Zoosymposia 22: 305–306 (2022)
https://www.mapress.com/j/zs

Correspondence

ISSN 1178-9905 (print edition)
ZOOSYMPOSIA
ISSN 1178-9913 (online edition)

https://doi.org/10.11646/zoosymposia.22.1.188

Two cases of structural anomalies on dorsal podosomal shields in *Raphignathus gracilis* (Rack) (Acariformes: Raphignathidae)*

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**In*: Zhang, Z.-Q., Fan, Q.-H., Heath, A.C.G. & Minor, M.A. (Eds) (2022) *Acarological Frontiers: Proceedings of the XVI International Congress of Acarology (1–5 Dec. 2022, Auckland, New Zealand)*. Magnolia Press, Auckland, 328 pp.

Raphignathus gracilis (Rack, 1962) (Raphignathidae) is a widely distributed species and has been recorded from many countries including Turkey (Koç & Ayyıldız 1996; Doğan 2003, 2019; Beron 2020; Mohammad-Doustaresharaf & Kazemi 2022). It can be recognized by having 2 setae on palp femur, 2 pairs of setae on interscutal membrane of idiosoma, no obvious small platelets posteriad of median podosomal shield, 3 pairs of genital setae and 3 setae on femur IV in female (Fan & Yin 2000; Doğan *et al*. 2019).

Altogether 398 female specimens of *R. gracilis* collected within the scope of an on-going study on mite biodiversity (121Z986) were examined. Asymmetrical variations in 2 of the specimens examined were detected. Mite specimens were extracted by using Berlese-Tullgren, cleared in 60% lactic acid and mounted in Hoyer's medium on microscopic slides as discussed in detail by Fan & Zhang (2005) and Doğan (2006). The variations were photographed with the aid a Leica DM 4000B phase-contrast light microscope.

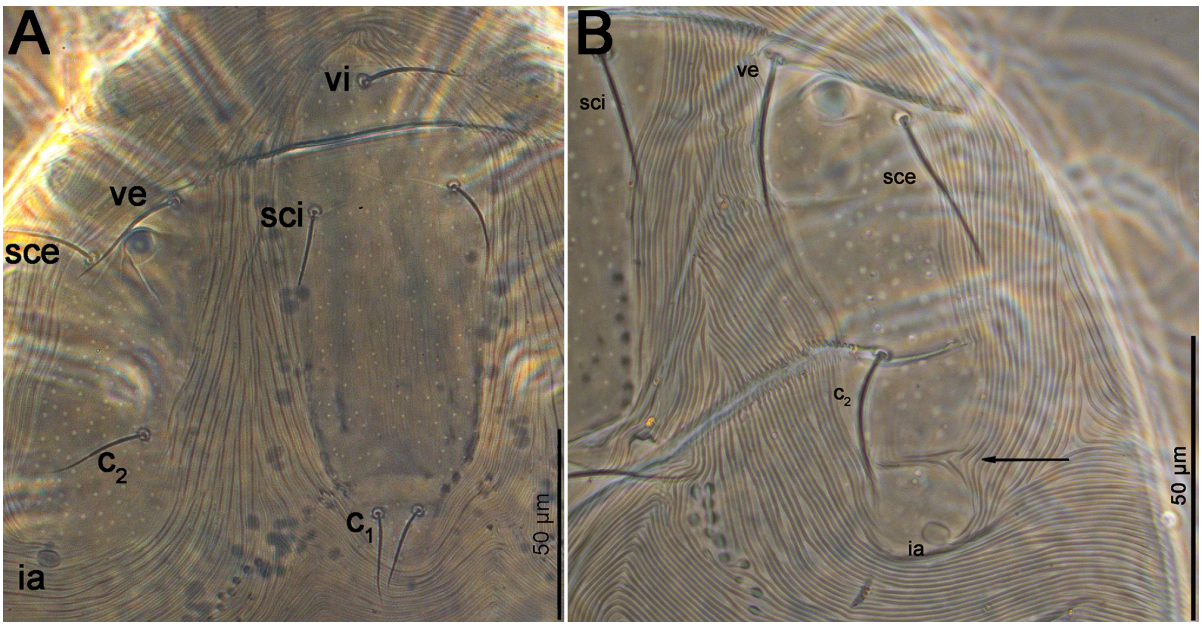

FIGURE 1. Morphological variations in *Raphignathus gracilis* (female)—A) One of *vi* on median propodosomal shield is absent; B) Right lateral podosomal shield is divided (arrowed).

Submitted: 18 Oct. 2022; Accepted by Zhi-Qiang Zhang: 20 Oct. 2022; published: 30 Nov. 2022

There are typically a pair of internal vertical setae (*vi*) on the median podosomal shield of *R. gracilis*, but an examined female specimen lacks the left seta *vi* (Fig. 1A). In another examined female specimen, right lateral podosomal shield is indented by striae in its lower part (Fig. 1B). In *R. gracilis*, some variations on the location of internal pair of sacral setae (f_1), the positon of internal pair of lumbral setae (e_1) and the number of aggenital setae (*ag*) were determined and recorded by Gerson (1968), Bingül *et al*. (2018) and Doğan *et al*. (2019). These two asymmetric structural variations in *R. gracilis* mentioned in this study are reported for the first time. These variations disrupting the bilateral symmetry can be expressed as anomaly (Bingül *et al*. 2018). The anomaly rate in the current study is only around 0.5% (2/398) whereas the rate in Bingül *et al*. (2018) is 15.38%. In conclusion, it can be asserted that the abnormalities detected in this study are of very low frequency.

Acknowledgements. The specimens in the current study were collected during a project (121Z986) supported by Scientific and Technological Research Council of Turkey (TÜBİTAK). We gratefully appreciate TÜBİTAK's financial assistance.

Keywords: Anomaly, asymmetric variation, mite, morphology

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