

career of Bates may help to inspire young entomologists to abandon easy generalizations and "quick and dirty" field experiments in the peripheral Neotropics, and once again penetrate the complex reality of the Amazon Basin. Here, they can still observe and absorb a multitude of new facts and phenomena which, though they may not be publishable next year and may never be acceptable to scientific magazines of wide circulation, will continue to promote the still very necessary "rapid growth of knowledge" about tropical entomofaunas.

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### BOOK REVIEW

**BUTTERFLIES OF OREGON**, by Ernst J. Dornfeld. 1980. Timber Press. Order from International Scholarly Book Services, Inc., Dept. B, 2130 Pacific Avenue, Forest Grove, Oregon 97116. Format:  $8\frac{1}{2} \times 11$ ". 276 pp., 4 color plates, 48 halftone plates, 35 text halftones, 45 line drawings, 192 distribution maps. Cloth. Price \$24.95 + 1.00 shipping. (The copy received for review was a paperback but no separate price was quoted.)

This book, which has been many years in preparation, is an extensive study of Oregon butterflies. It opens with an historical background of collectors and collecting in the state with an accompanying list of species described from Oregon localities. Then follow discussions of Oregon's physiography (illustrated) and associated butterfly distributions, butterfly biology, endangered and extinct butterflies, evolution, classification and nomenclature. The final sections of the introductory material treat collecting methods, rearing and photographing butterflies. These introductory sections occupy 36 pages and are well illustrated. The physiography section with its associated photographs should be invaluable to non-resident collectors planning a visit to Oregon.

The preliminary sections are followed by 81 pages that comprise the "Systematic Account." The families are ordered: Papilionidae, Pieridae, Danaidae, Satyridae, Nymphalidae, Riodinidae, Lycaenidae, Hesperidae. One hundred and fifty-five species are discussed. Each species discussion is arranged in two columns of text with references to plate, figure and map numbers. Distinguishing characters of each species are clearly stated along with pertinent life history information. In many instances, literature references are included. Each family is introduced by a well-annotated prefatory statement.

The appendices include in order: color plates, halftone plates, maps, checklist, glossary of terms, index of butterfly names. The halftone plate legends reference each figure to the appropriate text page. The distribution maps are by county (counties not identified by name) with dots for each locality.

Generally speaking, the book is very well done and very thorough. For the most part, the taxonomic usage reflects current trends. The author has not accepted fully some recent revisionary work at the generic level. In these instances, he has used generic/subgeneric headings. Some examples are: *Pieris* (*Artogeia*), *Euphydryas* (*Ocidryas*), *Lycaena* (*Epidemia*). This is a matter of personal preference and in no way detracts from the book. No new taxa are introduced, but some new combinations are

used such as *Callophrys sheridanii lemberti*. *Euphydryas colon* is treated as a subspecies of *E. chalcadon*. The trinomial *Incisalia fotis mossii* has been retained, rather than the form *I. mossii mossii* now accepted by many lepidopterists. If one accepts the taxonomic work of Higgins and Riley in Europe, then *Agriades aquilo podarce* should be listed as *A. glandon podarce*. *A. glandon* is the montane species, while *aquilo* occurs in arctic coastal regions. Some specialists consider the North American species as distinct from their European counterparts.

Genitalic sketches are included throughout the text, whenever such information is necessary, to assist in making positive identifications. The text descriptions always give sufficient information to assist in making differential diagnoses when two or more look-alike species are involved.

The color plates (photographs) are good, with 86 specimens and 85 species represented in the first three plates. The fourth color plate illustrates a pair of Oregon's state insect, *Papilio oregonius*. These plates reflect a good balance of colorful butterflies (probably requested by the publisher), and ventral views to assist in identification of some difficult species. The halftone plates are excellent and collectors should have little difficulty in using them.

The book has so many positive features that the reviewer is reluctant to introduce any negative comments. There are, however, a few items that require passing comment. At first reading, some of the species headings appear inconsistent. When more than one subspecies is discussed, the heading includes only genus and species; when only one subspecies occurs in Oregon, the heading includes the complete trinomial.

Several items were noted in the section on *Colias*. It appears that this section was prepared toward the onset of the overall project and the associated literature references are not nearly so complete or current as in other sections of the book. The author appears reluctantly to treat *C. eurytheme* and *philodice* as separate species. There is no reference to the body of literature developed during the past decade that reflects the many ultraviolet light studies of *Colias*. Many authors have stated positively that *C. eurytheme*, *philodice* and the Old World *chrysotheme* are, in fact, distinct species based both upon ultraviolet reflectance from the wings and biological factors.

Dr. Dornfeld apparently recognizes only *Colias alexandra edwardsii* in Oregon, when there are actually two very distinct entities and some clinal forms. The rather striking population from the Ochoco Mts. in Crook Co. is not mentioned. The females are polymorphic and both sexes are distinct from *edwardsii*. Some collectors have confused this *alexandra* with *occidentalis*. Doubtful males can be separated easily by ultraviolet reflectance photography; *C. alexandra* produces a characteristic reflectance pattern, *C. occidentalis* produces no pattern. The females may pose some substantial identification problems. Plate I, f. 12 and Plate 6, f. 5c may represent *alexandra* and not *occidentalis* as stated.

No discussion appears of the quite local and isolated population of *Colias gigantea* that occurs in the Ochoco Mts. These butterflies are intermediate between nominate *gigantea* and *harroweri*.

*Colias* is a difficult genus and the items mentioned are perhaps minor, but for the sake of completeness, the reviewer would like to have seen this section expanded.

BUTTERFLIES OF OREGON contains a wealth of information and should be in the library of any collector who is interested in the butterfly fauna of western North America. It is not just a state book since many of the butterflies mentioned have ranges into several states and Canada. The text is very readable and should appeal to professional and amateur alike. This book is comprehensive, well documented, and I recommend it highly.

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