

to one who has long tried to discover what preys on these small succulent creatures. Those that are bigger of build prey upon the smaller, and a large infusorian will swallow a small rotifer, but the fresh-water mussel is a giant who devours great and small impartially.

The paper on snails and slugs is good throughout, and might with advantage have been extended beyond the thirty pages allotted to it. The want of space is due to the attempt to make the book useful to the systematist and the collector, as well as to the observer and student of the lives of animals. No less than eleven pages are devoted to the definitions of the different species of British land and fresh-water gastropods, and, after all, they are too brief to be of much use to the collector. Why, then, insert them at all? In the same way no less than eight pages are expended on the specific characters of dragonflies. Where, as in the case of the British Amphibia, there are but few species, the descriptions are fuller and well suited to what I take to be the aim and purpose of the book, viz. to help and encourage the genuine student and observer as distinguished from the mere collector. Altogether the book is an admirable one. Though the waste of space which has been pointed out is to be regretted, it does not interfere with the excellence of the rest. The illustrations, fifty-four in number, are good.

F. W. H.

OUR BOOK SHELF.

The Purification of Sewage. By S. Barwise, M.D., B.Sc. Pp. xiv+220. (London: Crosby Lockwood and Son, 1904.) Price 10s. 6d. net.

THE author has in the present edition attempted to bring the information available upon this important subject up to the present state of knowledge and practice, and he has added to the former edition an appendix in which the processes in common use for the chemical examination of sewage and sewage effluents are briefly described. The work bears evidence that it has been written by one who is in touch with the practical side of the recent methods of sewage purification; the text also indicates considerable acquaintance with the advances which have been made in the treatment of sewage in various centres of population in this country.

The matters dealt with briefly but usefully include:—the nature, varieties, and chemical nature of sewage; pollution of rivers by sewage; and the treatment of sewage by land, by precipitation, and by the "septic tank," followed by either the intermittent or the percolating bacteria bed. These processes are illustrated by good reproductions of photographs, and by sectional and diagrammatic drawings. The appendix on chemical processes of analysis is also illustrated, but the directions are such as can only be usefully followed by one who has received a training in chemical analysis.

The book will undoubtedly be of use to those who are responsible for directing and advising on the treatment of sewage. The information furnished, as a whole, is reasonably accurate and up-to-date, but there are portions of the book in which the author appears to show lack of information of published results. Thus his statement on p. 125 of the relative advantages of intermittent and percolating beds leaves out of consideration the very potent aëration of the intermittent bed by the process of gaseous diffusion, since results published by the London

County Council show that even at the bottom of a twelve-foot bed a fair proportion of oxygen was present in the interstitial air; he also appears to hold the opinion that such a bed has a serious tendency to become choked, which is not noticed in properly worked beds; and he speaks of four feet being "the maximum efficient depth" for such a bed, when he should know that a 12-foot bed has been worked with entirely satisfactory results. In these and in other respects the intermittent bed appears at an unfair disadvantage with the percolating bed. It should be understood that these two methods of subjecting sewage to aërobic purification are at present under trial, and as a verdict is still scarcely obtainable, a cautious statement of their relative merits is desirable.

Physiologie des Menschen. By Dr. Luigi Luciani. Ins Deutsche übertragen und bearbeitet. By Dr. Baglioni and Dr. Winterstein. Erste und zweite Lieferungen. Pp. vii+322. (Jena: Fischer, 1904.) Price 4 marks each.

THIS translation into German of Luciani's text-book of physiology aims at occupying an intermediate position between the student's text-book and the larger handbooks, being more complete than the former and less encyclopædic than the latter. The translators have brought the book up to date by additions summarising more recent work.

The present first two parts of the work, which is expected to extend to twelve parts, deal with general or cellular physiology, the physiology of the blood and circulation, and the physicochemical phenomena of respiration.

Very interesting and complete accounts are given of the mechanism of the heart beat, and of the physiology of the cardiac muscle and nerves, to our knowledge of which the author himself has added much. The detailed description of practical methods has been wisely printed in smaller type.

Useful summaries of the chief sources of the literature of physiology are given at the close of each section.

A special feature of the work lies in the excellence of the historical introductions to the sections dealt with. The account of the discovery of the circulation is exceptionally complete and interesting.

So far as one can judge from the two parts already published, the difficult task of the collection of facts and their fusion into an interesting whole has been carried out with admirable skill, and the text-book promises to form a most useful and philosophic presentation of the chief facts of physiology. The author and translators are to be congratulated on the production of a work which is distinguished not only by its mastery of detail, but by its eminently readable character and attractive literary form. The appearance of the later parts will be looked forward to with much interest.

Kritische Nachträge zur Flora der Nordwestdeutschen Tiefebene. By Dr. F. Buchenau. Pp. vi+74. (Leipzig: W. Engelmann, 1904.) Price 1s. 6d.

THE "Flora der Nordwestdeutschen Tiefebene" was published in 1894, and was well received. Since that time the author has personally, and with the help of other botanists, collected a number of new localities for plants enumerated in the flora, and new plants have been discovered. As the publishers could not at present undertake a second edition, Dr. Buchenau has prepared this small pamphlet, which forms an appendix. It contains a full numbered list of all the species of the area, but diagnostic characters are given only for new species or varieties, and the additions and eliminations are tabulated at the end of the book.