

BOOK REVIEW

THE NORTH AMERICAN AEGERIIDAE (LEPIDOPTERA): A REVISION BASED ON LATE INSTAR LARVAE; by Margaret Rae MacKay. Entomological Society of Canada, Memoir 58: 1-112, including 49 figs. 1968.

Miss MacKay's revision is the most important work concerning the North American Aegeriidae since the work of Engelhardt in 1946. It is unusual for a taxonomic revision to be based entirely upon larval features. The close agreement between MacKay's conclusions about the higher classification of the Tortricidae based on her study of their larvae and the conclusions reached by Obraztsov affirm the reliability of her methods and conclusions.

The major source of material for this study was the extensive G. P. Engelhardt collection of aegeriid larvae, at the U. S. National Museum. Other material came from only five other sources. Late instar larvae of 60 of the 114 species (53%) of North American Aegeriidae were studied and thoroughly described. The author's conclusions were somewhat hampered by the fact that larvae of six genera (*sensu* Engelhardt) were not available for study. It is unfortunate that two of these genera are the sole representatives of two of Engelhardt's nine suprageneric groupings, *i.e.*, Signaphora Group and Calasesia Group.

The phylogenetic relationships of the higher categories as interpreted by MacKay differ strikingly from the arrangements of Engelhardt (1946, U. S. Natl. Mus., Bull. 190) and Niculescu (1964, *Linneana Belgica* (III) 3). The 60 species studied are treated as representing 20 genera in five tribes and two subfamilies. MacKay's study indicates that three new genera should be recognized. Since two of the new genera indicated are established from single larvae, and since genera are more normally established on the basis of adults, the genera are referred to nominally as Genus I, Genus II, and Genus III. If all authors past and present displayed such concern for nomenclatural stability, much needless work could be (have been) eliminated for future systematists. When adults of the new genera are studied in comparison with those of closely related genera or when more larval material becomes available, names can be given to these genera if justified.

In the text there are keys to all tribes, to genera within each tribe, and to species for the larger genera. The treatment of each species includes a listing of material examined, a larval description, citation of recorded hosts, and a brief statement of distribution. Ten subspecies are included by MacKay, eight of these were treated as races and two as forms by Engelhardt. MacKay does not list the latter as new combinations nor does she give any substantiation for their elevation to subspecific status.

The figures illustrate 54 of the species under consideration. These figures, which display MacKay's concern for features of taxonomic importance include setal maps, frontal view of head, arrangement of ocelli and surrounding setae, and crotchets.

There are separate indices to scientific names of the hosts and the moths at the end of the treatment.

Despite the excellence of this treatment, there remains much work to be done with the North American Aegeriidae. Engelhardt's species concept and his sometimes ambiguous usage of "race," "form," and "variety" as well as his frequent omission of type localities make it difficult for one to identify many specimens with any degree of certainty. Distribution for most non-economic species are poorly known, and several species complexes in the west urgently need study.

MacKay has now provided an excellent framework within which any new information at the species level may be easily interpolated. This work should be included in the personal library of any serious student of North American Lepidoptera.—PAUL A. OPLER, *University of California, Berkeley*.