A NEW SPECIES OF LORRYIA (ACARI: TYDEIDAE) FROM A TERMITE NEST IN SOUTH AFRICA

Alexander A. Khaustov1*, Elizabeth A. Hugo-Coetzee2,3 and Sergey G. Ermilov1

1X-BIO Institute, Tyumen State University, Tyumen, Russia
2Terrestrial Invertebrate Department, National Museum, Bloemfontein, South Africa
3Department of Zoology and Entomology, University of the Free State, Bloemfontein, South Africa
*corresponding author; e–mail: alex1973khaustov@gmail.com

ABSTRACT: A new species—Lorryia pseudoplacita sp. n.—is described from central South Africa. It was collected from a nest of the termite Trinervitermes trinervoides (Sjöstedt, 1911) (Isoptera: Termitidae). The new species differs from L. placita in the shape of the dorsal setae and in having a shorter palptarsus.

KEY WORDS: Tydeoidea, systematics, morphology, SEM microscopy, Ethiopian region.

DOI: 10.21684/0132-8077-2020-28-1-47-53

MATERIALS AND METHODS

The mites were collected from termite nests with shovels and extracted using Berlese funnels. Most of the mites were mounted in Hoyer’s medium. For SEM microscopy, several alcohol-preserved mites were dried in a JFD 320 (JEOL, Japan) freeze-drying device, coated with gold and scanned with a TESCAN Mira3 LMU SEM microscope. The mite morphology was studied using a Carl Zeiss AxioImager A2 compound microscope with phase contrast and DIC illumination. Notations applied to the body and leg setae follow the system of Grandjean—overviewed by Kethley (1990) and André (1981b), respectively—with minor modifications. The palpal setation follows André (1981a).

SYSTEMATICS

Family Tydeidae Kramer, 1877
Genus Lorryia Oudemans, 1925 sensu Kaźmierski, 1989
Type species: Lorryia superba Oudemans, 1925, by original designation.

INTRODUCTION


Previously, we have described many new taxa of prostigmatic and oribatid mites from termite nests in South Africa (Ermilov et al. 2017a-c, 2019; Khaustov et al. 2017a, b, 2018a, b, 2019a, b). During the study of mites inhabiting termite nests in South Africa, a new species of Lorryia was discovered in the nest of Trinervitermes trinervoides (Sjöstedt, 1911) (Isoptera: Termitidae). The aim of this paper is to describe the new species and to compare it with the holotype of the closely related L. placita (Livshitz, 1973).
**Lorryia pseudoplacita sp. n.**
(Figs. 1–5)


**Idiosomal dorsum** (Figs. 1A, 4A). Dorsal ornamentation: striation type “Tydeus”; dorsal stria with tubercles (Fig. 4A); no reticulation patterns on idiosoma; more than 20 stria lie between trichobothria. Trichobothria smooth, whip-like, about three times longer than other prodorsal setae; other dorsal setae subequal in length and shape, thin, slightly curved and weakly barbed (Fig. 4A). Lengths of setae: vi 10 (10–12), ve 12 (10–12), sci 44 (34–44), sce 13 (12–14), c1 14 (13–15), c2 11 (13–15), d 12 (12–15), e 14 (13–16), f1 14 (14–15), f2 13 (13–15), h1 13 (12–14), h2 14 (12–16), ps1 12 (11–14).

**Idiosomal venter** (Figs. 1B, 5A, B). Cuticular tubercles on ventral stria in general smaller than on dorsal surface; stria between setae 3a and 4a longitudinal (Fig. 5A). Lyrifissures ih situated near posterior edge of opisthosoma. Coxal organs very small, ovate. Epimeral formula 3–1–4–2. Six pairs of genital and four pairs of aggenital setae (Fig. 5B); some specimens with asymmetric number of genital setae 5/6, 5/7 or 6/7.

**Gnathosoma** (Figs. 2, 4B, C). Gnathosoma not covered by idiosoma. Cheliceral stylets 17 (17–18) longer than palptarsus 12 (12–13) and slightly

**Legs** (Figs. 3, 4D, 5C, D). Legs setation typical for the genus. Setae \((p)\), \((tc)\) and \(ft''\) of tarsus I eupathid-like, smooth, other setae on legs thin and weakly barbed. Solenidion \(ω\) (7) on tarsus I finger-shaped (Fig. 5C); solenidion \(ω\) (3) on tarsus II rod-like (Fig. 5D). Famulus \(k\) on tibia I multi-branched distally (Fig. 4D). Empodia with very small empodial hooks.

**Male** similar to female, differing only in having a longitudinal slit-like genital opening and four pairs of short and barbed eugenital setae.

**Larva, protonymph, deutonymph and tritonymph** unknown.

**Type material.** Female holotype, slide AK221018/T, South Africa, Bloemfontein, Franklin Game Reserve on Naval Hill, 29º05′57.9″S 026º14′03.2″E, 1,404 m a.s.l., in the nests of termites *Trinervitermes trinervoides*, 22 October 2018, collected by A. A. Khaustov, S. G. Ermilov and E. A. Hugo-Coetzee; paratypes: 9 females, 7 males, same data.

**Type deposition:** the holotype, four female and two male paratypes are deposited in the acarological collection of the National Museum, Bloemfontein, South Africa (NMBS); other paratypes are deposited in the mite collection of the Tyumen State University Museum of Zoology, Tyumen, Russia (TSUMZ).

**Etymology.** The name of the new species is a combination of the Greek *pseudo*, meaning *false*, and the Latin *placita*—the species epithet of the closely related species, *L. placita*.

**Differential diagnosis.** The new species is very similar to *L. placita* (Kuznetsov and Livshitz 1973) in having a similar type of striation and dorsal body setae. We examined the holotype of *L. placita*, housed in TSUMZ, and found the shapes of the dorsal body setae to be slightly different in the two species. In fact, in *L. placita*, setae \(v\), \(ve\), \(sce\) and \(c2\) are clearly thinner and weaker barbed (Fig. 6B) than other dorsal hysterosomal setae (Fig. 6A). In *L. pseudoplacita*, on the other hand, all dorsal setae are uniformly thin and weakly barbed. The new species also differs from *L. placita* in having a distinctly shorter palptarsus (12–13 vs. 19 in *L. placita*).
Remarks. Tydeid mites have never been recorded in termite nests.

ACKNOWLEDGEMENTS

The authors thank Dr. N. V. Beljaeva (Moscow State University, Moscow, Russia) for the identification of the termite species and A. N. Bobylev (Tyumen State University, Russia) for the SEM images.

The study was supported by the Russian Foundation for Basic Research (RFBR), the research project No. 18-04-00096A.

REFERENCES


inhabiting nests of the termite *Trinervitermes trinervoides* (Sjöstedt) in the Franklin Game Reserve (Bloemfontein, South Africa), with description of a new species of the genus *Ceratobates* (Tegoribatidae). *Systematic and Applied Acarology*, 22(10): 1715–1732.


Fig. 5. SEM micrographs of Lorryia pseudoplacita sp.n., female: A—type of striation between metasternal setae, B—ano-genital area, C—solenidion and eupathidium ft” on tarsus I, D—solenidion on tarsus II.


Fig. 6. DIC micrographs of Lorryia placita (Livshitz, 1973), female (holotype): A—hysterosomal dorsum, B—prodorsum and anterior part of hysterosoma.