

BOOK REVIEWS

A REVISION OF THE GENUS *HYPOCHRYSOPS* C. & R. FELDER (LEPIDOPTERA: LYCAENIDAE). D. P. A. Sands. 1986. Entomograph vol. 7. E. J. Brill/Scandinavian Science Press, Leiden. 116 pp., 2 color plates. About \$38.25.

Sands's revision of the primarily Australian Region hairstreak genus *Hypochrysois* (Lycaenidae) is excellent. First and foremost, Sands knows these butterflies intimately. He has studied them in the field and museum, and clearly communicates his encyclopedic knowledge of them. There are 57 species—including 4 new ones—that can now be identified using the wing pattern keys to males and females. Almost half of the species are illustrated on two superb color plates. Sands figures male genitalia for each species, and comments on identification, larval foodplants, myrmecophily, and distribution. This information will be of interest to all students of Australian Region butterflies.

Sands's classification differs from that in previous books, such as D'Abrera (1977, Butterflies of the Australian Region, Lansdowne, Melbourne) because *Hypochrysois* had been confused with *Waigeum*. *Hypochrysois* species have red bands bordered with silver-green metallic markings while *Waigeum* resemble the distinctive "Danis wing pattern" shared by a variety of unrelated Australian Region blues and hairstreaks (Eliot, J. N. 1973. Bull. Brit. Mus. [Nat. Hist.] 28:399). Sands synonymizes these two genera because they do not differ structurally and because there are transitional forms. As this brief description indicates, *Hypochrysois* are beautiful butterflies.

Two scientific highlights are noteworthy. First, Sands quantifies some of the variation that he finds in wing patterns and legs. The use of means and standard errors allows objective assessment of previous taxonomic results based on wing pattern and leg variation; hopefully Sands's example will be followed by others. Second, Sands notes that "parts of the genitalia are almost membranous when specimens are freshly emerged and do not develop complete sclerotisation until about three days after emergence." If this observation, which I believe to be original, is widely true, it would account for some genital variation found in butterflies.

Sands admirably discusses the systematic position of *Hypochrysois* among the hairstreaks. He presents an identification key to the four genera of the relatively homogeneous *Hypochrysois* Section. Clench (1955, Ann. Carnegie Mus. 33:261-274) considered these butterflies to be close relatives of the New World eumaine hairstreaks, but Eliot (above) placed them in the tribe Luciini. Sands accepts Eliot's classification, but I do not believe there is enough published information to resolve these differing views, one of the very few points on which I disagree with Sands.

Despite my high praise, there are a few minor weaknesses with the book. Sands does not illustrate the female genitalia, an unnecessary omission. His classification is based mostly on overall similarity, not phylogeny, and I hope that he will consider a phylogenetic analysis as his next project. Along the same lines, he presents a diagnosis of *Hypochrysois*, but does not specify derived character states that "define" the genus. The biggest drawback, however, is the \$38.25 price tag for a slim 116 page book with two color plates. Apparently, it was priced for libraries, not individuals. However, those interested in the Lepidoptera of the Australian Region cannot afford not to have this excellent work.

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