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Cornugon (Hymenoptera: Eulophidae: Entedoninae) a new genus from tropical America including ten new species

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Abstract

Cornugon **gen. nov.** (Hymenoptera: Eulophidae: Entedoninae) is described from the Neotropical region, including ten new species from Costa Rica, Ecuador, Honduras and Mexico: *C. albicoxa*, *C. anais*, *C. bicornis*, *C. diabolos*, *C. diceros*, *C. gibberum*, *C. leios*, *C. petiolatum*, *C. reticulatum*, and *C. unicornis* **spp. nov.** The monophyly of the genus is demonstrated through two putative morphological autapomorphies. One of the autapomorphies is in a recently discovered character system, wing interference colour patterns (WIPs). WIPs are used here for the first time at the generic level for the classification of insects. *Cornugon* is compared to *Pediobius* Walker with which it shares the most apomorphies.

Key words: Neotropical, Pediobius, taxonomy, wing interference patterns, WIP

Introduction

The knowledge of the fauna of Eulophidae in tropical America has increased considerably during the last decade, both through large monographs, e.g. Hansson (2009), and smaller contributions, e.g. Hansson (2010) and Schauff & Janzen (2001). In spite of these contributions even the most basic knowledge of what species occur in the neotropics and how to identify or classify them is still very incomplete. This is a contribution to this knowledge, adding a new genus and new species with new morphological information.

Wing interference colour patterns (WIPs) were recently introduced as a potential new character system of extremely thin insect wings (Shevtsova *et al*. 2011), i.e. of the wings of very small insects. The functional use of the patterns for the insects and for those studying insects was speculated upon in the article, but very little was actually known at the time of publication. Taxonomy was mentioned as one of the fields of research that would benefit from the discovery. The only known concrete case was indeed in taxonomy, in the genus *Achrysocharoides* Girault, where males of some species showed species-specific wing patterns. Consequently, WIPs have been proven useful for the separation of species. Here, WIPs are shown for the first time to be also advantageous for generic classification in insects.

Material and methods

Methods how to view and document interference colour patterns in thin membranous wings are explained in Shevtsova *et al*. (2011). The following is in addition to that account. Images 52–69 were made with a Nikon SMZ 1000 stereomicroscope, a halogen ring light Ø 55 mm, and a Nikon DS-Fi1 camera. As long as the optics is of high quality the brand of the microscope is not important — what is important is the angle between lines of observation and incident light beams. Using another stereomicroscope (Nikon SMZ 1500) with the same light source the colour patterns were the same as for the SMZ 1000, but appeared distinctly less bright (compare Figs 89, 90). The main difference between these microscopes is the working distance (WD) and thus the angle between lines of observation and light beams. In the SMZ 1000 this angle is 25° (WD = 60 mm) and in SMZ 1500 it is 40° (WD = 30 mm).

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