



Primary chaetotaxy of the larval head capsule and head appendages of the Hydrophilidae (Coleoptera) based on larva of *Hydrobius fuscipes* (Linnaeus, 1758)

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Abstract

The primary chaetotaxy of the larval head capsule and head appendages of the family Hydrophilidae (Insecta: Coleoptera) is described and illustrated using the larva of *Hydrobius fuscipes* (Linnaeus, 1758) as a model, and compared with fifteen hydrophilid taxa representing all main taxonomic groups within the family; brief comparative notes with representatives of the families Helophoridae, Spercheidae, Hydrochidae and Histeridae are also provided. Primary chaetotaxonomic nomenclature is developed for the Hydrophilidae, allowing the use of chaetotaxonomic characters for phylogenetic studies as well as diagnostic purposes. The study of representatives of the families Helophoridae, Hydrochidae and Spercheidae suggests that this nomenclature can also be effectively applied to other hydrophiloid families. Chaetotaxonomic nomenclature systems used in larvae of other groups of Coleoptera are briefly reviewed.

Key words: chaetotaxy, head capsule, head appendages, Hydrophilidae, Coleoptera, Insecta

Introduction

Hydrophiloidea (*s. str.*) comprises a large group of beetles, worldwide in distribution, containing six families, 180 genera and about 3150 described species (Hansen 1999; Short & Hebauer 2006). Bionomically, they are a very diverse group of beetles, inhabiting both aquatic and terrestrial habitats. Adults and larvae are common in freshwater, riparian habitats, phytotelmata, decaying plant material, carrion, dung, etc. Feeding habits are contrasting: adults are mostly scavengers (including necrophagy) or herbivores, predatory in a few cases (Wilson 1923a,b; Miller 1963), while larvae are almost always predatory (Balduf 1935; Böving & Henriksen 1938; Miller 1963; Spangler 1991; Archangelsky 1997; Archangelsky et al. 2005).

The family Hydrophilidae (*s. str.*) comprises over 2650 species (Hansen 1999; Short & Hebauer 2006) and has been subdivided into four subfamilies. Of these subfamilies, Hydrophilinae and Sphaeridiinae are the most diverse and include several tribes each. Adults and larvae of Hydrophilidae are quite common, their size ranging from about 1.5 mm to about 50 mm in some genera (e.g. *Hydrophilus* Geoffroy, 1762).

For most beetle families, knowledge of the larval stages is generally very poor. Although immature stages of hydrophilids are better known than in other groups, there remains a lot of work to do within the family (Archangelsky 1999). Most work on immatures of this family has focused on their biology and general mor-