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Taxonomic notes, new species and identification key to the New World species of *Toxophora* Meigen (Diptera, Bombyliidae, Toxophorinae)

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Abstract

Two new species of *Toxophora* Meigen are described and illustrated—*T. paulistana* **sp. nov**. (Neotropical) and *T. azteca* **sp. nov**. (Nearctic and Neotropical). An identification key to the New World species is also presented. Morphological differences between populations of *T. aurea* Macquart (1848) are recorded, illustrated and added to the key. The new species are easily recognized by: scape with long, yellow scales laterally; presence of yellow scales on mesonotum margins; posterior margin of mesonotum with a pre-scutellar pair of setae; and yellow scales forming thin bands on posterior margins of abdominal tergites in *T. paulistana* **sp. nov**., and scape entirely covered with long dark-brown scales and yellow scales forming a broad, longitudinal stripe on center of abdominal tergites III-VII in *T. azteca* **sp. nov**.

Key words: Nearctic, Neotropical, taxonomy, *T. azteca* **sp. nov.**, *T. paulistana* **sp. nov.**

Introduction

Toxophorini represent one of the three tribes of Toxophorinae, together with Systropodini and Gerontini. The tribe includes only the genus *Toxophora* Meigen, 1803 with 48 species distributed in all biogeographical regions, 10 of which are restricted to the Neotropical region, and seven to the Nearctic (Evenhuis & Greathead, 1999, Zaitzev, 2005). In the past, species of *Toxophora* were included, by different authors, in two distinct genera, *Toxophora* and *Eniconevra* Macquart, 1840. The synonymy of both genera was presented in a catalogue by Kertész (1909), but without any justification.

The genus is characterized by the following characters. A stout body with humped thorax enlarged pronotum with macrochetae; ocellar tubercle with two large setae, anteriorly directed; elongated antenna, with the flagellum thin, flattened and with a long stylus. Wings have three posterior cells; the anal cell always closed with two or three submarginal cells. Abdomen strongly convex, wider than thorax at base and covered by dark brown scales, abdomen dorsally with yellow or white scales forming different patterns of spots and marks (D'Andretta & Carrera 1950). The immature stages are parasitoids of solitary wasp's larvae (Lamas *et al.* 2003).

D'Andretta & Carrera (1950) revised the Brazilian Toxophorini, redescribed the *Toxophora* species and described four species of *Eniconeura* (unjustified emendation of *Eniconevra*). They considered *Toxophora* and *Eniconevra* as valid genera based mainly on the presence of an inter-radial crossvein on *Eniconevra* species. Cunha *et al.* (2009) showed that although this character seemed enough to justify their segregation, the study of species from other regions of the world revealed that only the three species placed by D'Andretta & Carrera (1950) among *Toxophora* (*T. aurea* Macquart, 1848, *T. cuprea* (Fabricius, 1787), and *T. pallida* D'Andretta & Carrera, 1950) do not have the inter-radial crossvein. Yeates (1994) identified the epandrium fused to posterodorsal region of the gonocoxite in the male genitalia as a synapomorphy of *Toxophora*, based on the examination of *T. virgata* and *T. compta* Roberts, 1929; Cunha *et al.* (2009) did not observed this fusion on *T. aurea*.

In this paper two new species of *Toxophora* of the New World (*T. paulistana* **sp. nov**. and *T. mexicana* **sp. nov**.) are described, and an identification key to the New World species (except for *T. americana* Guérin, 1835) is presented.

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