

BOOK REVIEW

MATILE, L. 1990. Recherches sur la systématique et l'évolution des Keroplatidae (Diptera Mycetophiloidea). *Mém. Mus. nat. Hist. Nat. (A)* 148:1-682, 1283 figs. Paris ISBN 2-85653-173-3. FF 650.

This work of Dr. Loïc Matile is a brilliant example of how the best of what has been developed in the history of comparative biology - excellent morphology, phylogenetic systematics, and vicariant biogeography - can be brought together in the systematic revision of a group. This work is a study of the world Keroplatidae, except for the species of *Macrocera* and the Orfeliini.

This *opus magnum* is divided into four basic sections: morphology, systematics, phylogeny, and biogeography, also including a general introduction, conclusions, literature, and character matrices. In the first section, Matile discusses all external morphology of immatures and adults and biology, with a comparison among a representant of each of the subfamilies, Arachnocampinae, Macrocerinae, and Keroplatinae.

The second section, has keys for the species and supraspecific taxa of the family. Many new species are described, which add to the extensive study of the world Keroplatidae already made by Matile. Illustrations of head, thorax, wing, and abdomen are included for at least one species in each genus, and of male and/or female terminalia (and in many cases also of the wing) for virtually every species.

The third section has a brief *résumé* of Hennig's method, and a very detailed discussion of the evolution of each character. All morphology is reanalyzed, comparing the conditions of structures within the Mycetophiloidea (and when necessary of groups as distant as Mecoptera), trying first to establish the ground-plan condition for the Keroplatidae and then interpreting the transformation series for each character inside the family. A cladogram is proposed for the relationships among the Mycetophiloidea families, as well as for the genera and species of Keroplatidae (fully resolved in most levels).

The last section also includes a *résumé* of the biogeographical theories and makes explicit the method used in the work. The biogeographical hypotheses are elaborated under two different Post-Triassic geological assumptions: earth expansion and global tectonics. The paleontological data available is also handled and spatio-temporal scenarios are proposed for the evolution of the family in the world.

Some critical comments about the work could be eventually considered. The biogeographical method, for example, does not follow very strictly cladistic biogeography, and there is not a single final biological area cladogram for intercontinental relationships. Eventual disagreement about phylogenetic hypotheses also may be held. Another point is that the way the characters are numbered along the text makes it rather difficult to follow the discussion with the cladogram and the matrices. There is not a single final matrix for the whole family, what turns difficult to visualize more precisely the homoplasies. The classification proposed fail to reflect unequivocally the cladogram. Finally, the presence of the Orfeliini as a terminal taxon in the cladogram for the Keroplatidae would be particularly useful.

If these minor points may be raised, however, they do not make even shadow on the contribution of the work as a whole. This is not only a must for all who have any interest in the Diptera Bibionomorpha, but it is also a model of how a modern systematic revision should be made. Even if in the future some phylogenetic hypothesis come to be changed, the work will continue to be a definite source of information on the Keroplatidae. In fact, very few large groups as the Keroplatidae have ever had a so splendid treatment in the history of Dipterology.

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