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Some oppiid mites (Acari: Oribatida) of East Azerbaijan province, with two new records for the fauna of Iran

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The family Oppiidae Sellnick, 1937 (Acari: Oribatida) is one of the most species rich families of the suborder Oribatida (Subías and Balogh 1989). This cosmopolitan family comprises 134 genera, 39 subgenera, 1,025 species and 54 subspecies (Subías 2016). Oppiids occur in almost all terrestrial habitats worldwide and they are especially represented in soil, litter and moss samples and fungi make up the bulk of oppiid diets (Subías and Balogh 1989; Norton and Behan-Pelletier 2009). However, Seniczack (1975) found that in addition to feeding on fungi, oppiid mites from Poland also feed on algae, lichen, rotten leaves, humus, and *Oppia nitens* even on carrion.

In order to study the oppiid mite fauna of Marand region (East Azerbaijan Province, Iran), soil samples were taken in wheat and sunflower fields, gardens and grasslands, during mid-September of the year 2014. The mites were extracted using Berlese funnels and preserved in Oudemans' fluid. The specimens were cleared in Nesbitt's fluid, mounted by Hoyer's medium on microscope slides and identified using available references. Materials of this study are deposited in the Acarological Collection, Department of Plant Protection, Faculty of Agriculture, Azarbaijan Shahid Madani University, Tabriz, Iran.

In the faunistic study of oppiid mites of Marand region, nine species belonging to eight genera and five subfamilies were collected and identified as below. Among them, three genera and four species were new for East Azerbaijan Province and one subfamily, two genera and two species were new for Iran. New records for East Azerbaijan Province and Iran marked with (*) and (**), respectively:

Subfamily Antillooppiinae Mahunka, 1985**

*Neoppia*** *discreta* Ruiz, Mínguez and Subías, 1988**

Distribution – Southern Europe (Subías 2016).

Material examined

Two adult specimens from wheat field soil, 38° 25' 29.19" N, 45° 52' 59.22" E, 1,376 m above sea level; two adult specimens from grassland soil, 38° 23' 24.06" N, 45° 51' 13.02" E, 1,621 m above sea level; five adult specimens from garden soil, 38° 24' 9.40" N, 45° 50' 50.76" E, 1,394 m above sea level; two adult specimens from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Diagnostic characters – Body size 212–238 × 93–110 µm (n = 10); rostrum rounded, with an well-developed acute central excrescence; rostral setae (*ro*) long with distinct barbs on outer edge; sensillus clavate with ciliae on all sides of its head; notogaster oval, with extended anterior margin into prodorsum up to level of interlamellar (*in*) setae, with 12 pairs of short and smooth notogastral setae; epimeral setae formula: 3-1-3-3; anal region relatively close to genital region; anogenital formula: 5-1-2-3; *iad* in paraanal position (Fig. 1).

Comment – It is the first record for mites of the subfamily Antillooppiinae in Iran.

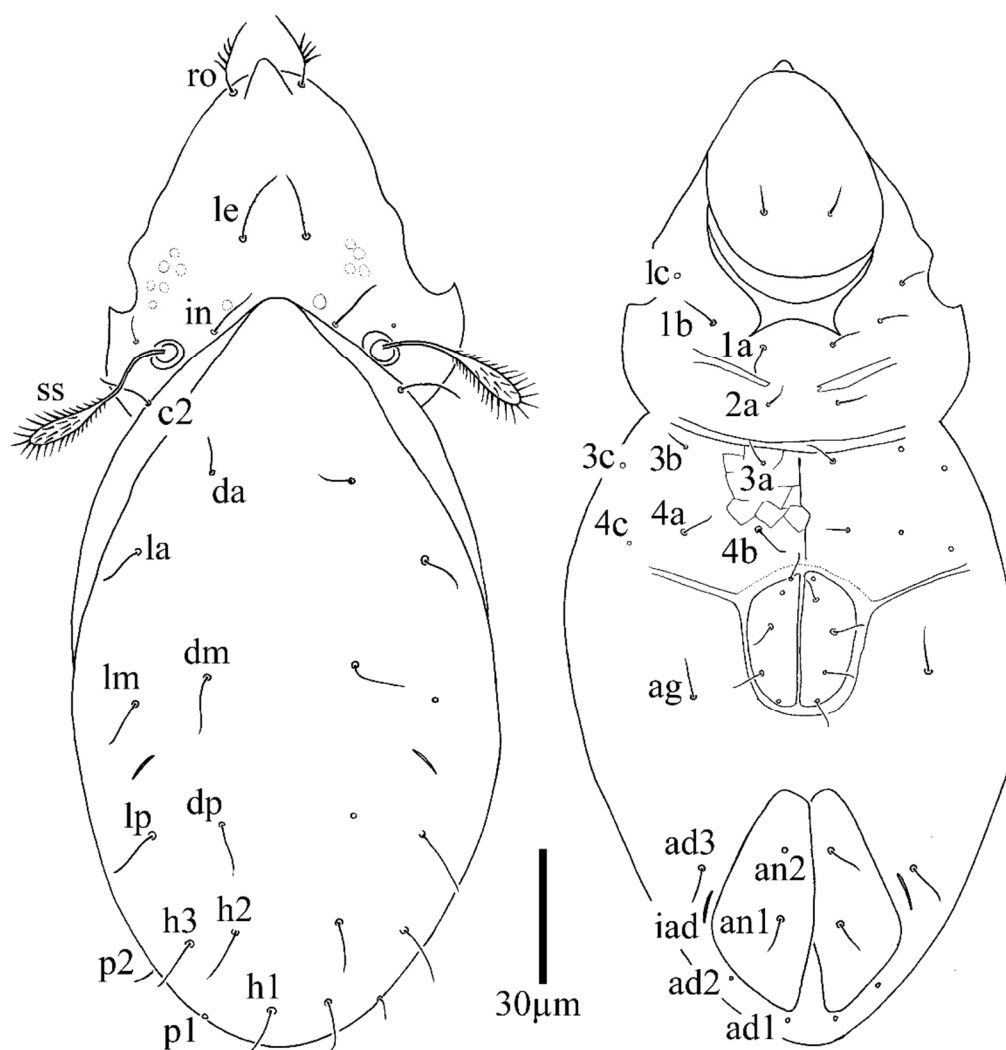


Figure 1. *Neoppia discreta* Ruiz, Mínguez and Subías, 1988 – Dorsal (left) and ventral (right) view of body.

Subfamily Oppiinae Sellnick, 1937

*Lasiobelba** (*Lasiobelba*)* *kuehnelti* (Csiszár, 1961)*

Distribution: Tropical: Oriental (frequent), Australian and Ethiopic, and subtropical: Iran (Subías 2016).

Material examined

One adult specimen from wheat field soil, 38°23'55.87"N, 45°51'11.75"E, 1,437 m above sea level.

Previous locality records from Iran – Khuzestan province (Akrami 2015).

Comment – It is the first record of this genus for East Azerbaijan Province mite fauna.

Subfamily Multioppiinae Balogh, 1983

***Graptoppia (Graptoppia) sundensis acuta* Ayyildiz, 1989**

Distribution – Eastern Mediterranean and Iran (Subías 2016).

Material examined

Three adult specimens from wheat field soil, 38° 25' 29.19" N, 45° 52' 59.22"E, 1,376 m above sea level; one adult specimen from wheat field soil, 38° 23' 55.87" N, 45° 51' 11.75"E, 1,437 m above sea level; one adult specimen from grassland soil, 38° 24' 29.60" N, 45° 53' 34.37" E, 1,455 m above sea level; three adult specimens from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Previous locality records from Iran – Soofian, Marand, Shabestar and Zenooz, East Azerbaijan Province (Lotfollahi and Haddad Irani-Nejad 2010).

Javieroppia *cervus* Mínguez and Subías, 1986****

Distribution: Western Mediterranean and Australia (Subías 2016).

Material examined

One adult specimen from wheat field soil, 38° 25' 29.19" N, 45° 52' 59.22" E, 1,376 m above sea level; five adult specimens from wheat field soil, 38° 27' 28.13" N, 45° 51' 15.60" E, 1,327 m above sea level; one adult specimen from grassland soil, 38° 24' 29.60" N, 45° 53' 34.37" E, 1,455 m above sea level; two adult specimens from garden soil, 38° 24' 9.40" N, 45° 50' 50.76" E, 1,394 m above sea level; three adult specimens from sunflower field soil, 38° 26' 11.64" N, 45° 54' 46.32" E, 1,398 m above sea level; two adult specimens from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Diagnostic characters – Body size 195–215 × 77–84 µm (n = 10); rostrum rounded, *ro* large with one branch at outer edge; prodorsum with lamellar and translamellar lines; *le* at translamellar line; sensillus globular and radiate-ciliate; two pairs of sigillae between setae *in*; notogaster cylindrical, with 12 pairs of relatively short and dendriate setae; anogenital formula: 5-1-2-3; *iad* in paraanal position (Fig. 2).

Comment – This genus is a new record for the mite fauna of Iran.

***Ramusella (Ramusella) sengbuschi tokyoensis* (Aoki, 1974)**

Distribution: Southern Palearctic (Subías 2016).

Material examined

One adult specimen from wheat field soil, 38° 25' 29.19" N, 45° 52' 59.22" E, 1,376 m above sea level; one adult specimen from grassland soil, 38° 23' 58.2" N, 45° 50' 58.6" E, 1,425 m above sea level.

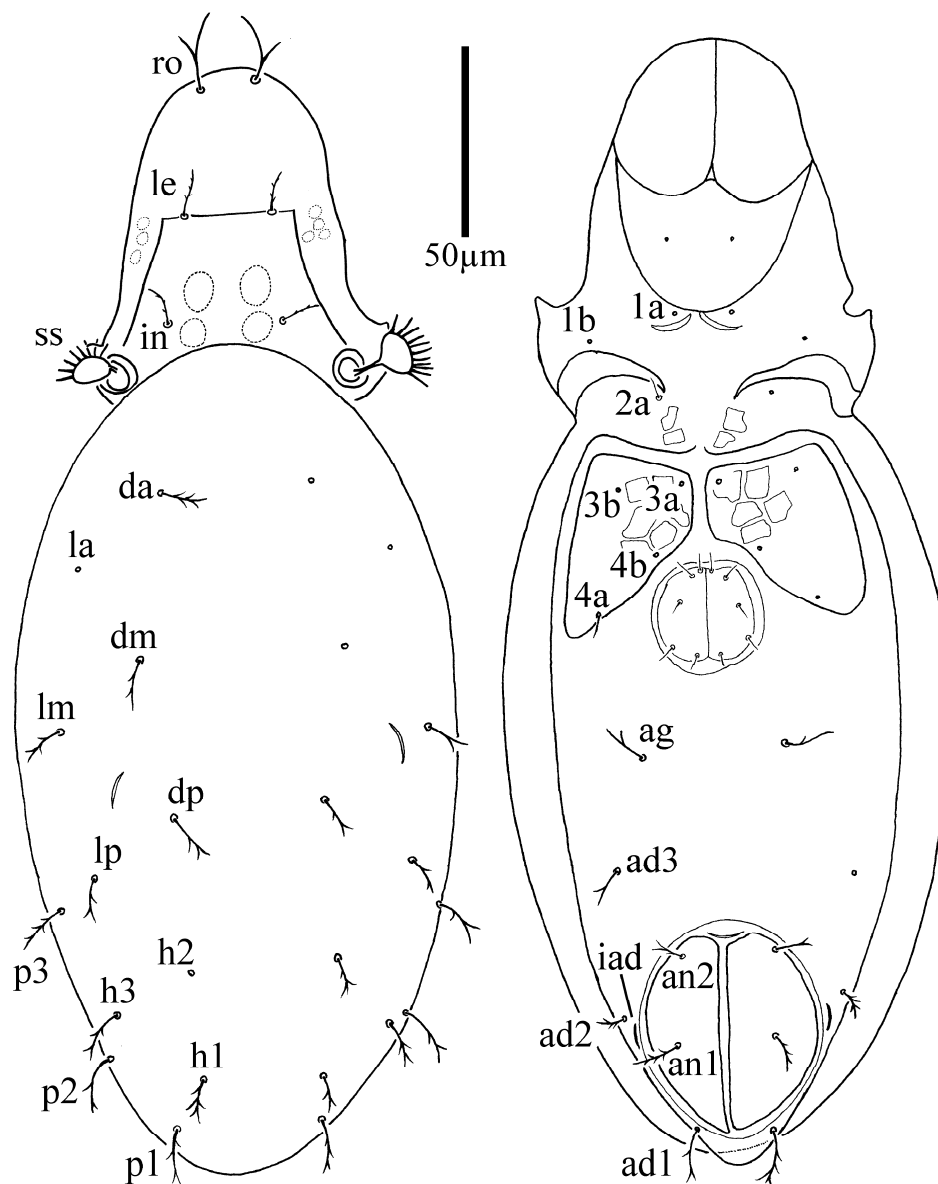


Figure 2. *Javieroppia cervus* Mínguez and Subías, 1986 – Dorsal (left) and ventral (right) view of body.

Previous locality records from Iran – Nowshahr, Kojoor road, Mazandaran; Soofian and Shabestar, East Azerbaijan Province (Akrami 2015).

Ramusella (Insculptoppia) farsi* Akrami, Subías and Behmanesh, 2011

Distribution – Iran (Subías 2016).

Material examined

One adult specimen from wheat field soil, 38° 25' 29.19" N, 45° 52' 59.22" E, 1,376 m above sea level; one adult specimen from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Previous locality records from Iran – Sepidan, Bajgah and Shiraz, Fars Province (Akrami 2015).

Comment – This species is a new record for the mite fauna of East Azerbaijan Province.

Subfamily Medioppinae Subías and Mínguez, 1985

Discoppia (Cylindroppia) cylindrica cylindrica (Pérez-Íñigo, 1965)*

Distribution – Palearctic (less frequent in the North) and tropical: Vietnam and Panama (Subías 2016).

Material examined

32 adult specimens from wheat field 1 soil, 38° 25' 29.19" N, 45° 52' 59.22" E, 1,376 m above sea level; 25 adult specimens from wheat field soil, 38° 27' 28.13" N, 45° 51' 15.60" E, 1,327 m above sea level; two adult specimens from wheat field soil, 38° 23' 55.87" N, 45° 51' 11.75" E, 1,437 m above sea level; two adult specimens from wheat field soil, 38° 25' 19.35" N, 45° 49' 21.64" E, 1,321 m above sea level; five adult specimens from grassland soil, 38° 24' 35.27" N, 45° 55' 21.99" E, 1,541 m above sea level; three adult specimens from grassland soil, 38° 23' 24.06" N, 45° 51' 13.02" E, 1,621 m above sea level; eight adult specimens from garden soil, 38° 24' 9.40" N, 45° 50' 50.76" E, 1,394 m above sea level; 10 adult specimens from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Previous locality records from Iran – Behshahr, Mazandaran Province; Larestan and Shiraz, Fars Province; Ahvaz, Khuzestan Province (Akrami 2015).

Comment – This species is a new record for the mite fauna of East Azerbaijan Province.

Microppia minus minus (Paoli, 1908)

Distribution: Cosmopolitan (frequent in Palearctic) (Subías 2016).

Material examined

Four adult specimens from wheat field soil, 38° 27' 28.13" N, 45° 51' 15.60" E, 1,327 m above sea level; two adult specimens from wheat field soil, 38° 25' 19.35" N, 45° 49' 21.64" E, 1,321 m above sea level; three adult specimens from sunflower field soil, 38° 26' 11.64" N, 45° 54' 46.32" E, 1,398 m above sea level; three adult specimens from sunflower field soil, 38° 25' 38.12" N, 45° 50' 6.68" E, 1,319 m above sea level; eight adult specimens from sunflower field soil, 38° 27' 17.92" N, 45° 50' 12.43" E, 1,304 m above sea level.

Previous locality records from Iran – Miandoab, West Azerbaijan Province; Noor, Royan road to Firoozkola, after Kodir, Amol and Polour, Mazandaran Province; Soofian, East Azerbaijan Province; Rasht, Guilan Province; Shiraz, Fars Province; Asara and Eshtehard, Alborz Province (Akrami 2015).

Subfamily Mystroppinae Balogh, 1983

Corynoppia* kosarovi kosarovi (Jeleva, 1962)*

Distribution – Mediterranean, Iran and Panama (Subías 2016).

Material examined

One adult specimen from grassland soil, 38° 24' 29.60" N, 45° 53' 34.37" E, 1,455 m

above sea level.

Previous locality records from Iran – Firoozabad, Fars Province (Akrami 2015).

Comment – This genus is a new record for the mite fauna of East Azerbaijan Province.

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