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Article

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A new species of the genus *Eryngiopus* Summers (Acari: Stigmaeidae) from Hamedan Province, Iran

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Abstract

A new species of the genus *Eryngiopus, E. hamedanicus* Khanjani, Mohammadi & Nazari **sp**. **nov**. is described and illustrated based on females collected from soil under pear trees, Negarkhaton Village, Famenin town, Hamedan province, Iran.

Key words: pear tree, new species, first record, predatory mites, Iran.

Introduction

Eryngiopus Summers is one of genera of the family Stigmaeidae and occur all over the world. The members of this genus are predators and feed on scale insects (Fan & Zhang 2005). Currently the family Stigmaeidae contains 32 genera (Khanjani *et al.* 2012b), of which 10 genera are recorded from Iran namely: *Agistemus* Summers, 1960, *Cheylostigmaeus* Willmann, 1951, *Eustigmaeus* Berlese, 1910, *Ledermuelleriopsis* Willmann, 1953, *Mediolata* Canestrini, 1889, *Parastigmaeus* Kuznetsov, 1984, *Prostigmaeus* Kuznetsov, 1984, *Stigmaeus* Koch, 1836, *Storchia* Oudemans, 1923 and *Zetzellia* Oudemans, 1927 (Khanjani *et al.* 2012b). In this paper, the genus *Eryngiopus* is recorded for the first time from Iran and a new species described hereunder.

Material and methods

Mites were collected from soil under *Pyrus communis* L. (Rosaceae) in Negarkhaton Village, Famenin, Hamedan province and mounted directly in Hoyer's medium. The specimens were measured, identified and drawn by means of an Olympus BX_{51} differential interference contrast microscope under 1000× magnification and equipped with a drawing tube. Body length measurements represent the distance between base of gnathosoma to end of idiosoma; width was measured above coxae III. Setae were measured from the setal base to the tip of the seta; distances between setae were measured between setal bases. Legs measurements are from coxa to tip of pretarsus.

The terminology and abbreviations used in the description of the new species follows that of Kethley (1990). All measurements are given in micrometers and the measurements of the paratype are given in parentheses.

Results

Family Stigmaeidae Oudemans, 1931
Genus *Eryngiopus* Summers, 1964
Type species: *Eryngiopus gracilis* Summers, 1964, by original designation.

Diagnosis (based on Fan & Zhang, 2005): Idiosoma narrowly to broadly oval in dorso-ventral view, generally red or orange in life. Chelicerae separate. Palp tibial claw subequal to palp tarsus; accessory claw slender, seta-like or spine-like; terminal eupathidia on palp tarsus mostly fused and split into 2–3 vestigial prongs; counts of setae and solenidia from palp trochanter to palptarsus: 0, 3, 1, 2 + 1 claw + 1 accessory claw, 4 + 1ω + 1 subterminal spine-like eupathidium + 3 eupathidia (mostly fused). Infracapitulum with two pairs of subcapitular setae, *m* posterolaterad of pharynx, *n* posteromediad of *m*. Prodorsum mainly striated, prodorsal shield reduced to 1 small shield or 1 pair of platelets, which bears 2–3 pairs of setae, *sce* present or absent; eyes present, *pob* absent. Dorsal hysterosomal area C-F mainly striated, with one pair of minute platelets anteromediad of d_1; setae d_1 and d_2 situated on tiny platelets; humeral shields minute or vestigial, dorsolateral, with setae c_2; intercalary shields (F) divided along midline, each side with one seta (f_1). Suranal shield (H) divided or entire, with 2 pairs of setae (h_1 and h_2), h_3 absent. Endopodal shields I-II and III-IV present, divided along midline. Ventral opisthosoma with 2–3 pairs of aggenital setae; genitoanal valves with one pair of genital setae and three pairs of pseudanal seate. Leg tarsal claws robust; empodial shafts branching into tenent hairs before extending beyond tips of claws, with three pairs of tenent hairs; counts of setae and solenidia on legs I-IV: coxae (excluding *1a*, *3a* and *4a*) 1–2 + 1*elcp*, 1, 2, 1–2; trochanters 1, 1, 1, 0-1; femora 4–6, 4, 2–3, 2; genua 3 + 1k, 0–2, 0, 0; tibiae 5 + 1φp, 5 + 1φp, 5 + 1φp, 4–5 + 0-1φp; tarsi 12–13 + 1ω, 8–9 + 1ω, 6–7 + 1ω, 6–7 + 0–1ω.

Eryngiopus hamedanicus Khanjani, Mohammadi & Nazari sp. nov. (Figs. 1–8)

Diagnosis

Prodorsum with one shield medially, with three pairs of setae (*vi, ve*, *sci*), setae *sce* present, suranal shield entire. Aggenital shield with three pairs of setae (ag_{1-3}). Coxa II and trochanter IV with one seta, femur I & III with 6 & 2 setae respectively, genu II with 1 seta, tarsi II-IV with 9+1ω, 7+1ω, 7+1ω.

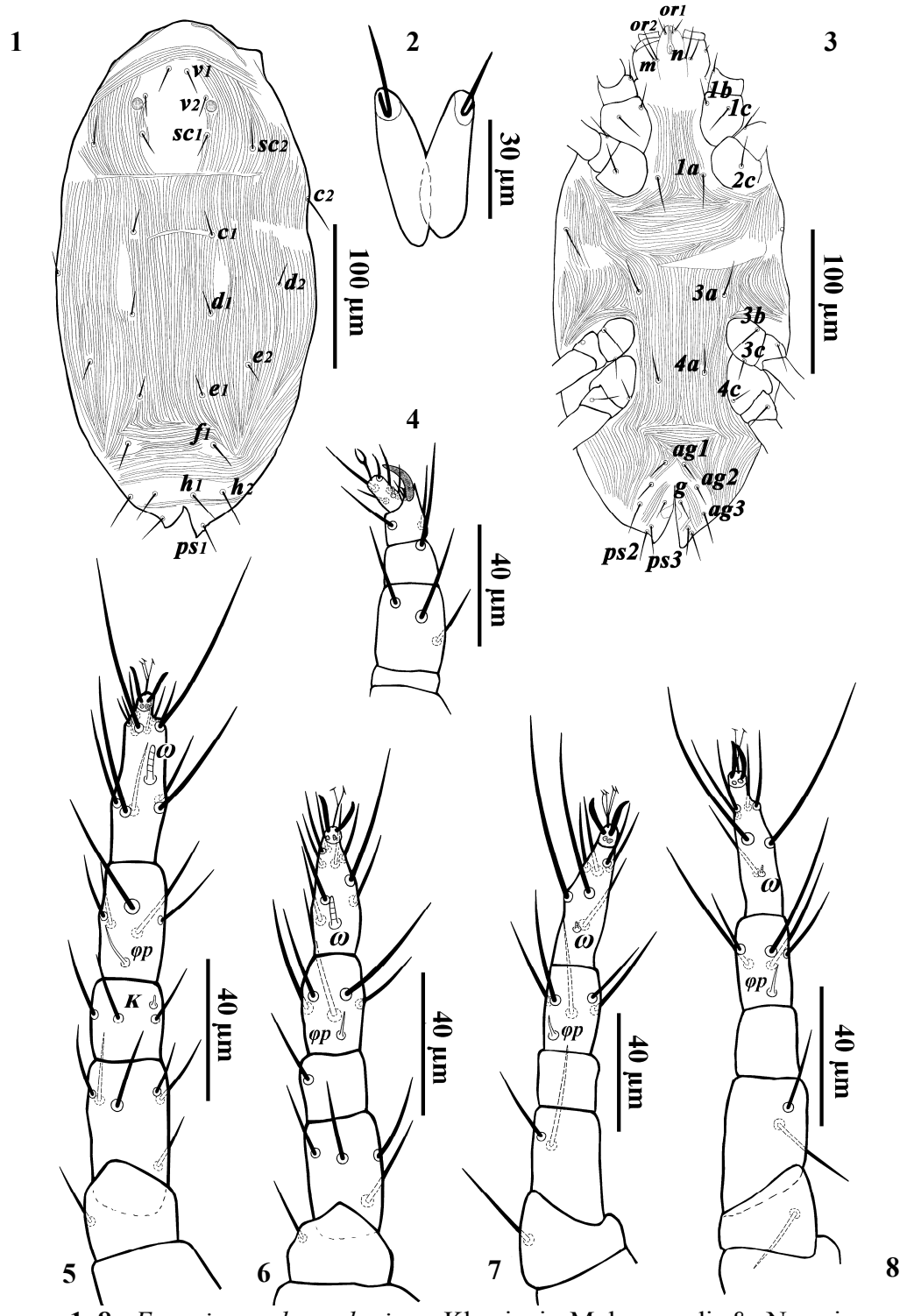
Material examined

Holotype female and one paratype female collected from soil under pear trees, *Pyrus communis* (L.) (Rosaceae) Iran: Hamedan Province, vicinity of Famenin town, NegarkhatonVillage, 35° 7′ N, 48° 55′ E, 8 June 2011, coll. L. Mohammadi. The holotype female is deposited as slide-mounted specimens in the Collection of the Acarology Laboratory, University of Bu-Ali Sina, Hamadan, Iran and one paratype female will be deposited in the National Collection of Arachnida, Plant Protection Research, Pretoria, South Africa.

Description

Female (n = 2). Color in life red. Idiosoma oval. Measurements of holotype with measurements of paratypes in parentheses: Length of body (excluding gnathosoma) 370 (388), (including gnathosoma) 468 (448); width 193 (205); length of leg I 211 (208); leg

II 160 (163); leg III 155 (155), leg IV 180 (178).



Figures 1–8. *Eryngiopus hamedanicus* Khanjani, Mohammadi & Nazari **sp. nov.** (Female): 1. Dorsal view of idiosoma; 2. Chelicerae; 3. Ventral view of idiosoma; 4. Palp; 5. Leg I; 6. Leg II; 7. Leg III; 8. Leg IV.

Dorsum (Fig. 1): Prodorsum with large shield medially; bearing three pairs of setae (*vi, ve*, *sci*), setae *sce* present, eyes present, post ocular bodies (*pob*) absent; dorsal

hysterosomal area between setae C-F with fine, longitudinal striae, anteromediad of setae d_1 with one pair of minute platelets; area between setae f_1 with transverse striae, f_1 on small platelets. Suranal shield (H) entire, with two pairs of setae (h_1 and h_2). Dorsal hysterosoma with 8 pairs of setae, almost smooth. Lengths of dorsal setae: *vi* 17 (18), *ve* 16 (16), *sci* 18 (17), *sce* 25 (22), c_1 16 (19), c_2 28 (30), d_1 16 (16), d_2 18 (15), *e1* 15 (15), e_2 15 (14), f_1 21 (21), h_1 23 (24), h_2 29 (27). Distances between dorsal setae: *vi-vi* 15 (15), *ve-ve* 48 (48), *vi-ve* 24 (36), *sci-sci* 50 (48), *sce-sce* 122 (127), *ve-sci* 29 (30), *sci-sce* 36 (30), c_1-c_1 60 (57), c_1-c_2 80 (80), c_2-c_2 192 (164), c_1-d_1 57 (57), d_1-d_1 60 (60), d_1-d_2 57 (47), d_1-e_1 60 (44), d_1-e_2 47 (43), d_2-e_2 72 (57), d_2-d_2 170 (165), e_1-e_1 58 (52), e_2-e_2 120 (120), e_1-e_2 42 (54), e_1-f_1 37 (29), f_1-f_1 64 (65), f_1-h_1 43 (34), h_1-h_1 30 (27), f_1-h_2 37 (42), h_2-h_2 29 (27), h_1-h_2 20 (23); ratio: *vi/vi-vi* 1.2 (1.1), c_1/c_1-c_1 0.31 (0.28), d_1/d_1-d_1 0.26 (0.26), e_1/e_1-e_1 0.25 (0.28), $f1/f_1$-f_1 0.32 (0.32), h_1/h_1-h_1 0.76 (0.85), h_2/h_2-h_2 0.40 (0.36), h_1/h_2 0.79 (0.92), c_1-c_1: d_1-d_1: e_1-e_1: f_1-f_1 : 1 (0.95): 1.03 (1.09): 0.93 (0.87): 1.

Venter (Fig. 2). Ventral cuticle striate transversely between coxisternal regions II-III; coxisternal regions I-II and III-IV covered with longitudinal striae (Fig. 2). Lengths of setae *1a* 28 (28), *1b* 21 (19), *1c* 20 (19), *2c* 23 (25), *3a* 28 (25), *3b* 28 (23), *3c* 18 (16), *4a* 22 (21) and *4c* 15 (15), ag_1 17 (14), ag_2 18 (18), ag_3 28 (23), *g*14 (12), ps_1 25 (24), ps_2 22 (19), ps_3 22 (22). Aggenital setae ag_3 longer than ag_{1-2}; and pseudanal seta ps_1 almost as long as setae ps_{2-3}. Distances: ag_1-ag_1 16 (20), ag_2-ag_2 37 (35), ag_3-ag_3 52 (50).

Gnathosoma (Figs. 3–4). Ventral infracapitulum with two pairs of subcapitular setae, *m* 29 and *n* 24, two pairs of adoral setae, or_1 6, or_2 9; distances: or_1-or_1 5, or_2-or_2 10, *m-m* 6, *n-n* 5, or_1- *m* 25, *m-n* 5 (Fig. 2). Chelicerae free 50, movable digit 29 (Fig. 3). Palp five segmented, palp tarsus with four simple setae + one simple eupathidium + one solenidion (ω) + one bifurcate eupathidium, palp tibia with two setae + one well developed claw + one accessory claw seta-like, palp genu with one seta and palp femur with three setae (Fig. 4).

Legs (Figs. 5–8). Legs about half length of body. Leg setal formulae as follows: coxae 2-1-2-1; trochanters 1-1-1-1; femora 6-4-2-2, genua 3+1κ-1-0-0; tibiae 5+1φρ-5+1φρ-5+1φρ-5+1φρ; tarsi 13+1ω-9+1ω-7+1ω-7+1ω. Length of solenidia: ω I 10 (12), ω II 10 (11), ω III 10 (11), ω IV 3 (4).

Etymology

The species is named after the locality where it was collected, namely Hamedan province.

Remarks

The new species *Eryngiopus hamedanicus* Khanjani, Mohammadi & Nazari **sp. nov.** resembles *E. nelsonesnsis* Wood, 1971 in that the prodorsum bears a shield, setae *sce* are present, setae d_1 associated with small platelets, aggenital shield with three pairs of setae (ag_{1-3}) and trochanter IV with one seta. However it differs from the latter in: genu II with 1 seta in the new species instead of two setae in *E. nelsonesnsis*; femora I and III with 6 and 2 setae, respectively in *E. hamedanicus* Khanjani, Mohammadi & Nazari **sp. nov.** instead of 5 and 3 in *E. nelsonesnsis* and tarsi II-IV with 9+1ω-7+1ω-7+1ω in the new species instead of 8+1ω-6+1ω-6+1ω in *E. nelsonesnsis.*

Male and immature stages: Unknown.

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گونه جدیدی از جنس *Eryngiopus* Summers (Acari: Stigmaeidae) از استان همدان، ایران

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چکیده

گونهٔ جدیدی از جنس *Eryngiopus*، با نام *E. hamedanicus* Khanjani, Mohammadi & Nazari **sp. nov.** بر اساس افراد ماده جمع‌آوری شده از خاک زیر درختان گلابی، روستای نگارخاتون، شهر فامنین، استان همدان توصیف و معرفی می‌شود.

واژگان کلیدی: گلابی، گونه جدید، نخستین گزارش، کنهٔ شکارگر، ایران.

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