

New Records for the Aphid Fauna (Hemiptera: Aphidoidea) of Turkey

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Abstract: Nine aphid species are recorded for the first time for the aphid fauna of Turkey. Samples originate from Inner West Anatolian, Central Anatolian and Middle Black Sea Regions of Turkey. The species recorded are *Cinara piniphila* (Ratzeburg, 1844), *Eulachnus tauricus* Bozhko, 1961, *Monaphis antennata* (Kaltenbach, 1843), *Pemphigus phenax* Börner & Blunck, 1916, *Pineus pineoides* (Cholodkovsky, 1903), *Stomaphis brastislavensis* Czyłok & Blackman, 1991, *Thelaxes valtodorei* Remaudière, 1982, *Therioaphis subalba* Börner, 1949 and *Thoracaphis flava* Takahashi, 1950.

Key words: Aphidoidea, Turkey, new records

Introduction

Aphid species have very close relationship with their host plants and climatic conditions have a strong effect on the distribution of aphids worldwide. Turkey has diverse types of climatic conditions, very large agricultural land and rich flora consisting of 12000 plant species. Therefore, it can be expected that territory of Turkey is characterised by the presence of many aphid species. Studies related to the Turkish aphid fauna dated back to the beginning of the 1900s. CANAKCIOGLU (1975) revised all previous studies and listed 258 aphid species. Since the 1980s, the studies of the Turkish aphid fauna have been intensified. DUZGUNES *et al.* (1982) added 3 new species and TUATAY (1991, 1993) added 30 species from various parts of Turkey to the list. Recently, the aphid researchers added many new records to the Turkish aphid fauna and the number of species in Turkey increased to about 500 species (WIOCZEREK 2009, KAYGIN TOPER *et al.* 2009, YILDIZ & TOPER KAYGIN 2010, AKYUREK *et al.* 2011, GORUR *et al.* 2012). The aim of the present article is to provide additional data on the species diversity of aphids in Turkey.

Material and Methods

Samples were collected from Inner West Anatolian Region (Kütahya, Afyon, Uşak), Inner Anatolian Region (Niğde) and Middle Black Sea Region (Tokat). The samples were processed in the laboratory based on the methods offered by MARTIN (1983). Species were identified according to <http://www.aphidsonworldsplants.info>, BLACKMAN & EASTOP (2006), QUEDNAU (1999, 2003). The taxonomic status of the species was checked at www.fauna-ur.org/taxon_tree.php, <http://Aphid.SpeciesFile.org>. Voucher samples were stored at the Biology Department of Niğde University.

The geographic distribution of the species is presented after HOLMAN (2009), <http://www.aphidsonworldsplants.info> and QUEDNAU (2003).

Results

As a result of the identification of the samples collected from various regions of Turkey, eight aphid species belonging to the family Aphididae and one species belonging to the family Adelgidae have been

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identified. All these are new records for the Turkish aphid fauna. General features, host plants and data about their general distribution are presented below.

Family Adelgidae

Pineus pineoides (CHOLODKOVSKY, 1903)

Material examined: 2 samples on *Abies* sp. from Kütahya-Dumlupınar (12.VI.2012, 25.VII.2012), feeding on the crevasse of the crust on the trunk, they almost covered the whole trunk as a small white patch.

Distribution: Europe, Canada, Australia.

Family Aphididae

Subfamily **Hormaphidinae**

Thoracaphis flava TAKAHASHI, 1950

Material examined: 3 samples on *Quercus* sp. from Kütahya-Tavşanlı, Kütahya-Tavşanlı-Göbel, and Kütahya (25.VIII.2012). Very small and orange-coloured individuals feeding on the undersides of the leaves. They remained stuck to the leaves, even when dead.

Distribution: It is only recorded from Malaya.

Subfamily **Lachninae**

Cinara piniphila (RATZEBURG, 1844)

Material examined: 2 samples on *Pinus* sp. from Afyon-Sultandağı (6.VI.2012); they were generally feeding on the base of the immature cones and also on the base of the newly grown needles.

Distribution: Almost all parts of Europe; recorded also from China.

Eulachnus tauricus BOZHKO, 1961

Material examined: 2 samples on *Pinus* sp. from Afyonkarahisar-Bolvadin (07.VI.2012) and Afyonkarahisar-Sinanpaşa (14.VI.2012), feeding on needles in groups; they became very active when they were disturbed.

Distribution: Most parts of the Europe.

Stomaphis brastislavensis CZYLOK & BLACKMAN, 1991

Material examined: 3 samples on trunk of *Quercus* sp. from Kütahya-Gediz (26.VII.2012), from Afyonkarahisar-Hocalar (Sandıklı road) (09.X. 2012), and Kütahya-Gediz (Muratdağı road) (08.X.2012), feeding on the big crevasse of the crust on the trunk, heavily occupied by ants. Individuals were shiny black-brownish, their rostrum was about twice longer than body length and therefore samples were hardly collected from the feeding site.

Distribution: Bulgaria, Slovakia.

Subfamily **Calaphidinae**

Monaphis antennata (KALTENBACH, 1843)

Material examined: 1 sample on *Betula* sp. from Tokat City centre (17.VII.2011). All individuals were alatae and heavily colonized the leaves of the tree.

Distribution: Widespread in Europe and Asia; recently recorded from America.

Therioaphis subalba BORNER, 1949

Material examined: 1 sample on *Trifolium* sp. from Afyonkarahisar-Hocalar (12.VI.2012); pale yellow individuals feeding on the undersides of the leaves as a small colony.

Distribution: North and Central Europe; recorded also in Korea.

Subfamily **Eriosomatinae**

Slavum esfandiarii DAVATCHI & REMAUDIÈRE, 1957

Material examined: 2 samples on *Pistacia* sp. from Afyonkarahisar-Çay (07.VI.2012) and Afyonkarahisar-Eber (08.VI.2012). They caused coral-like gall formation on the twigs of *Pistacia* sp.; the galls were green at the beginning of the formation and became reddish when mature.

Distribution: It was recorded only from Iran.

Pemphigus phenax BÖRNER & BLUNCK, 1916

Material examined: 1 sample on *Populus* sp. from Niğde City centre and University Campus (5.VII.2011), feeding on the trunk of *Populus* spp. and heavily colonized almost the whole parts of the trunk.

Distribution: Almost all parts of Europe and some parts of Asia.

Discussion

The present study added 9 new records to the aphid fauna of Turkey. With these new additions, the Turkish aphid fauna now consists of more than 500 species. Despite the rich flora (31% of endemic plants for the Turkish flora), various climatic conditions, indigenous geographic characteristics and the considerable number of agricultural plants in Turkey, studies of the Turkish aphid fauna are limited. It is expected that further studies will reveal additional aphid species new to the Turkish fauna.

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