beazley as valuable and as interesting as before, e.g. in the section of chapter vii. which deals with the geographical work of Adam of Bremen, who, as a clerk at the court of the great Archbishop Adalbert (d. 1076), was in the best possible position for gathering in the varied lore of the seafarers of the North for use in a geographical treatise. Of this lucky position he made the best possible use, and the result is that his tract "On the Position of Denmark and of Other Regions beyond Denmark" is of prime importance in the history of geography.

The appendix on maps is hardly so good as it might have been. Mr. Beazley praises the Mosaic Map of Madaba very highly (p. 580), but to us it hardly seems to merit such praise; it suffers in the first place from being executed in mosaic, and can hardly be taken to give us a very good idea of what the maps of the old Imperial period were like. On the same page Mr. Beazley says that in this map "we have one of the oldest pictures yet discovered of Jerusalem (outside the Egyptian and Assyrian monuments)." This passage has puzzled us considerably, for there is no representation of Jerusalem upon any Egyptian monument whatever, not even one of the time of Sheshenk I. (Shishak), and the Assyrian bas-relief of a town with a name ending in . . . *alammu*, which exists in the British Museum, cannot be identified with Jerusalem with any confidence. Perhaps Mr. Beazley is thinking of the reliefs representing Sennacherib's siege of *Lachish*. In his next edition the misleading phrase between brackets should be deleted. Mr. Beazley does not give many references to modern experts in antique cartography; as in the former volume, no mention is made of the name of the late Mr. Coote, for example. In the review of the first volume it was stated that "the revision of the whole of chapter vi. [of vol. i.], on 'Geographical Theory,' together with Mr. Beazley's account of the history and use of mediæval maps for the whole book—although Mr. Beazley omits to state the

fact—is due, we understand, to Mr. C. H. Coote, of the Map Department of the British Museum."

Mr. Beazley seems to have odd ideas as to the function of a footnote; he often uses it to convey some little piece of further information which could perfectly well have been inserted in the main text, e.g. on p. 130 we read that of the Crusade of Siegfried Archbishop of Mainz, out of "seven thousand only two¹ returned"; on referring to note¹ we find the laconic addition "thousand." There are other instances in the book of the same peculiarity.

Finally, we must, as before, protest against the insufficient indices with which Mr. Beazley provides his successive volumes. No doubt he will give us a proper index to the whole work when it is completed, but meanwhile we have nothing but a "short index of names," which is of little use. It would have been a better plan to have provided a full index for each volume.

Generally speaking, then, the chief fault we have to find with Mr. Beazley is his manifest unfamiliarity with Eastern matters, which sometimes causes him to make serious mistakes when dealing with the oriental side of his subject. For all else he is excellent, and, moreover, he has written a most interesting book.

SOIL AND SANITATION.

The Earth in Relation to the Preservation and Destruction of Contagia, being the Milroy Lectures delivered at the Royal College of Physicians in 1899, together with other Papers on Sanitation. By George Vivian Poore, M.D. (Lond.), F.R.C.P. Pp. 257. (London: Longmans, Green and Co., 1902.)

THIS book is the work of an enthusiast, but to find fault with enthusiasm in these days of rapid progress and fresh discoveries would be unwise. Mr. Rider Haggard, with his watchword "Back to the Land," and Sir Seymour Haden, with his advocacy of "superficial and coffinless burial," are both enthusiasts. Who will venture to say that Mr. Rider Haggard or Sir Seymour Haden or Dr. Vivian Poore are idle dreamers? None dare say this, and if in some directions the writer of this review ventures to dissent from Dr. Poore's conclusions, it must be understood that he does so in a spirit of tolerant sympathy with the author's main contentions.

In the first six chapters, the distinguished author seeks to show that such diseases as tetanus, anthrax, diarrhoea, dysentery, cholera, Malta fever, malaria and enteric fever have not been proved to be "soil diseases" in the proper sense of the term. That is, that the prominent part assigned to soil in the spread of disease among human beings is largely speculative in character. At the same time, the author freely admits that contaminated soil may occasionally (accidentally, as it were) be the means of causing isolated attacks or even localised outbreaks of certain diseases. Nevertheless, he refuses to regard the soil as a "breeding ground" for pathogenic microbes or as capable of exerting any sustained power of spreading disease. On the contrary, he considers the soil effective in bringing about the dissolution of harmful germs.

Chapter vii. deals with the Maidstone epidemic, and is an intelligent, but not wholly unbiassed, criticism of the

conclusions arrived at by the experts engaged in the inquiry. The author says :—

"The epidemic is remarkable, not only for its severity, but from the fact that six gentlemen, all eminent for their skill in bacteriology, failed to discover a single typhoid bacillus."

The failure to isolate the typhoid bacillus was in no way remarkable ; it is a matter of real difficulty to discover its presence in a typhoid stool. At Maidstone, the pollution of the implicated water with microbes of excremental origin was abundantly proved, and no bacteriologist of repute would consider that failure to isolate *B. typhosus* from an implicated water afforded any proof whatever that this microbe was in reality absent.

Chapters viii., ix. and x., dealing respectively with immunity, practical considerations and agriculture, contain many thoughtful passages. But the author, in the pursuit of his main thesis, which may briefly be described as a plea for the methodical deposition of fæces on well-tilled humus, advocates measures which, as regards water supply, are open to some objection. But few will find fault with expressions of opinion such as the following :—

"Apart from the question of food-supply, it is, I believe, absolutely necessary to encourage agriculture in order that our race may be maintained in vigour."

"Anything which discourages or increases the difficulties of agriculturists can hardly be in the interests of the public health."

Chapter xi., on the maintenance of the fertility of the soil, is of considerable interest. The author quotes Sir William Crookes's famous address to the British Association (1898), a fragment of which may here be cited :—

"In the United Kingdom we are content to hurry down our drains and watercourses into the sea fixed nitrogen to the amount of no less than 16,000,000*l.* per annum."

True ; but in how many million pounds of adventitious material is this store of potential wealth concealed ? Moreover, it may be good economy to allow to run to waste a potentially valuable substance if its retention (assuming questions of practicability and commercial gain) involves serious risk of danger to human beings.

In chapter xii., Dr. Poore interests the reader with an instructive account of sanitation in Holland.

Practical sanitarians would do well to read chapter xiii., describing the experiments conducted under the auspices of the city of Manchester as regards the disposal of refuse on Carrington Moss. The case may be an exceptional one, but the figures given by Dr. Poore are most instructive.

Dr. Poore's conclusions are given in chapter xiv., which contains also an interesting account of the author's experiments at Andover, in which the ordure and refuse of about 100 persons have been applied for fourteen years to rather more than one acre of land with conspicuous success as regards the amount of produce extracted from the soil. The author, by implication if not by direct statement, appears to consider that what is, under the superintendence of a master spirit, possible and practicable in the country must of necessity apply

also to the complex conditions attending the disposal of excremental matters in the neighbourhood of large towns.

The remark that

"the nineteenth century closed with the spectacle of a Royal Commission still discussing the best way of *destroying* the potentialities of life and prosperity"

might well have been omitted ; and it is to be regretted that the writer throughout his book so often seems to view a grave and serious problem through the wrong end of the telescope. But opinions such as the following will excite the sympathy of many readers :—

"At present he who advocates any attempt to entice a fair proportion of the people 'back to the land' is regarded as a Utopian dreamer. I feel convinced that the only chance of getting a living from agriculture lies in the due enrichment of the soil."

Chapters xv. to xviii. deal with an address to the Royal Medical and Chirurgical Society on enteric fever, and in chapters xix. to xxii. various papers on sanitary matters by the author are considered. They contain much useful and original information, and will repay careful perusal.

In conclusion, it may be said that the book is a noteworthy one. It is the work of a distinguished physician, an original thinker, and a lucid and polished writer. It is not free from defects, some dogmatic statements and one-sided opinions ; and the author's sanitary teachings do not always seem to the writer of this review to be of a wholly sound character. But a colourless reproduction of orthodox doctrines and the opinions of other men makes dull reading ; and no one who studies the book will regret having done so, nor will he fail to find in its pages many new and original thoughts, and fresh ways of interpreting old facts. That the book will add to the high reputation already enjoyed by Dr. Poore is certain.

A. C. HOUSTON.

STEEL-WORKS ANALYSIS.

The Analysis of Steel-Works Materials. By Harry Brearley and Fred Ibbotson. With Illustrations. Pp. xv + 501. Price 14*s.* net. (London, New York and Bombay : Longmans, Green and Co., 1902.)

ANALYSIS in the laboratories attached to works necessarily differs widely from the analysis of schools or that of research. To compare them is to compare the work of professionals with that of amateurs. The works chemist is already familiar with the methods he has to use, as well as with the general principles on which they are based, before he begins his daily round of endless determinations. Consequently, the best book for him will, in general, be shorn of philosophic considerations, of lengthy descriptions of ordinary manipulations, and of accounts of obsolete processes, though they may be of great educational value and historical interest. He needs a terse, accurate description of processes that he can use, with references to the difficulties that may be encountered and to the limitations that cannot be avoided. He must be able to find out quickly all that he wants to know, and he must not be misled. It is difficult to imagine a book which would be equally suitable for schools and works, but most treatises on analysis are compromises. The book now under review, which, by the way, is the second