

BOOK REVIEWS

ATLAS DE LAS MARIPOSAS DIURNAS DE CUBA (LEPIDOPTERA: RHOPALOCERA),

by Pastor Alayo D. and Luis R. Hernández.

1987. Ministerio de Cultura, Editorial Científico-Técnica, Calle 2, No. 58, e/ 3 y 5, Vedado, Ciudad de La Habana, 4, Cuba. 148 pp., 49 color pls., 15 figs. as line drawings. Hardcover, 22.0 x 29.3 cm. No ISBN number. In Spanish. Price: \$7.00 pesos.

Cuba has long held a particular fascination for students of the West Indies butterflies. The largest island in the Caribbean, located at one end only 90 miles south of the nearest point of land in the Florida Keys, yet with a peculiar endemic butterfly fauna, Cuba has attracted attention from lepidopterists for over two centuries. The study of Cuban butterflies was really initiated by Jacob Hübner with his works *Sammlung Exotischer Schmetterlinger* and *Zutrage zur Sammlung Exotischer Schmetterlinger*, written during the period 1806-1841. Earlier, Linnaeus and Fabricius had described Antillean butterflies but without pointing out exactly which ones were of Cuban origin. In 1832, the knowledgeable Cuban naturalist Felipe Poey y Aloy published his well-known *Centurie des lépidoptères de l'île de Cuba* which included color plates for all the species. This book was recently republished in facsimile form by E. W. Classey, England. Poey followed this work with a catalog of species, published in 1846-1847, and a work on the genus *Eurema*, published in 1853.

Over the next century, Cuban naturalists and visitors from abroad continued to publish works on the fauna of Cuba, including most notably Marston Bates (1935), with his *Butterflies of Cuba* (Bulletin of the Museum of Comparative Zoology, Harvard, Volume 78, No. 2). In 1943, the extremely capable Cuban lepidopterist, Salvador Luis de la Torre began publishing a series of significant papers on the butterfly fauna of Cuba, his last notable publication being in 1974 (a review of the possible origins of the Cuban butterfly fauna). Unfortunately, since for the past 30 years, much of this work by de la Torre and others of our Cuban colleagues has been inaccessible to American lepidopterists for reasons of international politics and a mail embargo. Now, Pastor Alayo D. and Luis R. Hernández have remedied this situation admirably by publishing this outstanding book, which has been brought to the attention of the Western world through copies brought out of Cuba by Peter Hall of Ottawa, Canada. The result of these two authors' efforts in this new book is an outstanding compendium of our present knowledge of Cuban diurnal Lepidoptera.

The book begins with a brief history of the several centuries of work on the butterfly fauna of Cuba. The next chapter treats, in systematic fashion, each superfamily and family of butterflies, summarizing the chief characters of each and presenting a key to the various families within each superfamily. This chapter is followed by excellent summaries on ways to study wing venation, a list of the nomenclature and symbols used in describing the wing venation of each group (including many figures of various genera showing different wing venation), and an outstanding chapter on the morphology of the male and female genitalia, including some of the best (and clearly labeled) drawings of dissected structures that this reviewer has seen in any butterfly book. The authors also present an excellent section on how to prepare microscopic preparations of genitalia.

This introductory material is followed by a comprehensive systematic list of the diurnal Lepidoptera (butterflies) of Cuba which lists 194 different taxa. Because nine subspecies are counted in this list of separate entities, the true total of species recorded for Cuba is 185

species. This makes Cuba second only to the island of Hispaniola (with 196 species) in diversity of butterfly fauna within the West Indies.

The bulk of the book, beginning on page 34 and running through page 123, is a species-by-species account (together with all the subspecies) of every taxonomic entity in Cuba. The typical species account starts with a synonymy, the range and average wing size, and a general description of the dorsal and ventral surface of the species as well as notes on its behavior. This is followed by a section on each subspecies of that species that occurs in Cuba. Of course, most people will be most interested in the detailed discussions of the endemic Cuban species. The reader who even has an elementary knowledge of Spanish will not be disappointed. Considerable details are given about flight season and distribution, as well as behavior, variation, and relative abundance. Nearly a full page of information is given on *Phoebis avellaneda*, the ithomiine *Greta cubana*, *Anartia chrysopelea*, *Atlantea perezii*, *Eurema lucina*, *Libytheana motya*, *Papilio caiguanabus*, *Papilio oxynius*, *Papilio aristodemus temenes*, *Eurytides celadon*, *Eumaeus atala atala*, and many other fascinating species. Perhaps the most pleasant surprise in reading the accounts of these is that despite the extensive agriculturalization in Cuba, many of these species are still abundant there and may be found with some ease. Host plants are given wherever known, but no life history descriptions are normally included.

Following the detailed species accounts, a very complete bibliography relating to the hundreds of publications on the Cuban butterfly fauna is included. Additionally, there is a comprehensive index to host plants and a separate index to the butterflies.

The 49 color plates in this book are made of individual photographs of specimens, including dorsal and ventral views. These vary in quality, but most (especially those specimens photographed against blue backgrounds) are quite good. Those photographed against tan or brown background often are quite dull, and details are hard to see. Most of the photographs are reproduced at either life-size or several times life-size in the case of lycaenids. Specimens from Cuban localities are used throughout; that is why not every specimen is in perfect condition, but at least the illustrations show Cuban material in all cases. Reproduction is excellent and color fidelity very good in the best of these ganged plates.

Overall, this is a remarkable book on a remarkable island, and it should be in the hands of every lepidopterist interested in tropical American butterflies. It shows the outstanding accomplishments of a small but dedicated group of Cuban lepidopterists who have persevered during the last 30 years in pursuit of better knowledge of the island's fauna. And this work brings to the rest of the world that accumulated knowledge which now hopefully will stimulate greater additional interest in the butterflies of this long-studied, but relatively little-known island of the Greater Antilles.

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