



Larval morphology of *Liodesus* Guignot, 1939: generic characteristics, descriptions of five species and comparisons with other members of the tribe Bidessini (Coleoptera: Dytiscidae: Hydroporinae).

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Abstract

The larvae of *Liodesus affinis* (Say, 1823), *L. crotchi* Nilsson, 2001, *L. flavofasciatus* (Steinheil, 1869), *L. involucer* (Brinck, 1948), and *L. patagonicus* (Zimmermann, 1923) are described with an emphasis on chaetotaxy of the head capsule, head appendages, legs, last abdominal segment and urogomphi. Larvae of these species are very uniform in terms of larval morphology. Considering all known bidessine larvae, *Liodesus* Guignot, 1939 is more similar to *Hypodesus* Guignot 1939, *Amarodytes* Régimbart, 1900, *Anodocheilus* Babington, 1841, *Glareadessus* Wewalka & Biström, 1998, *Allodesus* Guignot, 1953, and *Neoclypeodytes* Young, 1967, all these genera sharing a short siphon and an elongate first urogomphomere. *Liodesus* differs from *Hypodesus*, *Amarodytes* and *Anodocheilus* by absence of the primary pore PAj whereas it shares with *Anodocheilus* the absence of a ventroapical spinula on the third antennomere.

Key words: Bidessini, *Liodesus*, larval morphology, chaetotaxy

Introduction

Liodesus Guignot, 1939 is a genus of 39 known species mostly distributed in North and South America, Africa, New Zealand and several islands including Tristan da Cunha (Miller 1998; Nilsson 2001, 2003; Nilsson & Fery 2006). Species of this genus are small and generally found in waters with heavy organic debris. *Liodesus* is one of 41 genera of the tribe Bidessini (ca 600 species worldwide) (Nilsson 2001, 2003, 2004; Nilsson & Fery 2006) and is probably polyphyletic (Miller 1998; Larson *et al.* 2000).

Larval morphology of *Liodesus* is practically unknown as the first instar of only one species, *L. affinis* (Say, 1823) has been described (Alarie & Harper 1990; Alarie *et al.* 1990; Alarie 1991). Larval morphology is of great interest in the study of phylogenetic relationships of Holometabola. As different expression of the same genotype, larval characters help to complement adult characters, which have been traditionally the primary basis for classification. A putative phylogenetic hypothesis of relationship based on larval morphology between *Liodesus* and selected genera of Bidessini was formulated recently (Michat & Alarie 2007). This hypothesis should not be viewed as strongly supported, however, as only one species of *Liodesus* (*L. affinis*) was involved.