



Five new species of *Meteorus* Haliday (Hymenoptera: Braconidae: Euphorinae) from Brazil

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Abstract

Meteorus Haliday, 1835 (Hymenoptera: Braconidae) is a cosmopolitan genus with around 340 species described, all koinobiont endoparasitoids of Coleoptera or Lepidoptera larvae, and several of its hosts are pest insects. Previously to this work only two species were described from Brazil, *M. eaclidis* Muesebeck and *M. townsendi* Muesebeck. Five new species of *Meteorus* are here described: *M. atlanticus* n. sp., *M. ferruginosus* n. sp., *M. itatiaiensis* n. sp., *M. monoceros* n. sp., and *M. strigatus* n. sp. Three species are recorded for the first time from Brazil: *M. jerodi* Aguirre & Shaw, *M. laphygmae* Viereck and *M. megalops* Zitani.

Key words: Meteorini, taxonomy, parasitoid, Neotropical region

Introduction

Meteorus Haliday, 1835 is a cosmopolitan genus of koinobiont endoparasitoids of Coleoptera or Lepidoptera (Shaw 1997), comprising around 340 species worldwide, 75 of these are recorded from the Neotropical region, where the genus is recorded parasitizing only Lepidoptera, mostly in the families Erebididae, Noctuidae, Nymphalidae and Pyralidae (Aguirre *et al.* 2015). Some of their hosts are considered pest insects, including some major pests such as *Agrotis ipsilon* (Hufnagel) (Funasaki *et al.* 1988), *Lymantria dispar* (L.) (Marsh 1979), and *Spodoptera frugiperda* (Smith) (Villegas-Mendoza *et al.* 2015).

The classification of the genus has been under discussion for some time regarding its relationship with the genus *Zelee* Curtis, 1832 (Maetô 1990; Stigenberg & Ronquist 2011) and also the placement of *Meteorus* + *Zelee* in a tribe within Euphorinae or as a separate subfamily (Muesebeck 1923; Shaw 1985, 1995, 1997, 1998, 2004; Maetô 1986; Pitz *et al.* 2007; Shi *et al.* 2005; Stigenberg & Ronquist 2011). Stigenberg *et al.* (2015) in their phylogenetic analysis of the subfamily Euphorinae retrieved *Meteorus* + *Zelee* as a basal group of euphorines, and *Meteorus* as a paraphyletic genus, since *Zelee* was embedded within *Meteorus*, agreeing in this respect with the earlier works of Maetô (1990) and Stigenberg & Ronquist (2011), but refrained from proposing a change to the genus before more data are available. *Meteorus* is treated in this paper following the definition of Huddleston (1980).

In the Neotropical region this genus has only recently been the focus of taxonomic studies specially in Colombia, Costa Rica, and Ecuador with 38, 21 and 18 species respectively (Zitani *et al.* 1998; Shaw & Nishida 2005; Shaw & Jones 2009; Aguirre *et al.* 2011; Jones & Shaw 2012; Aguirre & Shaw 2014a; b; Aguirre *et al.* 2015). However, the *Meteorus* fauna remains largely unknown in tropical countries.

Only two described species from this genus were previously known from Brazil, *M. townsendi* and *M. eaclidis* (Muesebeck 1939, 1958), even though Brazil is regarded as a megadiverse country with regions like the Atlantic forest and Cerrado that have a large endemic fauna (Myers *et al.* 2000). *Meteorus* has been often cited in works involving the Brazilian fauna of Braconidae, but usually without identification to species level (see de Moraes *et al.* 1991; Braga *et al.* 2001; Cirelli & Penteado-Dias 2003; Scatolini & Penteado-Dias 2003; Sobczak *et al.* 2012), therefore it is likely that the genus has several undescribed species occurring in Brazil.