

**Original article (Orijinal araştırma)**

***Neophyllobius persiaensis* Khanjani & Ueckermann (Acari: Camerobiidae); new record of the species from the parks and ornamental plants in İstanbul (Turkey)**

*Neophyllobius persiaensis* Khanjani&Ueckermann (Acari: Camerobiidae); İstanbul park ve bahçelerinde yeni kayıt

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**Summary**

Two species of the genus *Neophyllobius* Berlese (Acari: Camerobiidae), *N. persiaensis* Khanjani & Ueckermann, 2002 and *N. communis* Gerson, 1968, were identified from the parks and ornamental plants, İstanbul (Turkey) in 2007. The first species is new for Turkish fauna.

**Key words:** Acari, *Neophyllobius persiaensis*, new record, predatory mite, İstanbul

**Özet**

İstanbul park ve süs bitkilerinden 2007 yılında *Neophyllobius persiaensis* Khanjani & Ueckermann, 2002 ve *N. communis* Gerson, 1968 olmak üzere iki tür tanımlanmıştır. İlk tür, Türkiye faunası için yeni kayıttır.

**Anahtar sözcükler:** Acari, *Neophyllobius persiaensis*, yeni kayıt, predatör akar, İstanbul

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## Introduction

Camerobiidae is one of the largest families in the superfamily Raphignathoidea. Neophyllobidae was synonymized with Camerobiidae and *Neophyllobius* become a genus of the family Camerobiidae (Gerson, 1972; Bolland, 1986, 1991). Seven genera were known in Camerobiidae (Bolland, 1986; Akyol, 2013). Members of this family are usually predator on spider mites and on small arthropods, especially armored and soft scale insects. They have small round bodies; their legs are very long and slender, longer than their idiosoma (Bolland, 1991; Khanjani & Ueckermann, 2002; Akyol & Koç, 2006 a, b, c; Khanjani et al., 2011). *Neophyllobius* the largest genus of this family, with 130 species (Akyol, 2013), has a worldwide distribution and have been found in Europe, Asia, America and Africa (Bolland, 1991).

By now nineteen *Neophyllobius* species were reported from Turkey: *Neophyllobius sultanensis* Akyol & Koç; *N. afyonensis* Akyol & Koç; *N. demirsoyi* Akyol & Koç; *N. lachishensis* Bolland; *N. yunusi* Akyol & Koç; *N. bolvadinensis* Akyol & Koç *N. populous* Akyol & Koç and *N. karabagiensis* Akyol & Koç, *N. orhani* Doğan & Ayyıldız, *N. fani* Doğan & Ayyıldız, *N. podocarp* Bolland, *N. turcicus* Koç & Ayyıldız, *N. izmirensis* Akyol, *N. communis* Bolland, *N. olurensis* Doğan & Ayyıldız, *N. ayvalikensis* Akyol, *N. atriplicis* Bolland, *N. ayyildizi* Koç & Madanlar and *N. askalensis* Doğan & Ayyıldız (Koç & Ayyıldız, 1996, 1998; Koç, 1999, 2001; Bolland & Koç, 2001; Koç & Madanlar, 2002; Ayyıldız & Doğan, 2003; Doğan, 2007; Doğan & Ayyıldız, 2003; Akyol & Koç, 2006 a,b,c; Akyol, 2013).

In this paper, a newly recorded species *Neophyllobius persiaensis* Khanjani & Ueckermann and *N. communis* Gerson have been given from coniferous plants in İstanbul (Turkey).

## Material and Methods

Mites were collected from coniferous plants; *Cupressus arizonica* Greene (Cupressaceae), *Cedrus atlanticus* (England) (Pinaceae) of parks (Özgürlük and Sabahhattin Zaim University), İstanbul in 2007. The collected plant samples were extracted by Berlese funnel and kept in 70% percent alcohol. The mites were mounted in Hoyer's medium. Bolland (1991), Akyol & Koç (2006 a,b,c) and Khanjani et al. (2011) were used for the identification of the mite samples. Their measurements have been given in micrometers (µm). The habitats and distribution of this species have been given. The materials of the slides are deposited at the Plant Protection Department of the University of Ankara, Turkey.

## Results and Discussion

### Genus *Neophyllobius* Berlese

Type species: *Neophyllobius elegans* Berlese 1886:19

The dorsal setae stout and serrated; two pairs of eyes located on prodorsum peritreme looped; idiosoma with 14 or 15 pairs of long, stout and lanceolate setae, usually set on prominent tubercles; each leg tarsus terminates with two claws and empodium, with tanent hairs; genital plates with two pairs of setae (Figure 1.), (Khanjani et al., 2012).

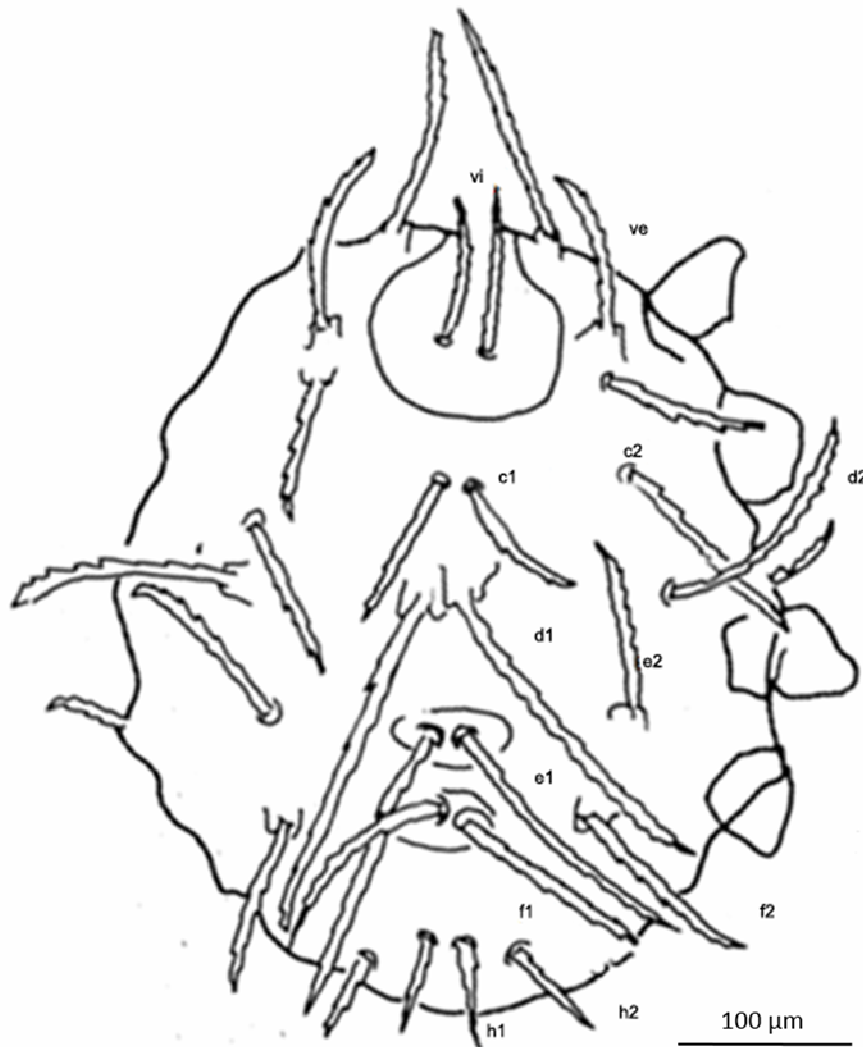


Figure 1. *Neophyllobius persiaensis* Khanjani & Ueckermann, dorsal setae.

Female: Body length 178, width 200 (n= 3). Prodorsum with two pairs of eyes lateral to *sci*. Dorsum having 15 pairs of finely serrated long setae, set on small tubercles. All dorsal setae longer than the distance of next behind it. Setae *d1*, *e1* and *f1* longer than others. The most important characteristic of this species is setae (*c1*) is less than half length of *d1*. The measurements of the dorsal setae; *vi*= 73; *ve*= 62; *sci*= 56; *sce*= 59; *pdx*= 52; *c1*= 58; *c2*= 100; *d1* =127; *d2*= 62; *e1*= 111; *e2*= 67; *f1*= 74; *f2*= 33; *h1*= 33; *h2*= 30; distance between setae: *vi-vi*= 57; *ve-ve*= 105; *pdx-pdx*= 14; *sci-sci*= 108; *sce-sce*= 139; *c1-c1*= 14; *d1-d1*= 17; *e1-e1*= 17; *f1-f1*= 16; *f2-f2*= 105; *h1-h1*= 12; *h2-h2*= 58.

Palp tarsus with two eupathidia, one solenidion and two simple setae.

Legs: The setae of genua I-IV measurements as follows Ge (Genu)= 83;105;150;189. Genual seta IV reaches slightly beyond between tibia and tarsus (Figure 2).

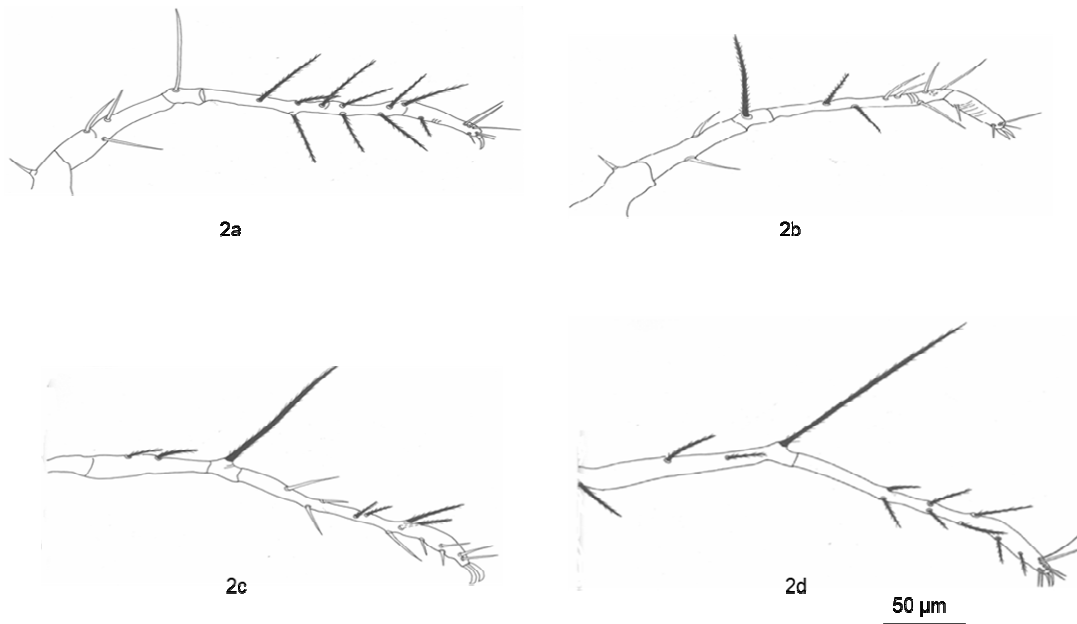


Figure 2. *Neophyllobius persiaensis* Khanjani & Ueckermann, Leg I (2a), Leg II (2b), Leg III (2c), Leg IV (2d).

Material examined: 3♀♀; 1♂ from *Cupressus arizonica* Greene (Cupressaceae) leaves at the University of Sabahattin Zaim, İstanbul, 20 December 2007.

Comments: *Neophyllobius persiaensis* was described from litter under *Sophora pachycarpa* Schrenk (Fabaceae) in Iran. It was reported from *Astragalus* sp. (Fabaceae); alfa alfa, *Medicago sativa* L. (Fabaceae) and *Gladiolus boehmii* L. (Iridaceae) (Khanjani & Ueckermann, 2002; Hoseini & Khanjani, 2013).

The measurement of the Iranian specimens:  $vi= 88$  (65-88);  $ve= 69$  (54-62);  $sci= 62$  (54-62);  $sce= 54$  (54-62);  $pdx= 49$  (46-54);  $c1= 62$  (62);  $c2= 103$  (77-103);  $d1= 143$  (111-143);  $d2= 69$  (46-79);  $e1= 116$  (102-116);  $e2= 72$  (54-75);  $f1= 100$  (78-100);  $f2= 39$  (33-52);  $h1= 31$  (31-13);  $h2= 33$  (30-40). The measurements of the Turkish specimens are very close to the type specimens and concurred with the measurement of the specimens which were collected in İstanbul.

This is the first record of the fauna of Turkey.

***Neophyllobius communis* Gerson, 1968**

*Neophyllobius communis* Gerson, 1968: 432 (Redescription, Bolland 1991:133; 71)

Male: Body length 133 and width 173 (n=1). Lengths of dorsal setae of male:  $vi = 45$ ;  $ve= 42$ ;  $sci= 35$ ;  $sce= 38$ ;  $pdx= 31$ ;  $c1= 36$ ;  $c2= 52$ ;  $d1= 60$ ;  $d2= 40$ ;  $e1= 45$ ;  $e2= 37$ ;  $f1= 38$ ;  $f2= 33$ ;  $h1= 22$ ;  $h2= 22$ ; Distance between setae;  $vi-vi= 42$ ;  $ve-ve=70$ ;  $pdx-pdx= 12$ ;  $sci-sci= 77$ ;  $sce-sce= 103$ ;  $c1-c1= 11$ ;  $c2-c2= 123$ ;  $d1-d1= 10$ ;  $d2-d2= 101$ ;  $e1-e1=12$ ;  $e2-e2=96$ ;  $f1-f1=82$ ;  $f2-f2=68$ ;  $h1-h1=7$ ;  $h2-h2=29$ . All the dorsal setae in moderate length.

Legs: The setae of genua I-IV measurements as follows Ge (Genu)=60;80;85;103.

Material examined: One male on *Cupressus* sp. leaves, 21 July 2007 at Özgürlük Park, Kadıköy in İstanbul

Comments: According to Koç (1996); lengths of dorsal setae of male:  $vi = 38$ ;  $ve = 38$ ;  $sci = 32$ ;  $sce = 34$ ;  $pdx = 47(43-50)$ ;  $c1 = 55(53-57)$ ;  $c2 = 45$ ;  $d1 = 124(116-137)$ ;  $d2 = 31$ ;  $e1 = 105(97-113)$ ;  $e2 = 26$ ;  $f1 = 77(70-87)$ ;  $f2 = 29$ ;  $h1 = 31(27-33)$ ;  $h2 = 18$ .

Female with one solenidium on the distal end of tibia I-IV, one solenidium only on tarsi I and II. distal setae on femur I shorter (Koç, 1999). *Neophyllobius communis* was previously reported in Erzincan, under the litter and soil of *Pinus sylvestris* L., *Pinus nigra* L., *Ulmus* sp. and *Populus* sp. (Koç, 1999). This species described by Gerson (1968) in Israel from leaf litter.

## Remarks

*Neophyllobius communis* looks like *Neophyllobius levanticola* Bolland. The third setae on tibia III and the second setae on tibia IV shorter in *N. levanticola* than *N. communis*. Proximal setae on palp femur longer than in *N. levanticola* (Bolland, 1991).

*Neophyllobius* spp. are very important predators as they prey on small arthropods. They inhabit leaf litter and soil. In this study, *Neophyllobius persiaensis* Khanjani & Ueckermann, 2002 was reported as a new record for the mite fauna of Turkey. The samples were collected from coniferous plants in İstanbul.

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