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## Two new *Anoplocheylus* species (Acari: Trombidiformes: Pseudocheylidae) from Kurdistan province of Iran

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### Abstract

Two new species of the genus *Anoplocheylus* Berlese, 1910 are described: *Anoplocheylus marivaniensis* sp. nov. collected from soil and rotten leaves under oak trees and *Anoplocheylus qorvehiensis* sp. nov. from soil under *Astragalus* sp. bushes in Kurdistan province, Iran. A key to females of all known species of *Anoplocheylus* is provided, based on original descriptions and other literature.

**Key words:** Anystoidea, Pseudocheylidae, oak trees, *Astragalus* bushes, litter

### Introduction

Pseudocheylid mites are predators that are found in different habitats such as on bark, in leaf litter, in nests, on moss and sometimes in soil (Walter *et al.* 2009; Van Dis & Ueckermann 1991). According to Walter *et al.* (2009), these mites are considered members of the Anystoidea, which comprises the families Anystidae, Teneriffiidae and Pseudocheylidae. The family Pseudocheylidae is distinguished by: lacking genital papillae; having pad-like tarsal apoteles I-IV that are produced into elongated annulate stalks and bear paired, minute claws; a reduced palp-tarsus; widely separated coxal fields I–II and III–IV; and anapomorphic additions of adanal and anal setae during ontogeny (Walter *et al.* 2009). According to Kethley (1990) this family comprises three genera, *Anoplocheylus*, *Neocheylus* and *Pseudocheylus*. The genus *Anoplocheylus* was revised by Ueckermann and Khanjani (2004) who described two new species in the process, one from Iran and the second from South Africa. They showed that the number of setae on the palp femur, presence or absence of a genital aperture and genital setae, and the number of setae on the prodorsal shield are important characters distinguishing different life stages. Up to now four species of the genus *Anoplocheylus* were recorded from Iran, namely: *A. malayeriensis* Ueckermann & Khanjani, 2004; *A. bonabjadidiensis* Navaei-Bonab, 2011; *A. sinai* Bagheri, 2013; *A. kazemii* Bagheri, 2013. In this paper two new species of *Anoplocheylus* are described and illustrated from west Iran.

### Material and methods

Tullgren funnels were used to extract mites from soil and litter under oak trees, *Astragalus* sp. bushes and hawthorn trees from the vicinities of Qorveh and Marivan, Kurdistan province. The mites were separated under a stereomicroscope and mounted on slides in Hoyer's medium. The slides were dried in an oven at about 50°C for a week, ringed with nail polish and examined under an Olympus BX51 microscope with phase contrast and differential interference contrast. Drawings were made by means a camera Lucida. The terminology of idiosomal chaetotaxy and abbreviations follow Kethley (1990) and Van Dis and Ueckermann (1991). All measurements are given in micrometers (µm).

**Remarks.** The new species is unique in the genus *Anoplocheylus* by having prodorsal sensillae (*sc*<sub>1</sub>) plumose in shape, but it does resemble *A. paraclavatus* Van Dis and Ueckermann, 1991 in having five pairs of setae on prodorsal shield, but differs from the latter by: 1) setae *sc*<sub>1</sub> plumose in new species but claviform in *A. paraclavatus*; 2) telofemora I with six setae instead of five setae in *A. paraclavatus*; 3) tarsi I–IV with 18( $\omega$ )–7( $\omega$ )–9–9 setae in *A. qorvehensis* but 19( $\omega$ )-7( $\omega$ )-7-7 in *A. paraclavatus*.

**Etymology.** This species is named after the type locality Qorveh.

**Type materials.** Holotype female and one paratype female from Qorveh vicinity, Kurdistan province, soil under *Astragalus* sp. bushes, (47° 47' 06.33" N, 35° 09' 03.62" E, 1472 m a.s.l.), 20 March 2013; coll. Fatemeh Amini. The type material are slide mounted specimens. The holotype female deposited in the Acari collection of the Department of Plant Protection, Faculty of Agriculture, University of Bu-Ali Sina, Hamedan, Iran and one paratype female will be deposited in the Arachnida Collection of ARC–Plant Protection Research Institute, Pretoria, South Africa.

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## References

- Bagheri, M., Zarei, E., Ahaniazad, M., Gharekhany, G. & Navaei-Bonab, R. (2013) Two new species of the genus *Anoplocheylus* Berlese, 1910 (Acari: Trombidiformes: Pseudocheylidae) from Iran. *Zootaxa*, 3599 (3), 291–297. <http://dx.doi.org/10.11646/zootaxa.3599.3.6>
- Baker, E.W. & Atyeo, W.T. (1964) A review of the mites of the family Pseudocheylidae Oudemans, 1909 (Acarina, Prostigmata). *Bulletin of the University of Nebraska State Museum*, 4 (12), 257–272.
- Berlese, A. (1910) Acari nuovi. Manipulus V. *Redia*, 6, 209–210.
- Kethley, J. (1990) Acarina: Prostigmata (Actinedida). In: Dindal, D.L. (Ed.), *Soil Biology Guide*. New York, John Wiley & Sons, pp. 667–756.
- Livshitz, I.Z. & Mitrofanov, V.I. (1973) A new species of the genus *Anoplocheilus* (Trombidiformes, Pseudocheylidae) from the Crimea. *Zoologicheskii Zhurnal*, 52 (5), 770–771.
- Navaei-Bonab, R., Bagheri, M., Ueckermann, E.A. & Zarei, E. (2011) Description of a new species of *Anoplocheylus* Berlese, 1910 (Acari: Trombidiformes: Pseudocheylidae) from Iran. *Acarologia*, 51 (4), 419–423. <http://dx.doi.org/10.1051/acarologia/20112024>
- Ueckermann, E.A. & Khanjani, M. (2004) A revision of the genus *Anoplocheylus* Berlese (Acari: Pseudocheylidae), with the description of two new and redescription of four known species. *Systematic and Applied Acarology*, 9, 53–67.
- Van Dis, J.C.S. & Ueckermann, E.A. (1991) A review of the Pseudocheylidae Oudemans (Acari: Prostigmata). *Phytophylactica*, 23, 105–113.
- Walter, D.E., Lindquist, E.E., Smith, I.M., Cook, D.R. & Krantz, G.W. (2009) Order Trombidiformes. In: Krantz, G.W. & Walter, D.E. (Eds.), *A Manual of Acarology*, 3<sup>rd</sup> edition. Texas Tech University Press, Lubbock, Texas, USA. pp. 233–234.