

A CONTRIBUTION TO THE KNOWLEDGE OF MITE DIVERSITY IN TURKEY (ACARI: TROMBIDIIDAE)

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ABSTRACT: In the present study, mite specimens belonging to the genus *Allothrombium* collected from Dumanlı Forest (Erzincan province) were evaluated. Description and microscope photographs of the adults and deutonymphs of *Allothrombium molliculum* (C. L. Koch, 1837) have been given. This species is reported for the first time from Turkey.

KEY WORDS: Acari, Trombidiidae, new record, *Allothrombium*, Turkey

Mites of the genus *Allothrombium* Berlese, 1903 belong to Trombidiidae family and are one of the 14 families known from Trombidoidea. The family Trombidiidae Leach, 1815 comprises four subfamilies including Allothrombiinae Thor, Dolicho-thrombiinae Robaux, Paratrombiinae Feider and Trombidiinae Leach. Also, it includes 23 genera and 207 species in the world (Makol & Wohltmann, 2012, 2013; Liu & Zhang, 2016; Saboori et al. 2017).

The genus *Allothrombium* is one of the most commonly known genera in the family. This genus has 72 species (Makol & Wohltmann, 2012, 2013; Sevsay, 2017). It is reported that 17 species are known only from larvae, 48 species from active postlarval forms and 7 species from both. Hitherto, nine species have been reported from Turkey (Sevsay & Özkan, 2010; Sevsay, 2017).

This study is aimed to give first record species of postlarval stage of *Allothrombium molliculum* (C. L. Koch, 1837) from Turkey, and also to contribute mite fauna of Turkey.

MATERIAL AND METHODS

Mite specimens collected from Dumanlı Forest in Erzincan province (39°54'5.36"N, 38°43'17"E, 1998 m). The materials (3 adults, 1 male, 2 deutonymphs) from different localities of Dumanlı Forest between April and July in 2017 were obtained directly and extracted in Berlese funnels. The materials were preserved in 70% ethyl alcohol and then fixed on slides in Hoyer's medium (Krantz & Walter, 2009). For measurements and microscope photographs a Leica DM 4000 B phase-contrast microscope was used. Examined specimens were deposited in the the Acarology Laboratory of Erzincan University, Turkey. For morphological terminology follows Gąbryś (1999) and Makol (2005). All measurements are given in micrometres (μm).

RESULTS

Family Trombidiidae Leach, 1815

Subfamily Allothrombiinae Thor, 1935

Genus *Allothrombium* Berlese, 1903

Type species. *Trombidium fuliginosum* Hermann, 1804

***Allothrombium molliculum* (C. L. Koch, 1837)**

Descriptions. Adults. Body length min.2200-max.2750 and width min.1365-max.1770. Colour in life red (Fig. 1).

Gnathosoma. Cheliceral blade serrated along the inner edge. Palps with sparse cover of setae. Palp tarsus cylindrical, covered with numerous solenidion (ω) at the top (Fig. 2).

Idiosoma. Crista metopica strongly sclerotized (Fig. 3). Anterior process of crista metopica club-shaped, not clearly widened, not reaching the margin of aspidosoma. Sensillary area of crista wide, with slightly convex sides. Sensillary setae covered with short setules distributed in $\frac{2}{3}$ distal half of the stem. Posterior process of crista fairly short. Eyes robust, set on relatively short peduncles, narrowed at the base. Anterior lens larger than the posterior one.

Dorsal opisthosomal (*pDS*) setae uniform, narrowing distally, slightly bent and covered with straight setules. (Fig. 4). Setules arising at proximal part of a stem the longest. Distal setules short, not reaching beyond setal termination. External genitalia composed of a pair of epivalves and centrovalves covered densely with setae. Three pairs of genital acetabula. Female genital sclerites larger than in males (Fig. 5). Males with genital apparatus (Fig. 6).

Legs stout, shorter than idiosoma. Tarsus I oval in shape. All tarsi terminated with double claws and pseudopulvillus.

Deutonymphs. Body smaller than adult. Other characters as in adults. Palps not as robust as in adults (Fig. 7). Dorsal opisthosomal setae similar to those in adults but shorter. Body and leg setation sparser. Two pairs of genital papillae (Fig. 8).

Distribution. Czech Republic, Germany, Poland, The Netherlands, Italy (Makol & Wohltmann, 2012). New for Turkey fauna.

DISCUSSION

Turkish specimens of *Allothrombium molliculum* are similar to the European specimens. (Makol, 2005). But they differ in terms of body size, dorsal setae lengths and structure. Turkish specimens's body size (2200-2750) is larger than European specimens's (1894-2233). This shows that this feature has a wide variation range. The *pDS* of Turkish specimens covered with more setules and thicker. Also, the length of *pDS* is a bit different (50- 95 μm vs 67- 90 μm). Distal setules short, not reaching beyond setal stem termination. Anterior process of crista metopica in our specimens slightly widened and farther the anterior margin of aspidosoma. But, anterior process of crista metopica in European specimens distinctly widened and closer the anterior margin of aspidosoma.

ACKNOWLEDGEMENTS

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LITERATURE CITED

- Gabryś, G.** 1999. The world genera of Microtrombidiidae (Acari, Actinedida, Trombidoidea). Monographs of the Upper Silesian Museum, 2: 1-361.
- Liu, J. & Zhang, Z.** 2016. Hotspots of mite new species discovery: Trombidiformes (2013-2016). Zootaxa, 4208 (1): 1-45.
- Małol, J.** 2005. Trombidiidae (Acari: Actinotrichida: Trombidoidea) of Poland Fauna Poloniae. Museum and Institute of Zoology, Polish Academy of Sciences & Natura Optima Dux Foundation, 1: 1-259.
- Małol, J. & Wohltmann, A.** 2012. An annotated checklist of terrestrial Parasitengona (Actinotrichida: Prostigmata) of the world, excluding Trombiculidae and Walchiidae. Annales Zoologici, 62: 359-562.
- Małol, J. & Wohltmann, A.** 2013. Corrections and additions to the checklist of terrestrial Parasitengona (Actinotrichida: Prostigmata) of the world, excluding Trombiculidae and Walchiidae. Annales Zoologici, 63: 15-27.
- Saboori, A., Šundić, M. & Pešić, V.** 2017. A new species of the genus *Trombidium* Fabricius (Acari: Trombidiidae), with a checklist of terrestrial parasitengone mites of Montenegro. Systematic & Applied Acarology, 22 (4): 584-601.
- Sevsay, S.** 2017. A checklist of the Erythraeoidea and Trombidoidea (Actinotrichida: Prostigmata) of Turkey. Türkiye Entomoloji Bülteni, 7 (2): 175-196.
- Walter, D. E. & Krantz, G. W.** 2009. Collecting, rearing, and preparing specimens. In: Krantz, G.W. & Walter, D.E. (Eds.), A Manual of Acarology. 3rd Edition. Texas Tech University Press, Texas, pp. 83-96.



Figure 1. General view.

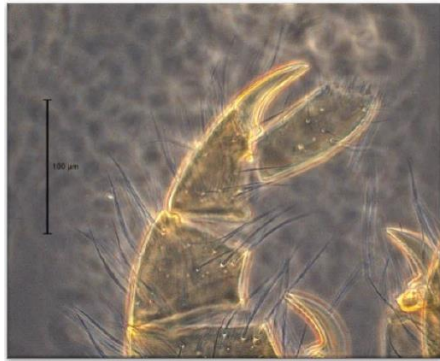


Figure 2. General palp (Adult).

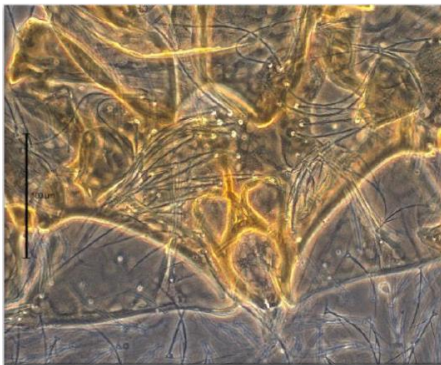


Figure 3. Aspidosoma.

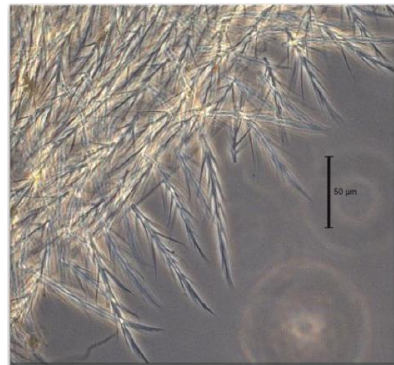


Figure 4. Dorsal opisthosomal setae (pDS).



Figure 5. Female genital opening.

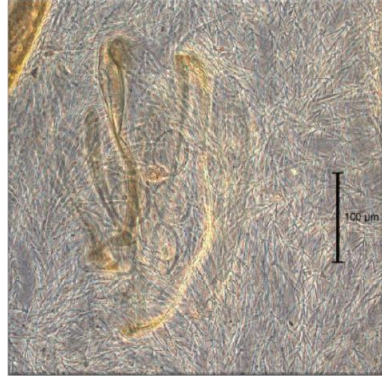


Figure 6. Male genital apparatus.

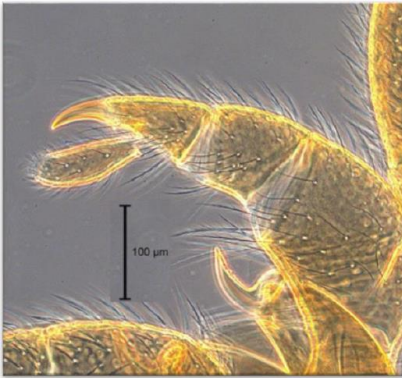


Figure 7. Palp of deutonymph.

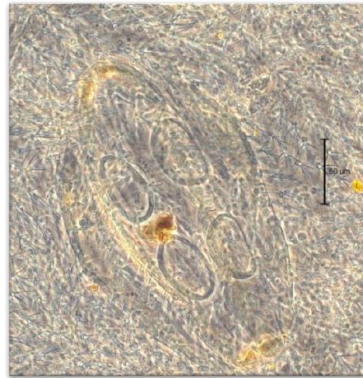


Figure 8. Genital opening of deutonymph.