



Description of the immature stages of *Notalina morsei* Holzenthal, 1986 (Trichoptera: Leptoceridae) and an updated key to larvae of Neotropical Leptoceridae genera

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Abstract

The endemic Neotropical long-horned caddisfly subgenus *Notalina* (*Neonotalina*) Holzenthal contains nine described species, but its immature stages are unknown. In this paper the larvae and pupae of *Notalina morsei* Holzenthal 1986 from southeastern Brazil are described and illustrated. Larvae of the subgenus are easily recognized from other Neotropical leptocerids by the following characters: ventral apotome which is broad anteriorly and narrow posteriorly; the metanotum with three sclerites; the metasternum bearing 10–12 setae; the gill arrangement, usually including ventral and dorsal filaments from abdominal segments II to VI; and abdominal tergite IX with 6 long and 4 short setae. An updated key to known larvae of Neotropical Leptoceridae genera is provided.

Key words: Leptoceridae, *Notalina*, Neotropical, taxonomy, larvae, pupae, key

Introduction

Leptoceridae Leach 1815 is a cosmopolitan family of caddisflies containing 1,567 described species, making it the second largest family in the order Trichoptera after the Hydroptilidae (1,677 species) in known species richness (Morse 2003). Leptocerid larvae are found in an extensive variety of habitats, ranging from high mountain torrents and cascades to meandering lowland rivers, sloughs, and even semi-terrestrial habitats (Holzenthal 1988a). The larvae construct tubular cases from a wide range of materials, including, at least in the Neotropics, small sand grains, pieces of grass stems, leaf detritus, small hollowed-out twigs, or entirely from silk (Holzenthal 1988a).

The genus *Notalina* was erected by Mosely (1936) for three Australian species, *Notalina parkeri* (type species), *N. delicatula* (Ulmer, 1908), and *N. flava* (Ulmer, 1908). Since then, 24 species have been described in two subgenera, *N.* (*Notalina*) and *N.* (*Neonotalina*) Holzenthal from the Australian and Neotropical regions, respectively. In *Notalina* (*Notalina*), 15 species have been described: *N. arena* St. Clair, 1991, *N. bifaria* Neboiss, 1977, *N. dwellinga* Neboiss, 1982, *N. fulva* Kimmins, 1953, *N. gungarra* Neboiss, 1984, *N. moselyi* Kimmins, 1953, *N. nigra* (Mosely, 1953), *N. ordina* St. Clair, 1991, *N. pseudodelicatula* Neboiss, 1982, *N. salina* St. Clair, 1991, *N. spira* St. Clair, 1991, and *N. tillyardi* Kimmins, 1953. Of these, immature stages have been described for seven species (*N. arena*, *N. fulva*, *N. ordina*, *N. salina*, *N. spira*, *N. moselyi*, and *N. bifaria*) by St. Clair (1991).

In the Neotropical subgenus, there are nine described species: *N. brasiliiana* Holzenthal, 1986, *N. morsei* Holzenthal, 1986, *N. cipo* Holzenthal, 1986, *N. hamiltoni* Holzenthal, 1986, *N. roraima* Holzenthal, 1986, *N. nanay* Holzenthal, 1986, *N. matthiasi* Holzenthal, 1986, *N. paulista* Calor & Holzenthal, 2006, and *N. froehli-*