

LARVAL MORPHOLOGY OF THE WATER MITE *ATRACTIDES ACUTIROSTRIS* MOTAŞ ET ANGELIER (ACARI: HYGROBATIDAE)

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ABSTRACT: The first illustrated description of the water mite larva *Atractides acutirostris* from Russia is given.

KEY WORDS: Hygrobatidae, *Atractides acutirostris*, water mite, larva.

INTRODUCTION

The water mite *Atractides acutirostris* is widely distributed in Europe and is only known from adults (Gerecke 2003). From the former USSR this species has been found in Crimea (Lukin 1931). I found this species in the North Caucasus and Yaroslavl' Province, and describe the larva.

MATERIAL AND METHODS

Adults *Atractides acutirostris* were collected by the author from the stream Ubin near settlement Ubinskaya, Seversk Distr., Krasnodar Territory, May–June 1976; and from stream Il'd' near village Mar'ino, Nekouz Distr., Yaroslavl' Province, May–August 2003, 2006. Larvae (n= 28) were reared from five females in the laboratory conditions. The duration of the embryonic period at room temperature was 11–16 days.

Nomenclature of idiosomal setae follows that Tuzovsky (1987). The following abbreviations are used: *c1* — coxal seta 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; *mas* — transverse muscle attachment scar.

Atractides acutirostris Motaş et Angelier, 1928

Figs 1–3

Larva description. Body flat and elongated, dorsal shields in unengorged larvae covers almost all dorsum (Fig. 1 a). Dorsal shield slightly expanded in distal half, its anterior margin straight. Dorsal shield bears four pairs of setae in anterior portion: two pairs of simple setae (*Fch*, *Vi*) and two pairs of trichobothria (*Fp*, *Oi*). Simple setae long and thick, anterior setae (*Fch*) longer than posterior setae (*Vi*). Both pairs of trichobothria short and thin, subequal. Nine pairs of setae (*Oe*, *Hi*, *He*, *Sci*, *Sc*, *Li*, *Le*, *Si*, *Se*) are situated on soft wrinkled membrane. Setae *Oe*, *Hi*, *Sc* subequal, longer and thicker than other setae situated on soft membrane.

Coxae I–III fused to each other on each side, suture line between them developed only in their lateral parts (Fig. 1 b). Both setae (*c1*, *c2*) on coxae I short and subequal. Lateral setae (*c3*) on coxae II longer than medial seta (*c4*) on coxa III. Urstigma with cap, very small, occupy lateral position on border between coxae I and II. Well developed *mas* situated in posteromedial corner of coxae III. All leg coxae with reticulated pattern consisting of elongated cells. Setae *Ci* very long and thick, located on elongated projections.

Excretory pore plate large, its width being nearly twice its length, with convex anterior and posterior margins (Fig. 2 a), bearing four pairs of setae (*Ai*, *Ae*, *Pi*, *Pe*). Both pairs of anal setae (*Ai*, *Ae*) usually reduced and represented by alveoli. Distance between setae *Ae*–*Ae* twice as long as distance between setae *Ai*–*Ai*. Setae *Pi* and setae *Pe* equal in length and situated near anterior margin of anal plate. Excretory pore situated between setae *Ae* in center of plate.

Capitulum (Fig. 2 b) elongate with rather wide base and narrow rostrum, anterior and posterior pairs of setae subequal. Basal part of capitulum longer than rostrum.

Basal segments of chelicerae fused to each other medially, their posterior edges concave (Fig. 2 c). Cheliceral stylet small, crescent-shaped with single subapical tooth (Fig. 2 d).

Palps relatively short (Fig. 2 e). Trochanter very short, without setae and fused to femur, suture between these podomeres usually visible in young specimens; femur with one short, thin dorsodistal seta; genu with long, thick proximal seta and short, thin dorsodistal one; tibia with two rather long unequal setae and massive dorsodistal claw; tarsus small, with one rather long solenidion and short, thin simple setae.

Leg 5-segmented. Shape and arrangement of setae on leg segments as shown in Figs 2 f; 3 a, b. Total number of leg setae, excluding eupathidia, as follows (specialized setae indicated in paren-

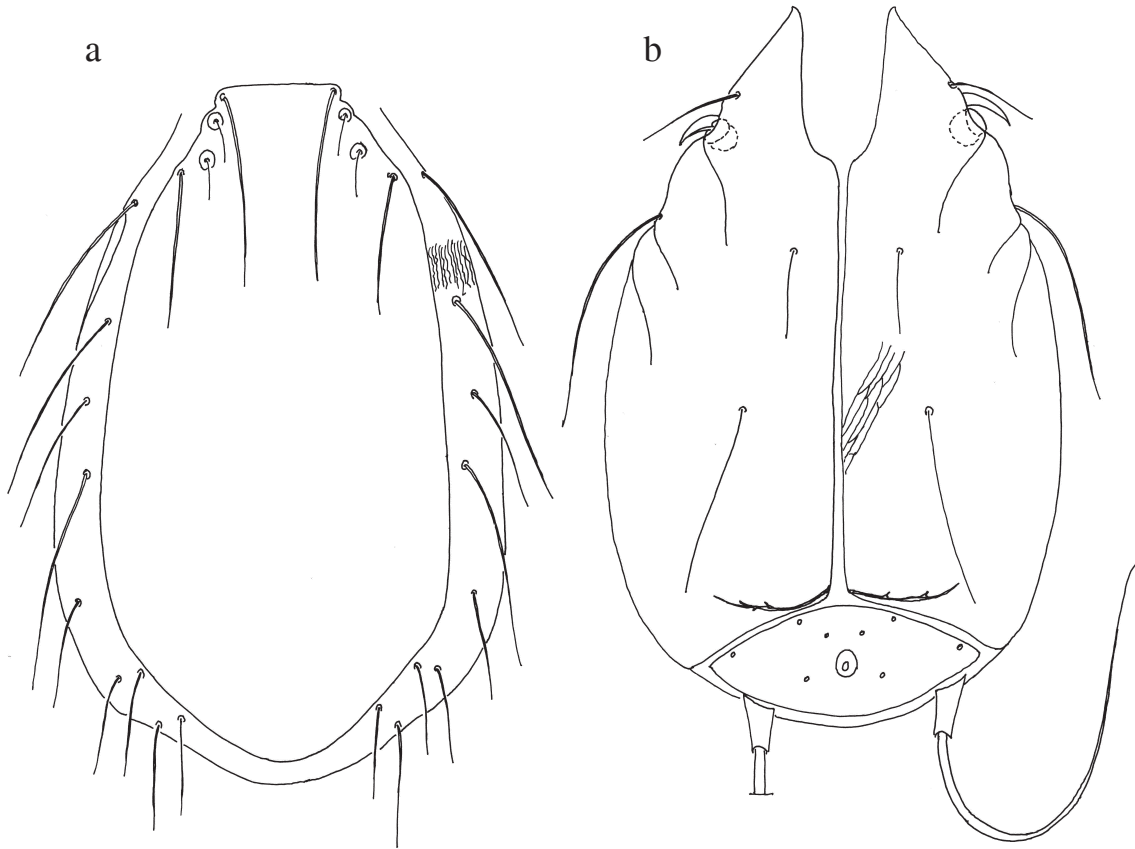


Fig. 1. *Atractides acutirostris*, larva: a — ventral view, b — dorsal view.

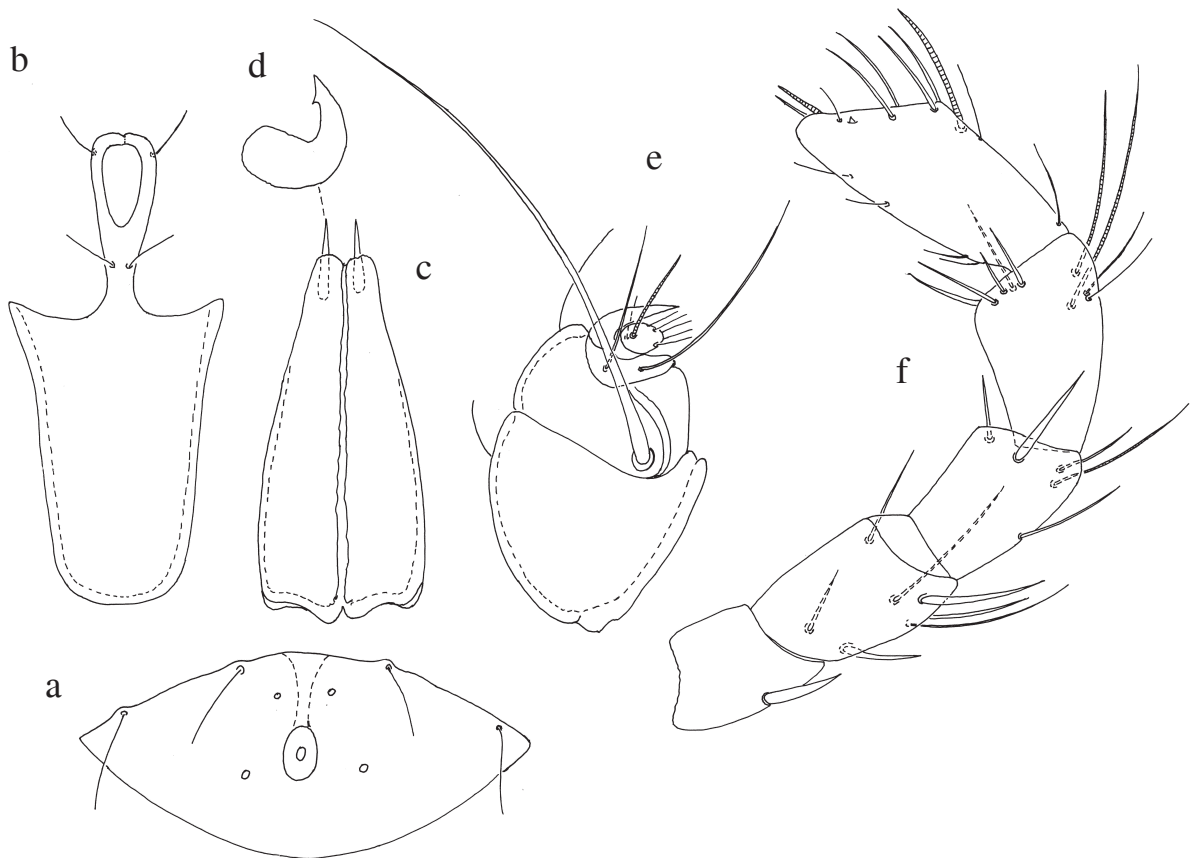


Fig. 2. *Atractides acutirostris*, larva: a — anal plate, b — capitulum, ventral view; c — chelicerae, dorsal view, d — cheliceral stylet, lateral view; e — pedipalp, lateral view; f — leg I.

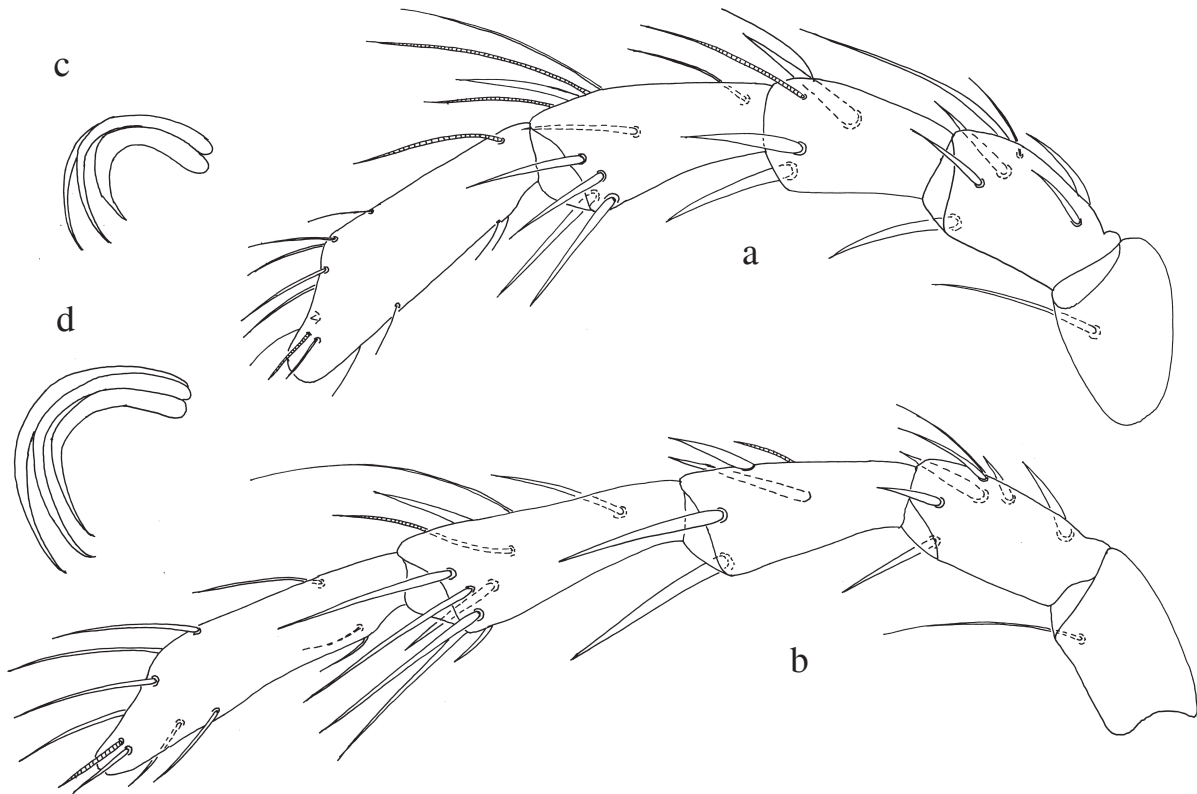


Fig. 3. *Atractides acutirostris*, larva: a — leg II; b — leg III; c — claws of leg I; d — claws of leg III.

thesis): I Leg. 1–5 — 1, 7, 5 (s), 10 (2s), 14 (s, ac); II Leg. 1–5 — 1, 7, 5 (s), 10 (2s), 13 (s, ac); III Leg. 1–5 — 1, 6, 5 (s), 10 (s), 11 (ac). Trochanter of legs II and III each with rather long seta, which longer than seta on trochanter of legs I. Femur of legs II with one long dorsodistal seta. Proximal solenidion on tibiae of legs I and II longer than distal one. Tibia of legs II and III each with one swimming dorsodistal seta. Solenidion on tarsus of leg I occupying dorsodistal position, solenidion on tarsus II situated proximally. Genu of legs III with short solenidion, tibia of legs III with long one. Claws of legs III (Fig. 3 d) larger than claws of legs I and II (Fig. 3 c).

Measurements (n = 5). Length of dorsal plate 190–200, width 100–110; length of medial edges of coxae I–III 125–130; diameter of urstigma 11–13; length of excretory pore plate 28–35, width 70–77; length of capitulum 72–75, width of basal part of capitulum 31–33; length of basal segment of chelicera 48–55, length of cheliceral stylet 13–16; length of pedipalpal segments (P1–5): 4–6, 25–29, 11–13, 4.5–6.0, 3.5–4.0; length of base of seta Ci 18–20; distance between setae Ai–Ai 9–12, distance between setae Ae–Ae 19–23; length of legs segments: I Leg. 1–5 — 18–22, 30–32, 28–31, 32–33, 35–39; II Leg. 1–5 — 19–26, 30–33, 29–33, 35–39, 38–45; III Leg. 1–5 — 28–32, 32–36, 32–36, 40–48, 40–52.

DISCUSSION

The genus *Atractides* is divided into four subgenera: *Atractides* Koch, 1837; *Tympanomegapus* Thor, 1923; *Polymegapus* K. Viets, 1926 and *Maderomegapus* Lundblad, 1941 (Gerecke 2003). The subgeneric division is based on characters of adult mites only. Larvae are known only in the following species of subgenus *Atractides*: *A. gibberipalpis* Piersig, 1898, *A. ovalis* Koenike, 1883 (Piersig 1987–1900); *A. nodipalpis* (Thor, 1899) (Imamura 1951; Wainstein 1980); *A. grouti* Habeeb, 1965, *A. parviscutatus* (Marshall, 1915) (Prasad and Cook 1972); *A. adnatus* Lundblad, 1956, *A. macrolaminatus*, Láska 1956, *A. panniculatus* (K. Viets, 1925), *A. walteri* (K. Viets, 1925) (Martin 2003); *A. fonticolus* (K. Viets, 1920) (Martin 2006). The species *A. acutirostris* belongs to the subgenus *Tympanomegapus*. It larva is characterized by the presence of *tmas* in the posteromedial corner of coxae III. In contrast, in all known larvae of the subgenus *Atractides tmas* is absent, except for the larva *A. (Atractides) ildensis* Tuzovskij (2005) (unpublished). Larvae of the genus *Atractides* are characterized by rather uniform structure of all organs. I could not find substantial differences between larvae of both subgenera.

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