

## BOOK REVIEW

**BUTTERFLIES AND MOTHS**, A Guide to the more common American species. By Robert T. Mitchell and Herbert S. Zim. Golden Press, New York, 1964; 160 pp., with 423 text illustrations in color. Paper, \$1.00; cloth, \$3.95.

Nearly 400 species of North American Lepidoptera are treated and illustrated in this little book, another in the Golden Nature Guide series. The illustrations, which are reproduced from paintings by Andre Durenceau, are nearly all superb, making this without a doubt the finest introductory publication on American butterflies and moths available. The authors, Mr. Robert T. Mitchell, a wildlife biologist at the Patuxent Wildlife Research Center, Laurel, Maryland, and Dr. Herbert S. Zim, supervising editor and co-author of the Golden Nature Guide series, received technical assistance from authorities at the U. S. National Museum, including Capps, Clarke, Field, and Todd.

Some 180 species of butterflies and about 170 species of larger moths are treated in addition to a small number of the micros. Illustrations of the smaller moths are reproduced from the 1952 Yearbook of Agriculture "Insects" and do not approach the excellence of Mr. Durenceau's figures. Although the book is intended as an introduction for beginners or persons interested in general nature study, the large number of moths and figures of larvae and pupae, which are given for many species, together with the pocket-sized convenience of the book, will make it attractive to many experienced lepidopterists as well. The hard bound version has been slightly enlarged photographically to 5"  $\times$  7½" and a bit of the excellence of the color has been lost from some pages in the process.

Introductory sections include discussion of classification of Lepidoptera; eggs, larvae, pupae, and adults; techniques of collecting, mounting, rearing, etc. The treatment of species follows, in the sequence of the McDunnough checklist, with the adult shown in color for each species. Often the larva, dimorphic sexes, or underside are also illustrated. The common name and a brief discussion of pertinent features of the distribution, flight period, and foodplants are included. Indexed lists of scientific names (but not authors) and common names terminate the volume. A surprising proportion of the fauna is covered, for some groups more than one third of the known species (e.g., Papilionidae, Pieridae, Lycaenidae, Sphingidae, Saturniidae).

For nearly two-thirds of those treated, a distribution map of a generalized range of the species in North America is also given. Most of these are quite useful since they give a quick, rough idea of the species' geo-

graphical distribution. Some are a little misleading, particularly to readers interested in distributions in the western states, usually because the ranges are too restricted (e.g., *Limenitis lorquini*, *Lycaena rubidus*, *Philotes sonorensis* and *battoides*, *Coloradia pandora*, *Halisidota maculata*); a few are severely restricted (e.g., *Smerinthus cerisyi*, *Antheraea polyphemus*, *Estigmene acraea*, *Alsophila pometaria*, *Paleacrita vernata*).

In general all aspects of the treatment appear to be quite accurate. One inexcusable point is the mention of the "suborders" Jugatae, Frenatae, and Rhopalocera, thus perpetuating for beginning students the old classification which has not been used by serious lepidopterists in 20 years. One species may be figured under the wrong name. A moth which appears to be *Hemileuca* (*Pseudohazis*) *washingtonensis* Medlar is shown in an excellent figure but called *P. eglanterina*. Its distribution map appears to fit the latter species or a combination of the two if they were considered subspecies. In general, subspecies are not treated in the book. In the list of scientific names an annoying number of misspellings occur in the butterflies (e.g., *Papilio machaon aliaska*, *P. eurymedom*, *Appias drusilla neumoezenii*, *Speyeria nevandensis*, *Limenitis weidemeyrii*, *Incisallia*). The moth names include very few errors (e.g., *Automaris*, *Pseudaletia unipunctata*).

The editors of the Golden Press and the authors are to be congratulated on having produced an introductory book on butterflies and moths with accurate illustrations, at a price appropriate to the audience. Publications of this nature have long been available in many parts of the world, such as in Japan, but nothing comparable to the Golden Nature Guide *Butterflies and Moths* has been available for recommending to the beginning student in North America.

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