



## Taxonomic revision of the Neotropical genus *Arthropeina* Lindner, 1949 (Diptera: Xylomyidae)

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### Abstract

Five new species are herein described for the Neotropical genus *Arthropeina* previously known only from the type-species, *A. fulva* Lindner: *A. colombiana*, **sp. nov.**, *A. diadelothorax*, **sp. nov.**, *A. lindneri*, **sp. nov.**, *A. melanochroma*, **sp. nov.** and *A. pseudofulva*, **sp. nov.** The new species are described and habitus, antenna, palpus, thorax, wing, and male and female genitalia, including genital fork and spermathecae, are illustrated. A key to the species of the genus is provided. The diagnosis of *Arthropeina* is emended to include these new species. Additionally, the genus is recorded for the first time for Guyana, Colombia, Ecuador, Peru and Bolivia.

**Key words:** *Arthropeina*, biodiversity, Neotropics, taxonomy, Xylomyidae

### Introduction

Xylomyidae is a family of the Stratiomyomorpha and sister to the Stratiomyidae (Woodley, 1989; Woodley *et al.*, 2009). The Stratiomyomorpha also includes the exclusively Neotropical family Pantophthalmidae (see Papavero, 2008, 2009). Xylomyids have a body length ranging from 4 to 14 mm and have quite varied coloration. They are easily recognized by the presence of spurs on the mid and hind tibiae, by the conical antennae, with most flagellomeres uniform in shape and color, by the elongated discal cell and by the cell  $m_3$  closed before the wing margin. Little is known about the biology of these flies, but frequently the males are associated with forest environments and the immature stages may occur under the bark of fallen trees (Webb, 1984; Woodley, 2009, 2011).

A total of 138 species of Xylomyidae have been described for the world, placed in four genera (Woodley, 2011). From these, 11 species in three genera are recorded for the Neotropics: one species in *Arthropeina* Lindner, 1949; seven species in *Solva* Walker, 1859; and three species in *Xylomya* Rondani, 1861. Most of the other species of the family are Palearctic and Oriental, respectively with 46 and 62 described species (Woodley, 2011).

Papavero & Artigas (1991) were the first to discuss the relationships between the genera of Xylomyidae in a phylogenetic perspective, using mainly female genitalia characters. More recently, Woodley (2011) proposed a new phylogenetic hypothesis for the Xylomyidae at the generic level, reinterpreting some of the characters available in the literature. In his proposal, the pair of clades (*Solva* + *Arthropeina*) and (*Coenomyiodes* + *Xylomya*) would be sister-groups.

### The genus *Arthropeina*

The genus *Arthropeina* is endemic to the Neotropical Region and before now included a single described species, *Arthropeina fulva* Lindner, 1949. The real diversity of the genus, however, is pretty large, as predicted by Woodley (2009, 2011).

## References

- Artigas, J.N. (1971) Las estructuras quitinizadas de la spermatheca y funda del pene de los asilidos y su valor sistematico a traves del estudio por taxonomia numerica (Diptera, Asilidae). *Gayana Zoologia*, 18, 1–106.
- Couri, M.S. (1998) Morphology of the quitinized structures related to the spermatheca of Muscidae (Insecta, Diptera). *Revista Brasileira de Zoologia*, 15 (3), 597–503.  
<http://dx.doi.org/10.1590/s0101-81751998000300004>
- Cumming, J.W. & Wood, D.M. (2009) Chapter 2: Adult morphology and Terminology, p. 9–50. In: Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M., Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera. Vol. 1*. NCR Research Press, Ottawa, Ontario, Canada.
- Daniels, G. (1977) The Xylomyidae (Diptera) of Australia and Papua New Guinea. *Journal of Australian Entomological Society*, 15 (4), 453–460.  
<http://dx.doi.org/10.1111/j.1440-6055.1976.tb01730.x>
- Lindner, E. (1949) Neotropische Stratiomyiiden des Britischen Museums in London. - Theil I. *Annals and Magazine of Natural History*, Series 12, 1 (11), 782–821.  
<http://dx.doi.org/10.1080/00222934808653947>
- Nagatomi, A. & Tanaka, A. (1971) The Solvidae of Japan (Diptera). *Mushi*, 45 (6), 101–146.
- Papavero, N. (2008) Catalogue of Neotropical Diptera. Pantophthalmidae. *Neotropical Diptera*, 19, 1–11.
- Papavero, N. (2009) Manual of Neotropical Diptera. Pantophthalmidae. *Neotropical Diptera*, 20, 1–11.
- Papavero, N. & Artigas, J.N. (1991) Phylogeny of the American genera of Solvidae (Xylomyidae) (Diptera), with illustrations of the female spermatheca. *Gayana Zoologia*, 55 (2), 101–113.
- Rondani, C. (1861) *Dipterologiae italicae prodromus. Vol. IV. Species italicae ordinis dipterorum in genera characteribus definita, ordinatim collectae, methodo analitica distinctae, et novis vel minus cognitis descriptis. Pars tertia. Muscidae Tachininarum complementum*. Alexandri Stocchi, Parmae, 174 pp.
- Walker, F. (1859) Catalogue of the dipterous insects collected at Makassar in Celebes, by Mr. A.R. Wallace, with descriptions of new species [part]. *Journal of the proceedings of the Linnean Society*, 4 (15), 97–144.  
<http://dx.doi.org/10.1111/j.1096-3642.1859.tb00187.x>
- Webb, D.W. (1984) A revision of the Nearctic species of the family Solvidae (Insecta: Diptera). *Transactions of the American Entomological Society*, 110 (3), 245–293.
- Woodley, N.E. (1981) A revision of the Neartic Beridinae (Diptera: Stratiomyidae). *Bulletin of Museum of Comparative Zoology*, 149 (6), 319–369.
- Woodley, N.E. (1989) Phylogeny and classification of the “orthorrhaphous” Brachycera. In: McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R. & Wood, D.M. (Eds.), *Manual of Nearctic Diptera. Vol. 3. Research Branch Agriculture Canada Monograph 32*. Ottawa, pp. 1371–1395.
- Woodley, N.E. (1999) Lectotype designations in Xylomyidae and Stratiomyidae (Diptera). *Entomological News*, 110 (4), 201–205.
- Woodley, N.E. (2009) Xylomyidae. In: Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M.; Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera. Vol. 1*. NCR Research Press, Ottawa, Ontario, Canada, pp. 517–519.
- Woodley, N.E., Borkent, A. & Wheeler, T.A. (2009) Phylogeny of Diptera. In: Brown, B.V., Borkent, A., Cumming, J.M., Wood, D.M., Woodley, N.E. & Zumbado, M.A. (Eds.), *Manual of Central American Diptera. Vol. 1*. NCR Research Press, Ottawa, Ontario, Canada, pp. 79–94.
- Woodley, N.E. (2011) A world catalog of the Xylomyidae (Insecta: Diptera) In: Thompson, F.C., Brake, I. & Lonsdale, O. (Eds.), *Contributions to the Biosystematic Database of World Diptera. Myia*, 12, 417–453.