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Phylogeny and description of *Eknomia*, a morphologically unusual new genus of Neotropical Cryptinae (Hymenoptera, Ichneumonidae), with three new species

BERNARDO F. SANTOS[1] & ALEXANDRE P. AGUIAR[1,2]

[1]*Universidade Federal do Espírito Santo, Avenida Marechal Campos 1468, Eucalipto, Vitória, ES, Brazil, 29043-900.*
[2]*Corresponding author. E-mail: aguiar.2@osu.edu*

Abstract

The Cryptini *Eknomia* Santos *et* Aguiar **gen**. **nov**. is proposed, described, and cladistically compared with representative species of 40 outgroup genera from twelve cryptine subtribes. A total of 98 morphological characters were evaluated. All analyses, conducted in TNT under implied and equal weighting, clearly suggest that *Eknomia* is a monophyletic group and can be treated as a distinct genus. Its likely sister group, however, varied among different analyses and could not be ascertained. The relationships of the new genus are therefore unclear, and because of this it is not assigned to any of the currently recognized subtribes. *Eknomia* can be diagnosed mainly by the anterior transverse carina of propodeum entirely absent; propodeum more or less uniformly strigate; clypeus almost entirely flattened; ovipositor stout, with compressed, minutely serrate flange at apex of dorsal valve, subapically crossed by a subvertical line; first metasomal spiracle placed at tergite midlength or nearly so; and hind margin of metanotum with tooth-like projections. The species *E. nigra* Santos *et* Aguiar, **sp**. **nov**., *E. rubra* Santos *et* Aguiar, **sp**. **nov**. and *E. propodeator* Santos *et* Aguiar, **sp**. **nov**. are described and illustrated. The genus is recorded from Colombia to southern Brazil.

Key words: Phygadeuontinae, Cryptini, implied weighting, pan traps

Introduction

Cryptinae are the largest and one of the least studied subfamilies of Ichneumonidae, with over 4,500 described species and 407 valid genera (Yu *et al*. 2005). In tropical regions, Cryptini are by far the most representative tribe, being "the most conspicuous of all ichneumonids" (Townes 1970). Species of the tribe are mostly parasitoids of pupae and prepupae of Lepidoptera, Coleoptera and Hymenoptera (Gauld 2006).

In the Neotropics, the number of valid Cryptini genera progressed from a total of only six in 1900, to 30 in 1950, and then to 84 in 2000. This substantial increase in the number of described taxa was mostly due to the impressive efforts of Townes (1946, 1961, 1962, 1966, 1970) and Porter (1963, 1965, 1967a/b, 1973, 1977, 1985, 1987). Both authors worked on large collections of specimens collected almost exclusively by Malaise traps – Henry Townes himself was one of greatest promoter of the use of Malaise traps to sample ichneumonids (e.g. Townes 1972).

In part because of that, most ichneumonid sampling since Townes and Porter is performed essentially with Malaise traps, and this still reveals much new material. Aguiar & Santos (2010), however, demonstrated that Malaise traps may not access a large component of the ichneumonid diversity, captured otherwise very efficiently with Moericke traps (informally known as "pan traps"). These traps usually yield a very different sample at genus and species levels, suggesting that a more generalized use of pan traps could perhaps stimulate another wave of discoveries in Ichneumonidae. This is the case with the new taxa described herein, collected primarily using pan traps.

This work aims to propose a new Neotropical genus of Cryptini, to test its monophyly, to examine its placement within the subtribal classification, and to propose and describe three new species.

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