



<https://www.doi.org/10.33910/2686-9519-2021-13-4-467-470>
<http://zoobank.org/References/C784943C-E11C-4087-92BC-B87B202C656C>

UDC 595.426

Description of a new water mite species of the genus *Limnesia* Koch, 1836 (Acari, Hydrachnidae: Limnesiidae) from Mongolia

P. V. Tuzovskij

Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences, Yaroslavl Region, 152742, Borok, Russia

Author

Petr V. Tuzovskij
E-mail: tpv@ibiw.ru
SPIN: 4101-5460
Scopus Author ID: 57190753429
ResearcherID: C-3184-2017
ORCID: 0000-0001-5002-2679

Abstract. An illustrated description of male of a new species *Limnesia mongolica* sp. nov. from Dergun reservoir of Mongolia is given. The genital field with three pairs of small acetabula, distance between ac.1 and ac.2 two to three times larger than length of any acetabulum, distance between ac.2 and ac.3 equal or larger than length of any acetabulum; P-4 distally strongly curved, with two simple ventral setae near middle of segment.

Copyright: © The Author (2021).
Published by Herzen State Pedagogical University of Russia. Open access under CC BY-NC License 4.0.

Keywords: Hydrachnidia, Limnesiidae, *Limnesia*, water mites, morphology, male.

Описание нового вида водяного клеща рода *Limnesia* Koch, 1836 (Acari, Hydrachnidae: Limnesiidae) из Монголии

П. В. Тузовский

Институт биологии внутренних вод РАН им. И. Д. Папанина, Некоузский район, Ярославская область, 152742, пос. Борок, Россия

Сведения об авторе

Тузовский Петр Васильевич
E-mail: tpv@ibiw.ru
SPIN-код: 4101-5460
Scopus Author ID: 57190753429
ResearcherID: C-3184-2017
ORCID: 0000-0001-5002-2679

Аннотация. Иллюстрированное описание самца нового вида водяного клеща *Limnesia mongolica* sp. nov. из Дергунского водохранилища Монголии. Генитальное поле с 3 парами маленьких присосок: расстояние между ac.1 и ac.2 в 2–3 раза больше чем длина любой присоски, расстояние между ac.2 и ac.3 равно или больше длины любой присоски; P-4 дистально сильно изогнута, с двумя простыми вентральными щетинками около середины сегмента.

Права: © Автор (2021). Опубликовано Российским государственным педагогическим университетом им. А. И. Герцена. Открытый доступ на условиях лицензии CC BY-NC 4.0.

Ключевые слова: Hydrachnidia, Limnesiidae, *Limnesia*, водяные клещи, морфология, самец.

Introduction

This paper describes the male of a new water mite species, *Limnesia mongolica*. The material was found in hydrobiological samples collected by A. Prokin in the reservoirs in West Mongolia. The water mites were fixed using 75% ethanol. All specimens were dissected, slide mounted in Hoyer's medium.

Idiosomal setae are named according to Tuzovskij (1987). Furthermore, the following abbreviations are used: ac.1–ac.3 = genital acetabula; H = height, L = length, n = number of specimens measured; P-1–5 = pedipalp segments (trochanter, femur, genu, tibia and tarsus); I-Leg-1–6 = first leg, segments 1–6 (trochanter, basifemur, telofemur, genu, tibia and tarsus) i.e. I-Leg-1 = trochanter of first leg; W = width. All measurements are given in micrometers (μm); length of appendage segments is given as dorsal length. The type material is deposited in the collection of the Papanin Institute for Biology of Inland Waters (Borok, Russia).

Systematics

Family Limnesiidae Thor, 1900

Genus *Limnesia* Koch, 1836

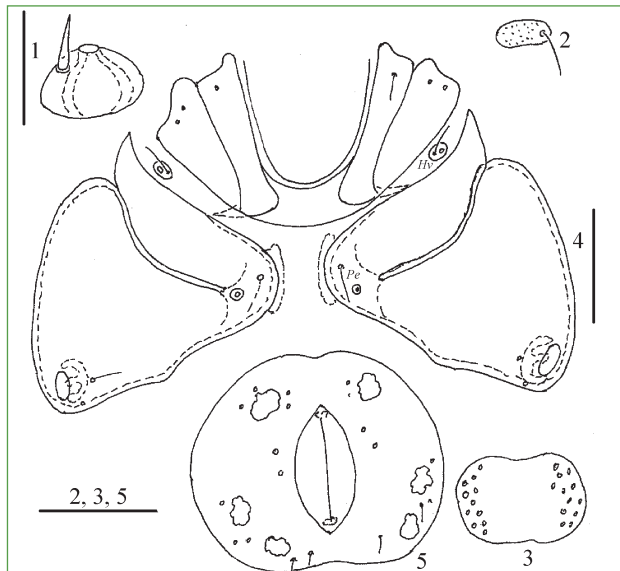
Limnesia (Limnesia) mongolica sp. nov.

(Figs. 1–8)

<http://zoobank.org/NomenclaturalActs/5587A84A-3A91-4E18-8A47-90120565E231>

Type material. Holotype: male, slide 9946, Asia, West Mongolia, Durgun reservoir near a dam which has been constructed on Chonokharaikh River, depth 3.5 m, 21 August 2018, leg. A. Prokin. Paratype: one male, same locality and data as holotype.

Diagnosis. Seta *Fch* distinctly shorter than diameter of sclerite on which located; dorsum with two small transverse anterior sclerites bearing trichobothria *Oi* and comparatively large transverse unpaired posterior plate; genital field with three pairs of small acetabula, distance between ac.1 and ac.2 two to three times larger than any acetabulum, distance between ac.2 and ac.3 larger than diameter of any acetabulum; P-4 with two simple ventral setae near middle of segment; IV-Leg-6 with four to five ventral setae.



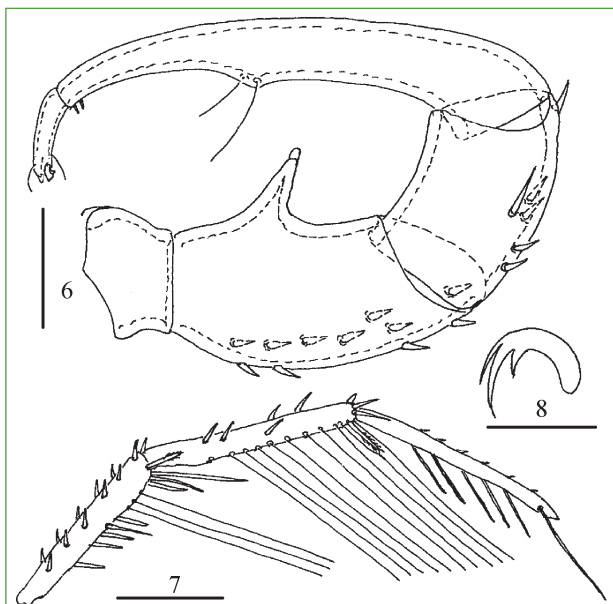
Figs. 1–5. *Limnesia mongolica* sp. n., male: 1 — seta *Fch*; 2 — left anterior dorsal platelet; 3 — posterior dorsal plate; 4 — coxal plates I–IV; 5 — genital field. Scale bars: 1 = 50 μm ; 2, 3, 5 = 100 μm , 4 = 200 μm

Рис. 1–5. *Limnesia mongolica* sp. n., самец: 1 — щетинка *Fch*; 2 — левая передняя дорсальная пластиночка, 3 — задняя дорсальная пластинка; 4 — коксальные пластинки I–IV; 5 — генитальное поле. Шкалы: 1 = 50 μm ; 2, 3, 5 = 100 μm , 4 = 200 μm

Description. Male. Integument soft and smooth. The number and position of idiosomal setae typical for the genus *Limnesia* (Tuzovskij 1990). Seta *Fch* (Fig. 1) thick, pointed and distinctly shorter than diameter of sclerite on which located. Dorsum with two small transverse anterior sclerites bearing trichobothria *Oi* (Fig. 2) and comparatively large transverse posterior plate (Fig. 3). Anterior coxal groups longer than wide, widely separated but connected by broad slightly sclerotized bridge, each with short posteromedial apodeme (Fig. 4). Posterior coxal groups wider than long, suture line between coxal plates III and IV incompletely obliterated medially. Setae and glandularia *Pe* separated and placed in medial portion of posterior coxal groups, glandularia *Pe* located close to medial end of suture line between coxal plates III and IV, seta *Pe* situated a little anteromedially to glandularia *Pe* on each side. Glandularium *Hv* free and located laterally between anterior and posterior coxal group on each side. Coxal plate IV triangular with a small broad-based extension near middle of medial margin.

Genital plate (Fig. 5) a little wider than long (L/W ratio 0.88–0.92), with 10–11 pairs short, thin setae and three pairs of small acetabula, distance between ac.1 and ac.2 two to three times larger than distance between ac.2 and ac.3. Posterior margin of genital plate slightly concave. Gonopore oval, about $\frac{1}{2}$ genital plate length with pointed anterior and posterior ends.

Pedipalp slender (Fig. 6): P-1 short and without setae; P-2 large (L/H ratio 2.85–3.1), ventrally with a long projection inserted in the middle of segment and bearing short peg-like seta which is much shorter than the projection, dorsally with 9–11 short, thick subequal setae; P-3 relatively short (L/H ratio 1.55–1.60), with concave ventral margin, dorsally with six to seven short proximal setae and single dorsodistal one; P-4 very slender (L/H ratio 5.0–5.45), in the distal part strongly curved, longer than P-2 (length ratio P-4/P-2 1.45–1.50), maximum height in proximal quarter, with small ventral extension near middle of segment and bearing only two thin simple setae, proximal much longer than distal one; P-5 comparatively short, thin with slightly concave ventral margin.



Figs. 6–8. *Limnesia mongolica* sp. n., male: 6 — pedipalp; 7 — IV-Leg-4-6; 8 — leg claw. Scale bars: 6 = 100 μ m; 7 = 200 μ m, 8 = 50 μ m

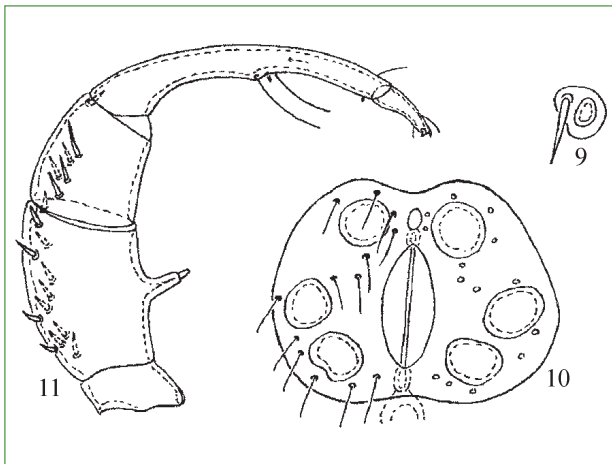
Рис. 6–8. *Limnesia mongolica* sp. n., самец: 6 — педипальпа, 7 — нога IV-4-6, 8 — коготок ног. Шкалы: 6 = 100 μ m; 7 = 200 μ m, 8 = 50 μ m

Posterior two pairs of legs with swimming setae. III-Leg-5 with six to seven, IV-Leg-4 with two to three, IV-Leg-5 with six to nine long swimming setae, IV-Leg-6 with four to five relatively short ventral setae, terminal seta much longer than the ventral ones (Fig. 7). Leg claws (Fig. 8) with three unequal, pointed clawlets, central clawlet longest, dorsal clawlet a little thinner and longer than ventral one. Claw lamella slightly developed with concave ventral margin.

Measurements (n = 2). Idiosoma L 1250–1400; seta Fch L 25–30; anterior dorsal platelets L 30–35, W 48–60; posterior dorsal plate L 60–75, W 85–100; coxal plates III-IV L 410, W 480; genital plate L 200–210, W 210–225, genital acetabula (ac.1–ac.3) L: 30–37, 30–35, 30–37; cheliceral segments: base L 350–400, chela L 145–150; pedipalp segments (P-1–5) L/H: 60–65/87–100, 275–285/130–135, 175–187/112–120, 410–425/75–85, 70–75/25–27; legs segments L: I-Leg-1–6: 100–105, 150–175, 185–190, 200–210, 260–285, 225–235; II-Leg-1–6: 100–110, 200–210, 200–210, 300–310, 335–350, 210–285; III-Leg-1–6: 125–135, 175–210, 185–200, 285–290, 350–365, 285–310; IV-Leg-1–6: 200–210, 200–225, 250–255, 360–375, 410–425, 450–455; IV-Leg-6 terminal seta L 150–175.

Female. Unknown.

Differential diagnosis. The present species is similar to *L. curvipalpis* Tuzovskij, 1997 in the structure of pedipalps. Differences between the two species are found in the following characters (character states of *L. curvipalpis* given in parentheses, data from Tuzovskij 1997): **male:** seta Fch (Fig. 1) distinctly shorter than length of sclerite on which it located (seta Fch longer than diameter of sclerite on which it located, Fig. 9); genital acetabula small, distance between ac.1 and ac.2 two to three times larger than length of any acetabulum, distance between ac.2 and ac.3 equal or larger than diameter of any acetabulum, Fig. 5 (genital acetabula comparatively large, distance between ac.1 and ac.2 1.0–1.5 times larger than length of any acetabulum, distance between ac.2 and ac.3 much lesser than length of any acetabulum, Fig. 10); P-4 only with two simple ventral



Figs. 9–11. *Limnesia curvipalpis* Tuzovskij 1997, male: 9 — seta *Fch*; 10 — genital field; 11 — pedipalp (after Tuzovskij 1997)

Рис. 9–11. *Limnesia curvipalpis* Тузовский 1997, самец: 9 — щетинка *Fch*; 10 — генитальное поле; 11 — педипальпа (по Тузовский 1997)

setae near middle of segment, Fig. 6 (P-4 with two simple ventral setae and one solenidion near middle of segment, Fig. 11); IV-Leg-6 with four to five ventral setae, Fig. 7 (IV-Leg-6 with six to eight ventral setae).

Etymology. The species is named after the name of the country (Mongolia) where it was collected.

Habitat. Running and standing waters.

Distribution. Asia (West Mongolia).

Acknowledgements

This research was performed in the framework of the state assignment of FASO Russia (theme No. 0122-2014-0007). The authors express sincere gratitude to Dr A. Prokin for the material supplied and anonymous referees for reviewing the manuscript.

References

- Tuzovskij, P. V. (1987) *Morfologiya i postembrional'noe razvitiie vodyanykh kleshchej* [Morphology and postembryonic development of water mites]. Moscow: Nauka Publ., 172 p. (In Russian)
- Tuzovskij, P. V. (1990) *Opredelitel' dejtonimf vodyanykh kleshchej* [Key to water mites deutonymphs]. Moscow: Nauka Publ., 238 p. (In Russian)
- Tuzovskij, P. V. (1997) *Vodyanye kleshchi roda Limnesia (Acariformes, Limnesiidae) fauny Rossii* [Water mites of the genus *Limnesia* (Acariformes, Limnesiidae) in the fauna of Russia]. Tolyatti: Institute of Ecology of the Volga basin of Russian Academy of Sciences Publ., 89 p. (In Russian)

For citation: Tuzovskij, P. V. (2021) Description of a new water mite species of the genus *Limnesia* Koch, 1836 (Acari, Hydrachnidae: Limnesiidae) from Mongolia. *Amurian Zoological Journal*, vol. XIII, no. 4, pp. 467–470. <https://www.doi.org/10.33910/2686-9519-2021-13-4-467-470>

Received 15 May 2021; reviewed 1 July 2021; accepted 28 October 2021.

Для цитирования: Тузовский, П. В. (2021) Описание нового вида водяного клеща рода *Limnesia* Koch, 1836 (Acari, Hydrachnidae: Limnesiidae) из Монголии. *Амурский зоологический журнал*, т. XIII, № 4, с. 467–470. <https://www.doi.org/10.33910/2686-9519-2021-13-4-467-470>

Получена 15 мая 2021; прошла рецензирование 1 июля 2021; принята 28 октября 2021.