

and her interesting descriptions in the text of his principal philanthropic schemes supply further details. His own ideas of how to dispose of "a balance at the bank in excess of what is necessary" are given in Chapter XX., "The Convalescent Home," and are commended to readers, who will afterwards understand more readily the unique reasons for Sir Alfred's many generous benefactions during his lifetime.

Lady Yarrow has evidently compiled her work under some restraint, as more could be told both of Sir Alfred's professional success, and of his bounty, and his methods of encouraging others (for example, his recent munificent gift to the Royal Society is not mentioned in this book), but she has told enough to warrant Sir Alfred's claim that "his business life has been filled with sentiment and friendship." She is to be congratulated on the scheme, sequence, and style of the compilation, and she can be assured that her work will be highly appreciated by the very large circle of Sir Alfred's friends.

G. G. GOODWIN.

### Our Bookshelf.

*Grundriss der allgemeinen Zoologie für Studierende.* Von Dr. Alfred Kühn. Pp. viii + 212. (Leipzig: Georg Thieme, 1922.)

THIS is a wholly admirable text-book. We know of no book in the English language exactly like it, none that attempts so much within so limited a space, and, moreover, attempts it so successfully, with a due regard to the requirements of those for whom it is written and to the maintenance of a proper balance between the various parts of the subject. The book is divided into three approximately equal parts, the first giving a rapid survey of the morphology of each phylum of the animal kingdom, the second an account of the physiology of animals, and the third a review of the main principles of embryology and the problems of variation, heredity, sex, and evolution. The book concludes with a short bibliography of more advanced text-books and original memoirs to which the student can turn for more detailed information on any point.

In attempting to treat of the whole of the animal kingdom in 70 pages, the author may be thought to have essayed an impossible task. By confining himself to the broad and general characters of each phylum, without entering into details of any one type, however, and aided by an excellent series of diagrammatic figures, he has succeeded in giving an admirably clear account of each phylum. The book is intended for medical students, and, consequently, special emphasis is laid on parasitic forms throughout, without, however, overburdening the book in this way or losing the general perspective of the whole. The illustrations have been mainly drawn specially for this book. They are, in the majority of cases, schematic drawings, very clearly reproduced and excellently chosen for the purpose, and would make good wall diagrams for lecture purposes.

The point which most impresses us in this book is the excellent balance which the author has kept between

the three broad divisions of zoology—morphology, physiology, and embryology—with its kindred problems. The general course given to first-year medical students is apt to be weighted too much on the morphological side; physiology is generally neglected, and very little consideration is given to the fundamental and general problems of zoology. We feel sure that a course on the lines so admirably sketched by Prof. Kühn would give the medical student a broader outlook on zoological subjects, would interest him more for its own sake, and would make abundantly clear to him the fundamental bearing of his zoology course on his future life's work. He would no longer regard zoology as a subject put into his curriculum for his ultimate confusion, to be got through with the minimum amount of work in the minimum time. With a little amplification, Dr. Kühn's book would serve as a basis for subsidiary one-year courses in zoology for science students.

*Our Solar System and the Stellar Universe: Ten Popular Lectures.* By the Rev. Charles Whyte. Pp. xi + 234 + 18 plates. (London: C. Griffin and Co., Ltd., 1923.) 10s. 6d. net.

THE ten lectures which form the basis of this volume were delivered as the Thomson Lectures for the session 1919-1920 in connexion with the United Free Church College, Aberdeen. They provide a survey—fairly up-to-date and in general accurate—of the present state of astronomical knowledge, in a form suitable for the non-scientific reader, so far as it is possible to do so without the introduction of mathematics or of mathematical reasoning.

There are a few errors to which attention may be directed. The statement on p. 27 that "the theory now generally accepted as being the chief cause in the maintenance of the sun's heat, is that advanced by Helmholtz in 1853," is not correct. It is well known that this theory is not in accord with geological facts. Again, on p. 60, it is stated that a temperature of 750° F. at the surface of a planet corresponds to an intensity of the rays of the midsummer sun multiplied by 9. This is, of course, a fallacy. The rotation period of Mercury is not known with certainty, though from p. 61 the contrary would be inferred. It is certainly exceeding the limits of scientific truth to say, as on p. 151, that "we have every reason to believe that a number of planetary bodies, many of them exceeding in size our own solar satellites, travel round these suns in swift motion over enormous circumferences," while on p. 164 the sentence, "They (the Cepheids) are situated from us at enormously greater distances than those which up to now have been measured," requires modification. In dealing with the Martian canals, their possible subjective nature might have been mentioned. The detailed elementary calculations on pp. 61-2, 87-8 might have been omitted with advantage.

The book is well produced, with good paper and clear type. The plates have been carefully selected, and it is a pleasure to see them reproduced on well-glazed paper. Too frequently astronomical photographs lose much of their value when reproduced in popular works, through the use of inferior paper. The book can be recommended as one which will provide much interesting reading to those who, though without scientific training, are interested in astronomy.

H. S. J.