

elliptical spores in the Flora, is here reproduced as *L. laccata* and said to have globose spores. In the Flora, essential microscopic details, especially of spores and cystidia, were indicated on the plates by line-drawings beside the coloured illustrations. One wonders why these have been omitted from the present work. The authors must know that a considerable proportion of the species depicted cannot be identified with certainty by macroscopic characters alone; even the generic key provided cannot be worked without reference to some microscopic details. To overcome this difficulty spore dimensions and other microscopic features are quoted briefly after the entry of each specific epithet in the index. Some characteristic basidiospore shapes are drawn in Figs. 11 and 12 on p. 230, while some rather crude sketches of cystidia appear in Fig. 9 on p. 228. This appears to be a valiant effort by the English editor to overcome a radical defect of the original Danish edition.

Because there was no such cheap and reliable hand-book covering the same field available in English, one must be grateful to the authors and publishers for their enterprise. The colour reproduction is reasonably faithful on the whole, and such blemishes as do occur have probably to be accepted as inevitable if so many coloured plates are to be offered so cheaply in these days of expensive book production. Anyone tempted to use the book for identification of species in serious ecological or floristic investigations should remember, however, that it figures scarcely a quarter of the species of Basidiomycetes known to occur in the British Isles and that many of the omitted species are superficially not so very different from some of those illustrated. Identifications to be placed on record should, therefore, be checked by reference to the more critical works listed in the bibliography or be verified by a specialist while the collections are in a fresh condition.

R. W. G. DENNIS

LEECHES

Leeches (Hirudinea)

Their Structure, Physiology, Ecology and Embryology. By K. H. Mann. With an appendix on the Systematics of Marine Leeches by Prof. E. W. Knight-Jones. (International Series of Monographs on Pure and Applied Biology. Division: Zoology, Vol. 11.) Pp. viii+201. (London and New York: Pergamon Press, 1962.) 45s.; 7.50 dollars.

DR. K. H. MANN is to be congratulated on this excellent book. The leeches or Hirudinea are not a well-known group of animals: indeed, biology students normally come out of university knowing very little about them. This regrettable state of affairs can now be remedied for here is presented, for the first time, a comprehensive survey of this small, though important, order of the phylum Annelida designed for use by students, teachers and research workers.

The medicinal leech *Hirudo medicinalis*, is taken as a type and, with meaningful text and a selection of first-class diagrams, its morphology and histology explained with exceptional clarity. Then the latest knowledge of leeches is analysed to delight the physiologist, behaviourist, ecologist, and systematist alike. A survey of the group introduces the reader to the wide range of form encompassed in the Hirudinea, and chapters on nutrition; excretion and water balance; circulation and respiration; muscle, nerve and locomotion; sense organs and behaviour; reproduction and development; and ecology, continue a delightful zoological story.

Finally, there are two appendixes on the systematics of the group. The first of these, by K. H. Mann, on freshwater and terrestrial leeches includes diagnoses from sub-orders to families and illustrated keys to species from Central Europe, Britain and North America. The second,

by E. W. Knight-Jones, provides a key to marine genera of the world, diagnoses of North Atlantic genera and species, with a host list.

Extensive use will be made of this gem of a book by all zoologists interested in the invertebrates. It is especially recommended to teachers as a source for new adventures by their pupils, for "leeches are fascinating animals, full of strange zoological paradoxes". NORMAN TEBBLE

TAXONOMY OF TIMBER BEETLE LARVÆ

A Monograph of the Immature Stages of Australasian Timber Beetles (Cerambycidae)

By E. A. J. Duffy. Pp. vii+235+11 plates. (London: Printed by order of the Trustees of the British Museum (Natural History), 1963.) 105s.

TWO major difficulties beset workers in the field of larval taxonomy, especially those who, like the author of *A Monograph of the Immature Stages of Australasian Timber Beetles*, deal with large groups on a regional basis. First, museum collections of identified larvæ are usually poor or non-existent, and the worker must depend heavily on the assistance of resident entomologists in those countries which he himself often cannot visit. Secondly, few such investigations are likely to be complete, and taxa must be defined on the basis of less-extensive material than is available of the adult stage. The industry of Mr. Duffy—and his ability to elicit co-operation—are made evident by the excellent coverage of this first review of the immature stages of the Australasian Cerambycidae.

All sub-families represented in the region are characterized in terms of both larval and pupal structures. Descriptions of, and keys to, the late-stage larvæ of 100 species are provided; these are representative of 77 genera contained in 43 tribes, more than half the tribes known to occur in the region. The pupæ of 44 species are similarly treated. Records of host plant are given for some 250 species. There are also excellent summaries of bionomic data (including much previously unpublished), and of the control methods used against species of known economic significance in forestry. The stated aim of the monograph is to provide a means of identifying the immature stages of these insects. The lucid keys and descriptions, supplemented by very good drawings and photographs, should fulfil this purpose admirably.

In his earlier monographs of the immature Cerambycidae of the Palaearctic and Ethiopian Regions, Duffy was able to select "single fundamental characters" that defined the higher taxa, and to arrange keys that placed these taxa in "the generally-accepted sequence of adult classification". In his review of the Neotropical fauna, and in the present work, neither of these aims was realized fully. Some taxa could be defined only in terms of different combinations of the same or similar characters. Larvæ often exhibited such morphological heterogeneity that portions of the same taxon had to be brought out in remote parts of the key. Such results inevitably place in question the validity of phylogenies deduced from morphological characters of the adult stage alone. It is interesting to note that, due to divergences of larval characters, Duffy found it appropriate to elevate to sub-family rank three taxa that are traditionally given tribal status.

The *Monograph* will prove of very great practical value to forest entomologists in Australasia, and represents a notable addition to Duffy's series of publications in this field. His next volume, on the Cerambycid fauna of the oriental region, will be awaited with interest.

The printing, format and binding are of that most pleasing quality one has come to associate with the British Museum (Natural History) monograph series.

P. B. CARNE