

A New Record of Genus *Parastigmaeus* (Acariformes: Stigmaeidae) from Türkiye

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Abstract

Parastigmaeus urmiaensis Mohammad Doustaresharaf and Bagheri, 2019 is founded for the first time from Türkiye and new report to genus *Parastigmaeus* the mite fauna of Türkiye. One female specimen of the species is collected from soil and litter under *Spartium junceum* (Fabaceae) in Manisa province, Türkiye. *P. urmiaensis* is redescribed and illustrated based on the adult female.

Keywords: Acari, New report, *Parastigmaeus*, Raphignathoidea, Türkiye.

1. Introduction

Members of the family Stigmaeidae are known predators and found in all biogeographical regions though most of them were discovered in the Palearctic, Nearctic, Afrotropical, Australian, Oriental regions [1].

The family Stigmaeidae is known has got in large quantities genus and species in the superfamily Raphignathoidea and includes about 636 species in 34 valid genera [2-5], of which 11 genera and 131 species are recorded from Türkiye, namely *Agistemus* Summers, 1960 (3 species), *Cheyllostigmaeus* Willmann, 1951 (9 species), *Eryngiopus* Summers, 1964 (4 species), *Eustigmaeus* Berlese, 1910 (28 species), *Ledermuelleriopsis* Willmann, 1953 (14 species), *Mediolata* Canestrini, 1889 (9 species), *Prostigmaeus* Kuznetsov, 1984 (3 species), *Stigmaeus* Koch, 1836 (50 species), *Storchia* Oudemans, 1923 (5 species), *Villersia* Oudemans, 1927 (1 species) and *Zetzellia* Oudemans, 1927 (5 species) [3-13].

Parastigmaeus is a small genus, in family Stigmaeida, with three described species in the world [14-17], namely *Parastigmaeus capensis* Meyer, 1969 (South Africa), *P. andreae* Khanjani and Ueckermann, 2002 (Iran) and *P. urmiaensis* Mohammad Doustaresharaf and Bagheri, 2019 (Iran). In this study, new report to genus *Parastigmaeus* Kuznetsov, 1984 the mite fauna of Türkiye.

A new record of Turkish fauna *Parastigmaeus urmiaensis* Mohammad Doustaresharaf and Bagheri is illustrated and redescribed based on the adult female. Similarities and differences were discussed by comparing them with the type locality (Iran) of the species.

2. Materials and Methods

The specimens were collected from soil and litter under *Spartium junceum*, Manisa province, Türkiye, and taken to the laboratory in plastic bags and extracted by Berlese-Tullgren funnels for 7 days. Mites were collected in 70% ethanol and mounted on slides in modified Hoyer's medium. The mite specimens were measured and drawn by means of a research microscope (Nikon Eclipse E 400). The setal nomenclature follows those of Kethley (1990) and Grandjean (1944) [18, 19]. All measurements were given in micrometers (μm). Measurements of legs were taken from base of coxa to tips of tarsal claws. The specimens are deposited as slide mounted in the (CBZM), Manisa, Türkiye. See Zhang (2018) for abbreviations [20].

3. Results and Discussion

Genus *Parastigmaeus* Kuznetsov, 1984

Parastigmaeus Kuznetsov, 1984: 1105; Ueckermann and Meyer, 1987: 50; Fan, Flechtmann and De Moraes, 2016: 106 [15, 21].

Type species: *Pseudostigmaeus capensis* Meyer, 1969

***Parastigmaeus urmiaensis* Mohammad Doustasharraf and Bagheri, 2019**

Diagnosis: Subcapitular setae *n* very long, prodorsal shield divided, with three pairs of aggenital setae, tarsus III with 7 setae, tarsus IV with a small solenidion [17].

Description: Female (*n* = 1) (Figs 1, 2).
Length of body (excluding gnathosoma) 414, width 216.

Gnathosoma (Figs 1A, B, 2E). Chelicerae 99, fixed digit 78, moveable digit 83. Ventral subcapitulum smooth, with two pairs of subcapitular setae, *m* 26 and *n* 65 and two pairs of adoral setae, *or1* 10 and *or2* 10. Palp 104, trochanter without seta, femur with three setae, genu with one seta, palp tibia with well-developed claw + one seta-like accessory claw and two setae, palp tarsus with one terminal tridentate eupathidium + one subterminal simple eupathidium + one solenidion + four simple setae.

Dorsum of idiosoma (Fig. 1A). Prodorsum with three pairs of setae (*vi*, *ve* and *sci*); prodorsal shield divided to two large shields, each shield with an eye; setae *vi* and *ve* located on prodorsal shields but setae *sci* on small shield contiguous prodorsal shield; hysterosoma without shields except suranal shield of which is smooth, entire and bearing two pairs of setae (*h1* and *h2*), seta *h2* the longest of dorsal setae. Rest of hysterosomal setae on very small platelets. Lengths and distances of dorsal idiosomal setae as follows: *vi* 23, *ve* 42, *sci* 34, *c1* 23, *c2* 36, *d1* 18, *d2* 17, *e1* 18, *e2* 17, *f26*, *h1* 36, *h2* 44, *vi-vi* 47, *vi-ve* 21, *ve-ve* 81, *ve-sci* 65, *sci-sci* 161, *sci-c1* 47, *c1-c1* 55, *c1-c2* 70, *c2-c2* 169, *c2-d1* 78, *d1-d1* 91, *d1-e1* 65, *e1-e1* 44, *e1-e2* 62, *e2-e2* 138, *e1-f29*, *f-f* 75, *f-h1* 42, *h1-h1* 36, *h1-h2* 23, *h2-h2* 83.

Venter of idiosoma (Fig. 1B). Endopodal shield absent; ventral setae includes *1a* 13, *3a* 16 and *4a* 16; one pair of long genital setae *g1* 21 present; anogenital area striated, with three pairs of aggenital setae *ag1* 13, *ag2* 13, *ag3* 31 and pseudanal setae *ps1* 26, *ps2* 26, *ps3* 29.

Legs (Figs 2 A-D). Length of legs (from base of coxa to tip of tarsal claw) leg I 195, leg II 169, leg III 156, leg IV 164. Chaetotaxy of leg segments: coxae 2-1-2-2, trochanters 1-1-1-1, femora 4-4-2-2, genua 3(+1 κ)-1-0-0, tibiae 5(+1 $\phi\phi$)-5(+1 $\phi\phi$)-5(+1 $\phi\phi$)-5(+1 $\phi\phi$), tarsi 13(+1 ω)-9(+1 ω)-7(+1 ω)-7(+1 ω). Length of solenidia: ω I 8, ω II 7, ω III 4, ω IV 2.

Male: Unknown.

Material examined. One female collected from litter and soil under the *Spartium junceum*, 94 m a.s.l., 38° 54' 09"N 27° 48' 23"E, Akhisar district, Manisa province, 09 November 2020, Türkiye, coll. M. Akyol.

Discussion

Parastigmaeus urmiaensis Mohammad Doustasharraf and Bagheri, 2019 was described for the first time from Iran and collected from soil, (altitude 1775 m a.s.l.) Urmia, West Azerbaijan province, Iran [17]. In this study, the samples collected from soil and litter under *Spartium junceum* (altitude 94 m a.s.l.) in Akhisar district, Manisa province, Türkiye.

The body size of 385 (356–370) long and 195 (164–172) wide in the Iranian specimens; 414 long and 216 wide in the Turkish specimens. Body size of the Turkish specimen is bigger than the Iranian specimens.

The Turkish specimen resembles the Iranian specimens, but some measurements of body setae (*ve* 42, *sci* 34, *c1* 23, *c2* 36, *e2* 17, *f26*, *1a* 13, *3a* 16, *4a* 16, *g1* 21, *ag1* 13, *ag2* 13, *ag3* 31, *ps3* 29 in the Turkish specimens) are different from the type specimens (*ve* 38 (32–34), *sci* 25 (21–22), *c1* 19 (16–20), *c2* 26 (25–28), *e2* 12 (12–13), *f* 20 (18–20), *1a* 23 (21–25), *3a* 25 (22–23), *4a* 19 (17–20), *g1* 38 (37–40), *ag1* 15 (16–18), *ag2* 17 (15–18), *ag3* 25 (22–23), *ps3* 23 (24–25) in the Iranian specimens). Also, setae *sci* on small shield contiguous prodorsal shield in the Turkish specimen whereas setae *sci* on integument in the Iranian specimens.

P. urmiaensis was found from the type locality (Iran) [17]. This is the second report of this species and a new record for the Turkish fauna.

Ethics

There are no ethical issues after the publication of this manuscript.

Author's Contributions

Mustafa Akyol: Drafted and wrote the manuscript, performed the experiment and result analysis

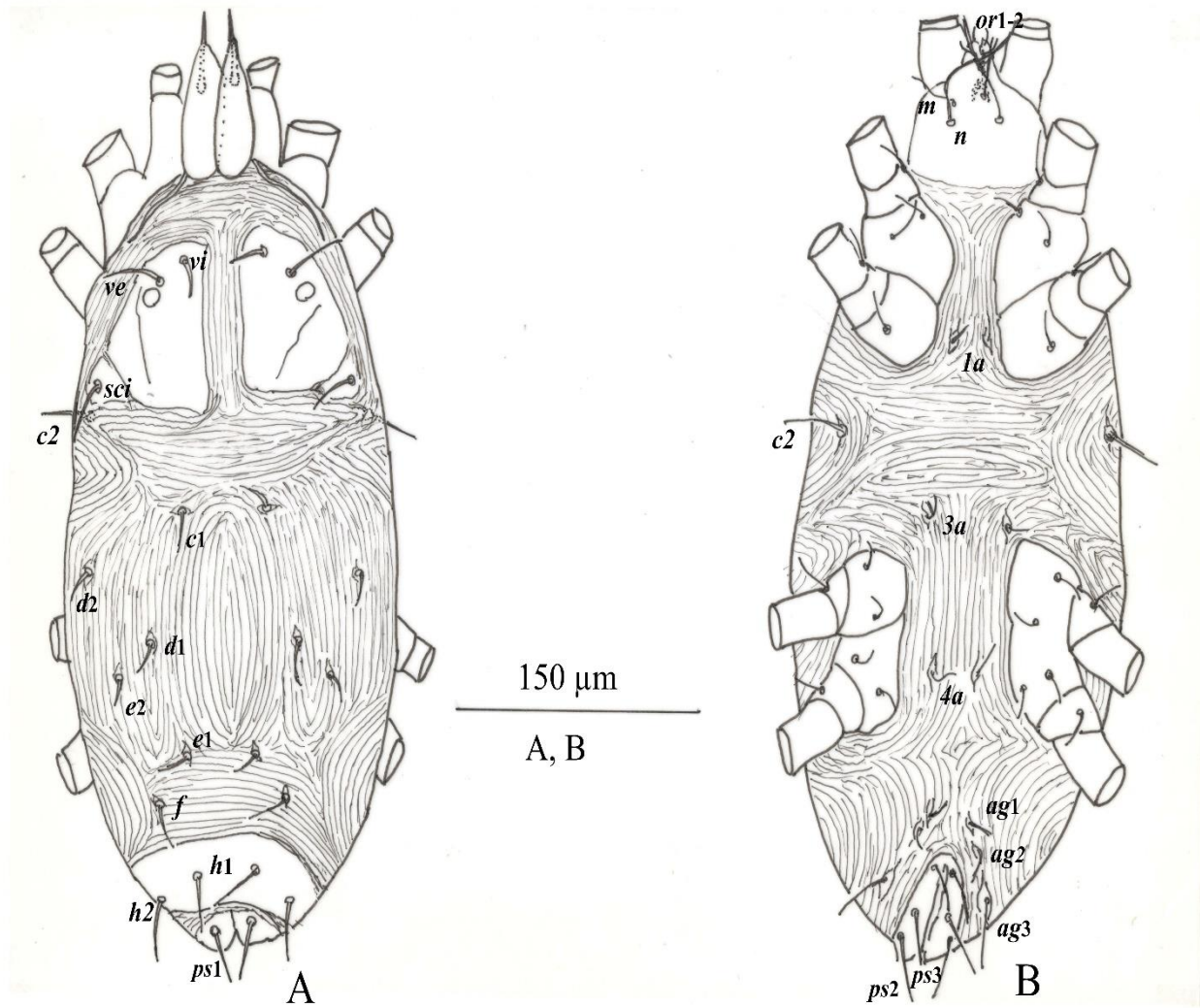


Figure 1. *Parastigmaeus urmiaensis* Mohammad Doustaresharaf and Bagheri (female): A. Dorsal view of idiosoma; B. Ventral view of idiosoma.

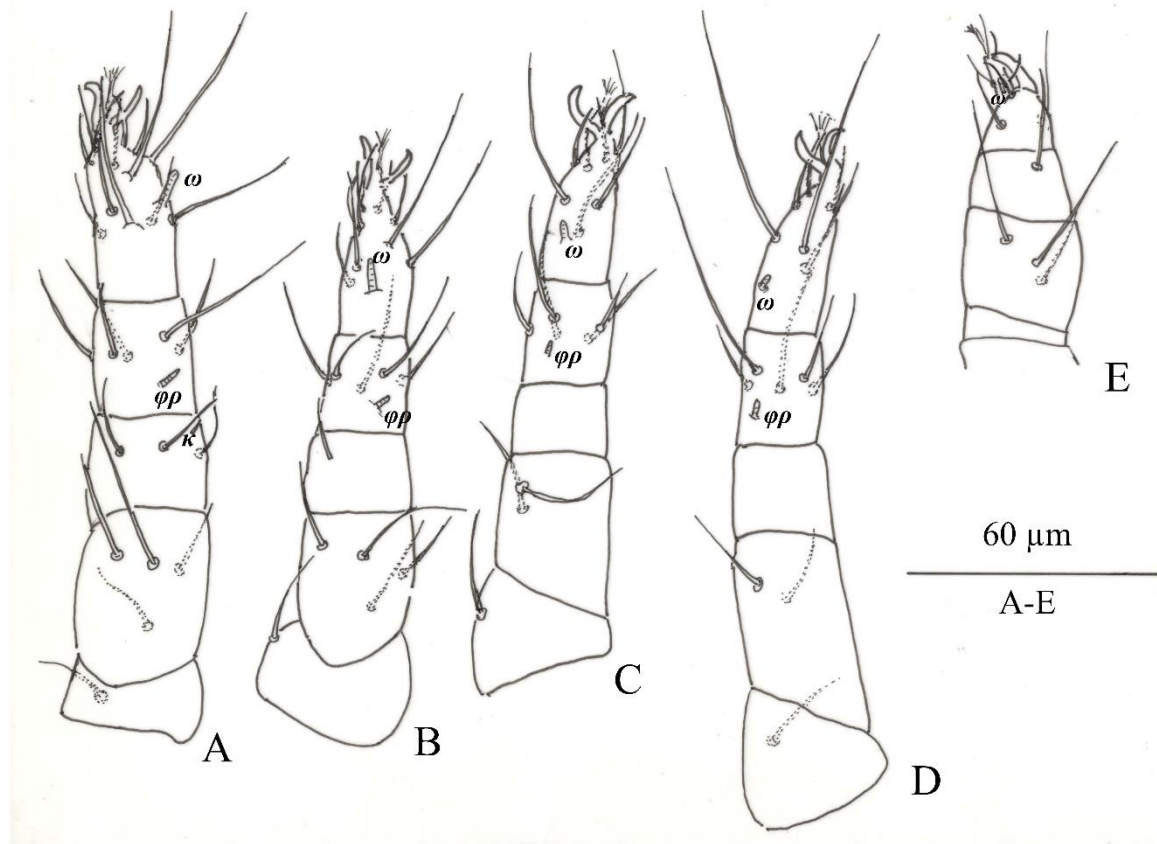


Figure 2. *Parastigmaeus urmiaensis* Mohammad Doustaresharaf and Bagheri (female): A. Leg I; B. Leg II; C. Leg III; D. Leg IV; E. Palp.

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