

NEW OCCURRENCES OF TWO RARE UROPODINA (ACARI: MESOSTIGMATA) SPECIES FROM IRANIAN FRUIT PLANTATIONS

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ABSTRACT: Two rare Uropodina species are reported from Iran: *Macrodinychus iranicus* Babaeian and Khalili-Moghadam, 2021 from soil in an apricot plantation; *Oplitis iranicus* Kazemi and Kontschán, 2007 from soils in orange plantations.

KEY WORDS: Acari, Uropodina, new species, horticultural areas, Iran

DOI: 10.21684/0132-8077-2024-32-2-175-178

INTRODUCTION

The investigations of the diversity of soil-dwelling mites (Acari)—especially the Uropodina infraorder—in agricultural areas is an understudied field in acarology. Currently, more than 2,000 described and named species are known. Uropodina mites are not the most intensively studied mesostigmatans; we have very little information about their diversity and their role in agricultural ecosystems. In the last few decades, some new species have been described from numerous subtropical and tropical plantation habitats (e.g., Japanese cedar, Monterey pine, cacao, coffee and banana) (Kontschán 2014, 2015, 2016, 2020; Kontschán and Starý 2015; Kontschán *et al.* 2015).

Iran's acarological research can be describes as one of most active ones in the world (Cokendolpher *et al.* 2019), which is true for the study of the Uropodina mites also. In the last few decades, numerous new occurrences of known species, as well as the discoveries of several new species have

been reported from this country (Kazemi and Rajaei 2013; Nemati *et al.* 2018). Our article presents new occurrences of two Uropodina species in horticultural areas of Iran.

MATERIALS AND METHODS

The specimens were collected from Iran, Fars Province, city of Darab, in orange and apricot plantations, during 2020–2021. Soil samples were randomly selected from four stations, from the depth of 0–15 cm from the surface, using a shovel (Table 1). Mites were extracted from the soil samples using a Berlese funnel. All specimens were cleared in lactic acid and Nesbitt's fluid (50/50) for a day. Subsequently, the specimens were mounted on microscopic slides using Hoyer's medium and examined using a Leica 1000 microscope with a drawing tube. All specimens are stored on slides, which have been deposited in the Acarological Collection of the Islamic Azad University, Shiraz Branch, Shiraz, Iran.

Table 1. The locations and the ecological characteristics of the studied stations (EC—electrical conductivity).

Station	Name	UTM: Northing/ Easting	Longitude and Latitude	Altitude, m	Soil EC (ds/m)	EC water (ds/m)	TH (Total hard water	TA (Total alkalinity) water	Age of trees (years)
1	Istgah 1	270369/ 3169971	28°38'11"/ 54°39'03"	1,126	4.67	2,000	1,010	817	5–8
2	Dehkheir Sofla 1	270802/ 3171933	28°39'15"/ 54°39'18"	1,119	2.5	1,500	450	342	2–8

Table 1 (end).

3	Istgah 2	270429/ 3170285	28°38'21"/ 54°39'05"	1,124	3.42	1,700	560	380	1–30
4	Dehkheir Sofla 4	270690/ 3171823	28°39'11"/ 54°39'13"	1,124	5.37	2,179	1,180	593	4–8

RESULTS

Family Macrotrichidae

Macrotrichus iranicus Babaeian and Khalili-Moghadam, 2021¹

(Figs. 1–4)

Material examined. One female specimen: Iran, Fars Province, city of Darab, 54°39'18"E, 28°39'15"N, station 2, from soil in an apricot plantation, 7 May 2021 (S. Memarzadeh).

Remarks. Macrotrichid mite species are distributed in the tropical realms (Wiśniewski 1993; Kontschán 2011, 2017; Brückner *et al.* 2017). Up to now, only two species of *Macrotrichus* (*M. bregetovae* Hirschmann, 1975 and *M. iranicus*) are known from the northern temperate region. *Macrotrichus bregetovae* was originally described from the Caucasus and later was also found in Hungary (Kontschán 2004) and East-Turkey (Bal and Özkan 2005); subsequently, it was also mentioned from Iran (Kontschán and Hajizadeh 2013). *Macrotrichus iranicus* is known only from the Bakhtiari Province, southwestern Iran (Khalili-Moghadam and Babaeian 2021).

One other species (*Macrotrichus baloghi* Hirschmann, 1975) was described from the southern temperate region; it is known from Australia, from the city of Canberra.

This is the first report of *M. iranicus* from an agricultural area, as well as from the Fars Province of Iran.

Family Oplitidae

Oplitis iranicus Kazemi and Kontschán, 2007

Material examined. Ten specimens: Iran, Fars Province, city of Darab, in soils of different orange plantations, 54°39'03"E 28°38'11"N, station 1 (one male, four females and two deutonymphs), 54°39'13"E, 28°39'11"N, station 4 (one deutonymph),

54°39'05"E 28°38'21"N, station 3 (two males), 5 May 2020–3 September 2020 (S. Memarzadeh).

Remarks. This species has been previously collected in the Yazd Province, Iran (Kazemi and Kontschán 2007). Ours is the first report of this species from an agricultural area, as well as from the Fars Province of Iran.

ACKNOWLEDGEMENTS

We would like to express our gratitude to Dr. Hans Klompen of Ohio State University for the initial diagnosis of the specimens.

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¹ In Khalili-Moghadam and Babaeian (2021).



Figs. 1–4. Microscope images of *Macrodynychus iranicus* Babaecian and Khalili-Moghadam, 2021: 1—pygidial shield; 2—ventral view of idiosoma; 3—intercoxal area; 4—peritreme.

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