1749 onwards. But it is much to be regretted that there is now no index, although one was to be found in the first edition. An index is of great importance in a book of this kind, which is likely to be consulted on various occasions.

The book is extremely useful for every kind of practical work in the field of solar research. But beyond this range it can also be warmly recommended to the much larger group of readers from the various borderlands of solar research. The mathematical and physical knowledge assumed in the reader is to a large extent of an elementary nature, so that the book is also well suited to the amateur and for schools, as well as for instruction at higher levels. Of particular value are the ample and carefully quoted references.

H. VON KLÜBER

THE BIOLOGY OF BIRDS

Natural History of Birds

A Guide to Ornithology. By Leonard W. Wing. Pp. xi+539. (New York: The Ronald Press Company, 1956.) 6.75 dollars.

Recent Studies in Avian Biology

Edited by Albert Wolfson. Pp. ix+479. (Urbana, Ill.: University of Illinois Press, 1955.) 7.50 dollars.

THESE two works, both from America, are very different in aim. The first represents the biological approach to the study of birds; the second reflects the contribution of ornithological research to general biology and has the wider appeal.

Wing's volume is in fact a text-book, or work of general reference, intended to be used in conjunction with a field guide to the species of the area. It is at only a moderately advanced level, being addressed to the serious amateur as well as to the student; and it deals mainly with the bird as a living thing, giving only brief treatment of the basic facts of structure and function and the general principles of evolution and taxonomy. Thereafter it is concerned mainly with distribution and ecology and with the habits related to different aspects of life. There are concluding chapters on diseases, conservation, economic relations and methods of field study. The book is handsomely produced and very clearly illustrated. It is, however, naturally written for a North American audience and draws most of its examples from the bird-life of that region.

The second work consists of contributions by a dozen American authorities, who deal with subjects varying in the degree to which they have general rather than mainly specialist interest. There are discussions of systematic problems in relation to evolutionary processes (Miller) and of the biological significance of recent revisions of classification (Friedmann): here ornithologists have the advantage of the relative completeness of the systematic description of their material. Then there are accounts of advances in the study of fossil forms (Wetmore) and of some problems of anatomy (Fisher), the latter a rather neglected aspect nowadays. The study of behaviour in birds is the subject of a general essay (Emlen), followed by articles on bird navigation (Griffin), the physiological stimulus to migration (Farner) and nocturnal observations of migratory passage (Lowery and Newman)—fields in which the ornithologist can give a general lead. Breeding

biology (Davis) and the role of hormones in sex differentiation (Domn) provide two further topics; as do population problems, studied respectively in gallinaceous birds (Hickey) and by 'banding' (Farner). A final article is on diseases of wild birds (Herman), a subject in which there is still very much to be done.

The articles, with their lists of references, constitute valuable guides to the newer knowledge and recent thought in the subjects covered.

LANDSBOROUGH THOMSON

THE ADRENAL GLAND

The Adrenal Cortex

By Dr. I. Chester Jones. Pp. x+316+9 plates. (Cambridge: At the University Press, 1957.) 37s. 6d. net.

THE adrenal gland has been the subject of a number of treatises in the past twenty years and one might have thought that, apart from the advances in the chemistry and physiology of their hormones in recent years, much of what can be said has already been published. In some respects a good deal of the present volume is in fact a repetition of what has already been written in previous volumes; nevertheless it is presented in an interesting fashion and is well integrated into the rest of the subject-matter. The book begins with a study of the adrenal glands in Eutheria, dealing with their gross anatomy, histology, their hormones, their control and their functions, and particularly their relationship to various tissues, for example, cartilage, bone, skin, lymphatic and connective tissues. There is also a discussion of adrenal gonad relationships and some naturally occurring abnormalities of function. Later chapters deal with the adrenals in the fish, amphibians, reptiles, birds, monotremes and marsupials, and with embryology and the correlation of structure and function.

Although the size of the text is relatively small (only 245 pages) it is unusually well documented, with a list of approximately 770 references. This, of course, adds enormously to the value of the book, particularly in view of the fact that the author has included practically all the major and important contributions to the literature of the adrenal in the various aspects with which he deals. Another valuable feature of the book is that the author has been able to draw upon his own extensive researches and those of the group working on comparative embryology at Liverpool in writing it, and this has obviously coloured his discussion and made the book much more than just a readable compendium of the literature. However, the attempt to review critically such an enormous field, with the support of so many references in so few pages, does make the book a little over-condensed in places and does not enable the author to do justice to many aspects which could have been developed. Nevertheless it is an excellent book for the many types of people working in this field—the zoologist interested in the adrenal will read with interest the clinical part and the clinician will no doubt find much to stimulate and intrigue him in the comparative anatomical and physiological aspects presented in it. Both will no doubt find much of pleasure and profit in the final chapter which discusses and attempts to find a "correlation of structure and function" in the adrenal.

G. H. BOURNE