

TWO NEW SPECIES OF OPPIID MITES (ACARI: ORIBATIDA) FROM TURKEY

Nusret AYYILDIZ, Ayşe TOLUK and Mehmet TASKIRAN

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Erciyes University, Faculty of Science, Department of Biology, Kayseri, Turkey.
nayildiz@erciyes.edu.tr; atoluk@erciyes.edu.tr; taskiran038@hotmail.com

ABSTRACT — Two new species of the family Oppiidae Sellnick, 1937, *Ramusella (Insculptoppia) pinarbasiensis* n. sp. and *Dissorhina uludagensis* n. sp., are described and illustrated based on adult specimens collected from Kayseri and Bursa provinces, Turkey respectively.

KEYWORDS — Oppiidae; taxonomy; new species

INTRODUCTION

Oppiidae is the largest family in the super-family Oppioidea belonging to the order Oribatida. This family currently contains 130 genera (Subías 2009). Two new taxa here reported are belonging to the genera *Ramusella* Hammer, 1962 and *Dissorhina* Hull, 1916.

The genus *Ramusella* was erected by Hammer (1962), with the type species, *Ramusella puertomontensis* Hammer, 1962. On the basis of the position and shape of rostral setae, there is four subgenera in the genus *Ramusella* Hammer, 1962; *Ramusella (Rectoppia)* Subías, 1980 (ten species, three subspecies); *Ramusella (Ramusella)* Hammer, 1962 (twenty species, one subspecies); *Ramusella (Insculptoppiella)* Subías and Rodriguez, 1986 (twelve species); *Ramusella (Insculptoppia)* Subías, 1980 (thirty-one species) (Subías 2009). One subgenus *R. (Rectoppia)* has divergent rostral setae which situated close to each other. The other three subgenera *R. (Ramusella)*, *R. (Insculptoppiella)* and *R. (Insculp-*

toppia) were included in a group having convergent rostral setae which situated far to each other. One of them, *R. (Ramusella)* is distinguished by having knee-bent rostral setae from the others. The other two subgenera were included having arched rostral setae and differentiated on the basis of the shape of sensillus. *R. (Insculptoppia)* has unilaterally ciliated sensillus, *R. (Insculptoppiella)* bilaterally ciliated sensillus. So far, 31 species of the subgenus *R. (Insculptoppia)* are known (Subías 2009). Of these, four species viz. *R. (Insculptoppia) luxtoni* Ayyildiz, 1989, *R. (Insculptoppia) elliptica* (Berlese, 1908), *R. (Insculptoppia) insculpta* (Paoli, 1908) and *R. (Insculptoppia) salmani* Toluk and Ayyildiz, 2008, have been previously recorded in Turkey (Ayyildiz 1989; Baran and Ayyildiz 2004; Toluk and Ayyildiz 2008a).

The genus *Dissorhina* was erected by Hull (1916), with the type species, *Eremaeus ornatus* Oudemans, 1900. So far, eight species and five subspecies of *Dissorhina* are known (Subías 2009). According to Mahunka (2008a, b) the genus comprises thirteen species. Of these, one species, *Dissorhina or-*

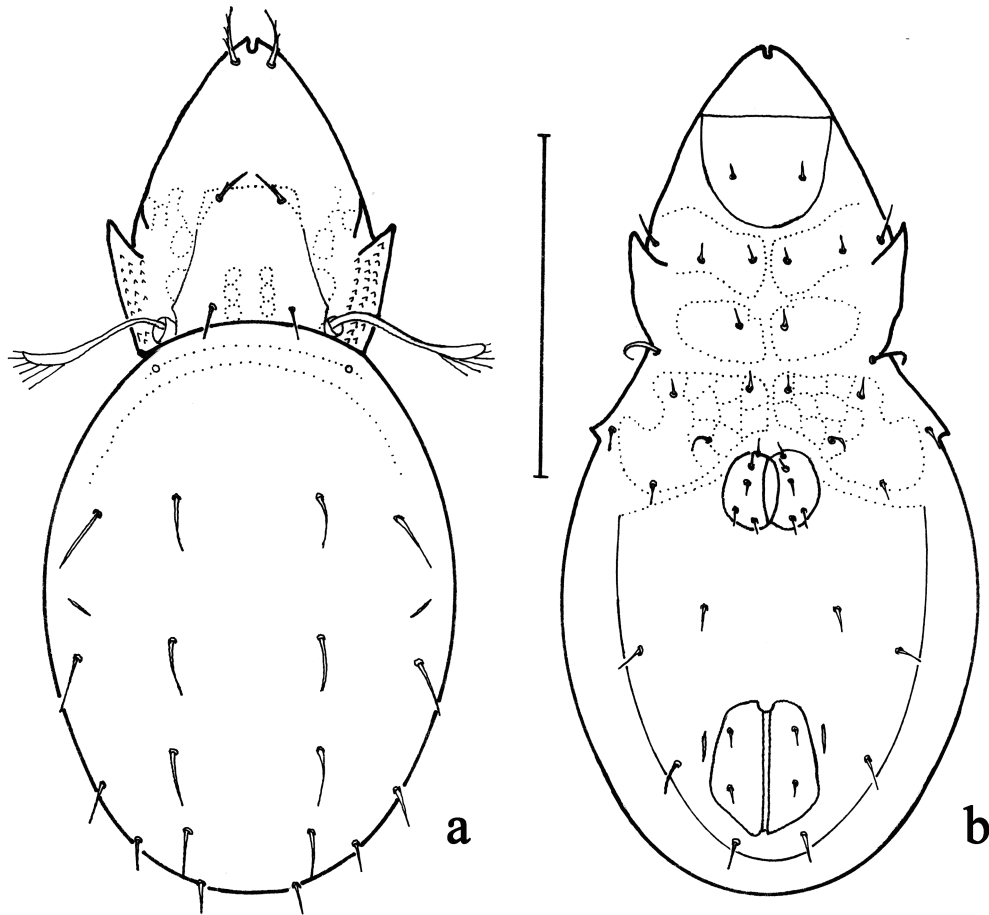


FIGURE 1: *Ramusella (Insculptoppia) pinarbasiensis* n. sp. (a) - Dorsal view; (b) - Ventral view (scale bar for all figures = 100 μ m).

nata ornata (Oudemans, 1900), has been previously recorded in Turkey (Toluk and Ayyildiz 2008b).

MATERIAL AND METHODS

The methods used for specimen collection, extraction, preparation, drawing and preservation were as discussed by Toluk and Ayyildiz (2008a). Measurements and descriptions are based on specimens mounted in temporary cavity slides and on permanent slides.

The terminology used in this paper follows Grandjean (see Travé and Vachon 1975), Balogh (1983), Mahunka and Zombori (1985), Subías and Balogh (1989). The type materials are deposited in the Acarological Collection of the Zoological Museum, Erciyes University, Kayseri, Turkey (ZMEU).

Descriptions of new taxa

Super-family Oppioidea Sellnick, 1937

Family Oppiidae Sellnick, 1937

Ramusella (Insculptoppia) pinarbasiensis n. sp.

(Figures 1-3)

Diagnosis — Rostrum divided by a median incision. Lamellar line present, not reaching to the insertion of lamellar setae, trans-lamellar line faint. Sensilli 40 μ m in length, fusiform, with long stalk and their distal half being dilated; 6-7 setae unilaterally, among them proximal setae longer than distal ones.

Dimensions — Length: 200-208 (holotype: 208) μ m, width: 114-116 (holotype: 116) μ m (n= 4).

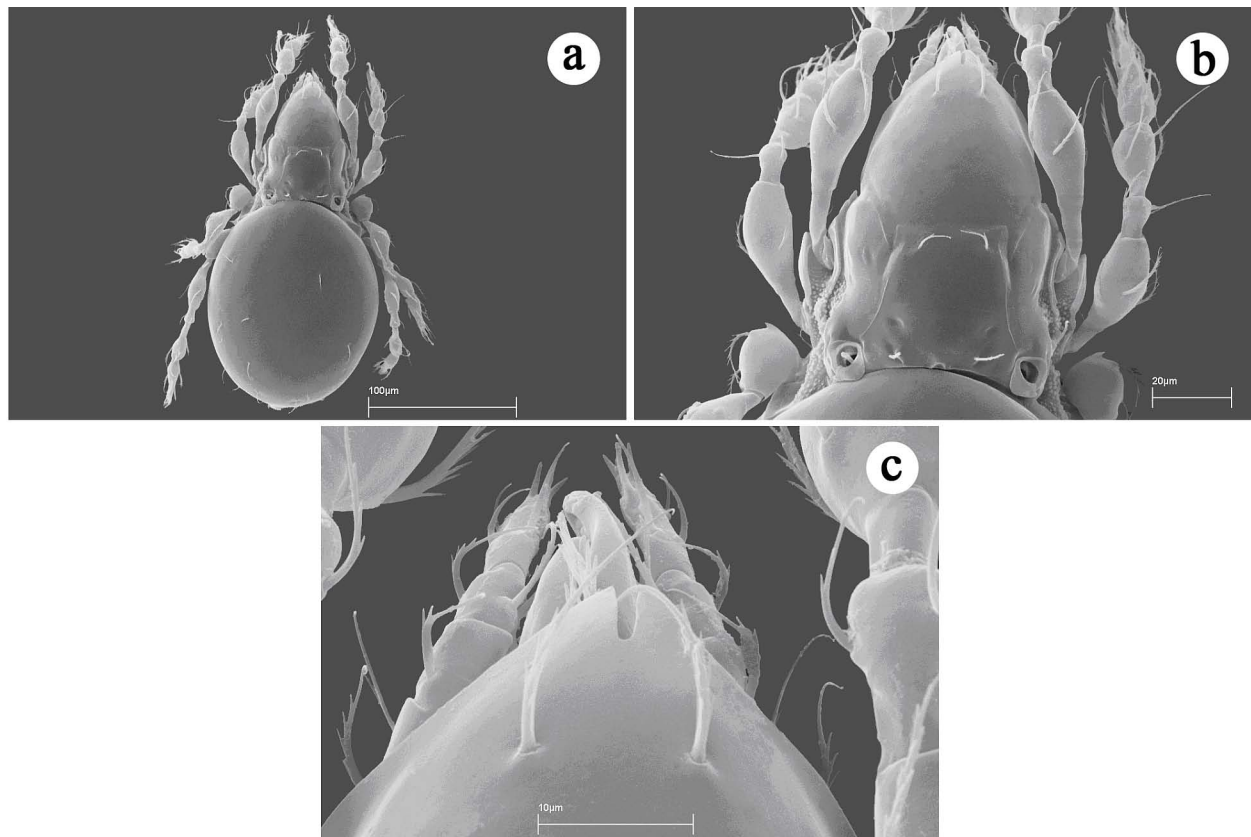


FIGURE 2: *Ramusella (Insculptoppia) pinarbasiensis* n. sp. (a) - Dorsal view; (b) - Prodorsum; (c) - Rostrum and rostral setae.

Prodorsum (Figures 1a and 2) — Rostrum divided by a median incision. Rostral setae ciliated, 12 μm in length arising on the dorsal surface of rostrum, curved inwards and situated far to each other. Lamellar setae, with one cilium, 10 μm in length and situated closer to inter-lamellar setae than to rostral setae. Lamellar line present, not reaching to the insertion of lamellar setae, trans-lamellar line faint. Inter-lamellar setae minute, 2 μm in length, situated lateral of medial three pairs of muscle sigillae. Bothridia round, with small opening, sensilli (ss) long (40 μm in length), fusiform, with long stalk and their distal half being dilated; 6-7 setae unilaterally, among them proximal setae longer than distal ones.

Notogaster (Figures 1a and 2a) — Oval. Longer than wide, ratio 1.3:1. Nine pairs of smooth notogastral setae present. Setae *c2* reduced the alveoli. Setae *la*, *lm*, and *lp* about 14, 20, and 32 μm long, respectively. Setae of *h* series usually about 16 μm

long (range 14-20 μm). Setae of *p* series smaller than other notogastral setae, about 7 μm long (range 6-8 μm).

Ventral side (Figure 1b) — Labiogenal articulation smooth. Epimeral borders distinctly visible and strongly sclerotized. Epimeral setal formula 3-1-3-3, setae thin and smooth, setae *1c* and *3c* slightly longer 8 and 12 μm in length, respectively. The remaining coxisternal setae 2 μm long. Coxisternal setae *3c*, positioned laterally on coxisternal protuberance ventrally at base of pedotectum II. Genital plates 22 μm in length, 26 μm in width, with five pairs of setae, all of them equal in length and smooth. Anal plates 38 μm in length, 32 μm in width, with two pairs of setae, about 6 μm in length, smooth. Distance between genital and anal plates 51 μm . One pair of aggenital and three pairs of adanal setae. Aggenital setae about 6 μm in length, smooth, three pairs of adanal setae *ad1-3* smooth, 12, 10 and 8 μm in length, respectively. The adanal



FIGURE 3: *Ramusella (Insculptoppia) pinarbasiensis* n. sp. (a) - Leg I; (b) - Leg II; (c) - Leg III; (d) - Leg IV (scale bar for all figures = 40 μm).

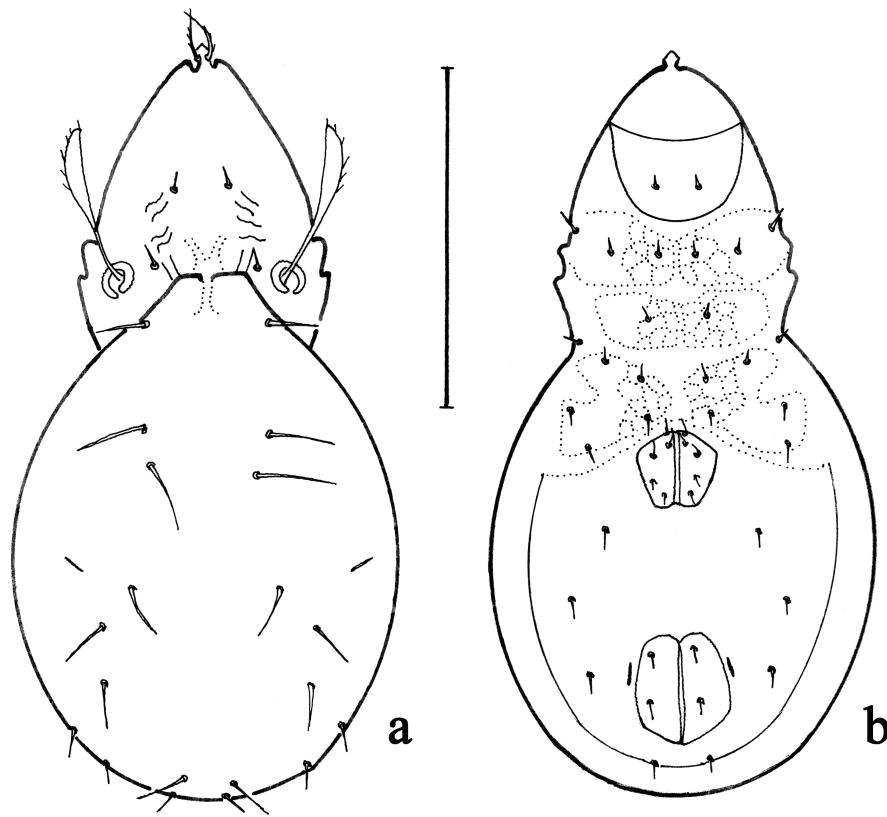


FIGURE 4: *Dissorhina uludagensis* n. sp. (a) - Dorsal view; (b) - Ventral view (scale bar for all figures = 100 μ m).

setae *ad1* in postanal, *ad2* in paraanal and *ad3* in preanal positions. Lyrifissures *iad* 10 μ m in length, paraanal, anterior of *ad2*.

Legs — Formula of leg setation (trochanter to tarsus): I (1-5-2+1-4+2-14+1); II (1-5-1+1-3+1-12+2); III (2-3-1+1-3+1-12); IV (1-2-2-3+1-10). Structure and setation of legs as shown in Figure 3.

Material examined — Holotype (ZMEU: 249) and five paratypes (ZMEU: 250-254), one of them were mounted on aluminium stubs and gold-coated for scanning electron microscopy, collected from soil and litter under oak trees, Pinarbasi (38°19'43.18" N, 36°23'28.14" E), Kayseri, Turkey, 1330 m, 23 Apr. 2008.

Etymology — Specific name "*pinarbasiensis*" is named after the locality, Pinarbasi, Kayseri, Turkey,

where the present new species was found.

Remarks — Among the known species of the subgenus *Ramusella* (*Insculptoppia*), *Ramusella* (*Insculptoppia*) *berninii* (Pérez-Íñigo, 1975), *Ramusella* (*Insculptoppia*) *corniculata* (Pérez-Íñigo and Peña, 1997) from Spain and *Ramusella* (*Insculptoppia*) *cavernalis* (Ohkubo and Cokendolpher, 2002) from southwestern USA resembles the new species with their dentate rostrum. The new species can be distinguished from them by the following features: 1) rostrum with two dentate, divided by deep median incision in the new species (rostrum tridentate in *R. (I.) cavernalis*; rostrum with two dentate, divided by wide and shallow incision in *R. (I.) berninii* and *R. (I.) corniculata*); 2) lamellar and trans-lamellar line present in the new species (lamellar and trans-lamellar line absent in *R. (I.) corniculata*; short lamel-

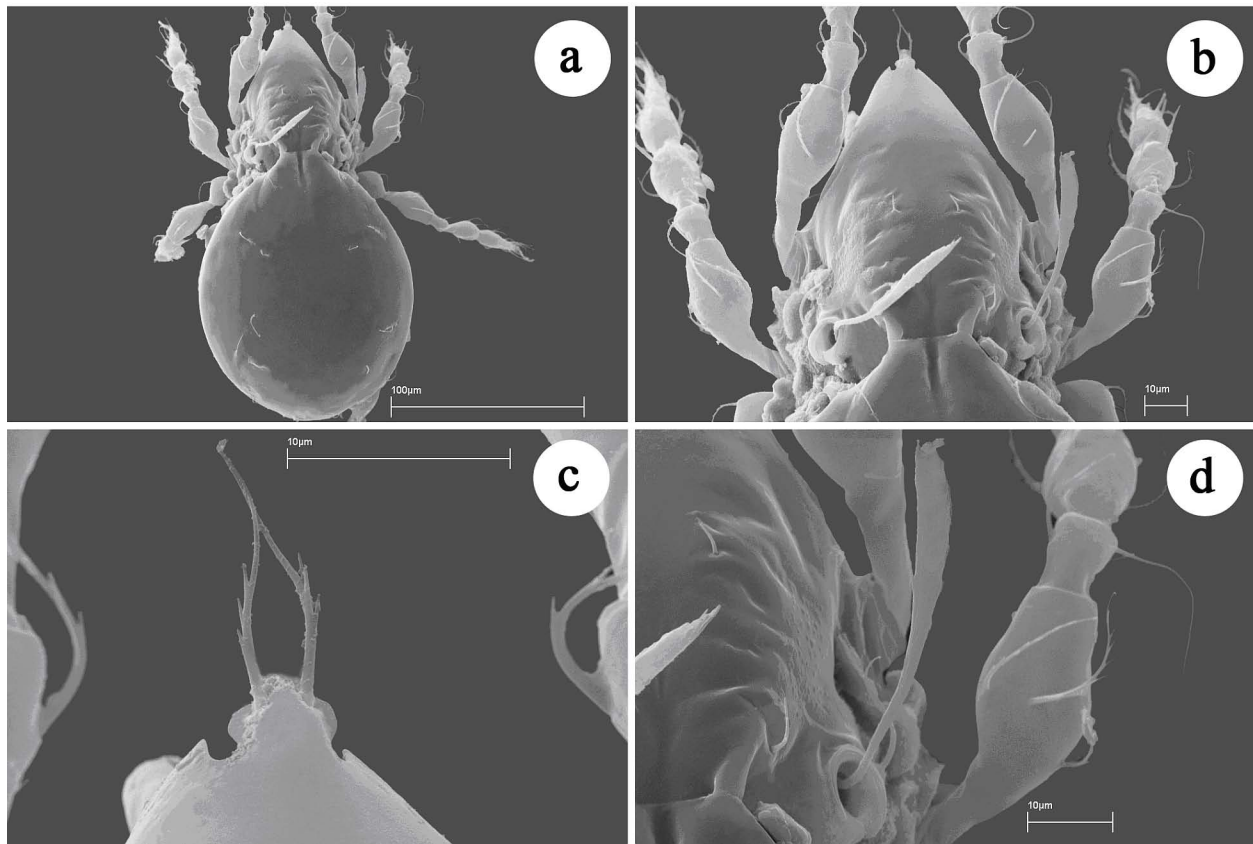


FIGURE 5: *Dissorhina uludagensis* n. sp. (a) - Dorsal view; (b) - Prodorsum; (c) - Rostrum and rostral setae; (d) - Sensillus.

lar line present but trans-lamellar line absent in *R. (I.) berninii* and *R. (I.) cavernalis*; 3) sensilli with 6-7 setae unilaterally, among them proximal setae longer than distal ones in the new species (sensilli with 8 setae unilaterally, different in length in *R. (I.) corniculata*; 5-6 setae unilaterally, different in length in *R. (I.) berninii*; 8-10 setae unilaterally, equal in length in *R. (I.) cavernalis*.

***Dissorhina uludagensis* n. sp.**

(Figures 4-6)

Diagnosis — Rostral apex triangular, conspicuously protruding from the rostral part of prodorsum. Incisure wide, lateral teeth much shorter than the median teeth and sharpened. Two pairs of weak transversal costulae present. Sensilli fusiform, as long as 70% of the length of prodorsum (42 µm in length), its head some minute aciculae.

Dimensions — Length: 204-228 (holotype: 212) µm, width: 104-120 (holotype: 104) µm (n=9).

Prodorsum — (Figures 4a and 5) — Rostral apex triangular, conspicuously protruding from the rostral part of prodorsum. Incisures wide, lateral teeth much shorter than the median teeth and sharpened. Rostral setae 10 µm in length, arising on this triangular apex. Two pairs of weak transversal costulae present. Lamellar and inter-lamellar setae smooth. Bothridia round, with small opening. Sensilli fusiform, as long as 70% of the length of prodorsum (42 µm in length), its head some minute aciculae.

Notogaster (Figures 4a and 5a) — Longer than wide, ratio 1.5:1. Anterior part well narrowed anteriorly, a short median part straight. Ten pairs of comparatively smooth notogastral setae present. The setae *c2* and *p* series short, thin, 12 and 6 µm in length respectively, the remaining notogastral setae

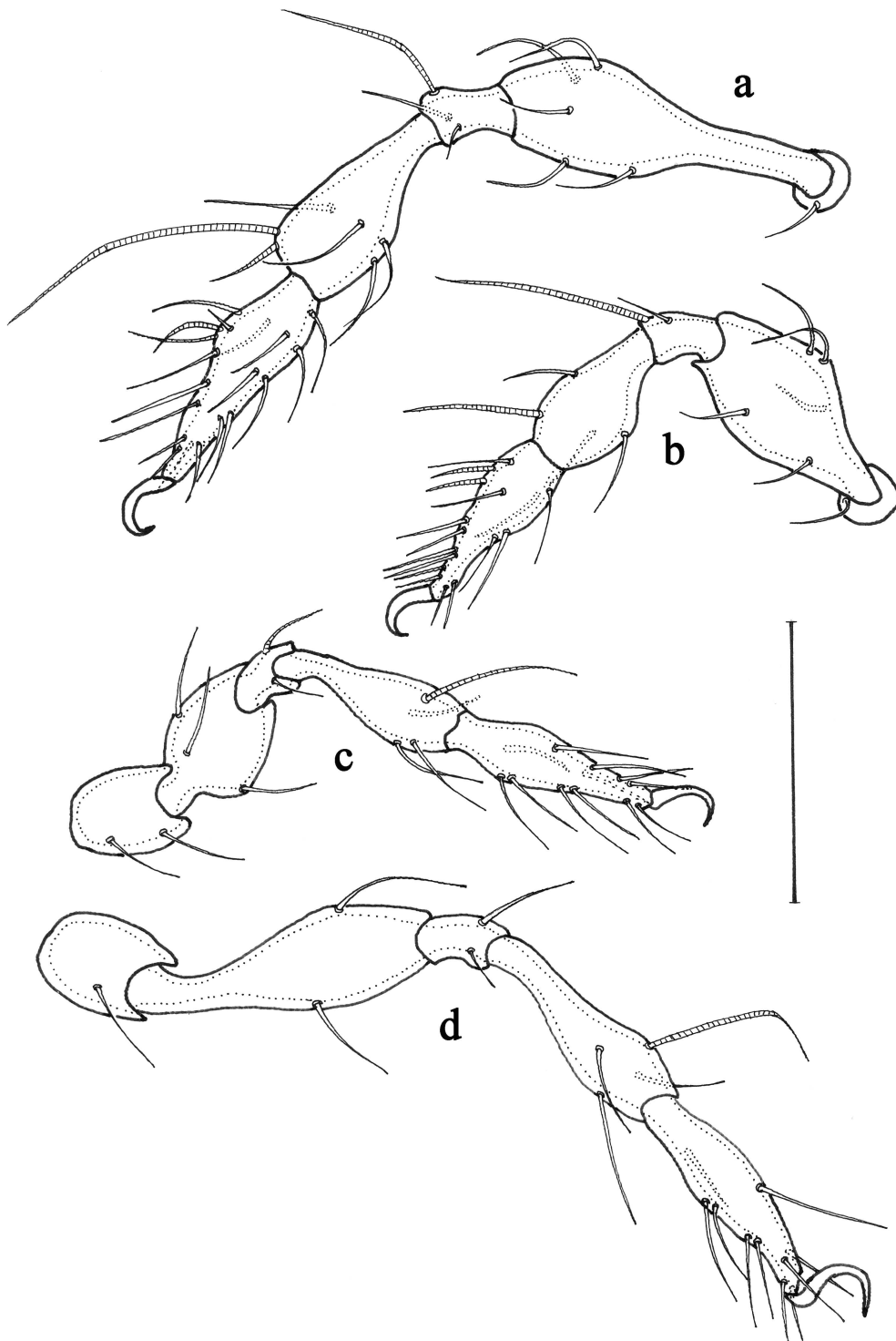


FIGURE 6: *Dissorhina uludagensis* n. sp. (a) - Leg I; (b) - Leg II; (c) - Leg III; (d) - Leg IV (scale bar for all figures = 40 μ m).

smooth, long 20 µm in length.

Ventral Side (Figure 4b) — Labiogenal articulation arched. Epimeral borders distinctly visible and strongly sclerotized. Epimeral setal formula 3-1-3-3, setae thin, short and smooth. Genital plates 24 µm in length, 24 µm in width, with five pairs of smooth setae, setae *g1* longest, the remaining setae equal in length. Anal plates 34 µm in length, 32 µm in width, with two pairs of smooth, short setae. Distance between genital and anal plates 36 µm. One pair of aggenital and three pairs of adanal setae. Lyrifissures *iad* 4 µm in length, paraanal, anterior of *ad2*. The adanal setae *ad1* in postanal, *ad2* in paraanal and *ad3* in preanal positions.

Legs — Formula of leg setation (trochanter to tarsus): I (1-5-2+1-4+2-17+2); II (1-5-1+1-3+1-14+2); III (2-3-1+1-3+1-12); IV (1-2-2-3+1-10). Structure and setation of legs as shown in Figure 6.

Material examined — Holotype (ZMEU: 255) and ten paratypes (ZMEU: 256-265), one of them were mounted on aluminum stubs and gold-coated for scanning electron microscopy, collected from soil and litter under fir trees, Uludağ Mountain (40°08'.13" N, 29°06'.21" E), Bursa, Turkey, 1634 m, 07 July 2008.

Etymology — Specific name "*uludagensis*" is named after the locality, Uludağ Mountain, Bursa, Turkey, where the new species was found.


Remarks — This new species stands very near to *Dissorhina longispina* Mahunka, 2006 by the shape and length of sensilli (Mahunka 2006). However, it is distinguished from it by the following features: 1) two pairs of short transversal costulae present, not starting from the bothridia in the new species (one pair of short costulae present, starting from the bothridia in *D. longispina*; 2) lamellar setae arising from anterior of transversal costulae (lamellar setae far beyond of costulae in *D. longispina*); 3) sensillus fusiform, its head some minute aciculae in the new species (sensillus lanceolate, its head smooth in *D. muranyii*) 4) body measurement in the new species: 204-228 / 104-120 µm (body measurement in *D. muranyii*: 290-301 / 140-147 µm).

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