

tions on similar species, distribution and habitat, early stages (i.e., one sentence with a general description of the apparently mature larva), larval host plants, adult energy sources, flight period, general comments, and, at times, specific references. Two or more photographs of spread specimens mostly from South Dakota superbly illustrate each species; these include at least dorsal and ventral surfaces and show additional specimens as needed to elaborate major variation. A photograph from life and/or of early stages illustrates some of the species. Distributional information is mapped at the county level and embedded into the species account. The book concludes with a checklist, a butterfly calendar, a hypothetical list, a glossary, a bibliography of useful references, and an index.

In a field guide, quibbles concerning nomenclature are largely irrelevant. Marrone recognizes acceptable family combinations with Riodinidae separated from Lycaenidae and *Libytheana* included within the Nymphalidae. The common and scientific names largely follow Opler (1999) and NABA (apparently Cassie et al. 1995) and are as contemporaneous as one could want. *Satyrium* and *Callophrys* are treated as all inclusive genera at the expense of *Harkenclenus* and *Mitoura*, *Incisalia*, and *Deciduphagus*, respectively. The same broad stroke generic approach was also applied to other lycaenids (*Lycaena*), to some papilionids (*Papilio*), and to certain nymphalids (e.g., *Nymphalis*, *Vanessa*, *Phyciodes*, *Boloria*). The use of infraspecific names is somewhat uneven. At first it was assumed that a subspecific name was given if the South Dakotan taxon was not of the nominotypical subspecies, yet this is not always so (e.g., *Pieris marginalis*, *Speyeria coronis*, *Speyeria mormonia*). These and other taxonomic decisions in no way detract from the book's intention as an identification guide to South Dakota's butterflies. A large number of aberrations are also illustrated that, although unusual in a field guide, include many heretofore not illustrated in a readily available publication. One major blunder involves the apparent switching of the plates for *Pieris marginalis* and *Pieris oleracea*.

This book is a true field guide with little extrinsic information between its covers. Those interested in more than identification may glean tidbits on general distribution, habitat, larval hostplants (although one is not always sure that the plants referred to are those used in South Dakota), and adult nutrient sources. The strength of this book for the researcher lies in the phenological data in the species accounts and, with more detail, in the appended butterfly calendar that is updated from Marrone (1994). The *Field Guide to Butterflies of South Dakota* is a must for anyone inter-

ested in the butterflies of that state and adjacent areas on the northern Great Plains. It also serves as a nice companion to the recently published guide for North Dakota (Royer 2003).

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NYPHALIDAE DE MÉXICO I (DANAINAE, APATURINAE, BIBLIDINAE & HELICONIINAE): DISTRIBUCIÓN GEOGRÁFICA E ILUSTRACIÓN, by Armando Luis-Martínez, Jorge E. Llorente-Bousquets & Isabel Vargas-Fernández. Illustrations by Pál János. 2003. Published by Facultad de Ciencias, Universidad Nacional Autónoma de México and Comisión Nacional Para el Conocimiento y Uso de la Biodiversidad (CONABIO), Mexico City. 249 pages, 30 color plates, 124 distribution maps. Softcover, glossy paper, 21.5 × 28.0 cm, ISBN 970-32-0693-X. Available from Andrew D. Warren, Dept. of Zoology, Oregon State Univ., Corvallis, OR 97331 (warrena@science.oregonstate.edu)—send personal check for US \$40 (includes postage from Mexico City) and shipping address with phone number.

This book is the second in a series of fascicles treating the butterfly fauna of Mexico, produced by the "Alfonso L. Herrera" Zoology Museum (MZFC), at the National Autonomous University of Mexico, in Mexico City. The volume is presented in the same format as the first (see Llorente et al. 1997, Warren 1999), and treats all Mexican species in the subfamilies Danainae, Apaturinae, Biblidinae & Heliconiinae (basically sensu Harvey 1991); a total of 181 subspecies of 140 species from 37 genera. It is the first time Mexican members of several genera, including *Adelpha* Hübner and *Doxocopa* Hübner, have been treated in detail.

Like the first in the series, this volume is crammed full of exact details, numerous facts and statistics, and data from over 73,000 specimens presented in tele-

graphic form, and gathered from over a dozen major institutional collections in Mexico, North America and Europe (Appendix I). In addition to data from collections, a substantial number of records are reported from the literature, from about 800 sources, all of which are listed in one of two bibliographies (mostly in Appendix III). Over 230 literature references are provided on the Monarch butterfly, *Danaus plexippus* L. alone! The limited amount of text in the introductory sections and at the beginning of each appendix, is in Spanish. However, users who do not read Spanish should have no problem extracting information from this volume due to its logical organization, extensive tables, maps, and illustrations.

The 124 distribution maps in Appendix IV are excellent, and are the most detailed available for the taxa treated. They show specific records gathered from museum collections and the literature (which are listed in Appendix I), plotted onto maps of Mexico with state boundaries. Several dubious records listed in Appendix I are not plotted on the maps; other dubious records are plotted, some accompanied by question marks. In several cases, multiple non-sympatric taxa are mapped on a single map, to save space. All locality data that could not be accurately mapped, such as general records from "Oaxaca," for example, and several vague literature records, are listed in a separate section of non-plotted data that follows the maps (Appendix V).

All Mexican nymphalid species in these four subfamilies are illustrated on 30 color plates (Appendix VI) that consist of paintings from museum specimens. Usually, for taxa that are sexually dimorphic the dorsal surfaces of both males and females of each taxon, and the underside of at least one sex is illustrated for almost every species. The book also includes a list of type localities for all taxa treated (pp. 4–9), a gazetteer of all localities listed in the book that is arranged by state (Appendix II), and tabular representation of much of the data presented in this volume. Specifically, tables are provided showing the number of localities from which these nymphalids have been recorded in each Mexican state, with other tables listing the most species rich localities (in terms of overall species per locality, and total recorded specimens per locality).

Some of the statistics presented in the tables show that, for example, data from over 25,000 specimens are included from the state of Michoacán alone. *Heliconius charithonia vazquezae* W. P. Comstock & F. M. Brown, Mexico's most abundant heliconiine, is known from over 5600 specimens and 465 localities (all listed); other taxa, such as *Speyeria nokomis melaena*

Mooser & García, and *S. nokomis wenona* dos Passos & Grey, are known from only one, and two specimens respectively. Records exist for over 6400 individual specimens of 79 species in these 4 subfamilies from Cerro El Vigía, in the State of Veracruz, while only two nymphalid species in these subfamilies are known from the State of Tlaxcala, represented by two specimens. I was surprised to see that of the more than 73,000 specimens in these four subfamilies that were examined for this book, 86.2% of these specimens are housed in two institutional collections in Mexico City. In contrast, specimens in the Allyn Museum of Entomology, American Museum of Natural History, California Academy of Sciences, Carnegie Museum of Natural History, Los Angeles County Museum of Natural History, Nevada State Museum, San Diego County Natural History Museum, Essig Museum of Entomology and the National Museum of Natural History, combined, make up less than 15% of this total.

I found a few minor typos in the text, a few errors on the maps, and some errors in labeling on plate legends, but none of these detract from the overall usefulness of this book. This book is a must for anyone seriously interested in Neotropical or southern Nearctic butterflies, as well as entomologists, biologists and other naturalists with a general interest in butterflies or Mexican biogeography. Considering the enormous amount of information available nowhere else, this book is indeed a bargain. The next volume in the series will treat Mexican Charaxinae, Morphinae and Ithomiinae, and follow this same format; until then I look forward to using the arsenal of distributional and ecological data now available for Mexican Danainae, Apaturinae, Biblidinae and Heliconiinae.

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