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A new water mite species of the genus *Arrenurus* Dugès, 1834 (Acari, Hydrachnidia: Arrenuridae) from European Russia

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Abstract. An illustrated description of a new species *Arrenurus pogorelkaensis* **sp. nov.** from Yaroslavsky Region of Russia is given. Color red, cauda well developed, petiole very small without ligulate process, pentagonal, not extending beyond idiosoma posterior margin, hyaline membrane absent.

Keywords: Hydrachnidia, Arrenuridae, *Arrenurus*, water mites, morphology, male

Новый вид водяного клеща рода *Arrenurus* Dugès, 1834 (Acari, Hydrachnidia: Arrenuridae) из Европейской России

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Аннотация. Иллюстрированное описание самца нового вида водяного клеща *Arrenurus pogorelkaensis* **sp. nov.** из Ярославской области России. Цвет красный, хвостовой придаток хорошо развит, петиолус очень маленький без лигулативного отростка, пятиугольный, не выдается за задний край идиосомы, гиалиновая мембрана отсутствует.

Ключевые слова: Hydrachnidia, Arrenuridae, *Arrenurus*, водяные клещи, морфология, самец

This paper describes a new water mite species of the family Arrenuridae. Specimens were collected by the author in standing waters from the European part of Russia with a common hand net of 250 μm mesh size. Specimens were not dissected, thus preserving a natural shape of the body. Pedipalp and IV-Leg was mounted in a position that allowed investigation in a lateral view. Idiosomal setae are named according to Tuzovskij (1987): *Fch* — frontales chelicerarum, *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.

In addition, the following abbreviations are used: L — length; W — width; n — number of specimens measured; all measurements are given in μm. The type material is deposited in the collection of the Papanin Institute for Biology of Inland Waters (Borok, Russia).

Systematic

Family **Arrenuridae** Thor, 1900
Genus ***Arrenurus*** Dugès, 1834

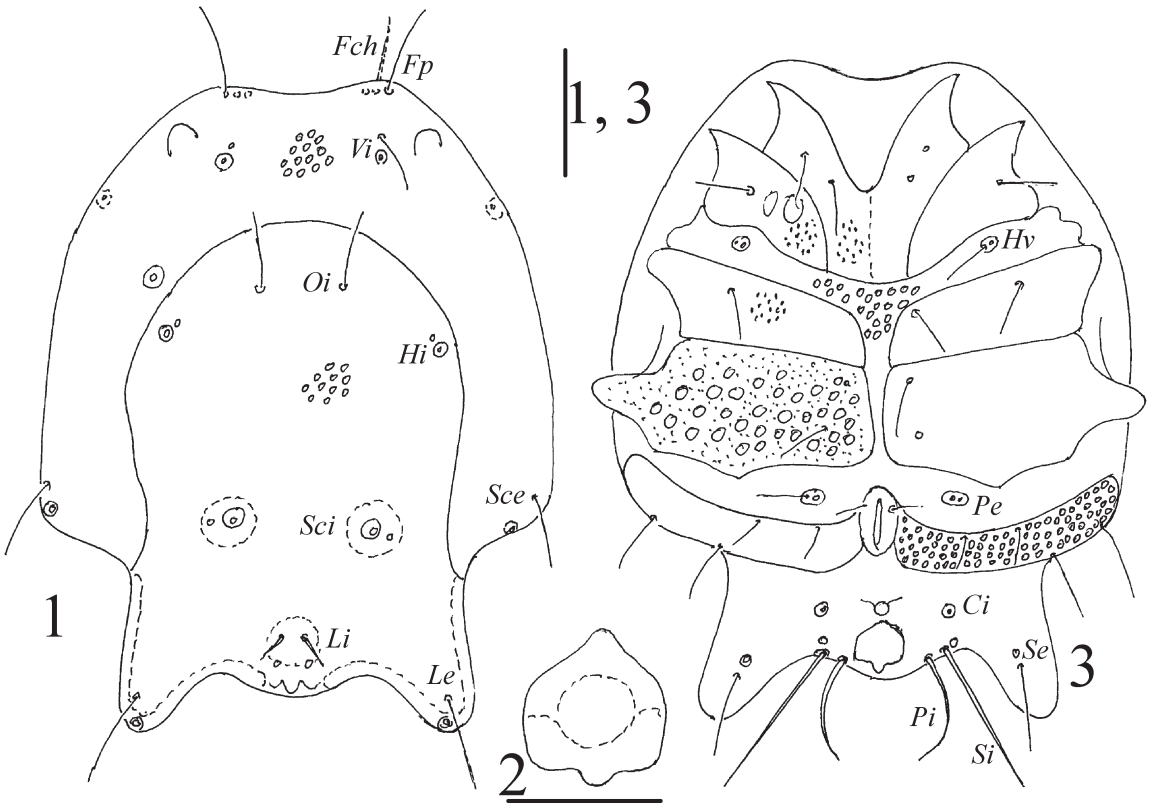
***Arrenurus* (*Arrenurus*) *pogorelkaensis* sp. nov.**

(Figs. 1–7)

https://zoobank.org/NomenclaturalActs/97339050-5170-4B42-9834-42B22B133269

Type series. Holotype: male, slide 9914, Europe, Russia, Yaroslavsky Region, Nekouz District, the mouth of the stream Shumorovka, near the village Pogorelka, 20.06.2019, leg P. Tuzovskij.

Diagnosis. Colour red, frontal margin concave, cauda and pygal lobes well developed, hyaline membrane absent. Petiole very small without ligulate process, located on ventral side and not extending beyond idiosoma pos-



Figs. 1–3. *Arrenurus pogorelkaensis* **sp. n.,** male: *1* — idiosoma, dorsal view; *2* — petiole, ventral view; *3* — idiosoma, ventral view. Scale bars: 1, 3 = 200 μm, 2 = 100 μm

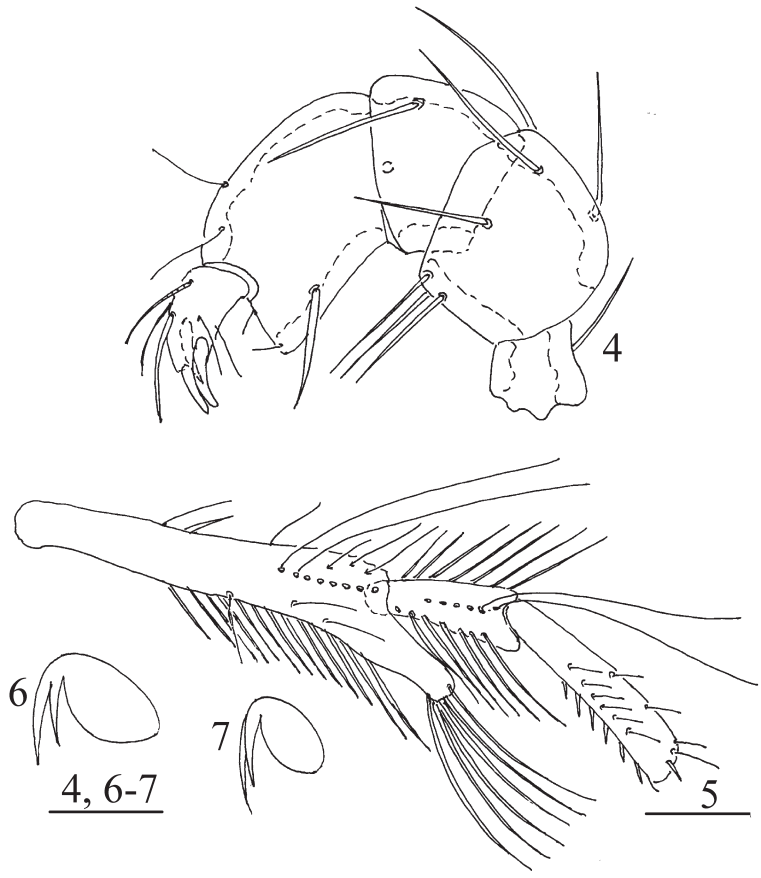
Рис. 1-3. *Arrenurus pogorelkaensis* **sp. n.,** самец: *1* — дорсальная сторона; *2* — петиолус, вентральная сторона; *3* — идиосома, вентральная сторона. Шкалы: 1, 3 = 200 μm, 2 = 100 μm

terior margin, with small posteromedian protrusion, IV-Leg-4 large, with well-developed distoventral projection.

Description

Male. Colour red. Idiosoma rather broad (L/W ratio 1.22), anterior margin slightly concave, lateral margins straight; cauda distinctly set off from the anterior part of the idiosoma; cauda and pygal lobes well developed, pygal lobes with rounded tips (Fig. 1). Dorsal shield moderately large, convex anteriorly, bearing five pairs of setae (*Oi, Hi, Sci, Li* and Le); setae and glandularia *Sci* open on somewhat small rounded tubercles distally to the middle of the shield; bases of setae *Li* close together and placed distally on small tubercle, *Le* near distal end of pygal lobes. Dorsal furrow complete passing onto sides of idiosoma at base of pygal lobes. Setae *Fp, Oi* and *Pi* without glandularia, other idiosomal setae associated with glandularia. Distance between setae *Oi-Oi* nearly three times shorter than distance between setae *Hi-Hi*. Hyaline membrane absent. Petiole very small pentagonal without ligulate process, located on ventral side and not extending beyond idiosoma posterior margin, with small posteromedian protrusion (Fig. 2).

Anterolateral corners of coxal plates I and II pointed (Fig. 3), not extending to anterior idiosoma margin. Coxal plates I fused to each other medially, suture line weakly developed. Posterior coxal groups close to each other medially. Medial margin of coxal plate III distinctly shorter than medial margin of coxal plates IV. Lateral projection of coxal plates IV with rounded tip, a little extending beyond lateral idiosoma margin. Gonopore small, acetabular plates long, narrow, reaching the lateral margins of the idiosoma, with nume-



Figs. 4–7. *Arrenurus pogorelkaensis* **sp. n.,** male: *4* — pedipalp; *5* — IV-Leg-4-6; *6* — claw of leg I; *7* — claw of leg IV. Scale bars: *4, 6–7* = 50 μm, *5* = 100 μm

Рис.4-7. *Arrenurus pogorelkaensis* **sp. n.,** самец: *4* — педипальпа; *5* — нога IV-Leg-4-6; *6* — коготок ноги I; *7* — коготок ноги IV. Шкалы: 4, 6–7 = 50 μm, 5 = 100 μm

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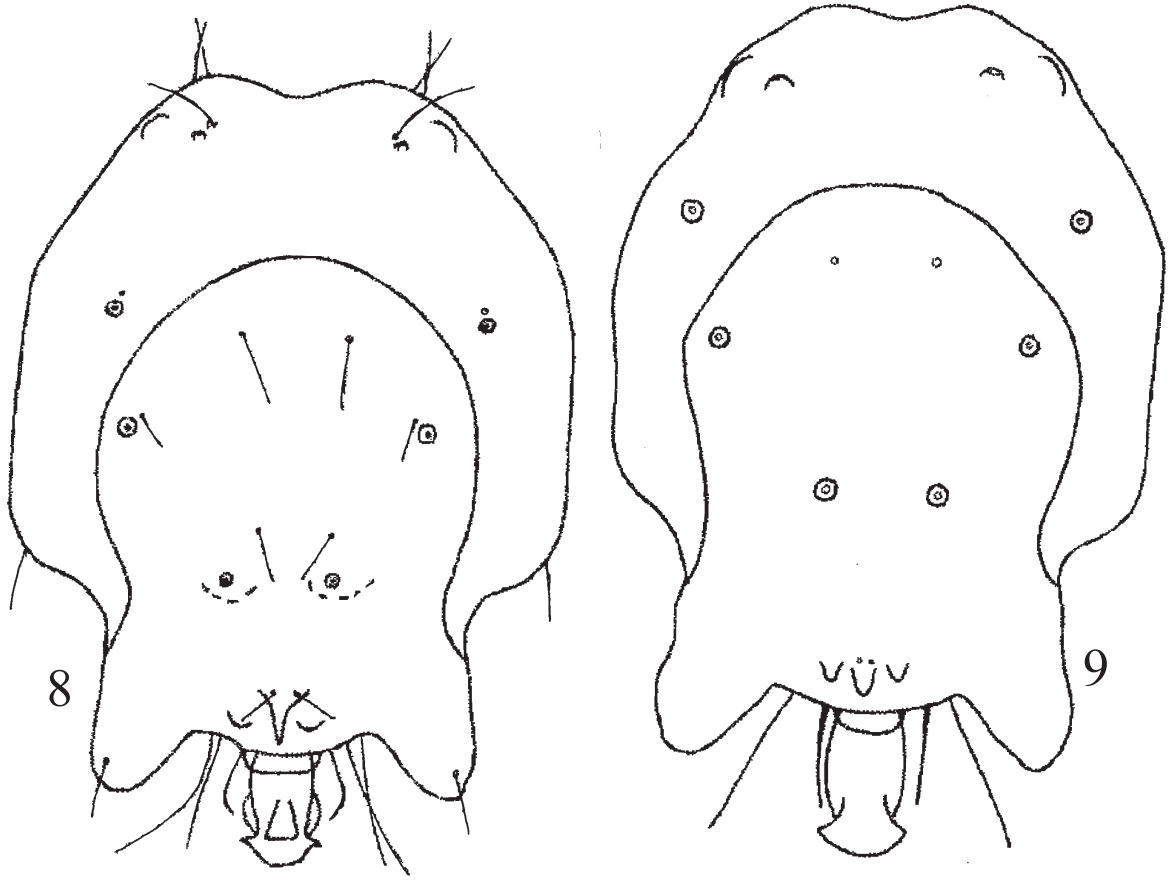

Figs. 8–9. *Arrenurus*: *8 — A. bruzelii*, male: idiosoma dorsal view; *9 — A. securifer*, male: idiosoma, dorsal view (*8–9* after Gerecke et al. 2016)

Рис. 8-9. *Arrenurus*: *8 — A. bruzelii*, самец: идиосома, дорсальная сторона; *9 — A. securifer*, самец: идиосома, дорсальная сторона (*8–9* по Gerecke et al. 2016)

rous small acetabula. Setae *Se* and *Pi* relatively thick, *Pi* curved, *Se* straight and longer than *Pi*. Excretory pore open near base of petiole. Setae *Hv* situated near posterolateral margin of coxal plates II, *Pe* located beyond acetabular plates, setae and glandularia *Se* placed on pygal lobes.

Pedipalp (Fig. 4): P-1 short, with a single dorsodistal setae; P-2 stocky, with straight ventral margin, three long dorsodistal, two to three ventrodistal and one mediodistal setae, medial and ventrodistal setae approximately equal in length; P-3 relatively short, with two setae; P-4 longer than P-2, with rather long antagonistic bristle, two fine dorsodistal setae and two short distal setae, P-5 with a single solenidion, four thin setae and three unequal spines.

Legs III and IV with swimming setae. IV-Leg-4 large, with well-developed distoventral projection bearing six setae (Fig. 5). Claws of leg I-III rather large, with strong convex lamella (Fig. 6); claws of leg IV comparatively small (Fig. 7).

Measurements (n=1). Idiosoma L 1075, W 875; dorsal plate L 835, W 560; distance between medial margins of coxal plates IV 35; petiole L 175, W 125; pedipalpal segments (P–1–5) L: 42, 95, 75, 100, 50; legs segments L: I-Leg-1-6: 60, 145, 150, 185, 180, 250; II-Leg-1-6: 85, 150, 155, 220, 180, 225; III-Leg-1-6: 100, 170, 160, 235, 220, 270; IV-Leg-1-6: 135, 210, 250, 435, 160, 200.

Female. Unknown.

Differential diagnosis. The new species is similar to *Arrenurus bruzelii* Koenike, 1885 and *A. securifer* K. Viets, 1930 in the structure of idiosoma. Both species differ considerably from *A. pogorelkaensis* sp.n. by the structure of petiole. The petiole in *A. bruzelii* (Fig. 8)

and *A. securifer* (Fig. 9) well developed, much longer than wide and located terminally, ligulate process and hyaline membrane present (Gerecke et al. 2016). In contrast, in the male of *A. pogorelkaensis* sp. n., the petiole very small, pentagonal, hyaline membrane and ligulate process absent.

Etymology. The species epithet *pogorelkaensis* is given after the village where it was collected (Pogorelka).

Distribution. Asia, Russia (Yaroslavsky Region).

Habitat. Stagnant waters.

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