



First record of the family Nosybeidae (Acari, Oribatida) from Turkey: *Lamellocephus personatus*

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ASBTRACT: In this study, on the basis of the specimens collected from Artvin province, Turkey, *Lamellocephus personatus* (Berlese, 1910) belonging to the family Nosybeidae was recorded as new for the Turkish fauna. Its morphological features were given with the scanning electron microscope images, and also distribution and ecology discussed.

Keywords: Soil mite, *Lamellocephus*, new record, Artvin, Turkey.

Zoobank: <https://zoobank.org/1FC216E8-613A-428B-A963-165B781112FF>

INTRODUCTION

Oribatid mites are one of the most abundant and diverse species of soil mesofauna. They play an important role in the decomposition processes in the soil. Globally, 11.325 oribatid species and subspecies are known, of these 3911 occupying the Palaearctic region (Subias, 2004). The number of known species of Turkish oribatid mites is around 250 (Özkan et al., 1988, 1994; Erman et al., 2007; Baran et al., 2018).

The family Nosybeidae recorded for the first time from Turkey is represented by two genera and 12 species worldwide (Subias, 2004). Only one of them, *Lamellocephus personatus*, is known from Europe in the Palaearctic region. *Lamellocephus* belonging to the family Nosybeidae is distributed in the southern Palearctic and Ethiopian regions and includes two species: *Lamellocephus genavensis* (Mahunka, 1993) (*Nosybea*) from Madagascar and *Lamellocephus personatus* from Europe. In this study, it is aimed to contribute to the knowledge of the oribatid fauna of Turkey and the distribution of the determined taxon.

MATERIALS AND METHODS

Soil and litter samples containing oribatid mites were collected from Artvin Province in 1992 and extracted using a Berlese funnel apparatus. Mites were sorted from the samples under a stereomicroscope. After the mite samples were cleaned, they were first pre-treated for light microscopy and subsequently for scanning electron microscopy. Terminology followed Norton and Behan-Pelletier (2009).

RESULTS

Family: Nosybeidae Mahunka, 1993

Genus: *Lamellocephus* Balogh, 1961

Type species: *Tectocephus personatus* Berlese, 1910

Lamellocephus personatus (Berlese, 1910)

Description (Figures 1-4)

Length: 280-290 µm, width: 160-164 µm (n = 2).

Prodorsum with coarsely granulated cerotegument. Rostrum incised in the middle. Rostral, lamellar and interlamellar setae short and smooth. Lamellae long, straight, originate in front of the bothridia and without translamella. Sensilli leaf-shaped, barbed, about 30 µm in length. Bothridium opening anteriorly.

Dorsosejugal suture slightly protruding in the middle. Ten pairs of short and smooth marginal notogastral setae present. Two pairs of them *c2* and *la* arising on small tubercles. In the anterior middle region of the notogaster, a wide depression present. Notogastral cuticle covered by coarsely granulated cerotegument.

Ventral region with fine granulation. Pedotectum I large, pedotectum II small; tutorium a long and small blade without free tip. The epimeres IV with strong lateral and posterior enantiophysis. Epimeral setal formula: 3-1-3-2. On both sides of the genital plates with longitudinal ridges. Genital and anal plates are approximately the same length and width (35 µm) and the distance between them is 14 µm. Five pairs of genital, one pair of aggenital, two pairs of anal and two pairs of adanal setae present. Lyrifissures *iad* situated paraanally. All legs monodactylous.

DISCUSSION

Lamellocephus personatus (Berlese, 1910) is distributed in Europe (Italy, Switzerland Austria Azerbaijan and Georgia) (Weigmann and Murvanidze, 2003; Subias 2004). *Lamellocephus personatus* is found in warm southern subalpine biotopes in Austria, Switzerland and northern Italy and forest litter in warm-temperate climate in Georgia. In this study, it was found in soil and litter from mixed forest.

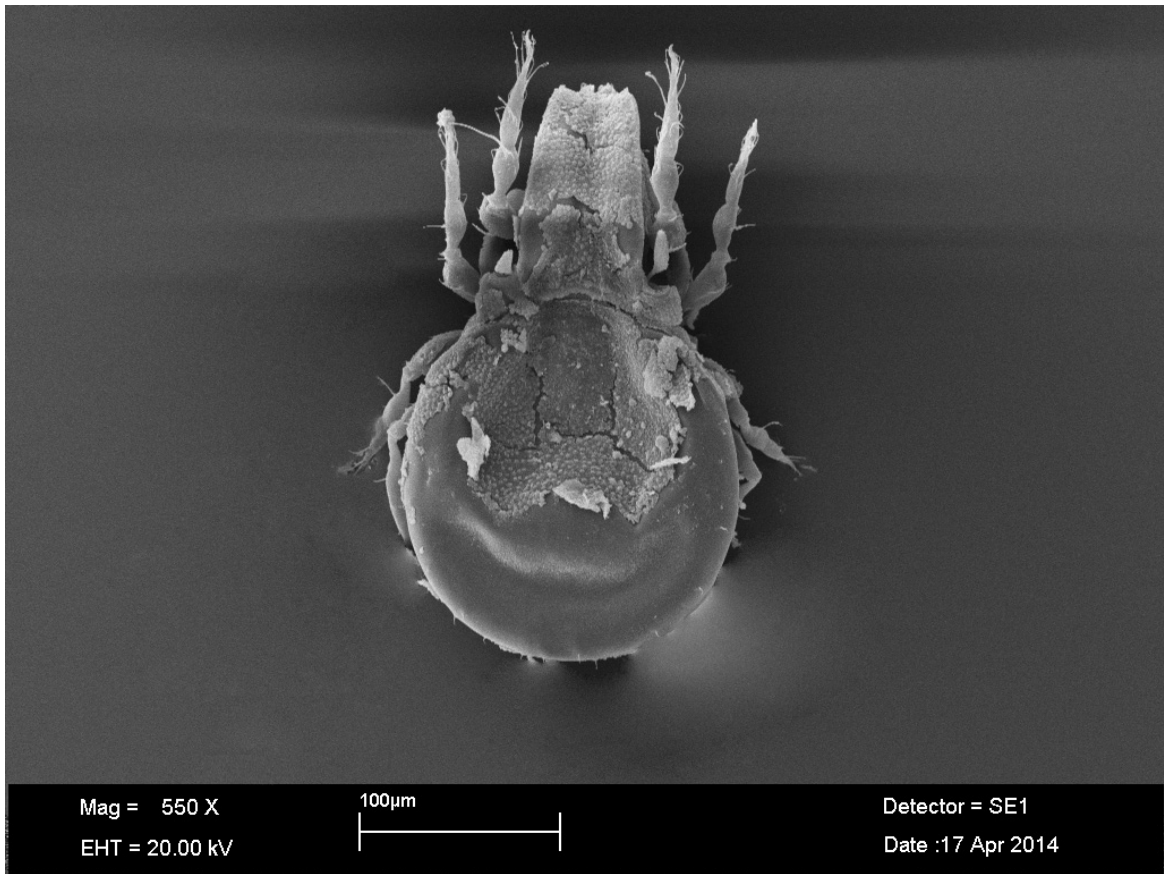


Figure 1. *Lamellocephus personatus* (Berlese, 1910): Dorsal view.

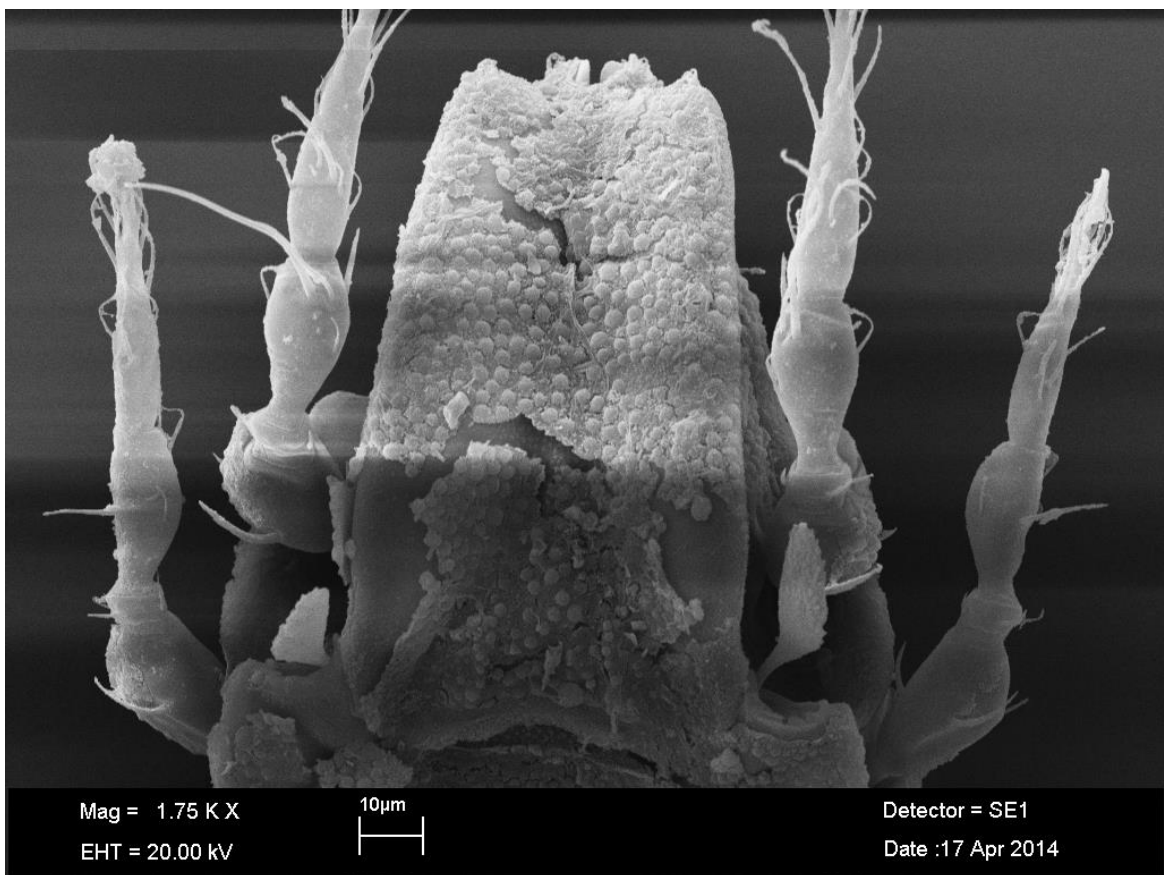


Figure 2. *Lamellocephus personatus* (Berlese, 1910): Prodorsum.

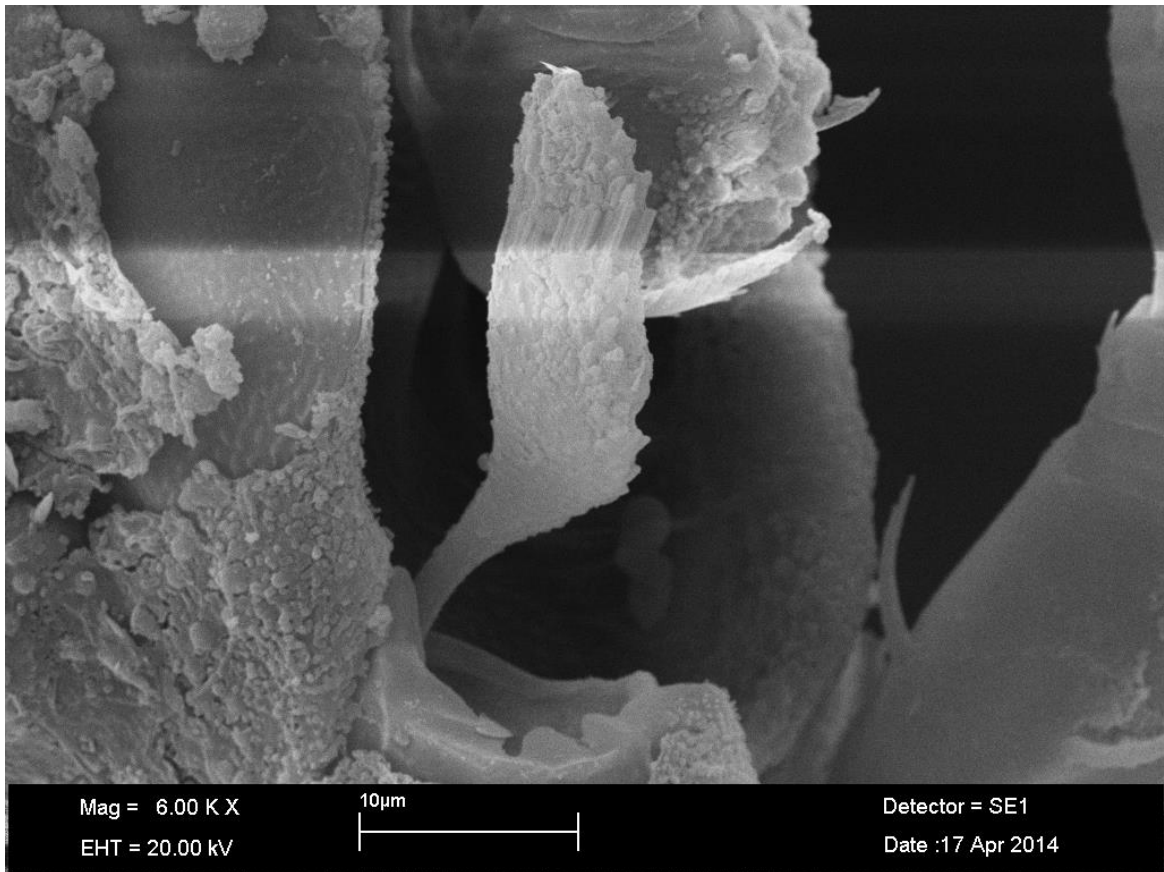


Figure 3. *Lamellocephus personatus* (Berlese, 1910): Sensillus.



Figure 4. *Lamellocephus personatus* (Berlese, 1910): Ventral view.

The species has been described by Berlese (1910) as *Tectocepheus personatus*. This species was previously placed under families Tectocepheidae and Charassobatidae by most authors (Balogh, 1961; Grandjean, 1964; Mahunka and Mahunka-Papp, 1995; Weigmann and Murvanidze (2003). Later, Mahunka and Mahunka-Papp (2009) transferred it into the family Nosybeidae. The taxonomic status and family placement of *Lamellocepheus* and *Lamellocepheus personatus* (Berlese, 1910) has been discussed and evaluated in detail by Colloff (2019). We agree with Colloff (2019) and Subías (2004) regarding the taxonomic status and place of the species.

The body length of this species are given as 345-420 µm by Weigmann and Murvanidze (2003). The dimensions of the specimens found in Turkey (280-290 µm × 160-164 µm) are smaller than previous measurements. These dimensional differences can be considered within the variation limits. In terms of the other morphological features, the Turkish specimens are in conformity with the descriptions given by the various authors.

Authors' contributions

Ayşe Toluk: Analysis, conceptualization, data curation methodology, visualization, writing-original draft, writing-review and editing. **Nusret Ayyıldız:** Investigation, analysis, conceptualization, data curation methodology, visualization, writing-original draft, writing-review and editing.

Statement of ethics approval

Not applicable.

Conflict of interest

None.

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