EPIDAMAEUS JOHNSTONI: A NEW DAMAEID MITE (ACARIFORMES: ORIBATEI) FROM KAZAKHSTAN

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DAMAEIDAE
ORIBATEI
SOIL MITES
CENTRAL ASIA

SUMMARY: A new species of the oribatid mite genus *Epidamaeus* is described from the Tien Shan mountains, Kazakhstan, Central Asia.

DAMAEIDAE
ORIBATE
ACARIENS EDAPHIQUES
ASIE CENTRALE

RÉSUMÉ : Une nouvelle espèce du genre *Epidamaeus* est décrite des Montagnes Tian-Chan, Kazakhstan, Asie centrale.

The central Asian fauna of the oribatid mite family Damaeidae is still poorly known. BULANOVA-ZAKHVATKINA (1979) mentioned three species of *Epidamaeus* Bulanova-Zakhvatkina, 1957 confined to the Tien Shan mountains in Kirghizstan. LYASHCHEV & TOLSTIKOV (1993) described one more species from Uzbekistan. This paper proposes a new species of this genus from Ala-Tau Ridge of the same mountain range, but from a location in Kazakhstan.

Morphological terminology follows that developed by F. GRANDJEAN (1960). A summary of his nomenclature for leg setation can be found in NORTON (1977).

This species is named in honor of the late Dr Donald JOHNSTON (Ohio State University, Columbus, Ohio, U.S.A.), who for many years encouraged his students to succeed in the science of acarology.

Epidamaeus johnstoni n. sp.

(figs 1–3)

Diagnosis. With general characters of *Epidamaeus* (Bulanova-Zakhvatkina, 1957). Spinae adnatae normally developed. Propodolateral apophyses small, but conspicuous. Notogastral setae flagellate, barbed. Setae c_1 directed anteriorly, *lm*-h_1 posteriorly. Discidium (*di*) horn-like. Tubercles *Ta* and *Tp* developed; connected to strong tubercle *Va* by a longitudinal ridge.

Dimensions of holotype male. Ventral length 498 µm; maximum notogastral width 324 µm; notogastral length 342 µm; proportion length/width of notogaster 1.06.

Cerotegument. Tubercles stellate on body, filamentous on the legs.

Prodorsum (Fig. 1). Tubercle *Da* relatively large. Propodolateral apophyses present, small but distinct, directed anteriad. Setae *le* (75 µm) thick, with strong barbs; *ro* of same length, with sparse, fine barbs; *ex* (50 µm) moderately barbed; *in* short (26 µm), straight, with rows of barbs. Sensillus (*ss*) long (255 µm), flagellate, with sparse barbs.

Notogaster (Fig. 1). Almost spherical, 1.06 times longer than broad; spinae adnatae of moderate size, with narrow base, slightly curved at tip. Dorsal setae (125-130 µm long), flagellate, bearing close rows of

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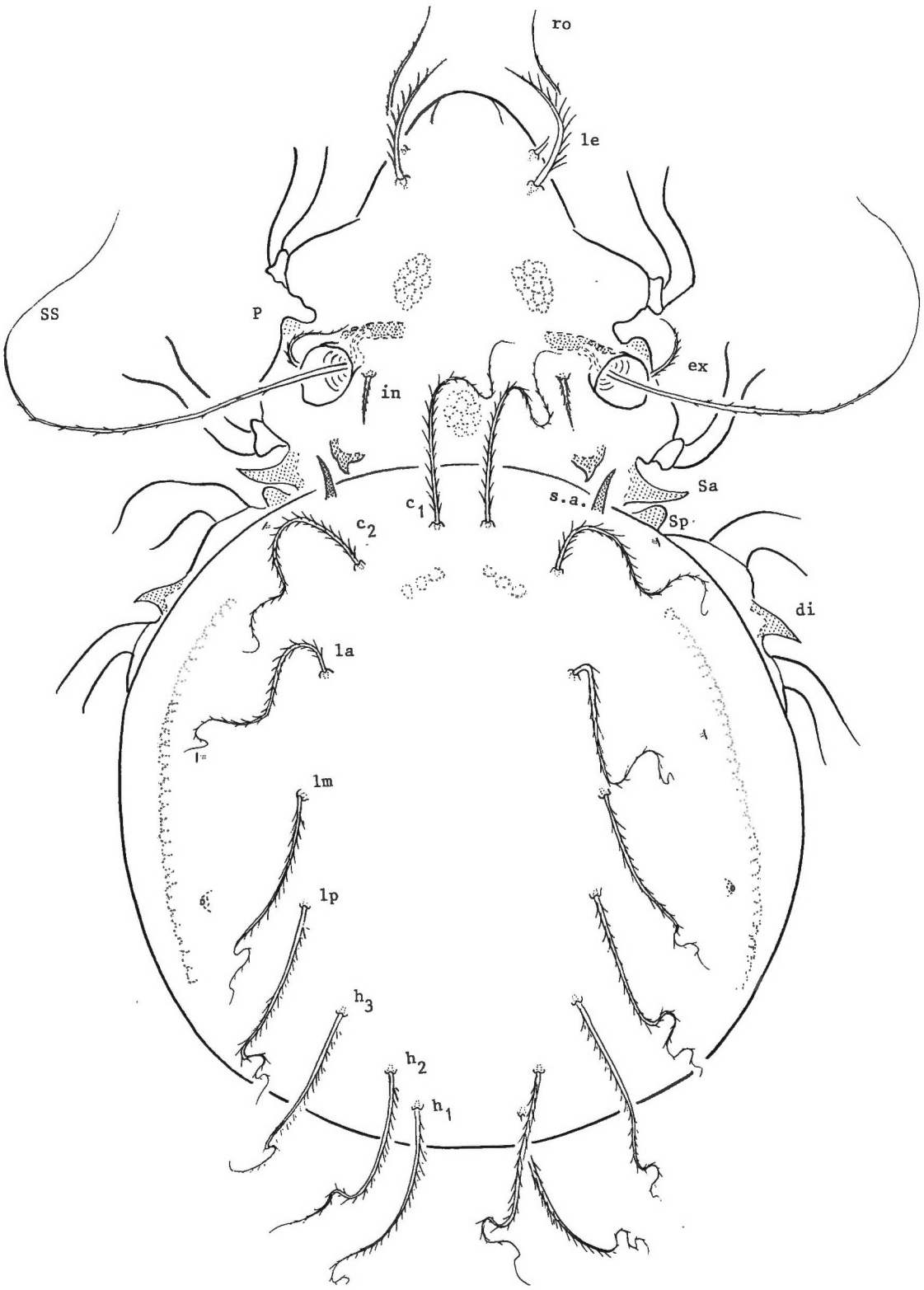

FIG. 1: *Epidamaeus johnstoni* n. sp., dorsal aspect.

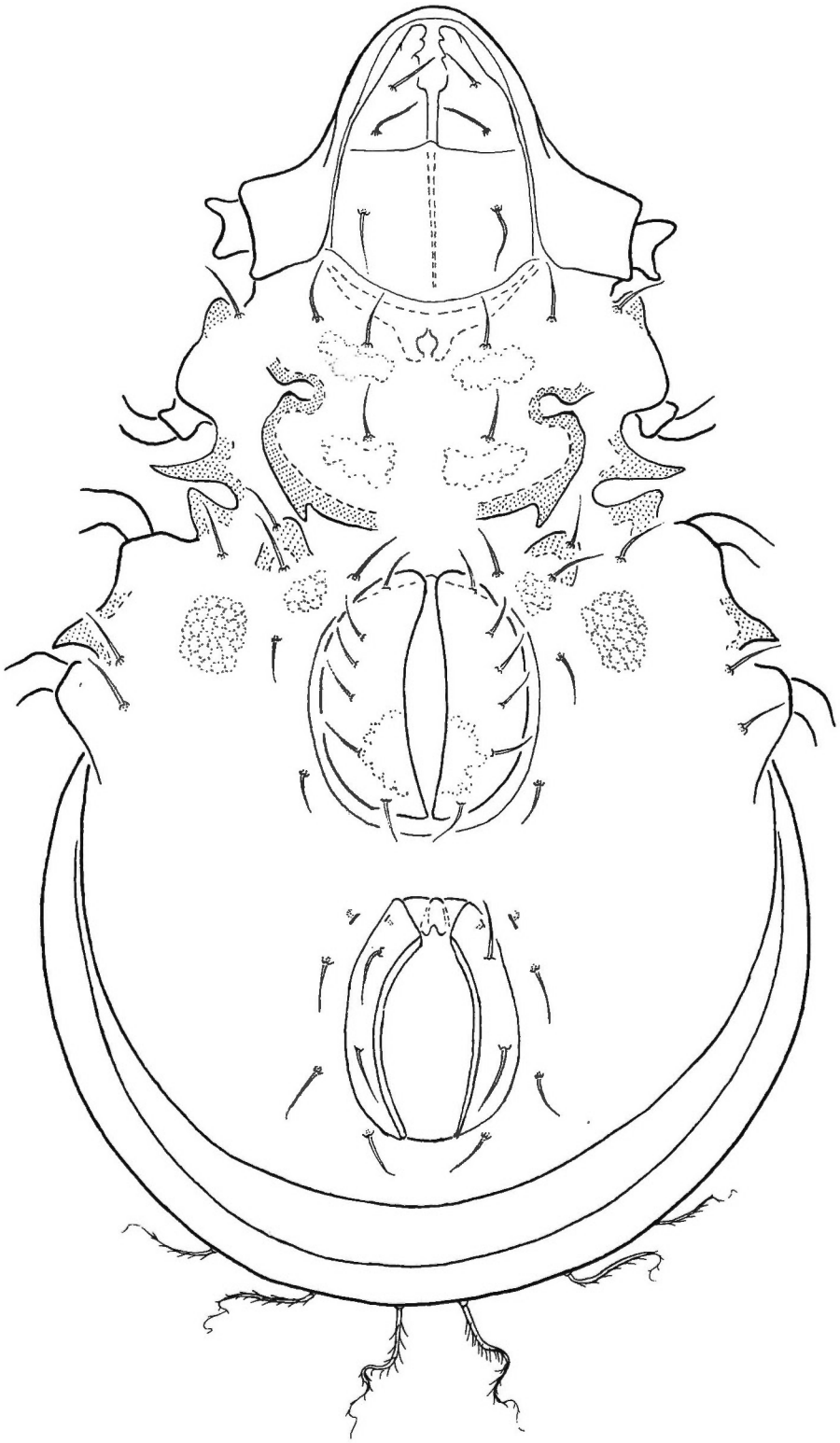

FIG. 2: *Epidamaeus johnstoni* n. sp., ventral aspect.

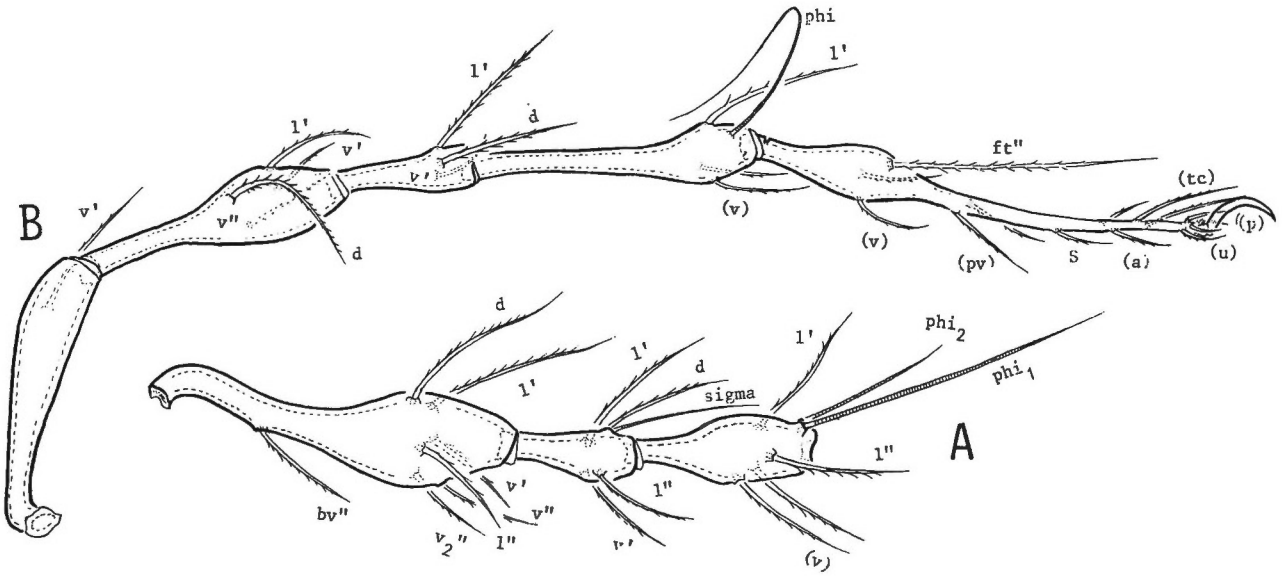

FIG. 3: *Epidamaeus johnstoni* n. sp.
A. — Right leg I (antiaxial; tarsus omitted). B. — Right leg IV (dorso-paraxial).

strong barbs; c_1 directed anteriorly, c_2 and *la* antero-laterally, *lm*-h_1 directed posteriorly.

Ventral region (Fig. 2). Propodolateral (*Ta*, *Tp*) and ventrosejugal (*Va*, *Vp*) enantiophyses well developed, first three connected by longitudinal ridge. Parastigmatic enantiophyses (*Sa*, *Sp*) of normal size. Anterior tectum of podocephalic fossa laterally produced. Discidium (*di*) triangular, of normal size. Coxisternal formula 3-1-3-4. Setation of anogenital region with normal complement of 2 pairs of anal and 6 pairs of genital setae.

Gnathosoma. Typical of the genus.

Legs (Fig.3: A, B). Setal formula (legs I to IV, famulus included on tarsus I, number of solenidia in parentheses) as follows: trochanters, 1-1-2-1; femora, 7-6-4-4; genua, 4(1)-4(1)-3(1)-3; tibiae, 4(2)-4(1)-3(1)-3(1); tarsi, 20(2)-17(2)-17-14. Measurements of leg segments in Table 1.

Immatures. Unknown.

Material examined[1]. Two males (holotype and paratype) were collected from dense bushes, along the Kshy-Kaindy river, on the northern slope of the Ala-Tau Ridge (1600 m above sea level), western Aksu-Dzhabagly, Tien Shan Mountains, Kazakhstan, leg. S. IORDANSKY.

Segment	Leg I	II	III	IV
Trochanter	–	–	62	98
Femur	159	140	101	137
Genu	55	49	50	65
Tibia	78	65	78	119
Tarsus	169	167	167	200

TABLE 1: Length of leg segments of holotype (in µm):

Types deposited in the collections of the Tyumen State University Zoological Museum, Tyumen (holotype), and of the Zoological Museum at the Institute for Systematics and Ecology of Animals, Novosibirsk, Siberia (paratype).

Differential diagnosis. The shape of notogastral setae of the new species is very similar to that of *E. golosovae* Ljashchev et Tolstikov, 1993. *E. johnstoni* n.

1. After this paper was submitted for publication, two more specimens (females) of *Epidamaeus johnstoni* sp. n. have been found in the same material. Paratype status is given to both specimens, which are deposited in the collections of the Tyumen State University Zoological Museum, Tyumen, Russia.

sp. is readily distinguishable from the latter by the presence of spinae adnatae, propodolateral apophyses, and some other features.

ACKNOWLEDGEMENTS

The author thanks Dr S. IORDANSKY, Institute of Virology, Moscow, Russia for donating the specimens for study, Dr A. PETROVA-NIKITINA, Moscow Lomonosov State University, Moscow, Russia and Dr A. A. LYASHCHEV, Tyumen Agricultural Academy, Tyumen, Russia for helpful discussions. The author is very glad to thank Prof. R. A. NORTON, S.U.N.Y., College of Environmental Science and Forestry, Syracuse, N.Y., U.S.A., who kindly reviewed the manuscript.

REFERENCES

BULANOVA-ZAKHVATKINA (E. M.), 1975. — Superfamily *Belboidea* Dubinin, 1954 (=*Damaeoidea* Balogh, 1961). — *In* Gilyarov, M. S. (ed.), Key to Soil Inhabiting Mites. *Sarcoptiformes*: 120-143. Nauka Publ., Moscow [In Russian].

BULANOVA-ZAKHVATKINA (E. M.), 1979. — The geographical distribution of *Epidamaeus* Bulanova-Zakhvatkina, 1957 species (Acariformes Oribatei). — *In* PIFFLE, E. (ed.), Proc. 4th Int. Congr. Acarology, 1974: 57-60. Akademiai Kiado, Budapest.

GRANDJEAN (F.), 1960. — *Damaeus arvernensis* n. sp. (Oribate). — Acarologia, **2** (2): 251-275.

LYASHCHEV (A. A.) & TOLSTIKOV (A. V.), 1993. — *Epidamaeus (Akrodamaeus) golosovae* sp. n.–a new representative of oribatid mites (Acariformes, Oribatei) from Central Asia. — Zool. Zhurn., **73** (1): 153-157.

NORTON (R. A.), 1977. — A review of F. Grandjean's system of leg chaetotaxy in the Oribatei and its application to the Damaeidae. — *In* DINDAL, D. L. (ed.), Biology of Oribatid Mites: 33-61. S.U.N.Y. College of Environmental Science and Forestry, Syracuse.