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Two new species of *Cyta* (Acari: Prostigmata: Bdellidae) from Western Iran

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Abstract

This paper reports two new species of Bdellidae, *Cyta leliae* **sp. nov.** and *Cyta kurdistanicus* **sp. nov.**, collected from soil and litter under oak trees, *Quercus brantii* Lindl. (Fagaceae), wild almond, *Amygdalus lycioides* Spach (Rosaceae) and grass, Kurdistan Province, Iran. A key is provided to adult female *Cyta* of the world.

Key words: taxonomy, Acariformes, predatory, Bdelloidea, Kurdistan

Introduction

Bdellidae Dugès (Acari: Trombidiformes) are predatory mites (Gerson *et al*. 2003) with extended gnathosomae that are known as snout mites and some species are effective biological control agents which feed on tiny insects such as lucerne flea (Wallace & Mahon 1972) and also, according to Alberti (1973), species of *Cyta* can eat oribatid mites *Galumna* Von Heyden (Galumnidae) and *Oppia* Koch (Oppiidae) in pastureland ecosystems.

Cyta was erected by von Heyden (1826) with the type species *C. latirostris* (Hermann 1804). Grandjean (1938) erected the Cytinae to group *Cyta* with *Trachymolgus* Berlese, which shares multiple similarities. Members of this genus have been shown to feed on oribatids (Alberti 1973) and have been recorded from several continents except Antarctica (Hernandes *et al.* 2011). Worldwide, 14 species have been described (Mihelčič 1958; Gomelauri 1963; Lombardini 1964; Hernandes *et al.*2011). In this paper two new species, *C. leiliae* **sp. nov.** and *C. kurdistanicus* **sp. nov.** are described from Iran, bringing the total to 16 species for this genus.

Material and methods

The mite specimens were extracted from soil and litter under grass, oak and wild almond trees along Sirvan river, Palangan village, Kurdistan Province, Iran, by using Tullgren funnels. The collection sites of these specimens are located in the Zagrous mountain range mainly covered by oak trees. The specimens were mounted directly on glass slides in Hoyer's medium. The slides were dried on a hot plate in an oven at 50° for one week, covered with insulating varnish and examined under an Olympus BX51 phase contrast microscope. Drawings were made with a camera Lucida. Notations of the idiosomal follow it of Kethley (1990) as adapted by Den Heyer & Castro (2008). The following Leg chaetotaxy and abbreviations are followed: attenuate solenidion (ats); blunt-pointed rod-like solenidion (bsl); peg-like seta (pe); small blunt-pointed rod-like solenidion (sbsl); trichobothrium (Tr) (Den Heyer 1981).

All measurements are given in micrometers (μm) and the holotype measurements are followed by the range of the paratypes in parentheses.

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Type material. The holotype and four paratype females were collected from soil covered with grass and litter under wild almond, *Amygdalus lycioides* Spach (Rosaceae), along Sirvan river, Palangan village, Kurdistan Province, Iran, (35°03.7'N, 46°35.97'E, a.s.l. 864 m), 14.IV.2013, by Amir Hossein Eghbalian. The holotype and three paratype females are deposited in the Collection of the Acarology Laboratory, University of Bu–Ali Sina, Hamedan, Iran. One paratype female will be deposited in the National Collection of Arachnida, Plant Protection Research Institute, Pretoria, South Africa.

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References

Alberti, G. (1973) Ernährungsbiologie und Spinnvermögen der Schabelmilben (Bdellidae, Trombidiformes). *Zeitschrift für morphologie der Tiere*, 76, 285–338.

Atyeo, W.T. (1960) A revision of the mite family Bdellidae in North and Central America (Acarina, Prostigmata). *The University of Kansas Science Bulletin*, 40 (8), 345–499.

Banks, N. (1907) A catalogue of the Acarina, or mites of the United States. *Proceedings of the National Museum*, 32, 595–625. http://dx.doi.org/10.5479/si.00963801.32-1553.595

Den Heyer, J. (1981) The Afrotropical species of *Cyta* Von Heyden (Bdellidae: Actinedida: Acarida). *Phytophylactica*, 13, 31–41.

Den Heyer, J. & Castro, T.M.M.G. de (2008) A new cunaxid genus with descriptions of two new species from Brazil (Acari: Prostigmata: Bdelloidea: Cunaxidae). *Zootaxa*, 1731, 42–50.

Dugès, A.L. (1834) Recherches sur l'order des Acariens. III. *Annales des Sciences Naturelles*. *Zoologie,* Series 2, 1, 21.

Ewing, H.E. (1909) Three new species of the genus *Bdella* (mites). *Canadian Entomologist*, 41 (4), 124–125. http://dx.doi.org/10.4039/ent41122-4

Gerson, U., Smiley, R. & Ochoa, R. (2003) *Mites (Acari) for Pest Control*. Oxford, Blackwell Science, 539 pp.

Gomelauri, L.A. (1963) On the study of mites of the family Bdellidae family in Georgian S.S.R. *Bulletin of the Academy of Sciences of the Georgian SSR*, 31 (1), 167–170.

Grandjean, F. (1938) Observations sur les Bdelles (Acariens). *Annales de la Societé Entomologique de France,* 107, 1–24.

Hermann, J.F. (1804) Memoire Aptérologique. *Ouvrage couronné en 1790 par la Société de Histoire Naturelle de Paris–publié par Frederic Louis Hammer, Strasbourg*, 60–62.

Hernandes, F.A., Bernardi, L.F. De O. & Ferreira, R.L. (2011) Snout mites from caves in Brazil, with description of a new species((Acari: Trombidiformes: Bdellidae). *Journal of Natural History*, 45 (13–14), 799–812. http://dx.doi.org/10.1080/00222933.2010.535919

Kethley, J. (1990) Acarina: Prostigmata (Actinedida). *In:* Dindal, D.L. (Ed.), *Soil biology Guide. John Wiley & Sons, New York*, pp. 667–756.

Lombardini, G. (1960) Bdellidae (Acari) XLIV. *Bollettino del Museo di Storia Naturale di Venezia*, 15, 105–109.

Mihelčič, F. (1958a) Prostigmata Südeuropas (Spanien). *Eos – Revista Española de Entomologia*, 34 (3), 269–290.

Omukunda, E., Theron, P.D. & Ueckermann, E.A. (2007) Six new species of the genus *Biscirus* Thor (Acari: Bdellidae) from South Africa. *Acarina*, 15 (2), 269–282.

Soliman, Z.R. & Zaher, M.A. (1975) Bdellid mites of Lattakia, Syria (Acarina: Bdellidae). *Bulletin de la Societé Entomologique d' Egypte*, 59, 75–82.

Swift, S.F. & Goff, M.L. (1987) The family Bdellidae (Acari: Prostigmata) in the Hawaiian Islands. *International Journal of Acarology*, 13 (1), 29–49. http://dx.doi.org/10.1080/01647958708683478

Von Heyden, C. (1826) Versuch einer systematischen Eintheilung der Acariden. *Isis of Oken*, 18 (6), 608–613.

Wallace, M.M.H. & Mahon, J.A. (1972) The taxonomy and biology of Australian Bdellidae (Acari). I. Sub–families Bdellinae, Spinibdellinae and Cytinae. *Acarologia*, 14 (4), 544–580.