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A new macrochelid mite (Acarina: Mesostigmata) associated with *Trox sabulosus* (Coleoptera: Scarabaeidae)

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Taxonomy, Acarina, mite, *Macrocheles trogicolis* sp. n., *Trox sabulosus*, phoresy, Slovakia

Abstract. *Macrocheles trogicolis* sp. n., a new macrochelid mite (Acarina: Mesostigmata: Macrochelidae) has been described on the basis of collections from the scarabaeid beetle *Trox sabulosus* (L., 1758) in Slovakia.

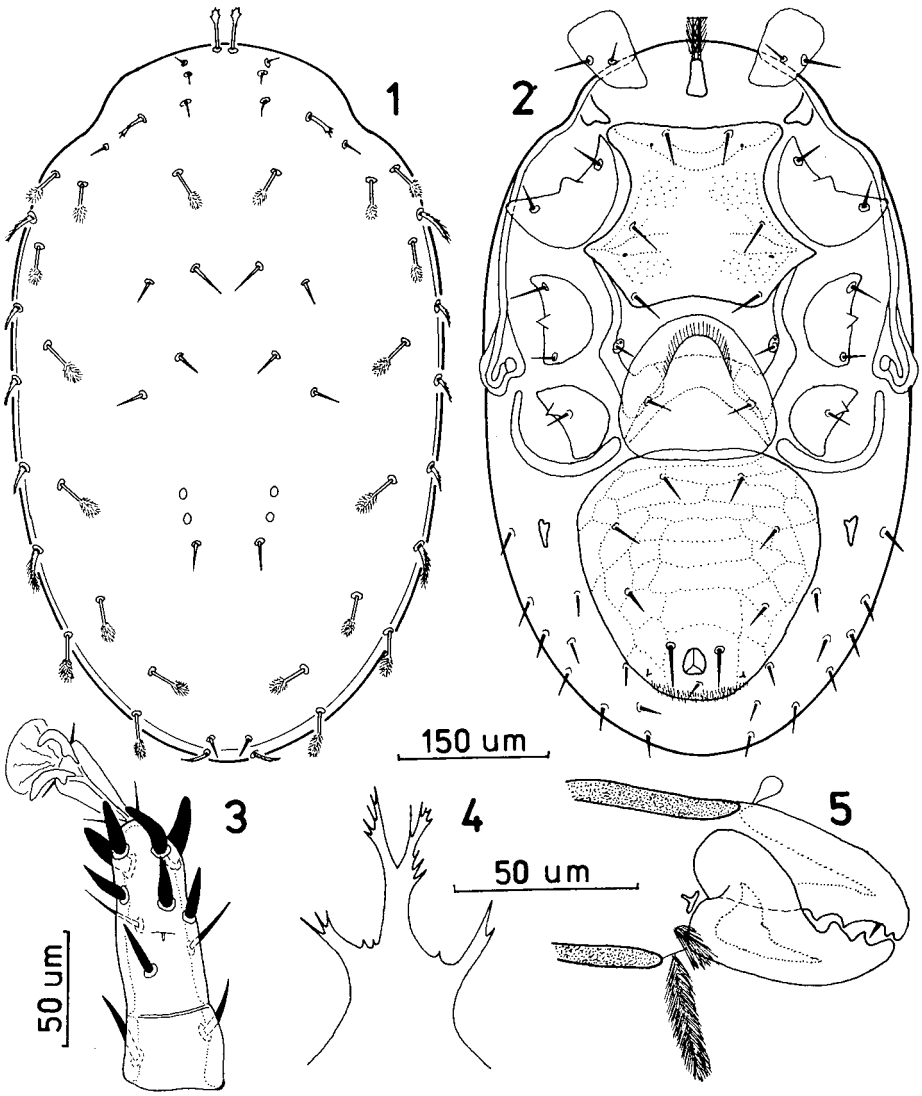
INTRODUCTION

The adults and larvae of the scarabaeid beetle, *Trox sabulosus* (L.) are necrophagous or saprophagous. In comparison with coprophilous scarabaeids, on which many phoretic macrochelid mites have been found and studied [e.g., Evans & Hyatt (1963); Costa (1966, 1967); Krantz & Mellott (1972); Kranz (1991)], knowledge of the macrochelid associates of the genus *Trox* is limited. Sixl (1971) found phoresy of females of *Macrocheles penicilliger* (Berlese) on *Trox scaber* (L.) in Austria and Mašán (1993) found the same species on *Trox sabulosus* (L.) in Slovakia. Phoresy of *M. penicilliger* on *T. scaber* was observed also by Evans & Browning (1956) in England. Recent studies upon *T. sabulosus* in Slovakia revealed a new species of *Macrocheles*.

Macrocheles trogicolis sp. n.

FEMALE: Idiosoma length: 710–745 μm, width: 455–480 μm. Dorsum (Fig. 1): Body elongate, elliptical, widest at the level of setae s6. Dorsal shield with 28 pairs of setae, differing in length and form; setae z1, s2, j2, j3, j5, j6, z5, z6, J2 and J5 simple, needle-shaped, setae z1 and j2 very short and indistinct (setal signatures according to Halliday, 1987). Setae z2 thicker than the preceeding, similarly needle-shaped, but produced distally into 3–5 needle-like points. Setae r3, r4, s6, S1, Z5 and often S2 thicker basally, narrowed uniformly toward apex, curved moderately, their convex side pubescent. Setae j4, z4, r2, s4, s5, Z1, Z3, Z4, S4 and S5 long, thickened and pubescent distally. Setae j1 only thickened moderately, with denticulated margins, smooth. Dorsum generally reticulated, with 22 pairs of pores.

Venter (Fig. 2): Sternal shield 155–170 μm long and 170–180 μm wide (on the level of setae St2: n = 10), with three pairs of short, needle-like sternal setae, granulated finely laterally. Metasternal shields rounded, each with one seta, genital shield unadorned and with one pair of setae. Ventrianal shield 240–255 μm long and 230–245 μm wide, with three pairs of preanal setae; paranal setae longer than preanal, postanal seta smooth; shield



Figs 1–5: *Macrocheles trogicolis* sp. n., female. 1 – dorsum; 2 – venter; 3 – tarsus II; 4 – tectum; 5 – chelicera.

reticulate as illustrated. With one pair of small metapodal shields and ten pairs of short needle-like opisthogastric setae.

Gnathosoma typical for genus. Chaetotaxy on legs normal, only tarsi II (Fig. 3) with strong spines. Tectum (Fig. 4) with free lateral processes, median process bifurcate distally. Both digits of chelicerae tridentate (Fig. 5). The sacculus complex is not well visible.

DIFFERENTIAL DIAGNOSIS: According to the chaetotaxy of the dorsum, *Macrocheles trogicolis* sp. n. is most similar to *Macrocheles lagodekhensis* Bregetova & Koroleva, 1960, in which the following setae are distally pubescent: j1, j4, z4, Z1, Z3, Z4, s5, S2, S4, S5, Z5 and r2 (Bregetova & Koroleva, 1960). The essential difference is in the presence of setae J1 in *M. lagodekhensis*, which are absent in *M. trogicolis* sp. n. Further differences are in the form of the lateral dorsal setae and in the ornamentation of the sternal shield.

DERIVATIO NOMINIS: The species name is derived from the generic name of the phoront beetle on which this species was found for the first time.

MATERIAL EXAMINED: Holotype – 1 ♀: Jakubov (Záhorská nížina lowland), Slovakia, 21.vii.1992, on *Trox sabulosus* (L.) found in decaying felt; paratypes – 39 ♀♀ with the same data, 3 ♀♀: 22.iv.1992, Jakubov, 1 ♀: Podunajské Biskupice (Podunajská nížina lowland), Slovakia, 6.v.1992, on *Trox sabulosus* found on remains of a roe-deer cadaver (all leg. author). Holotype and paratypes are deposited in the authors collection in the Institute of Zoology and Ecosozology of the Slovak Academy of Sciences in Bratislava.

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REFERENCES

BREGETOVA N.G. & KOROLEVA E.V. 1960: (Mites of family Macrochelidae Vitzthum, 1939. Fauna of USSR.) *Parasit. Sb. Zool. Inst. AN SSSR* **19**: 32–154.

COSTA M. 1966: Notes on macrochelids associated with manure and coprid beetles in Israel. I. Macrocheles robustulus (Berlese, 1904), development and biology. *Acarologia* **8**: 532–548.

COSTA M. 1967: Notes on macrochelids associated with manure and coprid beetles in Israel. II. Three new species of the Macrocheles pisentii complex, with notes on their biology. *Acarologia* **9**: 304–329.

EVANS G.O. & BROWNING E. 1956: British mites of the subfamily Macrochelinae Trägardh (Gamasina – Macrochelidae). *Bull. Br. Mus. Nat. Hist. (Zool.)* **4**: 3–55.

EVANS G.O. & HYATT K.H. 1963: Mites of the genus Macrocheles Latr. (Mesostigmata) associated with coprid beetles in the collections of the British Museum (Natural History). *Bull. Br. Mus. Nat. Hist. (Zool.)* **9**: 327–401.

HALLIDAY R.B. 1987: Further observations on the dorsal idiosomal chaetotaxy in the Macrochelidae (Acarina). *Int. J. Acarol.* **13**: 51–53.

KRANTZ G.W. 1991: Nature of the association between pisentii-group mites (Acari: Macrochelidae: Macrocheles) and dung beetles of the genus Scarabaeus (Coleoptera: Scarabaeidae) in Southern France. *Acarologia* **32**: 3–11.

KRANTZ G.W. & MELLOTT J.L. 1972: Studies on phoretic specifity in Macrocheles mycotrupetes and M. peltotrupetes Krantz and Mellott (Acari: Macrochelidae), associates of geotrupine Scarabaeidae. *Acarologia* **14**: 317–344.

MAŠÁN P. 1993: Mites (Acarina) associated with species of Trox (Coleoptera: Scarabaeidae). *Eur. J. Entomol.* **90**: 359–364.

SIXL W. 1971: Ein Beitrag zur Kenntnis der Phoresie. Macrocheles- und Uroseiusarten (Arachnida, Acari) an Trox scaber L. (Col., Scarabaeidae) als Transportwirt. *Mitt. Naturwiss. Ver. Steiermark* **100**: 405–406.

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