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Description of a new water mite species of the genus *Atractides* Koch, 1837 (Acari, Hydrachnidia, Hygrobatidae) from Kazakhstan

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Abstract. An illustrated description of a new species *Atractides turkestanicus* **sp. nov.** from the Turkestan Region of Kazakhstan is given. Diagnostic features of the new species include the following characters: integument smooth; genital plate with 23–24 fine setae on each side, anterior margin straight; excretory pore smooth; P-2 with moderately large ventrodistal protrusion; P-3 longer than P-2, with four thick dorsal setae; P-4 sword seta between ventral setae; I-Leg-5 S-1- S-2 separation 12 μm.

Keywords: Hydrachnidia, Hygrobatidae, *Atractides*, water mites, morphology, male

Описание нового вида водяного клеща рода *Atractides* Koch, 1837 (Acari, Hydrachnidia, Hygrobatidae) из Казахстана

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Аннотация. Иллюстрированное описание самца нового вида клеща *Atractides turkestanicus* **sp. nov.** из Туркестанской области Казахстана. Покров гладкий; длина генитальной пластины меньше его ширины с 23–24 тонкими щетинками на каждой стороне, передний край прямой; экскреторная пора не склеротизована; колено педипальпы длиннее бедра, с четырьмя толстыми дорсальными щетинками; мечевидная щетинка на голени педипальпы между вентральными щетинками; расстояние между мечевидными щетинками (S-1-2) на голени ног I 12 μm.

Ключевые слова: Hydrachnidia, Hygrobatidae, *Atractides*, водяные клещи, морфология, самец

Introduction

This paper describes a new water mite species of the family Hygrobatidae. The material was sampled by V. Stolbov from running waters of Kazakhstan with a common hand net with 250 μm mesh size, sorted in the field and fixed 75% ethanol. Specimen was dissected and slide mounted in Hoyer's medium.

Idiosomal setae are named according to Tuzovskij (1987), legs setae are named according to Gerecke (2003). The following abbreviations are used: ac. 1–3 — genital acetabula; a. s. l. — above sea level; D — diameter; L — length; mL — medial length; n = number of specimens measured; P-1–5 — pedipalp segments (trochanter, femur, genu, tibia and tarsus); S-1 — proximal sword seta on tibia of leg I; S-2 — distal sword seta on tibia of leg I; W — width; I-Leg-1–6 — first leg, segments 1–6 (trochanter, basifemur, telofemur, genu, tibia and tarsus) i.e. III-Leg-4 = genu of third leg, I-Leg-6: HA = basal height, HB = height in the centre, HC = distal height. All measurements are given in micrometers (μm); length of appendage segments is given as dorsal length. The holotype is deposited in the collection of the Papanin Institute for Biology of Inland Waters (Borok, Russia).

Systematics

Family **Hygrobatidae** Koch, 1842

Genus ***Atractides*** Koch, 1837

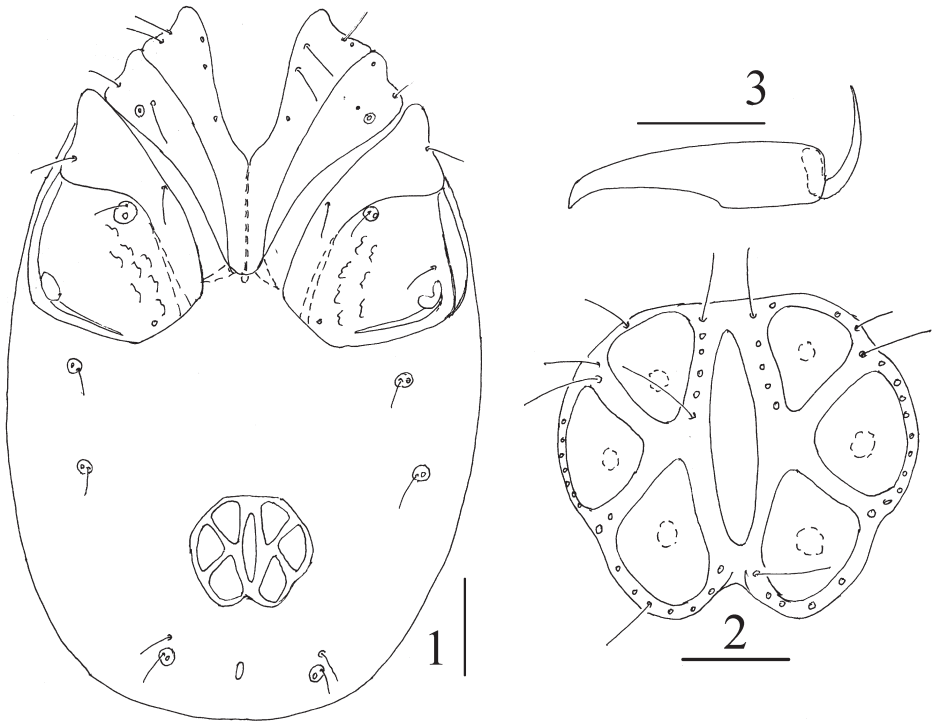
***Atractides (Atractides) turkestanicus* sp. nov.**

https://www.zoobank.org/NomenclaturalActs/B19BAC1F-B38E-45C9-9B5E-B38ADC19C4C3

(Figs 1-5)

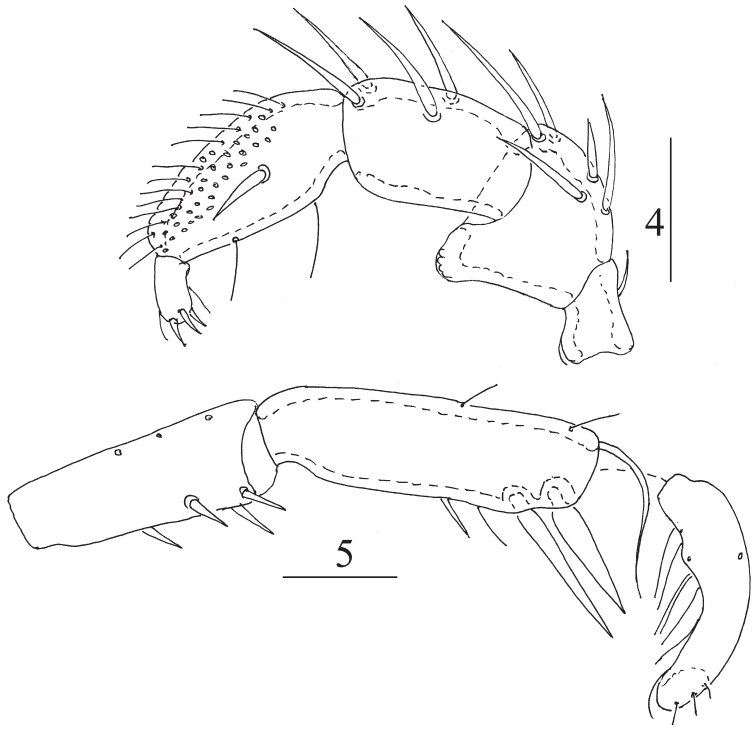
Type material. Holotype: male, slide 9961, Asia, Kazakhstan, Turkestan Province, Tjulkubassky District, Aksu-Zhabagly Nature Reserve, Taldybulak stream, 42°25′01.9″N, 70°28′22.3″E, 1230 m a. s. l., depth about 0.5 m, substrates: large stones, mosses, 10.08.2019, leg. V. Stolbov.

Diagnosis. Male (Female unknown). Integument smooth; muscle attachment unsclerotized, coxal plates I+II close to coxal plate III+IV but not forming a coxal shield; excretory pore smooth; genital plate wider long, with



Figs. 1–3. *Atractides turkestanicus* **sp.nov.**, male: *1* — idiosoma, ventral view; *2* — genital plate; *3* — chelicera, Scale bars: *1, 3* = 100 μm, *2* = 50 μm

Рис. 1–3. *Atractides turkestanicus* **sp.nov.**, самец: *1* — вентральная сторона; *2* — генитальная пластина; *3* — хелицера. Шкалы: *1, 3* = 100 μm, *2* = 50 μm



Figs. 4–5. *Atractides turkestanicus* **sp.nov.**, male: *4* — pedipalp, lateral view; *5* — I-Leg-4-6. Scale bars: *4, 5* = 50 μm

Рис. 4–5. *Atractides turkestanicus* **sp.nov.**, самец: *4* — педипальпа, боковая сторона; *5* — нога I-Leg-4-6. Шкалы: *4, 5* = 50 μm

23–24 fine setae on each side, anterior margin straight, narrowed posteriorly, acetabula in triangular position; capitular bay V-shaped; P-2 expanded dorsoventrally, with moderately large ventrodistal protrusion; P-3 longer than P-2, with four thick subequal setae; P-4 sword seta between ventral setae; S-1-2 separation 12 μm.

Description

Male. Color in life unknown. Idiosoma elongate (L/W ratio 1.9), integument smooth, muscle insertions unsclerotized. Coxal plates I+II close to coxal plates III+IV at their touching edges, but not forming a coxal shield (Fig. 1). Posteromedial margin of coxal plates I+II narrow slightly convex, apodemes of anterior coxal groups short directed laterally. Median suture line between coxal plates I distinct, central sub–dermal projection small and a little extending beyond posterior margin. Capitular bay V-shaped. Seta and glandularium *Hv* situated in posterolateral part of coxal plate II. Medial margin of coxal plates III+IV straight forming an obtuse angle, glandularium and seta *Pe* situated near anterior margin of coxal plate IV, posterior margin of coxal plate IV straight. The setae *Pi* and *Ci* separated, excretory pore unsclerotized. Genital plate (Fig.2) wider than long (L/W ratio 0.85), anterior margin straight, posterior margin moderately indented, bearing 23–24 fine setae on each side, acetabula rather large in an obtuse triangle.

Chelicera with large basal segment and short pointed chela (Fig. 3).

Pedipalp (Fig. 4) stout: P-1 short, thin with a single short dorsodistal seta; P-2 expanded dorsoventrally (L/H ratio about 1.0), with distinct ventrodistal protrusion, bearing three proximal (one short seta and two long ones), and two unequal dorsosodistal setae; P-3 with four subequal thick setae, ventral margin slightly convex in distal half; P-4 strong expanded near proximal seta, sword seta short pointed and located between ventral setae, bases of ventral setae divide tibia into three unequal sectors (1:2:1), dorsal setae numer-

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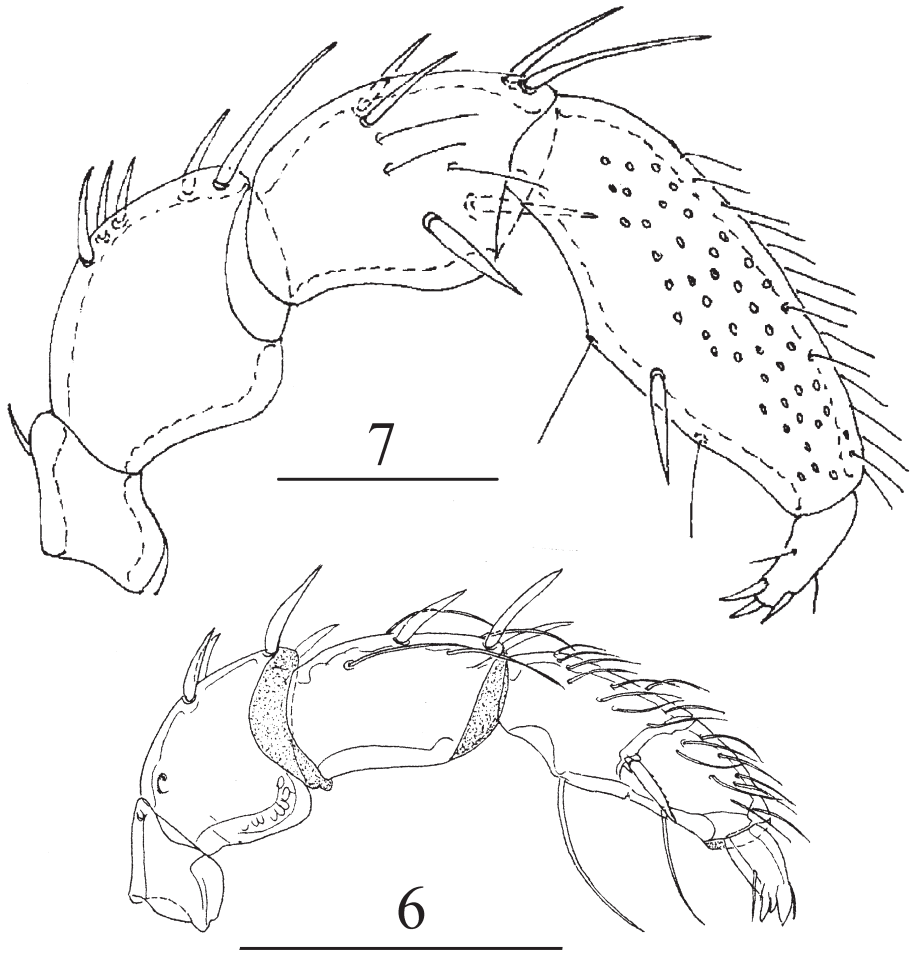

Figs. 6–7. *Atractides*: *6* — *A. tienshanensis,* pedipalp; *7* — *A. aksuensis,* pedipalp. Scale bars: *6, 7* = 50 μm

Рис. 6–7. *Atractides*: *6* — *A. tienshanensis,* педипальпа; *7* — *A. aksuensis,* педипальпа. Шкалы: *6, 7* = 50 μm

ous located in central and distal parts of segment.

All legs without swimming setae. I-Leg-5 seta S-1 and S-2 distally narrowed (Fig. 5), bluntly pointed, S-1 longish, S-2 thicker than S-1, proximally enlarged, distance between S-1 and S-2 short; I-L-6 ventral margin curved distally, basally thickened, in distal part narrowed, distinctly shorter than I-Leg-5 (I-Leg-5/6 ratio 1.3).

Measurements (n = 1). Idiosoma L 725, W 375; coxal plates I-IV L 325, W 435, mL 125; genital plate L 105, W 125; genital acetabula (ac. 1–3) L/W: 35/30, 42/24, 42/30; glandularia D: 25–37; pedipalp total L 245, L/H, L/H ratio: P-1, 30/24, 1.25; P-2, 54/54, 1.0; P-3, 69/42, 1.42; P-4, 78/36, 2.16; P-5, 24/12, 2.0; leg segments, L: I-Leg-1-6: 59, 62, 87, 125, 160, 112; II-Leg-1–6: 50, 62, 75, 100, 112, 110; III-Leg-1-6: 55, 60, 75, 125, 150, 135; IV-Leg-1–6: 110, 85, 135, 175, 212, 165; I-Leg-6: HA = 36, HB = 30, HC =24; I-Leg-6, distance between S-1 and S-2 12; S-1 L/W, L/W ratio 78/12, 6.5; S-2 L/W, L/W ratio 60/15, 4.0.

Differential diagnosis. The present species is similar to *Atractides tienshanensis* Pešić & Smit, 2021 and *A. aksuensis* Tuzovskij, 2022 in the structures of coxal plates and appendages. The new species differs from *A. tienshanensis* in the following characters (character states of male *A. tienshanensis* are indicated in parentheses, data from Pešić & Smit 2021): the integument smooth (striated), the genital plate with straight anterior margin, bearing 23–24 fine setae on each side (with convex anterior margin, bearing 15–18 setae; P-2 with distinct ventrodistal protrusion, Fig. 2 (P-2 ventrodistal margin convexly pro-

truding, Fig. 6), I-Leg-5 S-1 and S-2 relatively short, 78 and 60, respectively (rather long, 89–91 and 69–74, respectively). *Atractides turkestanicus* **sp. nov.** especially differs from *A. aksuensis* by the structure of pedipalp: P-2 strong expanded dorsoventrally (L/H ratio 1.0), P-3 with four thick dorsal setae; in contrast, in male *A. aksuensis* P-2 not strong expanded dorsoventrally (L/H ratio 1.1-1.2), P-3 with six thick setae (Fig. 7): four dorsal and two distoventral setae (Tuzovskij 2022).

Etymology. The species is named after the Province (Turkestan) where it was collected.

Habitat. Running waters.

Distribution. Asia: Kazakhstan: Turkestan Province.

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References

Gerecke, R. (2003) Water mites of the genus *Atractides* Koch, 1837 (Acari: Parasitengona: Hygrobatidae) in the western Palaearctic region: a revision. *Zoological Journal of the Linnean Society*, vol. 138, no. 2-3, pp. 141–378. https://doi.org/10.1046/j.1096-3642.06-0.00051.x (In English)

Pešić, V., Smit, H. (2021) Water mites of the genus *Atractides* Koch, 1837 from Kyrgystan (Acari: Hydrachnidia: Hygrobatidae) with the description of six new species. *Acarologia*, vol. 61, no. 2, pp. 332–355. https://doi.org/10.24349/acarologia/20214434 (In English)

Tuzovskij, P. V. (1987) *Morfologiya i postembryonal'noe razvitie vodyanykh kleshchej [Morphology and postembryonic development in water mites]*. Moscow: Nauka Publ., 172 p. (In Russian)

Tuzovskij, P. V. (2022) Two new water mite species of the genus *Atractides* Koch (Acari, Hydrachnidia: Hygrobatidae) from Asia. *Zootaxa*, vol. 5188, no. 2, pp. 195–200. https://doi.org/10.11646/ZOOTAXA.5188.2.9 (In English)

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