A NEW SPECIES OF EUSTIGMAEUS BERLESE (ACARI: PROSTIGMATA: STIGMAEIDAE) FROM NORTHWESTERN IRAN

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ABSTRACT: A new species of Eustigmaeus Berlese (Acari: Prostigmata: Stigmaeidae), Eustigmaeus azerbaijanensis sp. n. is described and illustrated; The new species differs from the closely related species, Eustigmaeus coronaria Kuznetzov, 1977, in the shape of dorsal, ventral and coxal setae and number of paragenital setae. A key to the Iranian species of Eutigmaeus is provided.

KEY WORDS: Acari, Stigmaeidae, Eutigmaeus, new species, Iran

INTRODUCTION

Eutigmaeus Berlese is one of the main genera of the Stigmaeidae and contains about 100 species (Dogan et al. 2003, Faraji et al. 2007). Members of the genus Eutigmaeus live on mosses, lichens, grass, litter and ant nests or they are bryophagous (Summers and Price 1961; Chaudhri 1965; Wood 1971, 1972, 1973; Gerson 1972a, b; Tseng 1982; Dogan et al. 2003). To date six species of the genus Eustigmaeus have been reported from Iran, namely: Eustigmaeus nasrinae Khanjani et Ueckermann, 2002, E. segnis (Koch, 1836), E. jiangxiensis Hu, Chen et Huang, 1996, E. ornatus Ueckermann et Meyer, 1987, E. spathatus Ueckermann et Meyer, 1987, and Eustigmaeus sculptus Doğan, Ayyildiz et Fan, 2003. In this paper, a new species, Eustigmaeus azerbaijanensis sp. n. from Iran is described and illustrated. A key to the females of all known species of Eutigmaeus from Iran is given.

MATERIAL AND METHODS

Stigmaeid mite fauna of East Azerbaijan Province, Iran was sampled in 2009. The new species, Eustigmaeus azerbaijanensis sp. n. was collected from an apple orchard at Shendabad (Shabestar) on 15 August 2009 by A.Akbari. Specimens were transferred to the acarology laboratory of the Plant Protection Department, Faculty of Agriculture, University of Tabriz and the mites extracted using a Berlese funnel or direct observation under a stereo microscope. Mites were cleared with Nesbitt’s and mounted in Hoyer’s medium. Identifications were done with a phase contrast microscope (Olympus, BX41). Illustrations were made using a drawing tube. The leg and idiosomal chaetotaxy of the species description follows Grandjean (1939, 1944) as adapted by Kethley (1990). All measurements are given in micrometers (μm).

Key to the Iranian species of Eutigmaeus Berlese

1. Eyes absent ............... E. azerbaijanensis sp. n.
   — Eyes present ........................................... 2
2. Setae c₁ and d₁ longer than 50 μm ............... 3
   — Setae c₁ and d₁ shorter than 50 μm ............... 4
   — Coxisternal shields reticulated and fused ..............
   .............................................. E. segnis (Koch, 1836)
4. Femur II with five setae ................................ 5
   — Femur II with 4 setae ................................ 6
5. Three pairs of ag setae ................................
   .............. E. sculptus Dogan, Ayyildiz et Fan, 2003
   — Two pairs of ag setae ................................
   .............. E. jiangxiensis Hu, Chen et Huang, 1996
6. Dorsal body setae short and spatulate ..............
   .......... E. spathatus Ueckermann et Meyer, 1987
   — Dorsal body setae densely setose, most terminating as blunt tip ..............
   .............. E. nasrinae Khanjani et Ueckermann, 2002

Stigmaeidae Oudemans, 1931
Type genus: Stigmaeus Koch, 1836

Eutigmaeus Berlese, 1910

Eutigmaeus Berlese, 1910: 206 (=Ledermuelleria Oudemans, 1923)
Type species: Stigmaeus kermesinus Koch, 1841

Diagnosis. Idiosoma globular and red to straw colored. Gnathosoma partly covered by overhang-
ing prodorsum; Chelicerae separate; palp 5-segmented; palptibial claw well developed, with small accessory claw at its base; terminal eupathidium on palptarsus basally fused and split into 3 long prongs; subcapitulum with 2 pairs of subcapitular setae, m and n. Dorsum covered with 3 unpaired shields mostly ornamented. Prodorsal shield typically bearing 4 pairs of setae (vi, ve, sci and sce) and with or without 1 pair of eyes; opisthosomal shield bearing 6 pairs of setae and suranal shield (usually situated ventrally) bearing 2 pairs of setae. Humeral shields triangular, displaced to a ventrolateral position and bears c_2; setal lengths: c_1 169 (158–169), c_2 126 (120–130), d_1 177 (166–177), d_2 166 (158–166), e_1 174 (158–178), e_2 182 (178–185), f_1 148 (148–150); ratios c_1/c_2 = 1.6, e_1/e_2 = 1.7 (1.4–1.7), c_1/c_2: d_1/d_2: e_1/e_2: f_1/f_2 = 1.4–1.5: 1.3–1.4: 1.5–1.6: 1.1–1.2; distances: c_1–c_2 103 (99–103), c_1–d_1 87 (85–87), d_1–d_2 99 (92–99), d_2–d_3 74 (74–87), d_3–d_4 237 (237–253), d_4–e_1 92 (92–101), e_1–e_2 103 (103–111), e_2–e_3 63 (63–68), e_3–e_4 221 (213–223), e_4–f_1 55 (44–57), f_1–f_2 84 (79–84). Suranal shield (situated ventrally) reticulated and bearing 2 pairs of setae, h_1 95 (95–103), h_2 54 (54–62). Dorsal setae as figured (Fig. 8).

Venter (Fig. 2). Covered with striae except for coxal and anogenital areas. Ventral setae 1a, 3a and 4a equal in length, ratio 1a: 3a: 4a = 1.3–1.6: 1.3–1.6: 1.2–1.6; lengths: 1a 32 (27–32), 3a 32 (26–32) and 4a 32 (24–32). Aggenital area with 2 pairs of setae, ag, 20 (14–20), ag_2 24 (22–24); 3 pairs of pseudoanal setae, lengths: ps_1 27 (18–28), ps_2 32 (17–22), ps_3 38 (35–38).

Legs (Figs. 4–7). Length: leg I 240 (240–245), leg II 225 (221–225), leg III 234 (161–234), leg IV 266 (245–266). Counts of setae (solenidia and setae not included) on legs I–IV: coxae 2, 2, 2, 2; trochanters 1, 1, 2, 1; femora 5, 3, 2, 1; genua 4, 3+1k, 1, 1; tibiae 5+1r+1p, 5+1p, 5+1p, 5+1p; tarsi 13 + 1o, 9 + 1o, 7 + 1o, 7 + 1o. Lengths of solenidia: Io 17, Io_2 17, IIo_3 15, IVo_6.

Male. Unknown.

Type materials. Holotype female and 13 female paratypes: Shendaband, East Azerbaijan, Iran, from soil in an apple orchard, 15 August 2009, coll. A. Akbari.

Type material deposition. Holotype and 10 paratypes are deposited in the Acarological Collection, Department of Plant Protection, Faculty of Agriculture, University of Tabriz, Tabriz, Iran. Three paratypes will be deposited in the Arachnida Collection of Plant Protection Research Institute, Pretoria, South Africa.

Remarks. The new species resembles Eustigmaeus coronaria Kuznetsov, 1977 in the body shape, arrangement and ornamentation of shields and number of setae on all segments of legs, however, it differs from this species in that dorsal setae are not inflated basally or sheathed, ventral and coxal setae are not serrated and by the presence of only two pairs of paragenital setae (vs. 3 pairs in E. coronaria).

Etymology. This species is named after the Province where it was collected.

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A new species of *Eustigmaeus*

**REFERENCES**


