

Larval morphology of *Arrenurus cuspidifer* Piersig, *A. claviger* Koenike, and *A. latus* Barrois & Moniez (Acari: Hydrachnidia)

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Abstract

The larva of *Arrenurus latus* is re-described and the larvae of *A. cuspidifer* and *A. claviger* are described for the first time. The larvae of *A. cuspidifer* and *A. claviger* share characters, such as shape of dorsal plate, shape of excretory pore plate and ratios of medial margins of coxal plates, which they also share with other *Arrenurus* s. str. species. In contrast, *A. latus*, a member of *Micrarrenurus*, lacks these characters. Instead, it closely resembles other members of *Micrarrenurus* such as *Arrenurus albator*, *A. fimbriatus* and *A. crassicaudatus* in having similar shape of dorsal plates, similar shape of excretory pore plates and pectinate setae on the PV3 and PV4 of the pedipalps. Therefore, the subgenus *Micrarrenurus* is further supported by characters of larval morphology.

Key words: Parasitengona, water mite, *Arrenurus* s. str., *Micrarrenurus*, larvae

Introduction

Water mites have three active stages: larva, deutonymph and adult; the deutonymph and adult are predators, larvae are generally parasitic (Gledhill 1985). Investigating relationships between water mite larvae and their hosts can be important for resolving the distribution, dispersal and phylogeny of various species. Additionally, water mite larvae may influence Odonata populations, as indicated by mite larvae which remain on exuviae of Odonata which failed to moult from final stage larvae to imagos (Zawal 2006f). However resolving these problems without knowledge of larval morphology is impossible.

The aim of such studies is to describe the morphology of the larvae of individual species, and larvae of the genus *Arrenurus* Duges are insufficiently known. In recent years such studies have been conducted by Imamura and Mitchell (1967), Prasad and Cook (1972), Stechmann (1977), Vajnštejn (1980), Smith (1990), Smith and Cook (1991),