Turkish Journal of Science & Technology
Volume 12(1), 1-4, 2017

A Newly Recorded Mite Species from Turkey: *Eupalopsellus deformatus* Fan (Acari: Eupalopsellidae)

Sibel Doğan[1,2*], Salih Doğan[2], Orhan Erman[1], Sevgi Sevsay[2], Sezai Adil[2]
[1]Fırat Üniversitesi Fen Fakültesi Biyoloji Bölümü Elazığ
[2]Erzincan Üniversitesi Fen Edebiyat Fakültesi Biyoloji Bölümü Erzincan
[*]sdilkara@erzincan.edu.tr

(Received: 26.07.2016; Accepted: 02.01.2017)

Abstract

Eupalopsellus deformatus Fan was herein described and figured based on specimen collected from moss and lichen in Örümcek Forests (Turkey). This species is a new record for the mite fauna of Turkey.

Keywords: Acari, Eupalopsellidae, *Eupalopsellus*, New record, Turkey.

Türkiye'den Yeni Bir Akar Türü Kaydı: *Eupalopsellus deformatus* Fan (Acari: Eupalopsellidae)

Özet

Eupalopsellus deformatus Fan Örümcek Ormanları'ndan (Türkiye) alınan yosun ve likenden toplanan örnek üzerinden tanımlandı ve şekilleri çizildi. Bu tür, Türkiye akar faunası için yeni kayıttır.

Anahtar Kelimeler: Acari, Eupalopsellidae, *Eupalopsellus*, Yeni kayıt, Türkiye.

1. Introduction

Eupalopsellidae Willmann is a family within the superfamily Raphignathoidea. This family comprises five genera, including *Eupalopsellus* Sellnick. Up to now nineteen species belonging to the genus *Eupalopsellus* are known in the world and three of which, *E. olandicus* Sellnick, *E. rostridius* Summers and *E. prasadi* Bagheri & Khanjani, are recorded from Turkey, previously. An additional species, *E. deformatus* Fan is herein described and illustrated. This species was given before from the type of locality China, and later Iran [1, 2]. This is the third report of the species up to date.

2. Materials and Methods

The mite specimens were extracted in the lichen and moss collected from Örümcek Forests using Berlese funnels, cleared in 60% lactic acid and mounted on microscopic slides in Hoyer's medium under stereo microscope. Drawings were made with the aid of a Leica DM 4000 B phase-contrast light microscope. Body size and measurements of various structures of the body were taken in micrometers (μm) with the aid of The Leica Application Suite (LAS) Software Version 3.8. Dorsal idiosomal and leg setal designations follow [3] and [4] respectively. Specimen examined was deposited in Acarology Laboratory of Erzincan University, Erzincan, Turkey.

3. Results

Family: Eupalopsellidae Willman

Genus: *Eupalopsellus* Sellnick

Type species: *Eupalopsellus olandicus* Sellnick
Diagnosis

Females of the genus *Eupalopsellus* can be distinguished by the following characters: Subcapitulum bearing two pairs of subcapitular setae (*m*, *n*) and two pairs of adoral setae (or_1, or_2). Palpus elongate, five segmented, number of setae and solenidia from palptrochanter to

palptarsus: 0, 3, 1, 2−3+1claw, 4+1ω+1subterminal eupathidium+1terminal eupathidium. Prodorsum covered with a triangular shield that bears one pair of eyes, one pair of postocular bodies (*pob*) and 3–4 pairs of setae (*vi*, *ve*, *sci*, *sce*; *sce* may be on platelets), metapodosomal shield with 2–3 pairs of setae (c_1, d_1 and d_2; c_1 may be on platelets), opisthosomal shield with 3 pairs of setae (e_1, e_2 and f_1), suranal shield with 2 pairs of setae (h_1 and h_2). Humeral setae c_2 on platelets or integument, venter with three pairs of intercoxal setae (*1a*, *3a*, and *4a*), three pairs of aggenital setae ($ag_{1–3}$), a pair of genital setae (*g*), and three pairs of anal setae ($ps_{1–3}$) [1, 5].

Eupalopsellus deformatus

Female (Figures 1, 2)

Idiosoma elongated. Length of body 340, 138 wide.

Gnathosoma. 80, chelicerae 92 long. Subcapitulum with two pairs of adoral setae ($or_{1,2}$) and two pairs of subcapitular setae (*m*, *n*). Lengths and distance between subcapitular setae, *m*: 16, *n*: 18, *m*-*m*: 7, *n*-*n*: 15, *m*-*n*: 22. Palp five segmented, number of setae and solenidia from palptrochaner to palptarsi: 0, 3, 1, 3, 4+1ω+1subterminal eupathidium+1terminal eupathidium (Fig. 2E).

Dorsum. All dorsal shields with tubercles except for suranal shield (Fig. 1). Humeral shields absent. Propodosomal shield bearing three pairs of setae (*vi*, *ve*, *sci*), a pair of eyes and post-ocular bodies. Diameter of eyes 7, post-ocular bodies 12. Setae *sce*, c_2 located on striated integument, c_1 located on edge of metapodosomal shields. d_1 and d_2 located on metapodosomal shields. Opisthosomal shields bearing three pairs of setae (e_1, e_2, f_1). Suranal shield entire and with two pairs of setae ($h_{1, 2}$). Dorsal idiosomal setae smooth. Lengths and distances of dorsal idiosomal setae as follows: *vi*: 9, *ve*: 11, *sci*: 10, *sce*: 15, c_1: 9, d_1: 8, e_1: 9, f_1: 33, h_1: 34, h_2: 20, *vi*-*vi*: 15, *ve*-*ve*: 41, *vi*-*ve*: 19, *sci*-*sci*: 9, *ve*-*sci*: 39, *sce*-*sce*: 65, *sci*-*sce*: 25, c_1-c_1: 44, c_1-d_1: 56, d_1-d_1: 42, d_1-e_1: 66, e_1-e_1: 32, f_1-f_1: 33, e_1-f_1: 12, e_2-f_1: 44, f_1-h_1: 33, f_1-h_2: 32, h_1-h_1: 17, h_2-h_2: 42, h_1-h_2: 8 (ratio of h_1:h_2 1.7).

Venter. Coxisternal shields absent, *1a*, *3a* and *4a* on striated integument, *1a* the longest. Anogenital shields bearing a pair of genital setae (g_1) and three pairs of pseudanal setae (ps_{1-3}). Three pairs of aggenital setae (ag_{1-3}) present (Fig. 1).

Legs. All segments of leg with punctate, leg I 146, leg II 110, leg III 105, leg IV 121 long. Setal formulae of legs I-IV; trochanters 1–1–1–1 femora 4–4–3–1, genua 1(+1κ)–1–1–1, tibiae 5(+1φρ)–4(+1φρ)–4(+1φρ)–4(+1φρ), tarsi 10(+1ω)–9(+1ω)–6(+1ω)–6 (Fig. 2).

Male: Not found.

Immature stages: Unknown.

Material examined: One female collected from lichen and moss on a stone, Örümcek Forests (Turkey), 40° 39' 36"N, 39° 00' 38"E, 1605 m, 08 March 2014.

Distribution: China and Iran [1, 2], and Turkey (this paper).

4. Discussion

Eupalopsellus deformatus Fan is close to *E. trudis* Summers, but it can be distinguished from the latter by opisthosomal shield is incised in front of e_1, metapodosomal shield is not expanded at the level of setae d_2, the suranal setae h_2 are longer [6].

This species was given before from China and Iran [1, 2]. The type specimens of the species were collected from leaves of an unidentified grass (Gramineae), whereas the Turkish specimen was collected from lichen and moss.

The Turkish specimen resembles the type specimens, but some morphological differences were observed. Dorsal shields with tubercles, the body is longer, dorsal idiosomal setae smooth, h_2 is shorter (ratio of h_1:h_2 1.7), segments of leg with punctate in the Turkish specimen. Length of body 301, dorsal idiosomal setae with small spinules, dorsal shields smooth, ratio of h_1:h_2 1.3 in the type specimens [1].

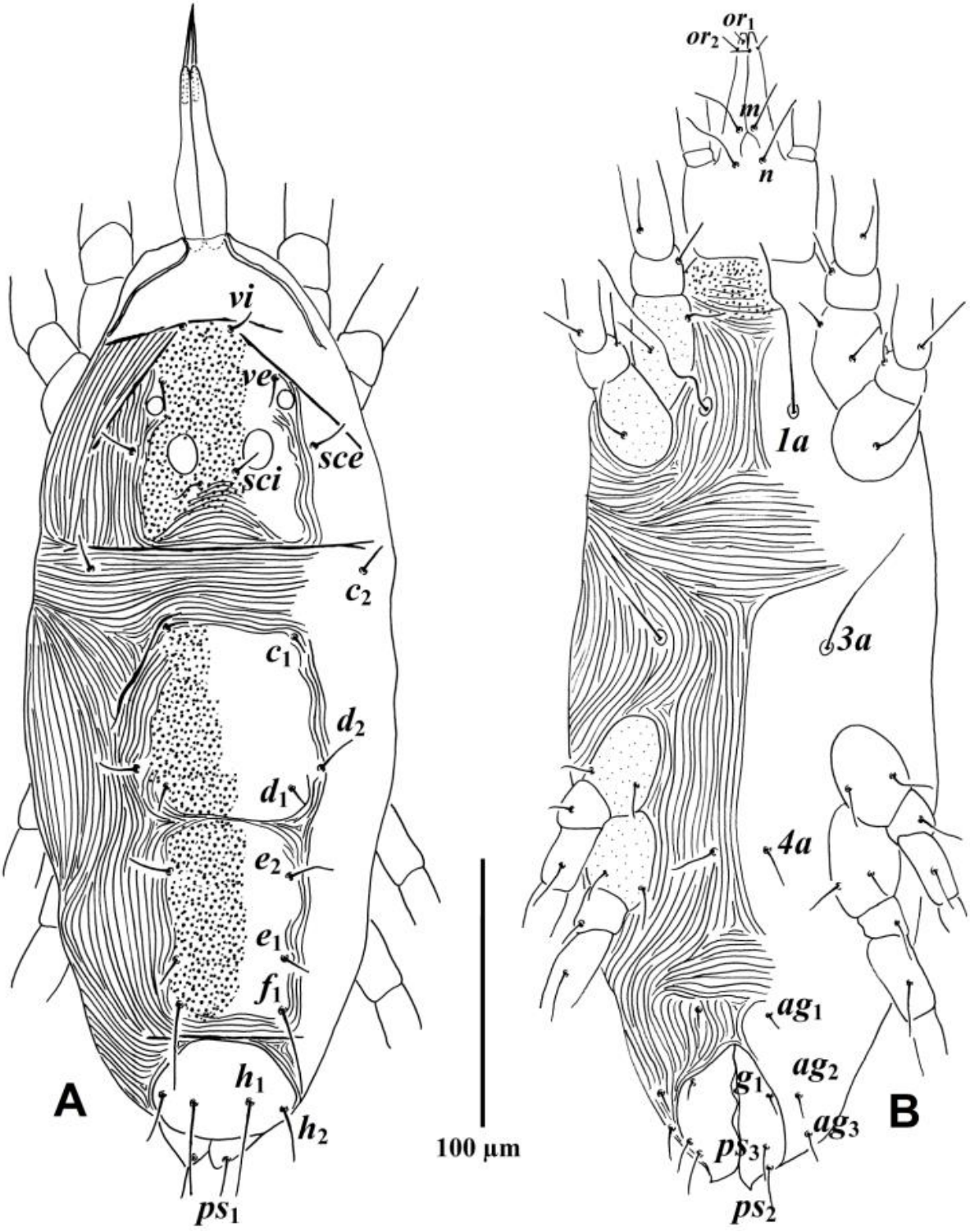

Figure 1. *Eupalopsellus deformatus* (Female). A. Body, dorsal, B. Body, ventral.

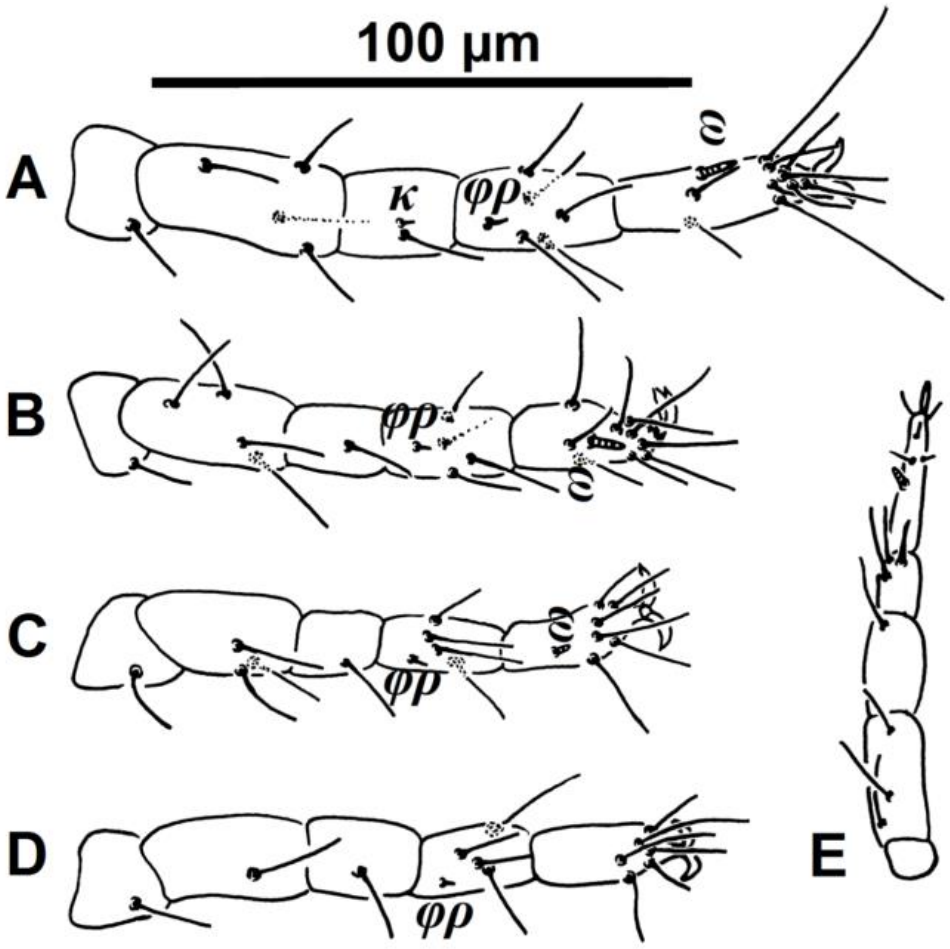

Figure 2. *Eupalopsellus deformatus* (Female). A. Leg I, B. Leg II, C. Leg III, D. Leg IV, E. Palp.

5. Acknowledgment

This study was financially supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK), research project number 113Z094. This study is a part of the first author's PhD thesis and was presented as poster at 8th Symposium of the European Association of Acarologists (EURAAC 2016) held from July 11 to 15, 2016 in Valencia, Spain.

6. References

1. Fan, Q.-H. (2004). A catalogue of the genus *Eupalopsellus* Sellnick (Acari: Prostigmata: Eupalopsellidae) with the description of a new species from China. *Biologia*, **59**: 533-545.

2. Bagheri, M., Ahaniazad, M. and Paktinat-Saeej, S. (2014). Predatory Prostigmatic mites (Acari: Trombidiformes) fauna in East Azerbaijan province, Iran. *21st Iranian Plant Protection Congress*, (*23-26 August*), Urmia, Iran, 979.

3. Kethley, J. (1990). "Acarina: Prostigmata (Actinedida)" in Soil Biology, (Ed) Dindal, D.L., John Wiley & Sons, New York, 667-756.

4. Grandjean, F. (1944). Observations sur les acariens de la famille des Stigmaeidae. *Archives des Sciences Physiques et Naturelles*, **26**: 103-131.

5. Khanjani, M., Masoudian, F. and Fayaz, B.A. (2011). A new species of the genus *Eupalopsellus* Sellnick (Acari: Prostigmata, Eupalopsellidae) from the west of Iran. *International Journal of Acarology*, **37:** 102-107.

6. Summers, F.M. (1960). *Eupalopsis* and eupalopsellid mites (Acarina: Stigmaeidae, Eupalopsellidae). *The Florida Entomologist*, **43**: 119-138.