

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

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Abstract

Stigmaeus canestrinii Stathakis, Kapaxidi and Papadoulis, 2019 is founded for the first time from Türkiye and new report the mite fauna of Türkiye. Mites taken from soil and litter samples under *Oleae europaea* (Oleaceae) Manisa province, Türkiye. *S. canestrinii* is redescribed and illustrated based on the adult female.

Keywords: Acari, new report, *Stigmaeus canestrinii*, Raphignathoidea, Türkiye.

1. Introduction

The mite family Stigmaeidae is known in the superfamily Raphignathoidea Kramer, 1877 (Acari: Trombidiformes: Prostigmata). Many members of Stigmaeidae found in all biogeographical regions and have been noted economically important predators of plant-feeding small insects and mites have taken a lot of interest from biologists, taxonomists and ecologists [1-4].

The genus *Stigmaeus* Koch, 1836, is the numerous in the family Stigmaeidae and now contains about 153 species. The majority of this genus are free-living predators [4-6]. So far, 40 species of the genus have been recorded from Türkiye [7-30] and this information shows that the species belonging to this genus are mostly identified from Türkiye in the Palearctic region.

In this study, a new record of Turkish fauna *Stigmaeus canestrinii* Stathakis, Kapaxidi and Papadoulis, is found for the first time in Türkiye, is illustrated and redescribed based on the adult female. Similarities and differences were discussed by comparing them with the type locality (Greece) of the species.

2. Materials and Methods

The specimens were taken from soil and litter under *Oleae europaea*, Manisa province, Türkiye, and taken to the laboratory in plastic bags and extracted by Berlese-Tullgren funnels for a week. Mites were piled up in 70% ethanol and set on slides in modified Hoyer's medium.

The mite specimens were drawn and measured by means of a research microscope (Nikon Eclipse E 400). The setal nomenclature follows those of Kethley (1990) and Grandjean (1944) [31, 32]. All measurements are given in micrometers (µm). Measurements of legs are taken from base of trochanters to the tips of tarsal claws. The specimens are held back as slide mounted in Manisa Celal Bayar University, Zoological Museum, Manisa, Türkiye (CBZM).

3. Results and Discussion

Family Stigmaeidae Oudemans, 1931

Genus *Stigmaeus* Koch, 1836

Type species: *Stigmaeus cruentus* Koch, 1836.

Stigmaeus canestrinii Stathakis, Kapaxidi and Papadoulis, 2019

Diagnosis: Dorsal setae simple. Propodosomal shield partly reticulated with 2 pairs of setae; postocular bodies (*pob*) and eyes without. Hysterosoma without clear central and marginal plates. Suranal shield divided, with 3 pairs of setae. Aggenital area with 4 pairs of setae; genital valves with 2 pairs of genital setae. Femora 4-4-3-2; genua 5+1κ-2-0-1; tarsi 13+1ω-8+1ω-7+1ω-7+1ω [33].

Description: Female (n = 3) (Figs 1, 2).

Length of body (excluding gnathosoma) 364-429, width 221-265.

Gnathosoma (Figs 1A, B, 2E). Chelicerae 80-82, fixed digit 68-70, moveable digit 28-30 in length. Ventral subcapitulum with two pairs of subcapitular setae, *m* 15-18 and *n* 45-50 (distances between subcapitular setae: *m*-*m* 23 (23-27), *n*-*n* 28 (27-29) and *m*-*n* 10 (8-10)) and two pairs of adoral setae, *or*1 7 and *or*2 6. Palp 104-109, trochanter without seta, femur with 3 setae, genu with 1 seta, palp tibia with well-developed claw + one seta-like accessory claw and 2 setae, palp tarsus with one terminal tridentate eupathidium + one subterminal simple eupathidium + one solenidion + 4 simple setae.

Dorsum of idiosoma (Fig. 1A). Propodosoma with a partly reticulated shield bearing 2 pairs of setae *vi* and *ve*; setae *sci* free on integument; without postocular bodies (*pob*) and eyes; setae *sce* on auxiliary platelets (Fig. 1AB). Hysterosoma without distinct central and marginal plates bearing setae *c*₁, *d*₁, *d*₂, *e*₁ and *e*₂; setae on intercalary plates. Suranal shield divided, with three pairs of setae *h*₁, *h*₂ and *h*₃. Dorsal setae simple. Lengths and distances of dorsal idiosomal setae as follows: *vi* 12-13, *ve* 37-42, *sci* 15-19, *sce* 20-21, *c*₁ 14-16, *d*₁ 13-14, *d*₂ 12-13, *e*₁ 13-14, *e*₂ 10-13, *f* 15, *h*₁ 15-16, *h*₂ 25-30, *h*₃ 17-18, *vi*-*vi* 22-25, *vi*-*ve* 15, *ve*-*ve* 26-34, *ve*-*sci* 30-35, *sci*-*sci* 52-60, *sci*-*c*₁ 65-73, *sce*-*sce* 105-130, *c*₁-*c*₁ 36-52, *c*₁-*d*₁ 50-60, *d*₁-*d*₁ 34-45, *d*₁-*e*₁ 46-60, *d*₂-*d*₂ 102-140, *e*₁-*e*₁ 35-41, *e*₁-*e*₂ 30-65, *e*₂-*e*₂ 90-140, *e*₁-*f* 30, *f*-*f* 43-50, *f*-*h*₁ 30-50, *h*₁-*h*₁ 25-26, *h*₁-*h*₂ 10-12, *h*₂-*h*₂ 50-52, *h*₂-*h*₃ 8-10, *h*₃-*h*₃ 65-72.

Venter of idiosoma (Fig. 1B). Humeral shields with setae *c*₂ 34-36. Endopodal shields smooth; ventral setae *la* 18-20, *3a* 20-21 and *4a* 20. Aggenital area with 4 pairs of setae; *ag*₁ 13-15 and *ag*₂ 13-14 free on integument, *ag*₃ 13-14 and *ag*₄ 17-20 on the same smooth platelet; anogenital area with 2 pairs of genital setae *g*₁ 13-15 and *g*₂ 17-20 and 3 pairs of pseudanal setae, *ps*₁ 20-21, *ps*₂ 21-22 and *ps*₃ 15-18 in length.

Legs (Figs 2 A-D). Length of legs (from base of trochanter to tip of tarsal claw) leg I 130-138, leg II 104, leg III 112-117, leg IV 130-135. Counts of setae and solenidia on legs I-IV: Coxae 2+1elcl- 2-2-2; trochanters 1-1-2-1; femora 4-4-3-2; genua 5+1κ-2-0-1; tibiae 5+1φ+1φp-5+1φp-5+1φp-5+1φp; tarsi 13+1ω-8+1ω-7+1ω-7+1ω. Length of spines and solenidia: κI 6-7, ωI 10-11, ωII 6-7, ωIII 5, ωIV 4; setae on tibia IV: *d* 40-42, *l'* 20-21.

Male: Unknown.

Material examined. Three females collected from litter and soil under the *Oleae europaea*, 71 m a.s.l., 38°38'47"N 27°21'23"E, Muradiye area, Yunusemre district; Manisa province, 25 April 2022, Türkiye, coll. M. Akyol.

Discussion. *Stigmaeus canestrinii* Stathakis, Kapaxidi and Papadoulis, 2019 was described for the first time from Greece and collected from ex *Sedum* sp. (Crassulaceae), 20 April 2013, Cape Tenaro, Co. Lakonia (altitude probably at about sea level) [33]. In this study the samples collected from soil and litter under *Oleae europaea* (altitude 71 m a.s.l.), 25 April 2022, in Yunusemre district, Manisa province, Türkiye.

Body size of 330-340 long and 160-170 wide in the Greece specimens; 364-429 long and 221-265 wide in the Turkish specimens. The body size of the Turkish specimen is bigger than the Greece specimens.

The Turkish specimen resembles the Greece specimens, but measurements of body setae *vi* 12-13, *ve* 37-42, *sci* 15-19, *sce* 20-21, *c*₁ 14-16, *d*₁ 13-14, *d*₂ 12-13, *e*₁ 13-14, *e*₂ 10-13, *f* 15, *h*₁ 15-16, *h*₂ 25-30, *h*₃ 17-18, *c*₂ 34-36, *la* 18-20, *3a* 20-21, *4a* 20, *ag*₁ 13-15, *ag*₂ 13-14, *ag*₃ 13-14, *ag*₄ 17-20, *g*₁ 13-15, *g*₂ 17-20, *ps*₁ 20-21, *ps*₂ 21-22 and *ps*₃ 15-18 in the Turkish specimens) are different from the type specimens setae *vi* 16, *ve* 46 (46-50), *sci* 20, *sce* 24 (24-26), *c*₁ 18 (16-18), *d*₁ 16, *d*₂ 16, *e*₁ 18 (18-20), *e*₂ 18 (16-18), *f* 20 (20-22), *h*₁ 20 (20-22), *h*₂ 32 (32-36), *h*₃ 20 (20-22), *c*₂ 40 (40-46), *la* 19 (19-23), *3a* 23, *4a* 19 (19-23), *ag*₁ 15, *ag*₂ 15, *ag*₃ 15, *ag*₄ 23, *g*₁ 15, *g*₂ 19, *ps*₁ 27 (25-27), *ps*₂ 22, *ps*₃ 19 in the Greece specimens). Measurements of about all body setae of the Turkish specimen is smaller than the Greece specimens.

S. canestrinii was found in the type locality (Greece) [33]. This is the second report of this species and a new record for the Turkish fauna.

Author's Contributions

Mustafa Akyol: The specimens were collected, taken to the laboratory mounted on slides, the mite specimens were drawn, measured, described and illustrated. Wrote and rafted the manuscript.

Ethics

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

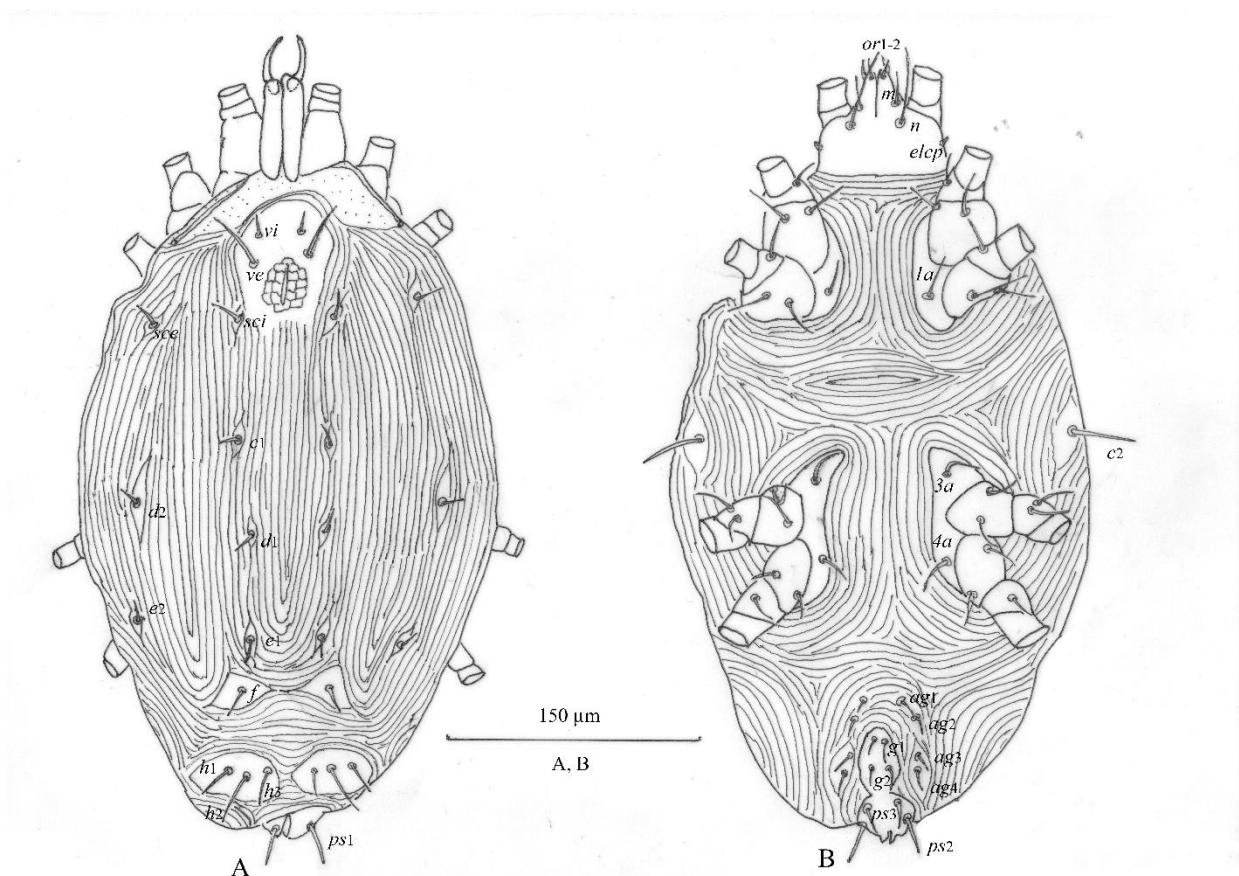


Figure 1. *Stigmaeus canestrinii* Stathakis, Kapaxidi and Papadoulis (female): A. Dorsal view of idiosoma, B. Ventral view of idiosoma.

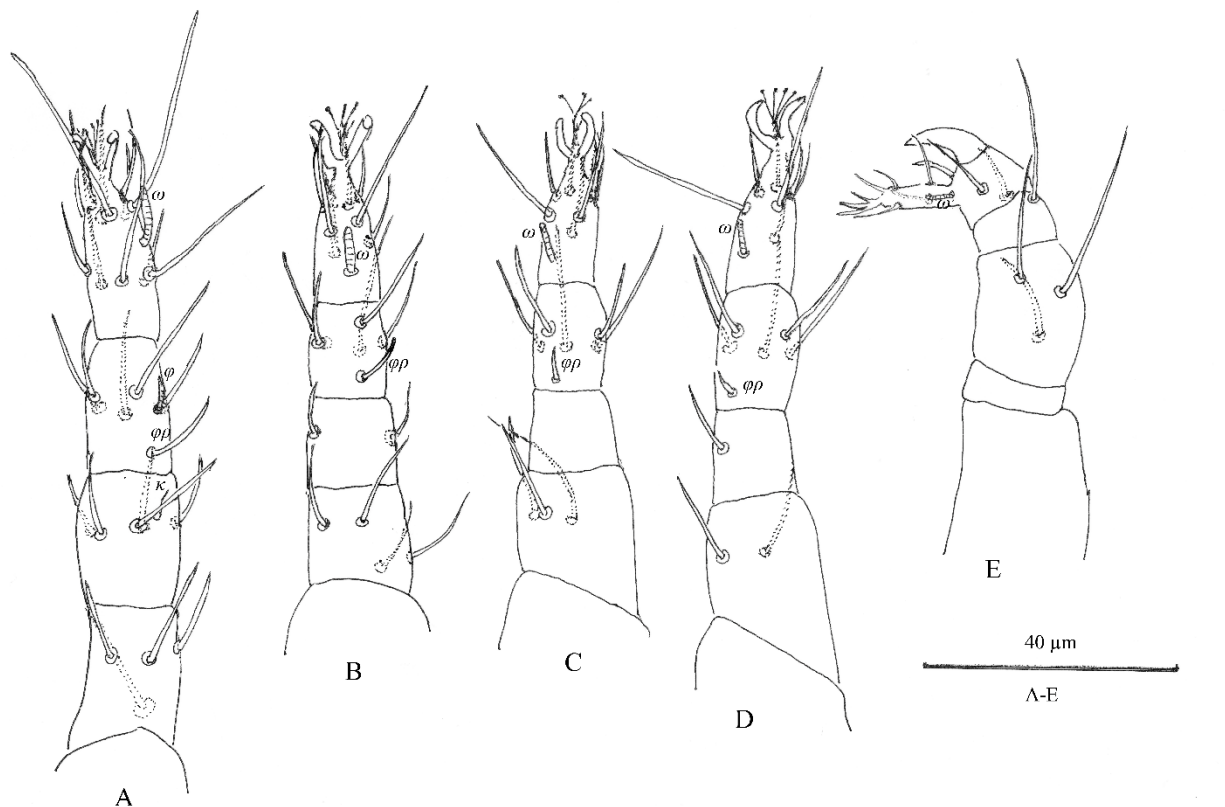


Figure 2. *Stigmaeus canestrinii* Stathakis, Kapaxidi and Papadoulis (female): A. Leg I, B. Leg II, C. Leg III, D. Leg IV, E. Palp.

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