

## BOOK REVIEWS

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HAWKMOTHS OF THE WORLD: AN ANNOTATED AND ILLUSTRATED REVISIONARY CHECKLIST (LEPIDOPTERA: SPHINGIDAE), by Ian J. Kitching and Jean-Marie Cadiou. Published by The Natural History Museum, London and Cornell University Press, Ithaca, New York. 226 pp., 8 color plates. Hardcover, 8.8 × 11.3 inches, ISBN 0-801437-34-2. Available from the publisher. Price \$95.

Description: This large-format book documents the current nomenclatorial status of more than 3800 species and genus-group names for the Sphingidae. Kitching and Cadiou recognize 203 genera and 1272 species as valid, and include all known available and unavailable synonyms in the checklist. The authors are to be congratulated for their encyclopedic scholarship in updating and correcting sphingid nomenclature and their comprehensive and critical review of the status of species and generic names. Nevertheless, as the authors acknowledge, there is still much work to be done on this charismatic moth family, including a full revision and a thorough phylogenetic analysis.

The book begins with a 34-page introduction containing short sections on morphology of adults and early stages, natural history, economic impact, rarity, and conservation (the authors argue that sphingid species are not necessarily as rare as they may seem). There is a brief sketch of the history of higher-level classification, and a table presenting a partially ordered "current best estimate" classification based on unpublished cladistic analyses by Kitching. This is followed by notes on biogeography, and a description of prior faunal lists and catalogs (some of the most important or recent are Rothschild and Jordan (1903, *A revision of the lepidopterous family Sphingidae*, *Novitates Zoologicae*, 9 (suppl.):1–972.), Hodges (1971, *Sphingoidea*, *Moths of America North of Mexico* including Greenland, 21:1–158), d'Abbrera (1987, *Sphingidae Mundi*, *Hawk moths of the world*, E. W. Classey, Farringdon, U.K., 226 pp.), Bridges (1993, *Catalog of the family-group, genus-group and species-group names of the Sphingidae of the world*, C. A. Bridges, Urbana, Illinois, 282 pp.), Pittaway (1993, *The Hawkmoths of the Western Palaearctic*, Harley Books, Colchester, U.K., 240 pp.), Carcasson and Heppner (1996, *Sphingoidea*, 118, *Sphingidae*. In J. B. Heppner, ed., *Atlas of Neotropical Lepidoptera*, checklist. 4B. Drepanoidea, Bombycoidea, Sphingoidea. Association for Tropical Lepidoptera, Gainesville Florida, pp. 50–60, 62.), Zhu and Wang (1997, *Lepidoptera Sphingidae*. *Fauna Sinica (Insecta)* 11:1–410) and Danner, Eitschberger and Surholt (1998, *Die Schwärmer der westlichen Palaearktis, Bausteine zu einer Revision (Lepidoptera: Sphingidae)*. Textband. *Herbipolonia* 4(1):1–368; Tafelband. *Herbipolonia* 4(2):1–720). A section on methodology describes the authors' concepts of genus, species and subspecies, and explains their differences of opinion on circumscription of taxa with respect to Danner et al.'s (1998, *op.cit.*) more finely split treatment of the Palearctic fauna. The introduction ends with instructions on how to interpret abbreviations and annotations to the checklist itself.

The checklist is organized in nested alphabetical order, first by genus, then by species within each genus, then by subspecies within species. Synonyms, infrasubspecific names, and *nomina nuda* are listed beneath the valid species or subspecies name to which they correspond. Author and year of publication are given for each name, and all original descriptions are included in the References Cited section. There are eight good-quality color plates: six illustrate pinned specimens of 48 species (including six holotypes, two paratypes, and two lectotypes), and two show photos of living specimens at rest in the wild. The latter are slightly grainy and the color reproduction seems a bit saturated. The dust jacket is illustrated with rather dark images of five species named after either Cadiou or Kitching which are not reproduced elsewhere in the book.

The bulk of the text comprises 627 nomenclatorial notes. These range from short reports on lectotype designations, transcriptions of data labels and other rather dry taxonomic minutia, to long and sometimes fascinating detective stories surrounding cases of mistaken identity, nomenclatorial squabbles that are reminiscent of

Francis Hemming's pronouncements (Hemming 1967, *The generic names of the butterflies and their type-species (Lepidoptera: Rhopalocera)*. *Bull. BM(NH) Ent. Suppl.* 9:1–509), and philosophical explorations of the ICZN Code (1985, International Commission on Zoological Nomenclature, International Code of Zoological Nomenclature, International Trust for Zoological Nomenclature and the British Museum (Natural History), London.) and its relation to species concepts.

The book concludes with a comprehensive Literature Cited section, descriptions of two newly-recognized species and two new subspecies, a one-page Addenda section, and good subject and taxonomic indices. Two of the four descriptions of new taxa are nomenclatorial corrections of discrepancies between current concepts and old nominal types, the third gives a differentiated geographical form subspecific status and the last is a previously unrecognized species. Only two of the new taxa are illustrated.

In general, the book seems well-organized and error-free. I noticed only one error (a misnumbered footnote reference), which is quite remarkable given the complex cross-referencing between the checklist and the notes.

Two Criticisms: As the authors state (p. 24), "*Sphingidae Mundi* [d'Abbrera 1985, *op.cit.*] remains the only readily available color guide to adult hawkmoths on a global basis . . . and will continue to be used to identify these moths." They justify their checklist as a means to correct the numerous nomenclatorial and identification errors in that work, (as well as a means to forestall entry into the literature of the "almost 1000 errors" in the Bridges' [1993, *op.cit.*] catalog). Although it exhibits impressive scholarly rigor, in my view Kitching and Cadiou's book will not be of much use or interest to the casual reader, or even to the serious amateur, because the practical information it contains is almost completely inaccessible, buried in the midst of a jumble of nomenclatorial notes that are arranged in the alphabetical order of the checklist. For example, suppose you identify a specimen as *Oxyambulyx placida* Moore by comparing it to the pictures in d'Abbrera's book. To discover that d'Abbrera's specimen was misidentified, you would need to stumble upon Kitching and Cadiou's footnote 56 (to *Ambulyx semiplacida* Inoue), which is not cross-referenced to either the synonym *Oxambulyx* Rothschild & Jordan, nor the species *A. placida* (Moore). Given the authors' acknowledgment of the continuing importance of d'Abbrera's book to sphingid workers, two extremely practical sections to have included in Kitching and Cadiou would have been, 1) a concise list of corrigenda to d'Abbrera's nomenclature and identifications, and 2) supplemental illustrations of the 200+ taxa d'Abbrera excluded from *Sphingidae Mundi*.

A sign of our mercenary times is the Natural History Museum's promotion of what is essentially a rather narrowly-focussed monograph as a trade book. The inclusion of color plates (and of the term, "Illustrated" on the glossy dust jacket) is a lure that will entice many hawkmoth fanciers to buy this book, but I suspect that most of them will find its contents largely impenetrable. Once upon a time, the British Museum (Natural History) published scholarly nomenclatorial works in its Bulletin (e.g., Hemming 1967), and distributed them free of cost. Nowadays, the more revenue-oriented Natural History Museum encourages its systematists to produce marketable products: another recent example is Malcolm Scoble's geometrid catalog (1999, *Geometrid Moths of the World: a catalogue*. CSIRO Publications, Melbourne, 1400 pp., \$395). I can think of no better way to prolong the lepidopterological imperialism of wealthy western nations than by publishing catalogs and checklists of global faunas in prohibitively expensive formats that the researchers from countries where most of the taxa occur generally cannot afford. It is onerous enough for Ecuadorean lepidopterists to have to go to London to see the holotypes of Ecuadorean moths. The least the Natural History Museum could do is to give something back to the "type localities" by making the knowledge derived from its holdings accessible at moderate cost, or better yet, free on the WWW.

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