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Revision of the Neotropical genus *Malacophagomyia* (Diptera: Sarcophagidae) with description of a new species

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Abstract

The small Neotropical genus *Malacophagomyia* Lopes is revised. Two previously recorded species from tropical South America are redescribed: *M. filamenta* (Dodge) and *M. kesselringi* Kano & Lopes. One new species is described, *M. rivadavia* sp. nov., from temperate southern South America. The structures of the male genitalia of the species of this genus are compared, and some female genitalic structures of *M. filamenta* are reinterpreted. Diagnostic characters to recognize the three species are given. Additionally, a key to described species of *Malacophagomyia* is presented.

Key words: Calypterae, Sarcophaginae, flesh flies, systematics, *Malacophagomyia*

Introduction

The genus *Malacophagomyia* Lopes is a small group of Neotropical sarcophagine flies known from two described species. The genus was erected by Lopes (1966), with *Sarcophaga filamenta* Dodge, 1963 as the type species, on the basis of unique features of the male and female genitalia. Two years later, Kano & Lopes (1968) described a second species, *M. kesselringi*, from northeastern Brazil.

Lopes (1969, 1983) in his tribal array of the Sarcophaginae, placed the genus *Malacophagomyia* in the Sarcophagini. The generic definition is supported by the remarkable morphology of its genitalia bearing some distinctive characters, as follows: phallus with a median stylus very elongated, and a conspicuously recurving juxta arching over the lateral styli in lateral view; pregonite (gonocoxital lobe) with apex bent upwards, and with membranous (less sclerotized) area along ventral, inner margin and near the bent apical part (Pape 1996).

Regarding the biology of *Malacophagomyia* species, *M. filamenta* was recorded from gastropods by Lopes (1966). The genus was thought to be restricted to tropical areas of South America, but our new species occurs in temperate Argentina. We redescribe the male and female of *M. filamenta* and the male of *M. kesselringi*, especially focusing on features of the genitalia.

Material and methods

Phallic structures of the male holotype of the new species were exposed using the technique described by Lopes (1973) and Dahlem and Naczi (2006), after keeping the specimen in a moist container for 24 hours. The genitalia of male and female specimens of *M. filamenta* were extracted and cleared in 10% potassium hydroxide, then transferred to 10% acetic acid, and washed in distilled water. The structures of genitalia were mounted on a concave slide for study and then preserved in glycerin and stored in plastic microvials pinned below the associated specimens.

The terminology used in the descriptions of external morphology follows that of McAlpine (1981) and

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References

- Cumming, J.M. & Wood, D.M. (2009) Adult morphology and terminology. *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*. NRC Research Press, Ottawa, Canada, pp. 9–50.
- Dahlem, G.A. & Naczi, R.F.C. (2006) Flesh flies (Diptera: Sarcophagidae) associated with North American pitcher plants (Sarraceniaceae), with descriptions of three new species. *Annals of the Entomological Society of America*, 99, 218–240. [http://dx.doi.org/10.1603/0013-8746\(2006\)099\[0218:ffdsaw\]2.0.co;2](http://dx.doi.org/10.1603/0013-8746(2006)099[0218:ffdsaw]2.0.co;2)
- Dodge, H.R. (1963) New sarcophagine flies (Diptera: Sarcophagidae). *Journal of the New York Entomological Society*, 71, 238–243.
- Giroux, M. & Wheeler, T.A. (2009) Systematics and phylogeny of the subgenus *Sarcophaga* (*Neobellieria*) (Diptera: Sarcophagidae). *Annals of the Entomological Society of America*, 102, 567–587. <http://dx.doi.org/10.1603/008.102.0401>
- Giroux, M., Pape, T. & Wheeler, T.A. (2010) Towards a phylogeny of the flesh flies (Diptera: Sarcophagidae): morphology and phylogenetic implications of the acrophallus in the subfamily Sarcophaginae. *Zoological Journal of Linnean Society*, 158, 740–778. <http://dx.doi.org/10.1111/j.1096-3642.2009.00561.x>
- Kano, R. & Lopes, H.S. (1968) A new species of the genus *Malacophagomyia* from Paraiba, Brazil (Diptera, Sarcophagidae). *Revista Brasileira de Biologia*, 28, 303–306.
- Lopes, H.S. (1966) Sobre *Malacophagomyia* g.n. (Diptera, Sarcophagidae) cujas larvas vivem em cadáveres de Gastropoda (Mollusca). *Revista Brasileira de Biologia*, 26, 315–321.
- Lopes, H.S. (1969) Family Sarcophagidae. *In*: Papavero, N. (Ed.), *A catalogue of the Diptera of the Americas south of the United States*. Chapter 103. Departamento de Zoologia, Secretaria de Agricultura, São Paulo, pp. 1–88.
- Lopes, H.S. (1973) Collecting and rearing sarcophagid flies (Diptera) in Brazil during forty years. *Anais da Academia Brasileira de Ciências*, 45, 279–291.
- Lopes, H.S. (1983) The importance of the mandible and clypeal arch of the first instar larvae in the classification of the Sarcophagidae (Diptera). *Revista Brasileira de Entomologia*, 26, 293–326.
- Lopes, S.M. (2000) A influência de vários fatores abióticos na atratividade de dípteros muscóides em lixo urbano exposto. *Entomologia y Vectores*, 7, 163–189.
- McAlpine, J.F. (1981) Morphology and terminology—adults. *In*: McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R. & Wood, D.M. (Eds.), *Manual of Nearctic Diptera. Volume 1. Agriculture Canada Monograph*, 27, 9–63.
- Mello-Patiu, C.A. & Pape, T. (2000) Definitions of *Dexosarcophaga* Townsend, 1917 and *Sarcofartiopsis* (Hall, 1933), including two new species and redescriptions of *Sarcofartiopsis cuneata* (Townsend, 1935) (Diptera, Sarcophagidae). *Boletín de Entomología Venezolana*, 15, 181–194.
- Mello-Patiu, C.A., Soares, W.F. & Silva, K.P. (2009) Espécies de Sarcophagidae registradas no Estado do Rio de Janeiro. *Arquivos do Museu Nacional, Rio de Janeiro*, 67, 173–188.
- Pape, T. (1996) Catalogue of the Sarcophagidae of the world (Insecta: Diptera). *Memoirs on Entomology, International*, 8, 1–558.
- Pape, T. & Dahlem, G.A. (2010) Sarcophagidae (flesh flies). *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. 2*. NRC Research Press, Ottawa, Canada, pp. 1313–1335.
- Stuckenberg, B.R. (1999) Antennal evolution in the Brachycera (Diptera), with a reassessment of terminology relating to the flagellum. *Studia Dipterologica*, 6, 33–48.