

and as a model faunistic study for emulation in any geographic area. Companion works on other moth families are planned, and when completed will provide coverage of Lepidoptera unexcelled by that of any other American faunistic study.

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BIOLOGIA Y MORFOLOGIA DE LAS ORUGAS. LEPIDOPTERA. VOL. 9. NYMPHALIDAE—SATYRIDAE—LYCAENIDAE—ZYGAENIDAE, by Carlos Gomez de Aizpurua. 1991. Boletín de Sanidad vegetal. Fuera de Serie No. 21. Ministerio de Agricultura, Pesca y Alimentación, Centro de Publicaciones, 1 Paseo de la Infanta Isabel, 28014 Madrid, Spain. Softcover, 18.5 × 25 cm, 226 pp., text in Spanish. 3000 pesetas (about \$30.00 U.S.).

This book is one of a series of volumes on the immatures of Spanish Lepidoptera. It includes a map for each species; a chart of the months of presence for eggs, larvae, pupae, and adults; a little about the habits of adults and immatures; and a brief mention of hostplants. But most of the text consists of lengthy descriptions of the colors of older larvae, pupae, and adults, with each stage illustrated by photographs. Unfortunately, descriptions and photographs of eggs and young larvae are not included and the book lacks such rigorous systematic niceties as morphological descriptions and setal patterns of larvae and pupae. Not all Spanish butterflies are included, and some groups are poorly represented (only one species of Melitaeini, for instance). Zygaenidae are included (Europeans treat burnet moths like butterflies because of their abundance and colorful appearance).

The book's best feature is its nice photos of older larvae and pupae. The photos are high quality, with most of each animal in sharp focus, permitting valuable comparisons with larvae and pupae of other species in other localities. In leafing through the photos, I was amazed to note that the larva of *Hipparchia statilinus* appeared identical to the larva of "*Neominois*" *ridingsii* I was rearing from Colorado, complete with the same head and body pattern and the same dark subdorsal mid-body stripe above a pink stripe. Comparison of *ridingsii* under the microscope with the photos did reveal some difference (the pink stripe of *ridingsii* is actually one stripe position lower than the pink stripe of *statilinus* and corresponds to the white spiracular stripe of *statilinus*). But surely the amazing larval resemblance must be due to phylogenetic relationship rather than to coincidence, and indeed Lee Miller (1968, Mem. Amer. Ent. Soc. 24, p. 119) placed both genera next to each other within tribe Satyrini of his family Satyridae, based on adult traits. I will be bold here, and declare that *ridingsii* is really *Hipparchia* (*Neominois*) *ridingsii*. (Furthermore, the Himalayan *Karanasa* is very close to *Neominois* according to Miller and others, so it should be demoted to a subgenus of *Hipparchia* as well.) Because generic limits are arbitrary, surely the color patterns of larvae and pupae can help harmonize the differing generic concepts in America and Europe.

The larva of *Erebia meolans* is similar to American *E. epipsodea*. The pupa and adults of Spanish *Celastrina argiolus* resemble Colorado *C. "neglecta"* more than Colorado *C. "lucia"-type*," which could help in determining whether any American form deserves the name *argiolus*. The theory that American *Lycaena phlaeas americana* came from Europe by ship suffers a setback because photographs of the Spanish adults (and English and other European adults I have seen) show the tails too long and the underside too brown to match American *americanus*; only ssp. *polaris* from Lapland has the underside gray enough and the tails short enough to match *americana*, but it has a brassy upperside. For this theory to hold water, a European population will have to be found that matches *americana*. A further setback for the theory: proponents of ship transport cite *americana*'s use of introduced European *Rumex acetosella* in America and Europe as proof, but

Colorado *Lycaena xanthoides editha* prefer it to native hosts also, evidently because of its larger leaves.

These are just a few of the interesting speculations to be made and conclusions to be drawn from comparing early life stages of different taxa across localities—a task made easier by the publication of collections of high quality color photographs such as this one.

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