

First record of *Neognathus terrestris* (Acari, Caligonellidae) in Turkey

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Abstract: In the present work, on the basis of specimens collected from Erzurum, the characteristic features and the figures of *Neognathus terrestris*, recorded for the first time from Turkey, have been given.

Key Words: Acari, Caligonellidae, *Neognathus*, new record, Turkey

Türkiye'de *Neognathus terrestris* (Acari, Caligonellidae)'in İlk Kaydı

Özet: Bu çalışmada, Türkiye faunası için yeni olan *Neognathus terrestris*'in tanımı örneklerimiz üzerinden yapılarak özgün şekilleri verilmiştir.

Anahtar Sözcükler: Acari, Caligonellidae, *Neognathus*, yeni kayıt, Türkiye

Introduction

Summers and Schlinger (1955) fully described the genus *Neognathus* under *Stigmagnathus*. Summers (1957) synonymized the latter genus with *Neognathus*, erected by Willmann (1952). Fan (2000) suggested that four species belonging to *Neognathus* are transferred to the genus *Paraneognathus*. Therefore, there are seven species in the genus: two from the United States, two from Africa, one from Europe, one from Egypt and one from Pakistan (Summers and Schlinger, 1955; Willmann, 1952; Fan, 2000; Chaudhri et al., 1979; Khaustov and Kuznetsov, 1997; Meyer and Ueckermann, 1989; Soliman, 1971; Swift, 1996; Gerson, 1968). *Neognathus terrestris* is described and illustrated on the basis of the female as *Stigmagnathus terrestris* by Summers and Schlinger (1955) from Glendale, California. Later, Summers (1957) synonymized the genus *Stigmagnathus* with *Neognathus*, and the status of *Stigmagnathus terrestris* was as follows: *Neognathus terrestris* (Summers and Schlinger, 1955). This species has not been identified by contemporary workers.

Neognathus can be recognized by the following characteristics: idiosoma without dorsal shield or eyes;

stylophore elongate, conical; peritremata confined to stylophore, w-shaped, outer arms ending on small lobules projecting from side walls of inflated section of stylophore.

To date, there have been no reports of this genus in Turkey. *Neognathus terrestris* is the only species reported from California (Summers and Schlinger, 1955). In this paper, *Neognathus terrestris* from Turkey is described and figured, and a species is thus added to the acari fauna of Turkey.

Materials and Methods

Soil, litter, grass and moss samples taken from Erzurum province were brought to the laboratory in nylon bags and extracted in Berlese funnels. Mites were collected in 70% ethanol. *Neognathus* mites were picked out from the samples under a stereomicroscope and mounted on slides in modified Hoyer's medium and 35% lactic acid. The drawings were made with the aid of a camera lucida attached to a compound microscope.

The dorsal setal and leg setal designations follow Kethley (1990) and Grandjean (1944), respectively. The

chaetotaxy of leg segments is given in descriptions as a formula from legs I to IV, with the solenidia in parenthesis. All measurements are given in micrometers (μm). The range as measures of the dispersion of the values of the length and width of the idiosoma has been given, and other measurements are averages. The examined materials are deposited at the Acarology Laboratory of Erciyes University, Kayseri, Turkey.

Results

Neognathus Willmann, 1952

Neognathus Willmann, 1952: 162; Summers, 1957: 55; Gerson, 1968: 429; Soliman, 1971: 97; Chaudhri et al., 1979: 141; Meyer and Ueckermann, 1989: 17; Swift, 1996: 322; Fan, 2000: 423.

Stigmagnathus Summers and Schlinger, 1955: 546.

Type species: *Neognathus insolitus* Willmann, 1952

Dorsal shields and eyes absent; stylophore elongate, conical; peritremata confined to stylophore, w-shaped.

Neognathus terrestris (Summers and Schlinger, 1955)

Stigmagnathus terrestris Summers and Schlinger, 1955: 547.

Neognathus terrestris (Summers and Schlinger, 1955) Summers, 1957: 55.

Female - Length of body (excluding gnathosoma) 233-267, width 127-137.

Dorsum - Dorsum without shields and eyes; with striae; 11 pairs of setae, simple about equal in length, 12-

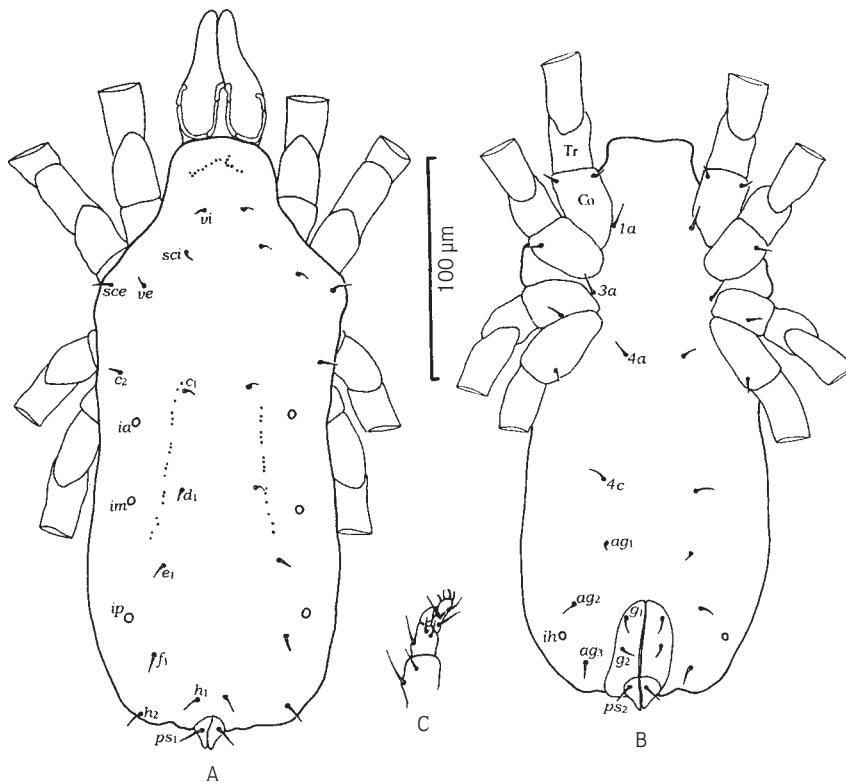


Figure 1. *Neognathus terrestris*: Female; A) Dorsal view, B) Ventral view, C) Palpus. Abbreviations: (Co) coxa, (Tr) trochanter, (vi) internal vertical setae, (ve) external vertical setae, (sci) internal scapular setae, (sce) external scapular setae, (c₁) internal humeral setae, (c₂) external humeral setae, (d₁) internal dorsal setae, (e₁) internal lumbral setae, (f₁) internal sacral setae, (h₁) internal clunal setae, (h₂) external clunal setae, (1a) anterior intercoxal setae, (3a) posterior intercoxal setae, (4a) anterior paragenital setae, (4c) posterior paragenital setae, (ag₁₋₃) aggenital setae, (g_{1,2}) genital setae, (ps_{1,2}) pseudoanal setae, (ia) dorsal cupules, (im) lumbral cupules, (ip) sacral cupules, (ih) clunal cupules.

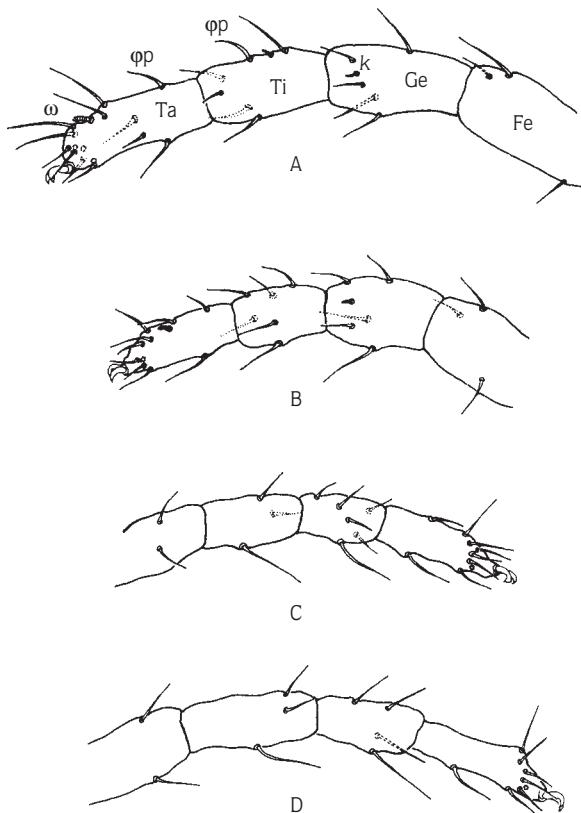


Figure 2. *Neognathus terrestris*: Female; A) Leg I, B) Leg II, C) Leg III, D) Leg IV. Abbreviations: (Fe) femur, (Ge) genu, (Ti) tibia, (Ta) tarsus, (ω , φ , $\varphi\varphi$, k) chemosensory solenidia.

14. Distances between setae: $vi-vi$ 17, $sci-sci$ 36, $vi-sci$ 20, $ve-ve$ 60, $sci-ve$ 27, $sce-sce$ 100, $ve-sce$ 17, c_2-c_2 103, $sce-c_2$ 33, $c_1-c_1=d_1-d_1$ 33, c_1-d_1 46, $e_1-e_1=f_1-f_1$ 50, $d_1-e_1=e_1-f_1$ 36, h_1-h_1 13, f_1-h_1 23, h_2-h_2 50, $h_1-h_2=f_1-h_2$ 27. Three pairs of cupules dorsolaterad on integument: a pair (ia) posterolaterad of setae c_1 , a pair (im) posterolaterad of setae d_1 and a pair (ip) posterolaterad of setae e_1 ; anal shields terminal with two pairs of setae ($ps_{1,2}$): a pair of setae dorsally, a pair of setae subdorsally (Fig. 1A).

Venter - Ventral surface with striae, seven pairs of setae; endopodal shields absent; $1a$, $3a$, $4a$ and $4c$ setae present, $1a$ and $3a$ not set on coxae; coxae in two groups; three pairs of aggenital setae (ag_{1-3}) on ventral shield; genital and anal shields confused, each bearing two pairs of simple setae ($g_{1,2}$ and $ps_{1,2}$); one pair of cupules (ih) laterad of genital shields (Fig. 1B).

Gnathosoma - Stylophore conical; peritremata W-shaped, with four segments; tibial claw of palp about half as long as tarsus of palp (Fig. 1C).

Legs - Leg I 227, leg II 177, leg III 163, leg IV 207. Number of setae (solenidia in parenthesis) on leg segments as follows: tarsi 16(p,w)-11($\varphi\varphi$, ω)-9-8; tibiae 7(φ , p)-6($\varphi\varphi$)-6($\varphi\varphi$)-4; genua 6(k)-6(k)-3-3; femora 3-3-2-2; trochanters 1-1-2-1; coxae 2-1-1-1. Tarsi I and II each bearing a chemosensory claviform solenidion ω and a thin, curved solenidion $\varphi\varphi$; tibiae I-III each also bearing a thin, curved solenidion $\varphi\varphi$, tibia I with a short, straight solenidion φ , genua I and II with small spiniform solenidion k (Fig. 2A-D).

Male - Unknown.

Distribution - U.S.A. (Summers and Schlinger, 1955).

Examined material - Three females from litter under *Populus* sp., 3 July 1999, Pasinler, Erzurum; three females from litter under *Astragalus* sp., Akveren village, Hinis, Erzurum, 19 May 2000.

Discussion

The size of the body of *N. terrestris* is 280/170 (Summers and Schlinger, 1955), and 233-267/127-137 in the Turkish specimens. Our specimens are therefore smaller than the type specimen. Except for the body size, Turkish specimens closely resemble the type species in all other features.

The cosmopolitan genus *Neognathus* comprises seven species: two from the United States of America, two from Africa, one from Europe, one from Egypt and one from Pakistan (Summers and Schlinger, 1955; Willmann, 1952; Fan, 2000; Chaudhri et al., 1979; Khaustov and Kuznetsov, 1997; Meyer and Ueckermann, 1989; Soliman, 1971; Swift, 1996; Gerson, 1968). *N. terrestris* is the only species reported by Summers and Schlinger (1955) from California. Turkish specimens closely resemble the type species in all other features. Turkey and the United States of America are in the same zoogeographical region: the Holarctic. For this reason, the same species can exist in both the United States of America and Turkey. However, the authors believe that *N. terrestris* is a cosmopolitan species.

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