

Oppiid mites (Acari: Oribatida: Oppiidae) from Mazandaran province (Northern Iran), with a description of *Medioppia bipectinata* sp. n.

MOHAMMAD ALI AKRAMI¹ & LUIS S. SUBÍAS²

¹Department of Plant Protection, College of Agriculture, Shiraz University, Shiraz, Iran. E-mail: akrami@shirazu.ac.ir

²Departamento de Zoología, Facultad de Biología, Universidad Complutense, Ciudad Universitaria, 28040 Madrid, Spain. E-mail: subias@bio.ucm.es

Abstract

This study deals with the members of oppiid mites (Acari: Oribatida: Oppiidae) from Mazandaran province, Northern Iran. Also, a new species, *Medioppia bipectinata* sp. n., is described. The new species is characterized by long and bipectinate sensillus; long interlamellar setae; presence of interbothridial tubercles in prodorsum and well developed seta *c*₂.

Key words: Acari, Oribatida, Oppiidae, new species, Iran

Introduction

Mazandaran province, Northern Iran, is located between the latitudes 35°47' and 37°05' N and longitudes 50°34' and 53°51' E. The province covers an area of 23,833 sq. km. This province is bounded on the north by the Caspian sea, on the east by Golestan, on the south by Semnan and Tehran and on the west by Guilan provinces. Mazandaran province is divided into two parts, a coastal plain and a mountainous area. The Alborz mountain range runs like a huge wall around the coastal strip and plains of the Caspian Sea. Rice, grain, fruits, cotton, tea, tobacco, sugarcane and silk are produced in the lowland strip along the Caspian shore.

There is little information on the oppiid mites of Iran. New records were published by H. Irani-Nejad *et al.* (2000) and H. Irani-Nejad *et al.* (2003) and three new species were described by Bayartogtokh and Akrami (2000) and Akrami and Subías (2007). Here we present the first records of oppiid mites from Mazandaran province and describe one new species from this collection.

Materials and methods

During 2000–2004, in the course of faunistic survey of oppiid mites of Iran, soil and litter samples were taken from the surface to a soil depth of 10 cm under fruit and forest trees, crop plants and weeds. Mites were extracted from soil samples in Berlese-Tullgren funnels set over jars of 75% ethanol. Oppiid mites were removed, cleared in lactophenol and mounted in Hoyer's medium on glass microscopic slides. The slides were placed in an oven at 45°C for one week and then the specimens were examined using a light microscope. All specimens were lodged in the Department of Plant Protection of Shiraz and Tehran Universities.

Results

Twenty-five species belonging to thirteen genera from Mazandaran province were collected, and among them one species, *Medioppia bipectinata* **sp. n.**, is recognized here as new. The genera and species that marked by asterisk are new records for Iran, also all species are new records for Mazandaran province.

List of the oppiid species of Mazandaran Province

*Medioppia obsoleta** (Paoli, 1908)
*Medioppia ordunensis** (Iturrondobeitia & Saloña, 1988)
Medioppia subpectinata (Oudemans, 1900)
Medioppia bipectinata **sp. n.**
Micropia minus (Paoli, 1908)
*Discoppia** (*Cylindropia*) *cylindrica** (Pérez-Iñigo, 1965)
*Lauroppia** *quadrituberculata** (Mahunka, 1987)
*Lauroppia doris** (E. Pérez-Iñigo, 1978)
*Lauroppia tenuipectinata** Subías & Rodríguez, 1988
*Oppiella** *nova** (Oudemans, 1902)
*Berniniella** sp. near *sakeni* Gordeeva & Tarba, 1990
*Moritzoppia** *unicarinata** (Paoli, 1908)
*Lasiobelba** (*Lasiobelba*) *neonominata** Subías, 2004
Lasiobelba (*Antennoppia*) *heterosa** (Wallwork, 1964)
*Oppia denticulata** (G. & R. Canestrini, 1882)
*Graptoppia** (*Apograptoppia*) *foveolata** (Paoli, 1908)
Ramusella (*Ramusella*) *sengbuschi tokyoensis** (Aoki, 1974)
Ramusella (*Ramusella*) *sengbuschi* s. str.* Hammer, 1968
Ramusella (*Ramusella*) *curtipilus** Hammer, 1971
Ramusella (*Ramusella*) *puertomontensis** Hammer, 1962
Ramusella (*Insculptoppiella*) *varians** (Wallwork, 1961)
Ramusella (*Insculptoppia*) *insculpta** (Paoli, 1908)
Anomaloppia mazandaranica Akrami & Subías (2007)
Multioppia wilsoni Aoki, 1964
*Multioppia laniseta** Moritz, 1966

Remarks

This list follows Subías (2004) except for *Ramusella* (*R.*) *sengbuschi tokyoensis*, that we consider a valid subspecies because the short branches of the sensillus and the barbed notogastral setae. According to this author *Medioppia ordunensis* was known only from west-central Europe, *Lauroppia quadrituberculata* from Hungary, *L. tenuipectinata* from western Mediterranean, *Lasiobelba* (*L.*) *neonominata* from southern Africa, Hawaii and western Mediterranean, *Lasiobelba* (*Antennoppia*) *heterosa* from Chad and *Ramusella* (*Insculptoppiella*) *varians* from Ghana, I. St. Helene and Saudi Arabia. The species *Berniniella sakeni* was described from Caucasus and the specimens collected from Iran differs in the rostral indentation and the smooth sensillus.

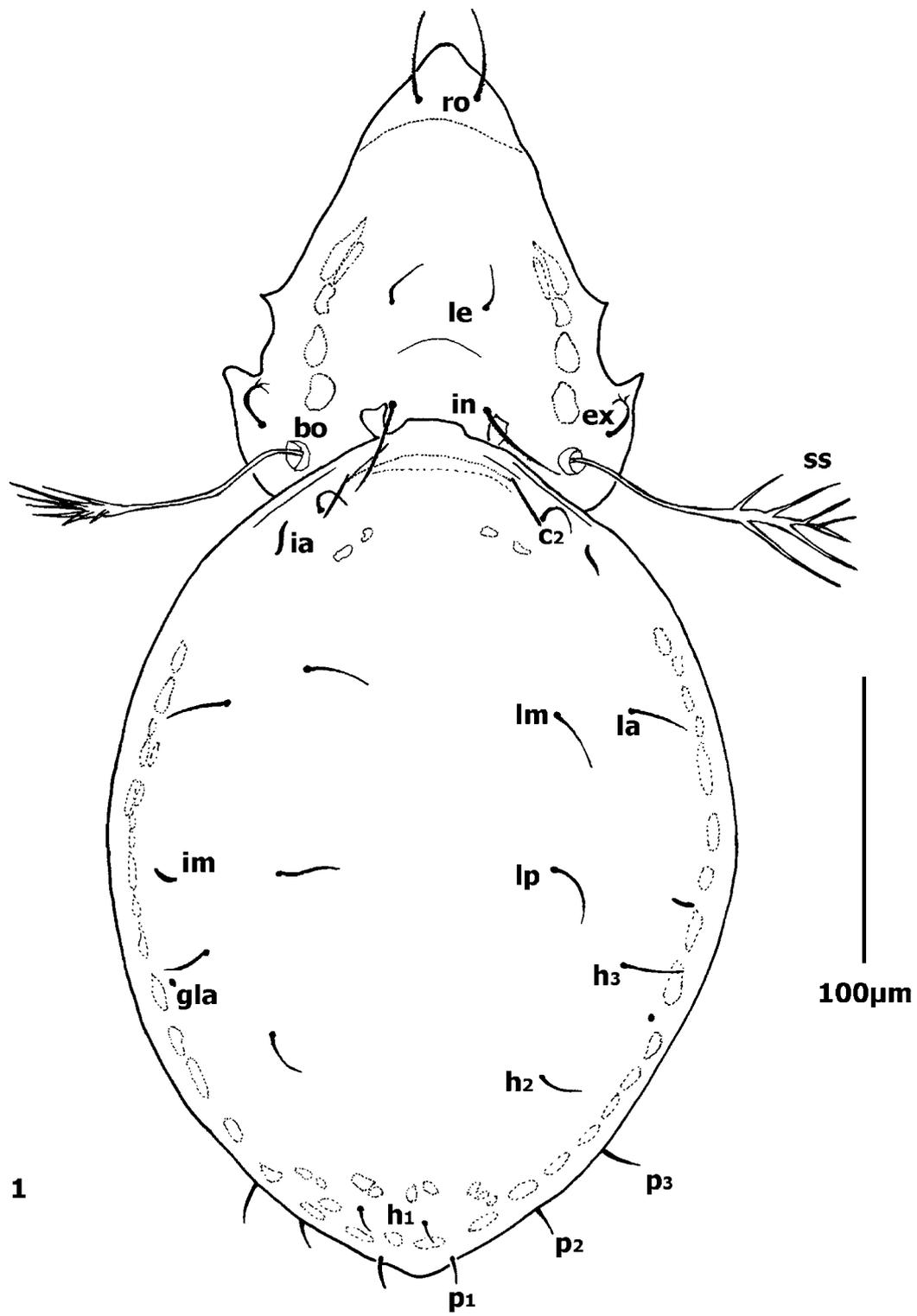


FIGURE 1. *Medioppia bipectinata* sp. n. Dorsal view.

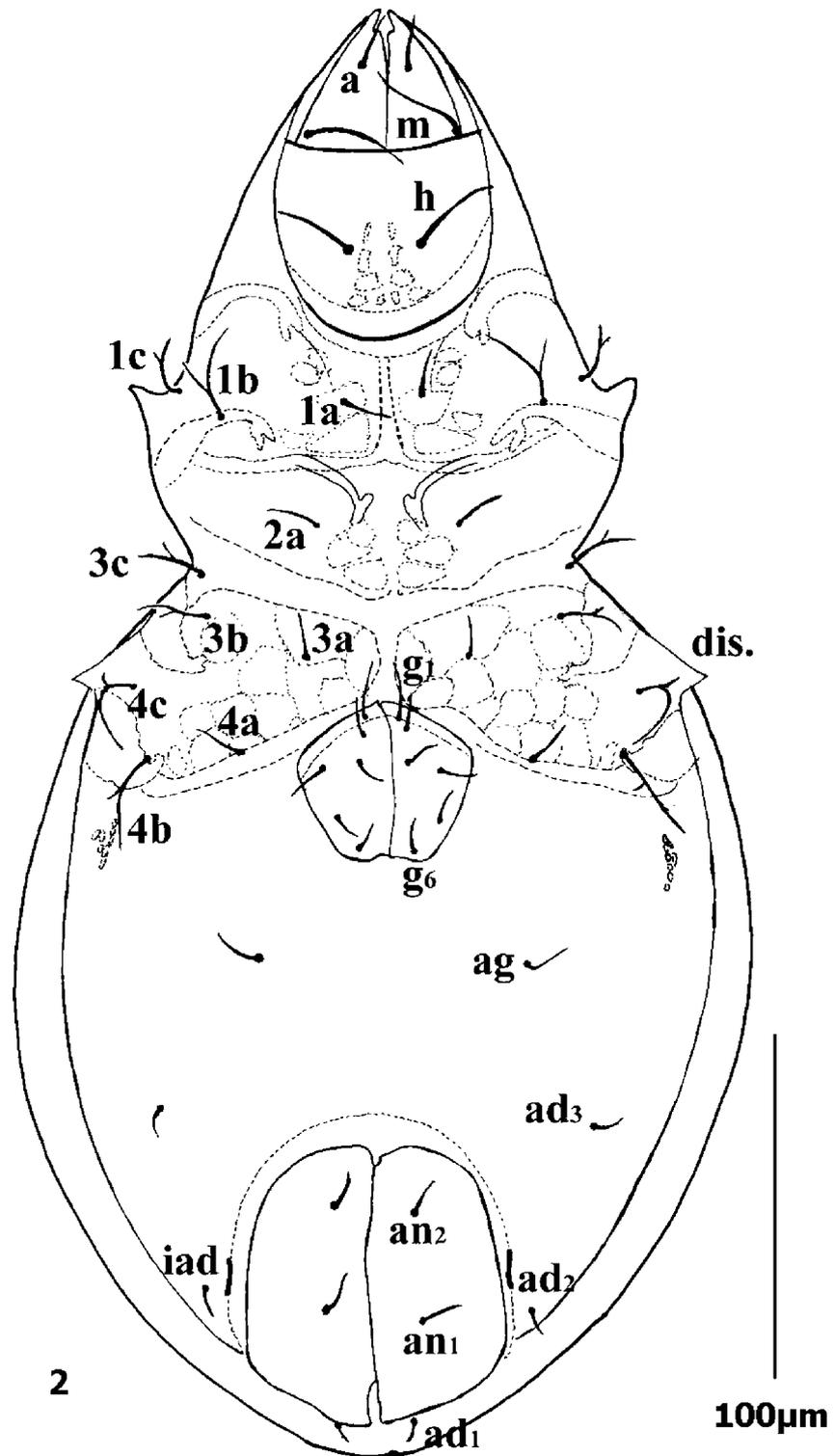


FIGURE 2. *Medioppia bipectinata* sp. n. Ventral view.

***Medioppia bipectinata* sp. n.**

(Figs. 1–4)

Description

Measurements. Body length 350–420 μm , width 170–230 μm ($n = 11$).

Prodorsum (Fig. 1). Rostrum rounded at tip; rostral setae (*ro*) situated far from each other, finely barbed, slightly curved inward; lamellar setae (*le*) thin, smooth, setiform and shorter than rostral and interlamellar setae (*in*); interlamellar setae long, nearly as long as rostral setae, finely barbed; exobothridial setae (*ex*) medium long with some barbs; sensillus (*ss*) long, bipectinate; bothridia (*bo*) round with small opening; some muscle sigillae situated anterior to each bothridium; two chitinous structures present between each bothridium and interlamellar seta.

Notogaster (Fig. 1). Notogaster oval, rounded in both anterior and posterior directions; crista present; ten pairs of notogastral setae thin and smooth, seta c_2 well developed, *lm* and *la* nearly situated at same level; lyrifissures *ia*, *im* and latero-opisthosomal gland (*gla*) well developed.

Ventral region (Fig. 2). Hypostomal setae *h* and *m* long and thin, *a* shorter, some muscle sigillae between setae *h*; epimeral region with a few muscle sigillae; apodemes *I*, *II*, *Sj* and *IV* well developed; epimeral setal formula (I–IV) 3-1-3-3; epimeral setae *1a*, *2a*, *3a* and *4a* smooth but *1b*, *1c*, *3b*, *3c*, *4b* and *4c* distinctly two branched; discidium well developed; genital plates with 6 pairs of setae, 4 arranged on anterior half and another 2 on posterior half of the plates, *g₁* about twice as long as other genital setae, one pair of aggenital, two pairs of anal and three pairs of adanal setae; anogenital region smooth, only a few and small sigillae situated posterolaterad of each epimeral seta *4b*; *iad* fissures paranal and adjacent to anal plates.

Legs. (Figs. 3 & 4). Formula of leg setation (trochanter to tarsus): I (1-5-2+1-4+2-20+2); IV (1-2-2-3+1-10). Structure and setation of legs I and IV shown in Figs. 3–4 is similar to that described for *Medioppia producta* Iturrondobeitia & Arillo (1997).

Etymology

The specific name "*bipectinata*" refers to the type of its sensillus.

Types

Holotype: Nowshahr, Mazandaran province, Iran, soil, 36°7'N, 51°30'E, 19 m above sea level, 28-IX-2000, M. A. Akrami leg. Ten paratypes: one from the same sample as holotype, 6 from the same sample as holotype but at 4-VI-2004, 3 from Noor, Mazandaran province, Iran, soil, 36°56'N, 52°03'E, 17 m under sea level, 11-IV-2004, M. A. Akrami leg. All specimens were taken from humus-rich soils under forest trees. The holotype and five paratypes are deposited in the Department of Plant Protection, Shiraz University, Shiraz, Iran and the rest are deposited in the Department of Plant Protection, Tehran University, Karaj, Iran.

Remarks

Among the known species of the genus *Medioppia*, *M. subpectinata* (Oudemans 1900) most closely resembles the new species. However, this species is distinguishable from *M. bipectinata* sp. n. by its pectinate sensillus. The only species described till now with bipectinate sensillus was *Medioppia plumata* (Gordeeva & Karppinen 1988), from Caucasus, but its length is shorter (325 μm), its prodorsum has interbothridial tubercles that project forwards in two ridges, and the exobothridial setae are longer.

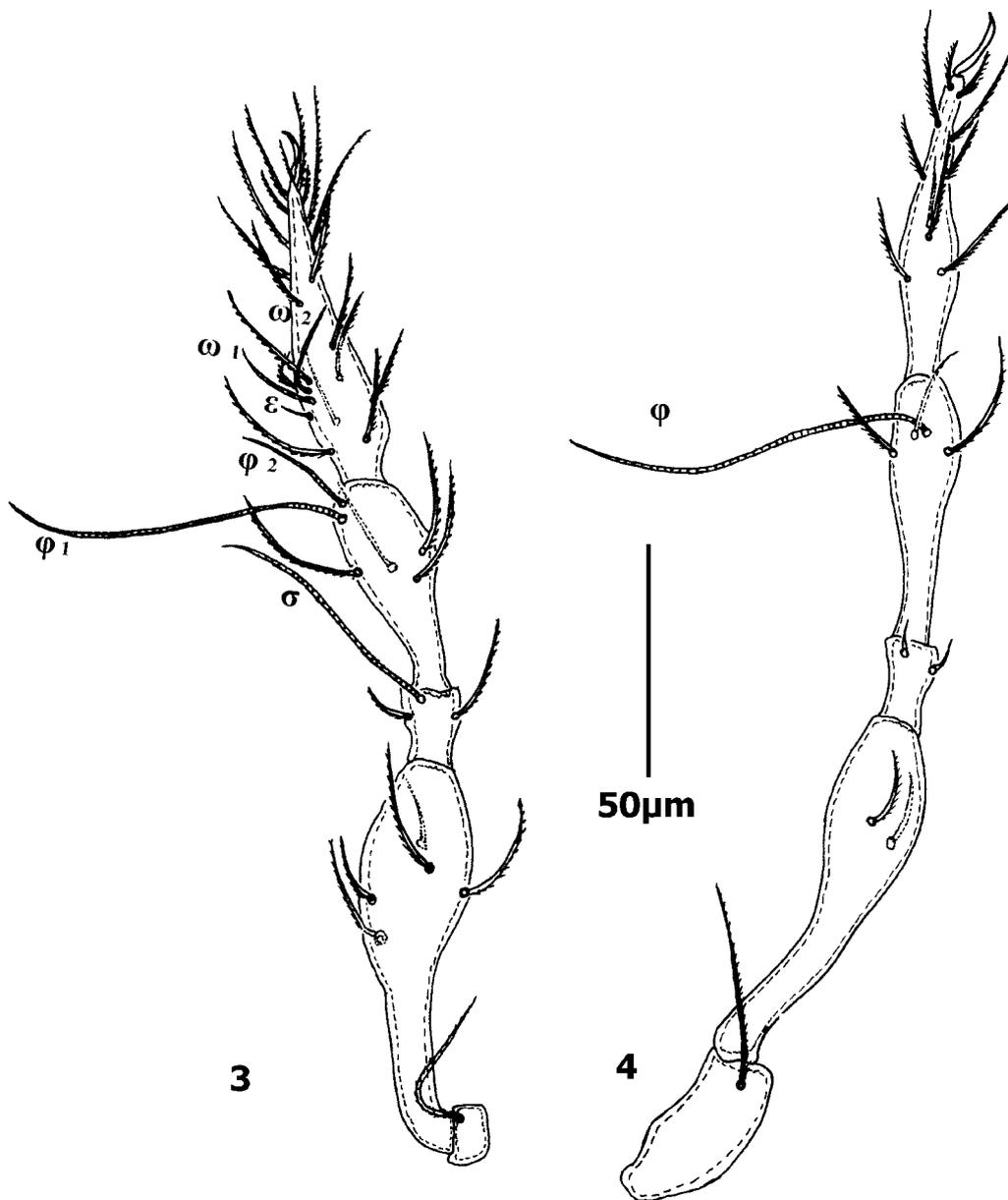


FIGURE 3–4. *Medioppia bipectinata* sp. n. 3, Leg I. 4, Leg IV.

Acknowledgement

The senior author is grateful to Dr. A. Saboori, University of Tehran, Karaj, Iran, for his guidance. This study was partly supported by the project "Biodiversity of oribatid mites of Mazandaran province", funded by Tehran University.

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Accepted by O. Seeman: 12 Sept. 2007

