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

Alexander A. Khaustov^{1*}, Elizabeth A. Hugo-Coetzee^{2,3} 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.

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INTRODUCTION

The family Tydeidae currently includes more than 300 species, sorted into about 30 genera; it is a diverse group of mostly fungivorous mites, characterized by a worldwide distribution (Silva *et al.* 2016; Kaźmierski *et al.* 2018). Twenty-one species of Tydeidae have been described from South Africa: *Pretydeus curiosa* (Ueckermann and Smith Meyer, 1979), *Ueckermannia grewiae* (Ueckermann, 1988), *Lorryia celtides* Ueckermann and Smith Meyer, 1979, *L. furcata* (Ueckermann and Smith Meyer, 1979), *L. leonora* (Ueckermann and Smith Meyer, 1979), *L. monticola* (Ueckermann and Smith Meyer, 1979), *L. ponglana* Ueckermann and Smith Meyer, 1979, *L. pseudovaritas* (Theron and Ueckermann, 2012), *L. relhaniae* Ueckermann and Smith Meyer, 1979, *L. rutrus* (Theron and Ueckermann, 2012), *L. varitas* (Theron and Ueckermann, 2012), *L. vinea* (Ueckermann and Smith Meyer, 1979), *L. zebamontana* (Smith Meyer, 1988), *Nudilorryia schotiae* (Ueckermann, 1988), *Orfareptydeus stepheni* Ueckermann and Grout, 2007, *Pseudolorryia andreae* (Ueckermann and Smith Meyer, 1979), *P. fustis* (Ueckermann, 1988), *P. pseudofustis* (Theron and Ueckermann, 2012), *Tydeus africanus* Baker, 1970, *T. munsteri* Meyer and Ryke, 1959 and *T. reticoxus* (Ueckermann, 1988) (Ueckermann and Smith Meyer 1979a, b; Smith Meyer and Ueckermann 1988; Ueckermann and Smith Meyer 1988; Theron *et al.* 2012; Silva *et al.* 2016). The genus *Lorryia* Oudemans, 1925 sensu Kaźmierski, 1989 is the largest in the family and includes two thirds of all known tydeid mites (Silva *et al.* 2016).

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).

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). The systematics of Tydeidae follows Kaźmierski (1998). The photomicrographs were taken with an AxioCam ICc5 digital camera. All the measurements are given in micrometers (μm) for the holotype and for the five paratypes (in parentheses).

SYSTEMATICS

Family Tydeidae Kramer, 1877

Genus *Lorryia* Oudemans, 1925 sensu Kaźmierski, 1989

Type species: *Lorryia superba* Oudemans, 1925, by original designation.

Fig. 1. *Lorryia pseudoplacita* sp.n., female: A—dorsum of the body, B—venter of the body. Legs omitted.

***Lorryia pseudoplacita* sp.n.**

(Figs. 1–5)

Description. With character states described for the genus *Lorryia* in Kaźmierski (1989). **Female.** Body ovate, yellowish in living mites. Length of idiosoma 270 (260–270), maximum width 150 (150–165).

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), *cl* 14 (13–15), *c2* 11 (13–15), *d* 12 (12–15), *e* 14 (13–16), *fl* 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

Fig. 2. *Lorryia pseudoplacita* sp. n., female: A—cheliceral stylet, B—palp, dorsal aspect.

shorter than combined length of palptarsus and eupathidium (p) 20 (19–20). Palpal organotaxy: 0–2–2–6+ ω . Palpal terminal eupathidium with T-shaped projection distally; seta d bifurcate distally.

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. Solenidium ω (7) on tarsus I finger-shaped (Fig. 5C); solenidium 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, 29°05'57.9"S 026°14'03.2"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*, described from Crimea (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 vi , 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*).

Fig 3. *Lorryia pseudoplacita* sp. n., female: A-D—legs I-IV, dorsal aspect.

Remarks. Tydeid mites have never been recorded in termite nests.

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Fig. 4. SEM micrographs of *Lorryia pseudoplacita* sp.n., female: A—left posterior opisthosomal part with setae *h1* and *h2*, B—gnathosoma, dorsal aspect, C—palptarsus, ventral aspect, D—famulus *k* on tibia I.

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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.

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

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