



Description of a new species of *Byrsopteryx* (Trichoptera: Hydroptilidae) from Rio de Janeiro State, Brazil, including its immature stages

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Abstract

Byrsopteryx Flint, 1981 is a small genus of microcaddisflies exclusively Neotropical in distribution. Currently, 15 species are known in the genus, 2 of which occur in Brazil, both described from Rio de Janeiro State. In this paper, we provide descriptions and illustrations for all stages of a new species of *Byrsopteryx* from Rio de Janeiro State, Brazil. *Byrsopteryx carioca* sp. nov. is distinguished from other *Byrsopteryx* species by male genitalia with a pair of spine-like ventral projections posteriorly on segment IX, the dorsolateral processes from segment IX each with an acute ventral projection, and the phallus simple internally with a short, bifurcate apical sclerite. In addition, we describe the female of *Byrsopteryx espinhosa* Harris & Holzenthal, 1994, and record *Byrsopteryx abrelata* Harris & Holzenthal, 1994, from São Paulo State, Brazil.

Key words: Leucotrichiini, *Byrsopteryx carioca* sp. nov., *Byrsopteryx espinhosa*, *Byrsopteryx abrelata*, Atlantic Forest, new species

Introduction

The caddisfly family Hydroptilidae is the largest in the order Trichoptera, with about 2,000 known species (Holzenthal *et al.* 2007). However, species in the family are among the smallest caddisflies (adults rarely exceed 5.0 mm in length). Marshall (1979) divided the family into 2 subfamilies: Hydroptilinae (cosmopolitan) and Ptilocolepinae (Holarctic and Oriental regions). Marshall (1979) divided the Hydroptilinae into 6 tribes: Hydroptilini, Leucotrichiini, Neotrichiini, Ochrottrichiini, Orthotrichiini, and Stactobiini. All 6 tribes of Hydroptilinae occur in the Neotropics, with over 600 described species.

The genus *Byrsopteryx* Flint, 1981 was established for *B. mirifica* Flint, 1981, from Venezuela and for *B. septempunctata* (Flint, 1968) from Dominica, the latter species originally described in *Alisotrichia* Flint, 1964. Flint (1981) placed the genus in the Leucotrichiini, but mentioned the equivocal position of *Byrsopteryx*. In the last review of the genus, Harris & Holzenthal (1994) described new species and transferred the genus to the Stactobiini. The genus has returned to the Leucotrichiini (Bowles *et al.* 1999) and currently contains 15 described species. Two species were described from Brazil: *Byrsopteryx abrelata* Harris & Holzenthal, 1994, and *Byrsopteryx espinhosa* Harris & Holzenthal, 1994, both known from only Rio de Janeiro State at the time.

Byrsopteryx larvae build portable cases and are found in the spray zones of small waterfalls and on boulders in small streams. The larvae apparently feed by scrapping diatoms and periphyton from the substrate (Harris & Holzenthal 1994, Flint *et al.* 1999). Groups of the pupal cases in small depressions on rock surfaces are attached upright to the substrate by a short posterior stalk. Adults of *Byrsopteryx* generally are black with contrasting white spots on the forewings. They are active during the day, unlike many caddisflies, and in the bright sunlight they erratically run over streambed rocks and boulders. Occasionally they stop and freeze in position (Harris & Holzenthal 1994, Flint *et al.* 1999).