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Descriptions of five new species of *Paduniella* from Madagascar (Trichoptera: Psychomyiidae)

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Abstract

Five new species of *Paduniella* (Trichoptera: Psychomyiidae) are described: *P. flinti*, *P. nandra*, *P. ambra*, *P. madagassa*, and *P. sona*, representing the first records of the genus from Madagascar and more than doubling the number of *Paduniella* species known from the Afrotropical Region.

Key words: Trichoptera, Psychomyiidae, *Paduniella*, Madagascar, new species, taxonomy

Introduction

The genus *Paduniella* Ulmer, 1913 includes 61 previously described species (Morse 2008, Johanson and Oláh submitted, Morse 2008) and together with *Psychomyia* Latreille, 1829 and *Metalype* Klapálek, 1898 comprise the subfamily Psychomyiinae (Li and Morse 1997a). With about 140 described species, the genus *Psychomyia* is the largest of the three genera in the subfamily, while *Metalype* is the smallest with only 4 described species. Four *Paduniella* species are previously described from the Afrotropical Region: *P. africana* (Ulmer, 1922), *P. ankya* Mosely, 1939, *P. capensis* Barnard, 1940 and *P. filamentosa* Jacquemart and Statzner, 1981.

A phylogenetic analysis by Li and Morse (1997b) suggested that three Afrotropical species (*P. africana*, *P. filamentosa* and *P. ankya*) form a polyphyletic group with *P. africana* + *P. filamentosa* being more closely related to species from the Oriental Region than to *P. ankya*. None of the Afrotropical species included in the analysis had a basal phylogenetic position and we consider their ancestors to have dispersed from the Oriental to the Afrotropical Region independently.

The family Psychomyiidae was first recorded from Madagascar by Johanson and Oláh (2007), with the descriptions of 4 species of *Tinodes* from Mt. d'Ambre and Ranomafana. In this paper, we describe 5 new species of *Paduniella*, which represent the first record of the genus from Madagascar.

Material and methods

There are various sources of the material included in this study. The material from Mt. d'Ambre was collected from by Stuckenber (no date) and Renaud Paulian in December 1949. The material from Namoroka was collected by Renaud Paulian in September 1952, the material from Mahitsy was collected by Renaud Paulian in September 1954, and the material from Ranomafana was collected by Claire Kremen in September 1988, and by Warren E. Steiner, Jr. in October–November 1988 and January-March 1990. Holotypes are deposited in Muséum National d'Histoire Naturelle in Paris, France (MNHN) and National Museum of Natural History (Smithsonian Institution), Washington, D. C., U. S. A. (NMNH). Some of the paratypes are deposited in the

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