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Description of the nymph of *Massartella alegrettae* Ulmer, 1943 (Ephemeroptera: Leptophlebiidae: Atalophlebiinae) with a key to *Massartella* Lestage, 1930 nymphs

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Abstract

The South American genus *Massartella* Lestage, 1930 is composed of five species. *Massartella alegrettae* Ulmer, 1943 is the only species with the nymph unknown. In this paper, we describe the nymph of *M. alegrettae* based on specimens from the state of São Paulo, Brazil. This is the first record of the species from southeastern Brazil. The nymph can be easily recognized by the gills present on segments I-V, with dark gray membrane and without apical processes.

Key words: taxonomy, mayflies, Neotropics, Brazil

Introduction

Massartella Lestage, 1930 (Ephemeroptera: Leptophlebiidae) is a Neotropical genus restricted to South America, with distribution from southeastern Brazil to northeastern Argentina, and the Guiana Shield along the Venezuela-Brazil border (Pescador & Peters 1990; Derka *et al.* 2009). According to Savage (1987), *Massartella* is one of the leptophlebiid genera of the Neotropics composing the Patagonian Shield, South Andean cold-adapted genera. Pescador & Peters (1980) included *Massartella* in the *Penaphlebia* lineage, a group also composed of another South American genus, *Penaphlebia* Peters & Edmunds, 1972 and a then undescribed Australian genus, later named *Garinjuga* Campbell & Suter, 1988 (O'Donnell *et al.* 2008). Domínguez (2009), however, in his phylogenetic analysis on the two-winged genera of South American Leptophlebiidae using morphological data, did not recover a close relationship between *Massartella* and *Penaphlebia*. According to Domínguez (2009), *Massartella* was recovered as the sister-group of two other South American genera, *Rhigotopus* Pescador & Peters, 1982 and *Hapsiphlebia* Peters & Edmunds, 1972.

The habitats of *Massartella* nymphs range from cold mountain streams and rivers to small lowland forest streams (Domínguez *et al.* 2006). They can be collected from leaf-packs in slow or rapidly flowing streams, with muddy, stony or gravel bottoms, and from rocks in the swift currents of small streams to large rivers (Pescador & Peters 1990; Derka 2002; Domínguez *et al.* 2006). According to Domínguez *et al.* (2006) only some few individuals compose the swarm, which takes place in midmorning, but in Brazil we observed some adults flying at dusk until evening.

Atalophlebia brieni Lestage, 1924 is the type-species of the genus *Massartella* (Lestage 1930) and was described from adults (Lestage 1924). Later, Demoulin (1955) described the nymph of *M. brieni*. Ulmer (1943) described two more species, *M. alegrettae* Ulmer, 1943 and *M. fruhstorferri* Ulmer, 1943, the last one synonymized with *M. brieni* by Pescador & Peters (1990). In the same paper, Pescador & Peters (1990) described *M. venezuelensis* Pescador & Peters, 1990 and Derka (2002, 2009) described two more species, *M. devani* Derka,