Phylogenetic analysis of Rhabdepyris (Hymenoptera: Bethylidae) and redefinition of generic limits based on morphological characters

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Table of contents

Abstract .......................................................... 1
Biology of Rhabdepyris .................................................. 2
Taxonomic history of Rhabdepyris ....................................... 3
Rhabdepyris Kieffer ...................................................... 3
Materials and methods ................................................... 4
List of characters and character states .................................. 10
Results .................................................................. 17
Cladistic analysis ......................................................... 18
Taxonomy ............................................................... 18
Anisepyris Kieffer ....................................................... 22
Chlorepyris Kieffer ..................................................... 25
Laelius Ashmead ....................................................... 25
Discussion ............................................................... 26
Acknowledgements ...................................................... 27
References ................................................................. 28

Abstract

Rhabdepyris (Epyrinae) is a cosmopolitan genus comprised of 132 species. No morphological synapomorphies are known for the genus and the genus is characterized by a combination of characters common to most Epyrini. Herein, we performed a cladistic analysis based on morphological characters to test the monophyly of Rhabdepyris. The three known subgenera of Rhabdepyris (Chlorepyris, Rhabdepyris s. str., and Trichotepyris) and other Epyrini (Anisepyris, Bakeriella, Calyozina, Epyris, Laelius, Trachepyris) were included in the ingroup. The cladistic analysis of 48 taxa (46 ingroup species and two outgroup species) and 81 structural characters yielded 72 cladograms under equal weights, and one under successive weighting. Rhabdepyris was found to be polyphyletic; the subgenus Trichotepyris was closely related to Anisepyris whereas Rhabdepyris str. s. was closely related to Laelius. The subgenus Chlorepyris is paraphyletic. Morphological characters are discussed in the light of the new phylogeny; novel characters are proposed and illustrated, and a new classification of Rhabdepyris and Epyrini is proposed. The following nomenclatural changes are proposed: Trichotepyris is synonymized under Anisepyris (syn. n.); Chlorepyris is recognized as a separated genus (stat. rev.); all 12 American species of the subgenus Rhabdepyris are transferred to Laelius; 22 species of Trichotepyris are transferred to Anisepyris; 58 species are transferred to Chlorepyris. A remaining total of 40 species are now recognized in Rhabdepyris. The holotype of Rhabdepyris, R. myrmecophilus Kieffer, the type species of Rhabdepyris, is redescribed.

Key words: Epyrinae, Epyrini, classification, Anisepyris, Chlorepyris, Laelius, Trichotepyris