

ogy would do well to consider this manual, especially if such courses are not preceded by more basic courses in entomology and botany.

The manual does not place emphasis on the identification of specific insect pests or pests that are associated with specific plants.

There are 15 exercises in the manual. This is suited for a laboratory meeting once a week for a semester. Some study exercises appear to have more work than can be done in one laboratory period. There are blank chart forms for use with field studies to record both diseases and insect specimens. This affords the instructor some opportunity to introduce the student to specific diseases and insects not described or illustrated in the manual.

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THE INSECT FACTORY IN WOOD DECAY, by Norman E. Hickin. St. Martin's Press, New York, NY 10010. Third edition, 383 pp. \$12.50.

This book is intended for wood conservation technologists, public health inspectors, and others concerned with wood-destroying insects in the timber and building industry in Britain. The book presents much useful information about wood-destroying insects. There are 280 illustrations, including one color plate. With the exception of Fig. 94 and 96, all are of good quality, particularly the line drawings. Unfortunately, little or no substantive upgrading of material has been done in most of the 12 chapters since 1963 when the first edition appeared. Few new references have been added.

Chapters 1 and 2 entitled Nature of Wood and Factors of Wood Decay respectively, are useful and informative. Following these two chapters and before the next chapter, a chapter or two on external and internal anatomy, and on various orders of insects would have been desirable.

Chapters 3-8 deal with various wood-boring beetles, their identification keys, life histories, morphology, host timbers, parasites and predators, distribution both in Britain and elsewhere, and in some cases historical classification and synonyms. Chapters 3 and 4 are on Anobiidae, 5 on other powderpost beetles (Lyctidae and Bostrychidae, 6 on several other families of lesser importance (Buprestidae, Lymexilidae, Eucnemidae, Melandryidae, Oedemeridae, Curculionidae, and Lucanidae) 7 on longhorn beetles (Cerambycidae) and 8 on Ambrosia and bark beetles (Platypodidae and Scolytidae). Together, these chapters cover some 266 pages, and are the best parts of the book.

Chapter 9 is concerned with wasps, ants, bees, moths and mayflies. Particularly conspicuous is the lack of details on carpenter ants and bees.

Chapter 10 deals with termites, which, according to the author, are found in Britain only as accidental imports in timber brought into the country. Both soil-inhabiting and wood-inhabiting species are mentioned. This chapter should have included brief summaries of signs of termite damage and control procedures for established infestations.

Chapter 11 discusses Incidence and Control. I believe the addition of a section on safe use and disposal of insecticides in this chapter would have increased its usefulness. Compared with the 1963 edition, three new subsections (Use of Pretreated Timber, Use of Smoke Generators and Dichlorvos Strips and Fumigation of Homes) on control procedures for House Longhorn beetle have been added.

The last Chapter discusses Research Methods, dealing mainly with laboratory techniques used in wood preservation research in Britain. This Chapter could have been considerably upgraded and reorganized.

The most serious criticism of this book is the lack of editorial scrutiny in the citation and arrangement of references both in the text and the Reference sections of all the 12 chapters. For example, in Chapter 3, several references are cited in the text but are not listed in the Reference Section; many references have been cited in the text without years; in one instance, a reference carries different years in the text and in the Reference section; in two instances two publications by the same author in the same year are not distinguishable from each other in the text; titles are missing in many references. What is surprising is that these very errors and inconsistencies were present also in the 1963 edition, and have not been corrected in this edition.

Apart from some of the above weaknesses, it is a useful book, and the fact that it is now in its 3rd edition indicates that it has been well received in Britain, and probably elsewhere.

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ATLAS OF AN INSECT BRAIN, by Nicholas James Strausfeld. 1976. Springer-Verlag, New York, xiv, 214 pp., illus.

Although there are many fine books in entomology, I cannot recall any which are as elegant and beautiful and expensive as this truly extraordinary monograph on the anatomy and histology of the brain of the adult housefly, *Musca domestica*. The volume is divided into seven chapters whose titles are: a historical commentary, the structure of the neuropil, the primary compartments of the brain, the coordinate system, some quantitative aspects of the fly's brain, the atlas, sections through the brain, and the forms and dispositions of neurons in the brain. There are two useful appendices, one giving histological methods and the other a dictionary of terms. The book has a frontispiece, 20 superb color illustrations, 43 diagrams or black and white drawings, 39 large plates of photomicrographs, and 57 smaller figures of drawings and/or photomicrographs. All of the illustrations are simply stunning. Aside from all of these attractions, the volume is beautifully and lucidly written. Not only has the author created a marvellous scholarly scientific book, but the publishers have lovingly executed it, and together they have made a thing of great beauty. It is worth the price of \$98! The book is dedicated to David Blest. What a tribute!

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THE ODONATA OF CANADA AND ALASKA, volume III, by Edmund M. Walker and Philip S. Corbet. 1975. University of Toronto Press, Toronto, Canada. xvi + 307 pp., 45 plates. \$25.00.

The Odonata, or the dragonflies and damselflies, has long been a favorite group with collectors. Consequently a tremendous amount of data has accumulated on this ancient group of insects. The late Professor Walker of the University of Toronto set out in 1948 to assemble the information available from his 50 years of work on these insects in Canada and Alaska. His first volume, which is now out-of-print but to be reissued soon, dealt with the Zygoptera, and appeared in 1953. The second volume treating the Anisopterous families Aeshnidae, Petaluridae, Gomphidae, and Cordulegasteridae was issued in 1958 and is still available at \$15.00. Regrettably a long terminal illness forced Professor Walker to give up work on the final volume, but fortunately Professor Corbet then with the Canada Department of Agriculture, but now in New

Zealand, agreed to complete the work. Now this long awaited third volume treating the three Libelluloid families Macromiidae, Corduliidae, and Libellulidae has appeared.

This volume continues the same fine style and content that was established in the first two volumes. In this volume 76 species are treated belonging to 20 genera: 4 species and 2 genera in the Macromiidae, 28 species and 7 genera in the Corduliidae, and 44 species and 11 genera in the Libellulidae. Of especial note is the treatment of the large, more boreal genera *Somatochlora* (18 species), *Sympetrum* (13 species), and *Leucorrhinia* (7 species). Keys to all levels are presented for nymphs and adults, with the males and females often keyed separately at the species level. The book is profusely illustrated with characters of venation, genitalia, and nymphal structures. In spite of this generally excellent degree of illustration, the characters of the secondary male genitalia in *Tamea* are not illustrated, and this would have been most valuable. The same format of extended descriptions of adults and nymphs, distribution, and field notes is continued in volume III.

There are a few changes in format in this volume, the main one being the grouping of illustrations by taxonomic unit and their placement near the appropriate taxon, which is a much easier system to use than the old one. The Tilliard-Fraser system of naming wing veins, which was introduced into volume II, has been adopted in volume III at the expense of the Comstock-Needham system. Although the latter system is more familiar to most American workers, the former is far preferable as it rests on a firmer foundation.

The author's preference for a broad generic definition is apparent in the synonymy of the often recognized genera *Tetragoneuria* and *Epicordulia* with *Epitheca*, *Ladona* and *Perithemis* and *Libellula*, and *Tarnetrum* with *Sympetrum*. Although there is a great deal to be said for this approach, it remains to be seen if these actions will all be accepted, as there is a strong tendency today toward generic splitting.

Professor Corbet has appended an addenda and corrigenda to volumes I and II. There is a most obscure entry concerning the synonymy of *Aeschna canadensis* Walker and *Anax maritimus* Provancher, from which it is uncertain as to which is the valid name. Upon study of the references it is clear that *maritimus* is to be considered a nomen oblitum under the 50 year rule of the International Code of Zoological Nomenclature (article 23b). Two species, *Anax longipes* Hagen and *Tachopteryx thoreyi* (Hagen), are newly recorded in Canada. An extensive section lists recently recorded range extensions in Canada or adjacent United States for 51 species. In the corrigenda is an easily overlooked lectotype designation for *Gomphus fraternus manitobanus* Walker.

We are indeed fortunate to have such a fine work now complete, and Professor Corbet is to be commended for his work. I know of no other geographic region of comparable size in the world where the Odonata have been treated in such an exhaustive and authoritative manner. It is a necessary reference for all interested in the Odonata of Canada, Alaska, and the northern United States.

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A FIELD GUIDE TO THE BUTTERFLIES OF THE WEST INDIES, by Norman D. Riley. \$12.50. 338 color illustrations and many in black and white. Bibliography. Index. A Quadrangle Field Guide Series of the New York Times Book Co. A Demeter Press Book.

It is easy to herald any new publication as 'long awaited' but in this instance the claim is well justified

in that no comprehensive guide to the Caribbean butterflies has previously existed. It is necessary to add a note of caution, however, in that the area covered does not include all that the geographer or politician might understand from either the term 'Caribbean' or the term 'West Indies'. The author has, of necessity, confined his thesis to the West Indies as a faunal region and so has avoided the risk of it becoming too large or too superficial. As a result, 292 species are included, few of which are as spectacular as many of the South or Central American species occurring on the mainland or associated islands. The 24 color plates—painted specially for the book by Gordon Riley and Brian Hargreaves—illustrate the upper and underside of almost all the butterflies. The detail and quality of reproduction are excellent. The text describes each species in detail with notes on range, type locality and early stages. The descriptions are preceded by a concise introduction to the subject, including the inevitable guide to collecting. A check list and distribution table, short bibliography and index complete the picture.

For its quality and size, this book represents extremely good value for money. Though it is presumably aimed at the many amateur lepidopterists anxious to enrich their bookshelves or check off their captures, it is hard to see how it could be improved for the specialist in the field. Norman Riley's style is concise and business-like and the print is clean and neat.

Most people contemplating buying this book will already have a copy of Malcolm Barcant's 'Butterflies of Trinidad and Tobago', published in 1970 and similar in price and format. It is interesting to compare the two works. Barcant illustrates only the upper sides of the more attractive species and uses photographs rather than paintings. His less orthodox arrangement using habitats, beauty and rarity as criteria may fire the schoolboy enthusiasm but also emphasizes the need for an effective index. Riley's book is certainly far easier to use. It is a pity the two authors couldn't agree on at least the common names of some of the species shared by the regions.

Perhaps the most useful contribution made by this new book is to designate what is and what is not known. It is infuriating to discover that what you suspected was a new and previously unidentified species turns out to have been described by Linnaeus. On the other hand, the author stresses that the fauna of many of the smaller islands is almost completely unknown and the overall distribution and life history data are incomplete as yet. I'm certain that Dr. Riley's book will encourage many to fill in some of these gaps—a challenge to professional and amateur alike—and further enrich the knowledge of the region. It will certainly enrich your bookshelf as well.

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INSECTS THAT FEED ON TREES AND SHRUBS, AN ILLUSTRATED PRACTICAL GUIDE, by Warren T. Johnson and Howard H. Lyon. April 1976. Comstock Publishing Associates, a division of Cornell University Press, Ithaca and London, \$35.00. (Pre-publication price \$24.95)

The early influence of Ephriam Porter Felt, Liberty Hyde Bailey and later that of Glenn Herrick in the State of New York and Cornell University is reflected in this worthy successor to their classic works. Johnson and Lyon have used modern color photography to good advantage in delineating the insect pests of shade trees and other ornamental plants.

This work has been some 10 years in preparation and the better of thousands of photographs have been collected into this profusely illustrated guide. Having spent many hours attempting to take a series of ornamental pest slides