



Polytene chromosomes of *Simulium (Psaroniocompsa) daltanhani* (Diptera: Simuliidae) from Central Amazonia, Brazil

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Abstract

Last-instar larvae of *Simulium (Psaroniocompsa) daltanhani* Hamada and Adler from a stream in Central Amazonia were analyzed cytologically by mapping their polytene chromosomes. *Simulium daltanhani* has the nucleolar organizer in the short arm of chromosome I, heterogametic females, and an absence of autosomal polymorphisms. The chromosomes carry multiple rearrangements relative to other analyzed members of the *S. quadrifidum* species group in the subgenus *Psaroniocompsa*. One-third of the chromosomal complement is rearranged relative to the sequence of *S. ulyssezi*, the species with the most similar banding pattern among studied members of the *S. quadrifidum* group.

Key words: aquatic insects, black flies, cytotaxonomy, polytene chromosomes, Simuliidae

Introduction

The economic and epidemiological importance of the family Simuliidae has stimulated studies of taxonomy, ecology, management, and cytogenetics (Crosskey 1990). Sibling species (i.e., morphologically similar but reproductively isolated species) are frequent among black flies. Species identifications, therefore, can be difficult when only conventional morphological characters are used. Cytogenetic studies, however, have helped clarify simuliid taxonomy (Rothfels 1979).

The classification of black flies in the Neotropical Region continues to be debated, particularly with regard to the ranking of taxa (e.g., Py-Daniel & Sampaio 1995; Crosskey & Howard 2004; Coscarón & Coscarón Arias 2007). Species in the subgenus *Psaroniocompsa* Enderlein are an example of this situation. Py-Daniel (1983) removed some species from this subgenus and created two new subgenera: *S. (Cerqueirellum)* and *S. (Coscaroniellum)*. Py-Daniel and Sampaio (1995) elevated all subgenera of *Simulium* from the Neotropical Region to the generic level. Crosskey and Howard (2004) did not recognize this change and considered *S. (Cerqueirellum)* and *S. (Coscaroniellum)* to be in the *S. amazonicum* and *S. quadrifidum* species groups, respectively, in the subgenus *Psaroniocompsa*.

Simulium daltanhani Hamada and Adler, 1998 was described from Central Amazonia and is known from Manaus, Itacoatiara, and Presidente Figueiredo counties in the state of Amazonas (Hamada & Adler 2001). This species is characteristic of anthropogenic environments. Hamada and Adler (1998) placed the species in the subgenus *Psaroniocompsa*, Py-Daniel and Coscarón (2001) placed it in the genus *Coscaroniellum*, and Crosskey and Howard (2004) considered it to be in the *S. quadrifidum* species group, one of five species groups in the subgenus *Psaroniocompsa*.