detail and its modification by Born and others. Blackman's account provides a very useful summary of the present state of the subject of the specific heats, and is of value to both theoretical and experimental physicists. It shows what an important part the characteristic temperature plays and also, unfortunately, what a complicated concept it has now become.

The final section, on lattice faults, is likely to be the least useful to the English-speaking world, solely because there are so many papers in English on the subject; about four-fifths of the papers in the bibliography are in English. For this same reason, it should be valuable to the Germans, and may give some incentive to them to apply their analytical powers to a new, fascinating and practically important branch of crystal physics.

The general impression remains of a thoroughly competent and able piece of work, rather ponderous perhaps, but of the general style that one expects in an encyclopædia.

H. LIPSON

THE WREN IN BRITAIN

The Wren

By Edward A. Armstrong. (The New Naturalist Series.) Pp. viii + 312 + 8 plates. (London: William Collins, Sons and Co., Ltd., 1955.) 30s. net.

IT is a sobering thought that, of the 280 species of bird which spend a substantial part of their lives in the British Isles, we still only have adequate and up-to-date monographs of a bare dozen. David Lack's "Life of the Robin" (1943) set a new standard, which has been well maintained by the seven books devoted to individual bird species that have appeared in the New Naturalist Series. The latest of these, by the leading British amateur worker in bird behaviour, is on the second smallest British bird, the wren (*Troglodytes troglodytes*). Though the book is formally devoted to the familiar European species, in fact, such is the wealth of comparative material presented that it almost becomes a treatise on the wrens of the world. This is an immensely valuable feature of the book, for students of British birds are more than usually prone to the myopic views engendered by insularity. Again and again, obscurities in the habits and biology of a British species can only be resolved by reference to the populations of the same bird in other parts of its range, or to quite different members of the same genus or family.

Ornithologists will all regret the author's statement in his preface that "the requirements of this series have necessitated drastic abbreviation and condensation", for it is always less convenient to have to turn to other sources for a complete conspectus. Thus, for extended information on parasites and nidicoles of the wren, one must now turn to the author's paper in Vol. 11 of the *Irish Naturalists' Journal*. However, authors must bow to economics, and ornithological readers must be thankful for being allowed to have as much between two covers as they are offered in this book. The work contains, in fact, a very adequate treatment of every important aspect of the life-history of the wren, largely based on the author's own field studies in a small wood near Cambridge. It is always dangerous to base a general study of a species on the particular circumstances in one locality, but in this book the author's wide reading, together with extensive field studies of wrens

in other parts of the British Isles, and in Iceland, have obviated as far as possible any bias due to the quirks of Cambridge wrens.

If it were necessary to standardize monographs on birds (which Heaven forbid!), this would make a very satisfactory book on which to base the standard. There are twenty excellent photographs in black-and-white, by the author and others. R. S. R. FITTER

MALAYAN FERNS

Ferns of Malaya

By Prof. R. E. Holttum. (A Revised Flora of Malaya: an Illustrated Systematic Account of the Malayan Flora, including Commonly Cultivated Plants—Vol. 2.) Pp. iv + 643 + 3 plates. (Singapore: Government Printing Office, 1954 [1955].) 20 Malayan dollars.

PROF. R. E. HOLTUM'S book on Malayan ferns, the second volume of his revised "Flora of Malaya", maintains—even surpasses—the high standard set up by him in the first volume, devoted to the orchids. Van Alderwerelt van Rosenburgh's account has long outgrown its usefulness, and an up-to-date and authoritative successor to it was much desired. Not only has the author described about five hundred species of ferns, but he has also provided 362 excellent line-drawings. The descriptive part of the volume is prefaced by chapters dealing with the nature, classification and nomenclature of ferns, followed by an interesting study of Malayan ferns in particular. Keys to identification are also provided.

Prof. Holttum naturally follows his own system of classification, which differs markedly in some respects from that of Copeland. This is no place to compare the two schemes; but mention must be made of the family Dennstaedtiaceae. The name was first proposed by Ching in 1940 for a small homogeneous group of genera centred around *Dennstaedtia*. When Prof. Holttum adopted the same name for a very much larger group of genera, he was doubtless unaware of Ching's work. Holttum's family comprises about seventy genera, as opposed to eight in Ching's scheme, and is so heterogeneous that the author has found it impossible to supply a family description. Subdivided into eleven sub-families, it embraces such diverse elements as *Davallia*, *Acrostichum*, *Dryopteris* and *Pteris*, to mention but a few. Treated as families, these sub-families would have invited little criticism since they are compact natural groups. Their amalgamation as a family will be regarded by some as far from natural. The treatment of the Hymenophyllaceae and Gleicheniaceae is frankly conservative, and the smaller segregate genera accepted by Copeland are not adopted. In the case of the Hymenophyllaceae, however, the corresponding segregate name of every species is given as an "alternative name".

A particularly interesting and novel feature of the book is an appendix, prepared by Prof. I. Manton, on the cytology of a hundred species of Malayan ferns. It is to be hoped that Prof. Manton's plea for further investigation of other species along the same lines by workers in Malaya will meet with a favourable response.

Prof. Holttum's book is well printed and commendably free from typographical errors. It should be pointed out, however, that *Ophioglossum pedunculatum* Desv. is now known as *O. reticulatum* L.