



## Larval morphology of *Atractides ildensis* Tuzovskij, 2005, *A. moniezi* (Motaş, 1927), and *A. graecus* Viets, 1950 (Acari: Hydrachnidia: Hygrobatidae)

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### Abstract

First illustrated descriptions of the larvae of three water mite species of the genus *Atractides* are presented: *A. ildensis* Tuzovskij, 2005, *A. moniezi* (Motaş, 1927), and *A. graecus* Viets, 1950.

**Key words:** water mites, Hygrobatidae, *Atractides*, *A. ildensis*, *A. moniezi*, *A. graecus*, morphology, larva

### Introduction

So far, the water mites of *Atractides moniezi* (Motaş, 1927), *A. graecus* Viets, 1950, and *A. ildensis* Tuzovskij, 2005 distributed in Europe and were hitherto only known as adults (Gerecke 2003, Tuzovskij 2005). Larvae of the genus *Atractides* are known to parasitize the abdominal region of imagos of the family Tipulidae and Chironomidae (Diptera) and Limnephilidae (Trichoptera) (Smith & Oliver 1986, Martin & Stur 2006). The present paper describes for the first time the larvae of the above named species.

### Material and methods

Specimens were collected by the author in streams of the European part of Russia and in Ukraine. To obtain larvae, water mites were maintained in laboratory conditions. Eggs and larvae obtained from females kept individually in glass or transparent plastic vessels with diameters 10–15, and a height 15 mm.

Idiosomal setae and lyriform organs are named according to Tuzovskij (1987): *Fch*—frontales chelicerae, *Fp*—frontales pedipalporum, *Vi*—verticales internae, *Ve*—verticales externae, *Oi*—occipitales internae, *Oe*—occipitales externae, *Hi*—humerales internae, *He*—humerales externae, *Hv*—humerales ventralia, *Sci*—scapulares internae, *Sce*—scapulares externae, *Li*—lumbales internae, *Le*—lumbales externae, *Si*—sacrales internae, *Se*—sacrales externae, *Ci*—caudales internae, *Pi*—praeanales internae, *Pe*—praeanales externae, *Ai*—anales internae, *Ae*—anales externae.

Furthermore, the following abbreviations are used: P–1–5, pedipalp segments (trochanter, femur, genu, tibia and tarsus); I–Leg–1–5, first leg, segments 1–5 (trochanter, femur, genu, tibia and tarsus) i.e. III–Leg–3 = genu of third leg; C1—coxal setae located posteromedially on coxa I, C2—coxal seta located posterolaterally on coxa I, C3—coxal seta located posterolaterally on coxa II, C4—coxal seta located anteriorly on coxa III, s—solenidion, ac—acanthoid seta; L—length; W—width, D—diameter, *tmas*—transverse muscle attachment scar located on coxa III posteromedially, n = number of specimens measured; all measurements are given in µm.