

First Record of Family Celaenopsidae Berlese (Acari: Mesostigmata) From Turkey

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ABSTRACT

Celaenopsis badius (C.L. Koch 1839) specimens collected in bark and rotten wood of *Salix* sp. and *Quercus* sp. from Northeastern Turkey which were described as a new record to Turkish fauna. Females and males of *C. badius* are presented herein with both descriptions and original SEM photos. This species is the first record of the family Celaenopsidae from Turkey.

Keywords: Acari, Mesostigmata, Celaenopsidae, *Celaenopsis badius*, a new record, Turkey.

Celaenopsidae Familyasının (Acari: Mesostigmata) Türkiye'den İlk Kaydı

ÖZET

Celaenopsis badius (C.L. Koch 1839) türünün bireyleri, *Salix* sp. ve *Quercus* sp. türlerine ait çürümüş kütükler ve gövde yarıklarından toplanmış ve Türkiye akar faunası için yeni kayıt oldukları belirlenmiştir. *C. badius* türünün dişi ve erkek bireylerinin tanımları ve orjinal SEM fotoğrafları sunulmuştur. Bu tür Celaenopsidae familyasının Türkiye'den ilk kayıdır.

Anahtar kelimeler: Acari, Mesostigmata, Celaenopsidae, *C. badius*, yeni kayıt, Türkiye.

1. Introduction

The family Celaenopsidae was created by Berlese (1892) and includes about 7 genera and 14 species worldwide (Beaulieu et al., 2011). The family is relatively well known in Europe and Russia (Bregetova, 1977; Khaustov, 1999; Kontschán, 2006; Gwiazdowicz, 2010), but fauna of Turkey is not investigated, and there is no recorded species up to now (Erman et al., 2007). The aim of present paper is to extend the geographic range of the family Celaenopsidae and species *C. badius* by including Northeastern Turkey.

2. Materials and Methods

Mites were collected by sieving the rotten woods and barks. After extraction using a modified Berlese funnels, the mites were mounted in Hoyer's medium according to the methods of Krantz and Walter (2009). Specimens were examined, illustrated and measured with a Leica DM 3000 light microscope. All measurements are given in micrometres (μm). The specimens examined are deposited in the Acarology Laboratory of Erzincan University, Turkey.

3. Results and Discussions

Family Celaenopsidae Berlese, 1982

Genus *Celaenopsis* Berlese, 1886

Type species: *Celaenopsis badius* (C.L. Koch, 1839)

Species: *Celaenopsis badius* (C.L. Koch, 1839)

Material Examined: 5 females and 4 males, Giresun Province, Çamoluk and Alucra Towns, 40°15'45" N, 38°50'20" E, alt. 1800 m, 31 May, 2008, bark of *Quercus* sp.; 4 females and a male, Gümüşhane Province, Şiran Town, 40°12'31" N, 39°09'14" E, alt. 1435 m, 28 August, 2008, bark of *Salix* sp.; 20 females and 11 males, Tokat Province, Niksar Town, Eryaba Village, 40°33'50" N, 36°47'40" E, alt. 690 m, 30 September, 2008, bark of *Quercus* sp.; 7 females and 4 males, Tokat Province, Niksar Town, Oluklu Village, 40°34'40" N, 36°46'36" E, alt. 735 m, 30 September, 2008, rotten wood of *Quercus* sp.

Description. Female.

Idiosoma. Oval shaped, and color from yellowish to dark brown depending on the degree of sclerotization.

Dorsum (Figure 1). Dorsal idiosoma 650-690 long, 430-470 wide at the level of the widest point, and bearing about 130-150 asymmetrically arranged smooth and needle-like setae, and unpaired setae posteriorly. Dorsal side ornamented with reticulation and pore-like structures.

Ventral (Figure 2). Sternal shield 60-65 long, 120-130 wide at the level of coxae II, with three pairs of needle-like setae, and

ornamented with lines; *st1* located on the anterior margin of the shield and thicker, *st2* distinctly longer than other sternal setae. Two large metasternal plates located between coxae II and coxae III, each bearing a metasternal seta on the plates (Figure 3). Mesogynal-latigynal shield located between coxae III, with about 30-40 needle-like setae on it. Ventri-anal shield weakly reticulated with lines. Post-anal shield much longer than wide, 30-38 long, 180-210 wide, with one pair of needle-like setae; three pairs of small plates present in the lateral corners of the shield, each bearing a seta on the plate, and one abutting postero-lateral side of the post-anal shield, not fused. Ventri-marginal shields long, relatively wide medially, and having two pairs of needle-like setae.

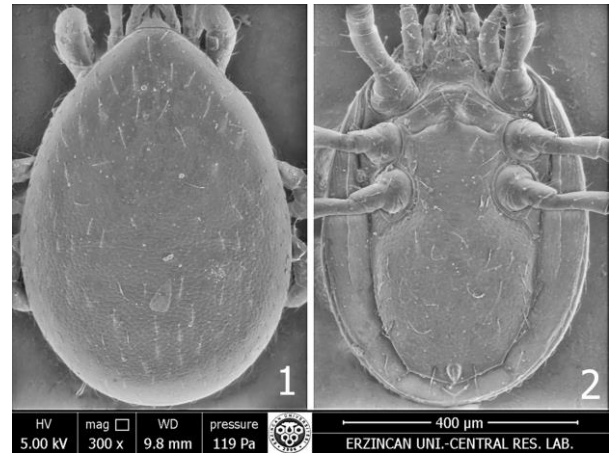
Gnathosoma (Figure 4). Deutosternal groove narrow, and carrying four setae, all smooth and needle-like, *h1* and *h3* of equal length and longer than *h2* and *pc*; *pc* the shortest and thicker, with denticles. Epistome with a median process pointed, laterally two distinct large denticles and few small, dorsal surface with polygonal ornamentation (Figure 5). Chelicerae elongate, fixed digit with a large postero-median tooth and a lot of slim denticles, and unidentate terminal hook; moveable digit with a large postero-median tooth and least 10 smaller teeth, and unidentate terminal hook. A pair of long arthrodistal brush present.

Legs. Leg IV longer than others, leg II and III relatively equally long and shorter than leg I (leg III slightly longer than leg II).

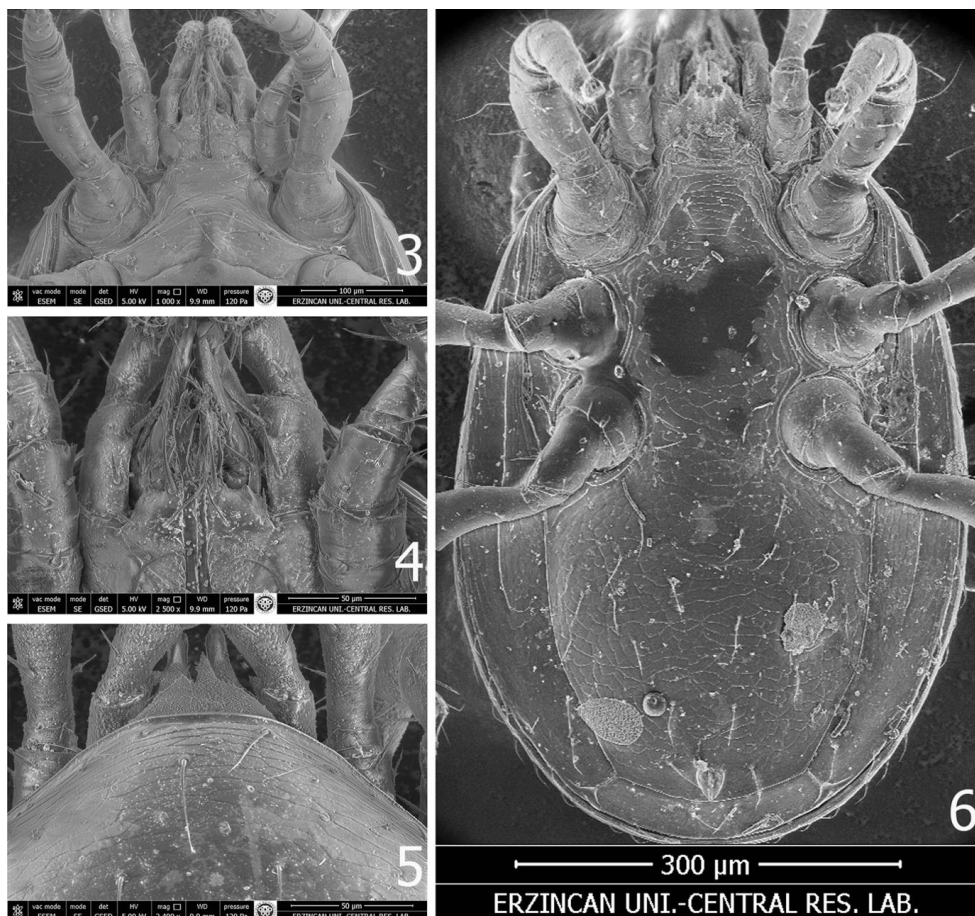
Description. Male

Dorsum. Dorsal idiosoma 600-640 long, 400-430 wide at the level of the widest point; other characters as in female. Young specimens with a weakly sclerotized, older specimens with a well-sclerotized integument. Sterni-ventral shield present about 520-540 long, reticulated with lines and bearing about 40 needle-like setae; genital orifice clearly distinct and located in the anterior region of the shield. Ventri-marginal and post-anal shields similar to that of the female.

Hypostome with one pair of short needle-like setae. Epistome and chelicerae as in female (Figure 6).



Figures 1-2. *C. badius*, female. 1. dorsal idiosoma; 2. ventral idiosoma



Figures 3-6. *C. badius*, female. 3. Sternal and metasternal shields; 4. Subcapitulum; 5. Anterior region of dorsal idiosoma with epistome, 6. Ventral view of male

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4. References

- Berlese, A. 1892. Acari, Myriopoda et Scorpiones hucusque in Italia reperta, 64, 17 text pages + Plates 1–10. (Reprint by Junk, The Hague, 1979).
- Beaulieu, F., Dowling A.P.G., Klompen, H., de Moraes, G.J. & Walter, D.E. 2011. Superorder Parasitiformes Reuter, 1909. In: Zhang, Z.-Q. (ed.) Animal biodiversity: An outline of higher level classification and taxonomic richness. *Zootaxa* 3148: 123–128.
- Bregetova, N.G. 1977. Cohort Antennophorina. In: Ghilyarov, M.S. & Bregetova, N.G. (Eds.), Key to the Soil-Inhabiting Mites (Mesostigmata). Nauka Leningrad, Russia 39–43 pp.
- Erman, O., Özkan, M., Ayyıldız, N. & Doğan, S. 2007. Checklist of the mites (Arachnida: Acari) of Turkey. Second supplement. *Zootaxa* 1532: 1–21.
- Gwiazdowicz, D.J. 2010. Sejoidea, Antennophoroidea, Celaenopsoidea, Microgynioidea (Acari, Mesostigmata) of Poland. Bogucki Wydawnictwo Naukowe 142 pp.
- Khaustov, A.A. 1999. A new species of the genus *Schizocyrtillus* (Acarina:

Mesostigmata: Celaenopsidae) from Crimea. *Acarina* 7: 107-109.

- Krantz, G.W. & Walter, D.E. 2009. A Manual of Acarology. Third Edition. Texas Tech University Press USA 807 pp.
- Kontschán, J. 2006. *Celaenopsis badius* (C. Koch, 1836) (Acari: Mesostigmata: Celaenopsidae) in Hungary. *Folia entomologica hungarica* 30: 137-138.