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Original article (Orijinal araştırma)

Aphid (Hemiptera: Aphididae) species of the South Marmara Region of Turkey including the first record of *Dysaphis radicola meridialis* Shaposhnikov, 1964 for the aphid fauna of Turkey[1]

Güney Marmara Bölgesi'nden yaprakbitleri (Hemiptera: Aphididae) ile *Dysaphis radicola meridialis* Shaposhnikov, 1964'in Türkiye yaprakbiti faunası için ilk kaydı

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Abstract

This study aimed to determine aphid species, and to contribute new species and hosts, in Çanakkale and Balıkesir Provinces in the South Marmara Region of Turkey. Samples were taken from different host plants between March 2017 and November 2018. In total 74 aphid species were identified, including three subspecies from 34 genera belong to five subfamilies (Aphidinae, Calaphidinae, Chaitophorinae, Eriosomatinae and Lachninae) of the family Aphididae. Among these, *Dysaphis radicola meridialis* Shaposhnikov, 1964 collected from the roots of *Rumex* sp. (Polygonaceae) is a new subspecies record for the aphid fauna of Turkey from Çanakkale. The new host records for Turkey are *Ajuga orientalis* L. (Lamiaceae) on *Aulacorthum (Aulacorthum) solani* (Kaltenbach, 1843), *Cynoglossum creticum* Mill. (Boraginaceae) on *Acyrthosiphon (Acyrthosiphon) malvae* (Mosley, 1841) and *Tragopogon porrifolius* L. (Asteraceae) on *Trama (Neotrama) caudata* Del Guercio, 1909. Also, body measurements, diagnostic features, illustrations, distribution and biology are given for the new aphid records. With this contribution, the number of aphids in the fauna of Turkey has reached to 541 species and 14 subspecies.

Keywords: aphid, Balıkesir, Çanakkale, *Dysaphis radicola meridialis*, new host records

Öz

Bu çalışma Türkiye'nin Güneybatı Marmara bölgesinde yer alan Çanakkale ve Balıkesir illerinde bulunan yaprakbitlerinin belirlenmesi, yeni türler ve konukçu bitkiler ile katkıda bulunulmasını amaçlamaktadır. Örnekler Mart 2017 ve Kasım 2018 arasında farklı konukçu bitkiler üzerinden alınmıştır. Aphididae familyası içerisinde yer alan beş altfamilyaya (Aphidinae, Calaphidinae, Chaitophorinae, Eriosomatinae ve Lachninae) ait 34 cinse bağlı üç tanesi alttür olmak üzere toplam 74 yaprakbiti türü tanımlanmıştır. Tespit edilen türlerden *Rumex* sp. (Polygonaceae)'nin kök kısmından toplanan *Dysaphis radicola meridialis* Shaposhnikov, 1964 Çanakkale'den Türkiye yaprakbiti faunası için yeni alttür kaydı olarak verilmiştir. Konukçu bitkilerden *Ajuga orientalis* L. (Lamiaceae) türü *Aulacorthum (Aulacorthum) solani* (Kaltenbach, 1843); *Cynoglossum creticum* Mill. (Boraginaceae) türü *Acyrthosiphon (Acyrthosiphon) malvae* (Mosley, 1841) ve *Tragopogon porrifolius* L. (Asteraceae) türü *Trama (Neotrama) caudata* Del Guercio, 1909 için Türkiye'de yeni konukçu kayıtlarıdır. Ayrıca yeni yaprakbiti kaydının vücut ölçümleri, teşhis özellikleri, preparat resimleri, dağılımı ve biyolojisi verilmiştir. Bu güncel katkıyla birlikte Türkiye yaprakbiti faunasının sayısı 541 tür ve 14 alttüre ulaşmıştır.

Anahtar sözcükler: yaprakbiti, Balıkesir, Çanakkale, *Dysaphis radicola meridialis*, yeni konukçu kayıtları

[1] This manuscript is a part of the PhD thesis of the first author and a part of the study was presented as poster in VII. Turkish Plant Protection Congress with International Participation (14-17 November 2018, Muğla, Turkey).

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Introduction

Aphids (Hemiptera: Aphididae) are one of the most important insect groups that fed on plants in diverse habitats around the world. The family Aphididae currently consists of about 5000 species in 510 genera (Blackman & Eastop, 2018).

The first data on the aphid fauna of Turkey were obtained in the early part of the twentieth century with the reports of Trotter (1903), Fahringer (1922) and Houard (1922). Subsequently, the comprehensive study conducted by Bodenheimer & Swirski (1957) catalogued aphids from Middle East including 90 species from different regions of Turkey. Since then researchers such as Toros et al. (2002), Özdemir et al. (2005), Toper Kaygın et al. (2008), Görür et al. (2011; 2012), Özdemir & Barjadze (2015), Şenol et al. (2015) and Kök et al. (2016) have further contributed to our knowledge of the aphid fauna of Turkey. With recent new records (Görür et al., 2017), the aphid fauna of Turkey has reached 541 species and 13 subspecies belong to about 141 genera.

Turkey, situated at the junction between Europe and Asia, is one of the richest countries for flora and fauna due to its diverse climatical and topographical conditions. Despite this richness and characteristic features, knowledge of aphid fauna of Turkey is still limited compared to neighboring countries located the same zoogeographic region. For example, the aphid fauna of Greece, Iran and Georgia are known to consist of 335, 486 and 320 species, respectively, despite these countries having lower floristic diversity than Turkey (Barjadze et al., 2010; Rezwani, 2010; Margaritopoulos et al., 2013). More comprehensive studies are needed to reveal the biological richness of Turkey.

Çanakkale and Balıkesir Provinces area, called the South Marmara Region, which is an important link between Europe and Asia. The region has a Mediterranean climate and includes the Biga Peninsula, Edremit Gulf and Kaz Dağları (Ida Mountains) which are known to have a high degree of endemic floristic diversity. For example, there are about 800 plant taxa in the Kazdağı National Park and 68 of them are endemic to Turkey (Özhatay & Özhatay, 2005).

It is thought that aphid species found on other zoogeographical regions, especially in Europe, are likely to also occur in different regions of Turkey because of Turkey's position at the junction of Europe and Asia. Also, it is thought that global climate change may accelerate the migration of invasive aphid species between regions and continents (Kollar & Barta, 2016). This study aimed to determine aphid's species, and to contribute new species and hosts, in Çanakkale and Balıkesir Provinces in the South Marmara Region of Turkey. Also, the aim was to provide a details of host plants, body measurements, illustrations and diagnostic features of the new aphid records in order to support comprehensive and specific studies of aphids in Turkey.

Material and Method

Aphid sampling

Aphid were collected from their host plants in Çanakkale and Balıkesir Provinces of Turkey between March and November from 2017 to 2018 (Figure 1). Apterous and alate specimens from host plants were transferred with a soft brush (#00) to Eppendorf tubes containing 70% alcohol in sufficient numbers for laboratory study.

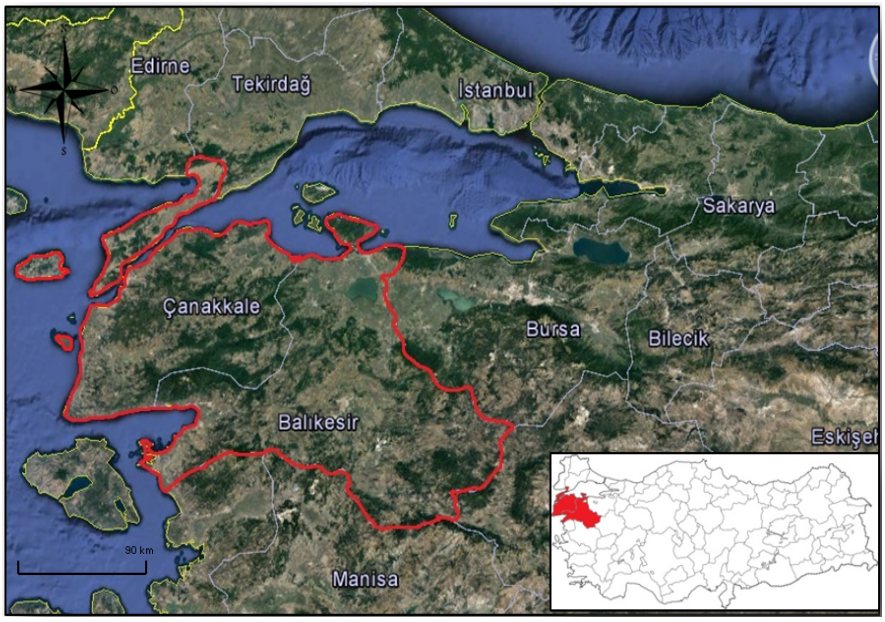


Figure 1. The sampling area of aphids in South Marmara region of Turkey (adapted from www.google.com/maps).

Collection, preparation and identification of aphid specimens

The collection and preparation of the specimens followed the method of Hille Ris Lambers (1950). Aphid species were determined using a LEICA DM 2500 microscope and LAS 4.1 version software according to Blackman & Eastop (2006; 2018). For new records, measurements of morphological characters, ratios of different body parts and chaetotaxy were made. Taxonomic status of all aphid species followed Favret (2018).

Abbreviations of morphological characters used in this study are: BL, body length; HW, head width; ANT, whole antenna length; ANT I, ANT II, ANT III, ANT IV, ANT V and ANT VI, antennal segments lengths; ANT III BD, antennal segment III basal diameter; LsH on ANT III, antennal segment III longest hair length; ANT VI base, antennal segment VI base length; ANT VI PT, processus terminalis of antennal segment VI; Urs (R IV+V), ultimate rostral segment length; HFem, hind femur length; HTib, hind tibia length; Ht I, hind tibia first segment length; Ht II, hind tibia second segment length; siph., siphinculi; Hairs on ABD tergite III, abdominal tergite segment III hair length; apt., apterous viviparous female; and alt, alate viviparous female.

Identification of all aphid species in this study were made by the senior author (ŞK), with confirmation of the new record of *Dysaphis radicola meridialis* Shaposhnikov, 1964 and some other species provided by Assoc. Prof. Dr. Shalva Barjadze (Institute of Zoology, Ilia State University, Tbilisi, Georgia). The host plants were identified by Assoc. Prof. Dr. Ersin Karabacak (Department of Biology, Faculty of Arts and Science, Çanakkale Onsekiz Mart University). Permanent slides of all aphid species collected have been deposited in the Department of Plant Protection, Faculty Agriculture, Çanakkale Onsekiz Mart University and Institute of Zoology, Ilia State University, Tbilisi, Georgia.

Results and Discussion

In total, 74 aphid species including three subspecies from 34 genera belong to five subfamilies, Aphidinae, Calaphidinae, Chaitophorinae, Eriosomatinae and Lachninae, of the Aphididae family were identified with their host plants from Çanakkale and Balıkesir Provinces in South Marmara Region of Turkey. Of these, *D. radicola meridialis*, is a new subspecies record for the aphid fauna of Turkey from Çanakkale Province. Also, its morphological features, detailed measurements of morphometric characters, illustrations, distribution and biology are detailed in this report. Of the 74 species collected, 72 belong to 33 genera from Çanakkale and 28 species belong to 16 genera from Balıkesir. Most of these species are

reported for the first time in both provinces as there have been relatively limited faunal studies of aphids in these provinces. Also, 96 host plant species belong to 37 families were found and are detailed below. Comparison of these data and that of previous studies revealed three new host records; *Ajuga orientalis* L. (Lamiaceae) for *Aulacorthum (Aulacorthum) solani* (Kaltenbach), *Cynoglossum creticum* Mill. (Boraginaceae) for *Acyrthosiphon (Acyrthosiphon) malvae* (Mosley) and *Tragopogon porrifolius* L. (Asteraceae) for *Trama (Neotrama) caudata* Del Guercio (Tuatay, 1988; Toros et al., 2002; Ölmez Bayhan et al., 2003; Görür, 2004; Özdemir et al., 2005; Eser et al., 2009; Akyürek et al., 2012; Sangün & Satar, 2012; Kuloğlu & Özder, 2017; Öztürk & Muştu, 2017). Taxonomic status, host plants, collection date and locality for the determined aphid species, with detailed taxonomic information of *D. radicola meridialis,* follow.

Family Aphididae

Subfamily Aphidinae

***Acyrthosiphon (Acyrthosiphon) lactucae* (Passerini, 1860)**

Material examined. Balıkesir, Edremit, 03.VI.2017, apt. 3♀♀, alt. 1♀, *Lactuca* sp. (Asteraceae); Çanakkale, Taşlıtarla, 31.V.2017, apt. 2♀♀, alt. 1♀, *Lactuca* sp. (Asteraceae).

***Acyrthosiphon (Acyrthosiphon) malvae* (Mosley, 1841)**

Material examined. Çanakkale, Umurbey, 01.V.2017, apt. 4♀♀, alt. 2♀♀, *Cynoglossum creticum* Mill. (Boraginaceae).

Comments. *Cynoglossum creticum* was not recorded as host plant for *A. malvae* in Turkey. The host plants determined in different regions of Turkey for *A. malvae* are given below.

Hosts in Turkey. This species has been reported on *Agrimonia* sp. (Rosaceae), *Geranium* sp. (Geraniaceae) and *Solanum* sp. (Solanaceae) (Tuatay & Remaudière, 1964; Çanakçıoğlu, 1975; Görür et al., 2009; Akyürek, 2013).

***Acyrthosiphon (Acyrthosiphon) pisum* (Harris, 1776)**

Material examined. Balıkesir, Gönen, 14.V.2017, apt. 4♀♀, alt. 2♀♀, *Medicago sativa* L. (Leguminosae); Susurluk, 14.V.2017, apt. 3♀♀, alt. 2♀♀, *M. sativa*; Çanakkale, Assos, 31.III.2017, apt. 4♀♀, alt. 2♀♀, *M. sativa*; Çan, 16.IV.2017, apt. 2♀♀, alt. 2♀♀, *M. sativa*; Eceabat, 06.V.2017, apt. 1♀, alt. 1♀, *M. sativa*.

***Aphis (Aphis) arbuti* Ferrari, 1872**

Material examined. Çanakkale, Yenice, 13.VI.2017, apt. 2♀♀, alt. 1♀, *Arbutus unedo* L. (Ericaceae).

***Aphis (Aphis) catalpae* Mamontova, 1953**

Material examined. Çanakkale, Central, 08.VI.2017, apt. 3♀♀, *Catalpa bignonioides* Walter (Bignoniaceae).

***Aphis (Aphis) craccivora* Koch, 1854**

Material examined. Balıkesir, Gönen, 27.IV.2017, apt. 2♀♀, alt. 1♀, *M. sativa*; İvrindi, 18.V.2018, apt. 1♀, alt. 1♀, *Amaranthus albus* L. (Amaranthaceae); Çanakkale, Biga, 12.V.2018, apt. 1♀, alt. 1♀, *Trifolium* sp. (Leguminosae); Central, 23.IV.2017, apt. 1♀, alt. 1♀, *Vicia faba* L. (Leguminosae); Central, 08.VI.2017, apt. 1♀, alt. 1♀, *Robinia pseudoacacia* L. (Leguminosae); Çiftlikköy, 22.IV.2018, apt. 1♀, alt. 1♀, *Trifolium stellatum* L. (Leguminosae); Musaköy, 21.VII.2017, apt. 1♀, alt. 1♀, *A. albus*; apt. 1♀, alt. 1♀, *Portulaca oleracea* L. (Portulacaceae); apt. 1♀, alt. 1♀, *Tribulus terrestris* L. (Zygophyllaceae); apt. 1♀, alt. 1♀, *Amaranthus retroflexus* L. (Amaranthaceae); Taşlıtarla, 24.V.2017, apt. 1♀, alt. 1♀, *Capsella rubella* Reut. (Brassicaceae); apt. 1♀, alt. 1♀, *M. sativa*.

***Aphis (Aphis) craccivora pseudacaciae* Takahashi, 1966**

Material examined. Çanakkale, Central, 02.VI.2017, apt. 3♀♀, alt. 1♀, *R. pseudoacacia*.

***Aphis (Aphis) fabae* Scopoli, 1763**

Material examined. Balıkesir, Havran, 26.IV.2018, apt. 1♀, alt. 1♀, *Chenopodium album* L. (Amaranthaceae); Susurluk, 14.V.2017, apt. 2♀♀, alt. 1♀, *Rumex* sp. (Polygonaceae); Çanakkale, Anzac Cove, 06.V.2017, apt. 1♀, alt. 1♀, *Rumex crispus* L. (Polygonaceae); Bayramiç, 16.IV.2018, apt. 2♀♀, alt. 1♀, *Rumex* sp.; Central, 20.V.2017, apt. 3♀♀, *Silybum marianum* (L.) Gaertn. (Asteraceae); Musaköy, 31.V.2017, apt. 3♀♀, *Fumaria* sp. (Papaveraceae); apt. 1♀, alt. 1♀, 16.V.2017, *Rumex* sp.; Taşlıtarla, 31.V.2017, apt. 2♀♀, alt. 1♀, *C. album*.

***Aphis (Aphis) fabae mordvilkoi* Börner & Janich 1922**

Material examined. Çanakkale, Central, 02.VI.2017, apt. 5♀♀, *Philadelphus coronarius* L. (Hydrangeaceae).

***Aphis (Aphis) frangulae* Kaltenbach, 1845**

Material examined. Çanakkale, Yolindi, 12.V.2018, apt. 2♀♀, alt. 2♀♀, *Lysimachia atropurpurea* L. (Primulaceae).

***Aphis (Aphis) gossypii* Glover, 1877**

Material examined. Balıkesir, Central, 23.V.2018, apt. 2♀♀, alt. 1♀, *Malus domestica* Borkh. (Rosaceae); Çanakkale, Central, 22.IV.2017, apt. 2♀♀, alt. 1♀, *Hibiscus syriacus* L. (Malvaceae); Central, 02.VI.2017, apt. 2♀♀, alt. 1♀, *C. bignonioides*; Eceabat, 14.XII.2017, apt. 2♀♀, alt. 1♀, *Chrysanthemum* sp. (Asteraceae); Musaköy, 24.V.2017, apt. 2♀♀, alt. 1♀, *Crepis* sp. (Asteraceae); 31.V.2017, apt. 2♀♀, *M. domestica*; 31.V.2017, apt. 1♀, alt. 1♀, *Urtica urens* L. (Urticaceae); Umurbey, 01.V.2017, apt. 2♀♀, alt. 2♀♀, *Veronica* sp. (Plantaginaceae).

***Aphis (Aphis) hederae* Kaltenbach, 1843**

Material examined. Çanakkale, Central, 27.IV.2017, apt. 4 ♀♀, *Hedera helix* L. (Araliaceae).

***Aphis (Aphis) nerii* Boyer de Fonscolombe, 1841**

Material examined. Balıkesir, Central, 12.VI.2017, apt. 2♀♀, alt. 2♀♀, *Nerium oleander* L. (Apocynaceae); Çanakkale, Dardanos, 24.V.2017, apt. 2♀♀, *N. oleander*; Kepez, 20.05.2018, apt. 2♀♀, N. *oleander*; Taşlıtarla, 24.V.2017, apt. 4♀♀, alt. 2♀♀, *Cynanchum acutum* L. (Apocynaceae).

***Aphis (Aphis) pomi* De Geer, 1773**

Material examined. Çanakkale, Central, 08.VI.2017, apt. 4♀♀, alt. 2♀♀, *Malus floribunda* Siebold ex Van Houtte (Rosaceae).

***Aphis (Aphis) punicae* Passerini, 1863**

Material examined. Çanakkale, Central, 20.V.2017, apt. 5♀♀, *Punica granatum* L. (Lythraceae).

***Aphis ruborum* (Börner, 1932)**

Material examined. Çanakkale, Gallipoli Peninsula, 7.IV.2018, apt. 4♀♀, alt. 2♀♀, *Rubus* sp. (Rosaceae). Musaköy, 29.III.2017, apt. 3♀♀, alt. 1♀, *Rubus caesius* L.

***Aphis (Aphis) rumicis* Linnaeus, 1758**

Material examined. Balıkesir, Susurluk, 14.V.2017, apt. 4♀♀, alt. 1♀, *R. crispus*; Çanakkale, Biga, 12.V.2018, apt. 4♀♀, alt. 1♀, *Rumex pulcher* L. (Polygonaceae).

***Aphis (Aphis) sambuci* Linnaeus, 1578**

Material examined. Çanakkale, Central, 15.IV.2017, apt. 5♀♀, *Sambucus nigra* L. (Adoxaceae).

***Aphis (Aphis) solanella* Theobald, 1914**

Material examined. Balıkesir, Susurluk, 14.V.2017, apt. 6♀♀, alt. 2♀♀, *Matricaria* sp. (Asteraceae); Çanakkale, Çıplak, 31.III.2017, apt. 3♀♀, alt. 1♀, *U. urens*; Musaköy, 16.V.2017, apt. 4♀♀, *Rumex* sp. (Polygonaceae); 16.V.2017, apt. 3♀♀, alt. 1♀, *Papaver rhoeas* L. (Papaveraceae); 31.V.2017, apt. 2♀♀, *C. album*; 21.VII.2017, apt. 4♀♀, *Solanum americanum* Mill. (Solanaceae); Taşlıtarla, 24.V.2017, apt. 2♀♀, *Cirsum* sp. (Asteraceae).

***Aphis (Aphis) spiraecola* Patch, 1914**

Material examined. Balıkesir, Central, 10.VI.2017, apt. 3♀♀, alt. 1♀, *Prunus avium* L. (Rosaceae); Çanakkale, Central, 02.VI.2017, apt. 4♀♀, *Spiraea* x *vanhouttei* (Briot) Zabel (Rosaceae); 08.VI.2017, apt. 4♀♀, alt. 1♀, *Viburnum opulus* L. (Adoxaceae); 12.V.2018, apt. 2♀♀, alt. 1♀, *Pittosporum tobira* (Thunb.) W.T. Aiton (Pittosporaceae); 20.V.2018, apt. 2♀♀, *N. oleander*); 15.06.2018, apt. 3♀♀, alt. 1♀, *Chrysanthemum* sp. (Asteraceae) ; Dardanos, 16.V.2017, apt. 2♀♀, alt. 1♀, *P. avium*; 24.V.2017, apt. 1♀, alt. 1♀, *N. oleander*; 31.V.2017, *apt.* 2♀♀, alt. 1♀, *Viburnum tinus* L. (Adoxaceae).

***Aphis (Aphis) umbrella* (Börner, 1950)**

Material examined. Balıkesir, Gönen, 10.VI.2018, apt. 3♀♀, alt. 2♀♀, *Malva* sp. (Malvaceae); Çanakkale, Gallipoli Peninsula, 7.IV.2018, apt. 3♀♀, alt. 1♀, *M. sylvestris* L.; Kepez, 04.IV.2017, apt. 3♀♀, alt. 1♀, *Malva* sp.

***Aphis (Aphis) vallei* Hille Ris Lambers & Stroyan, 1959**

Material examined. Çanakkale, Küçükanafarta, 06.V.2017, apt. 6♀♀, *Euphorbia rigida* M. Bieb. (Euphorbiaceae).

***Aphis (Aphis) viticis* Ferrari, 1872**

Material examined. Çanakkale, Central, 11.V.2018, apt. 3♀♀, *Vitex agnus-castus* L. (Lamiaceae); Gallipoli Peninsula, 06.V.2017, apt. 2♀♀, alt. 2♀♀, *V. agnus-castus* L.

***Aulacorthum (Aulacorthum) solani* (Kaltenbach, 1843)**

Material examined. Balıkesir, Ida Mountains, 13.V.2017, apt. 4♀♀, alt. 2♀♀, *A. orientalis*.

Comments. *Aulacorthum solani* was not recorded as host plant for *A. solani* in Turkey. The host plants determined in different regions of Turkey for *A. solani* are given below. Both adult apterous-alate female and nymph of *A. solani* were found under the leaves of *A. orientalis,* which is quite hairy-dusty and distributed in foothills of Ida Mountains including in both Çanakkale and Balıkesir Provinces.

Hosts in Turkey. *Antirrhinum* sp. (Plantaginaceae)*, Begonia semperflorens* Link & Otto (Begoniaceae)*, Canna indica* L. (Cannaceae), *Cydonia oblonga* Mill. (Rosaceae)*, Dianthus anatolicus* Boiss. and *Dianthus barbatus* L. (Caryophyllaceae)*, Hydrangea macrophylla* (Thunb.) Ser. (Hydrangeaceae), *Lactuca* sp. (Asteraceae), *Lycopersicum esculentum* L. (Solanaceae)*, N. oleander*, *Rubus* sp. (Rosaceae); *Taraxacum scaturiginosum* G. Hagl. (Asteraceae)*, Tulipa gesneriana* L. (Liliaceae), *Veronica anagalloides* Guss. (Scrophulariaceae); *Viburnum orientale* Pall (Adoxaceae); *Yucca flamentosa* L. (Asparagaceae) (Tuatay, 1988; Toros et al., 2002; Ölmez Bayhan et al., 2003; Görür, 2004; Eser et al., 2009; Akyürek et al., 2012; Sangün & Satar, 2012; Kuloğlu & Özder, 2017; Öztürk & Muştu, 2017).

***Brachycaudus (Thuleaphis) amygdalinus* (Schouteden, 1905)**

Material examined. Çanakkale, Central, 15.IV.2017, apt. 2♀♀, alt. 2♀♀, *Prunus cerasifera* Ehrh. (Rosaceae); Ezine, 22.IV.2017, apt. 3♀♀, alt. 1♀, *Prunus persica* (L.) (Rosaceae).

***Brachycaudus (Prunaphis) cardui* (Linnaeus, 1758)**

Material examined. Balıkesir, Balya, 12.VI.2017, apt. 2♀♀, alt. 1♀, *Cirsium* sp. (Asteraceae); Çanakkale, Biga, 12.V.2018, apt. 3♀♀, alt. 2♀♀, *Carduus pycnocephalus* L. (Asteraceae); Kepez, 04.IV.2017, apt. 3♀♀, alt. 1♀, *Cynara* sp. (Asteraceae); Taşlıtarla, 24.V.2017, apt. 4♀♀, *Cirsium* sp. (Asteraceae).

***Brachycaudus (Brachycaudus) helichrysi* (Kaltenbach, 1843)**

Material examined. Balıkesir, Susurluk, 14.V.2017, apt. 4♀♀, alt. 2♀♀, *Matricaria* sp. (Asteraceae); Çanakkale, Central, 27.IV.2017, apt. 6♀♀, alt. 1♀, *Calendula officinalis* L. (Asteraceae); Çiftlikköy, 22.IV.2018, apt. 5♀♀, *Carduus pycnocephalus* L.(Asteraceae) ; Taşlıtarla, 12.IV.2017, apt. 5♀♀, alt. 3♀♀, *Prunus domestica* L. (Rosaceae)

***Brachyunguis (Brachyunguis) tamaricis* (Lichtenstein, 1886)**

Material examined. Çanakkale, Central, 5.VI. 2017, apt. 5♀♀, alt. 3♀♀, *Tamarix* sp. (Tamaricaceae).

***Brevicoryne brassicae* (Linnaeus, 1758)**

Material examined. Balıkesir, Susurluk, 14.V.2017, apt. 4♀♀, alt. 2♀♀, *Brassica nigra* (L.) K. Koch (Brassicaceae); Çanakkale, Assos, 31.III.2017, apt. 3♀♀, alt. 2♀♀, *Brassica oleracea* L. (Brassicaceae); Halileli, 05.XII.2017, apt. 2♀♀, alt. 1♀, *B. oleracea*; Taşlıtarla, 24.V.2017, apt. 5♀♀, *Capsella rubella* Reut. (Brassicaceae).

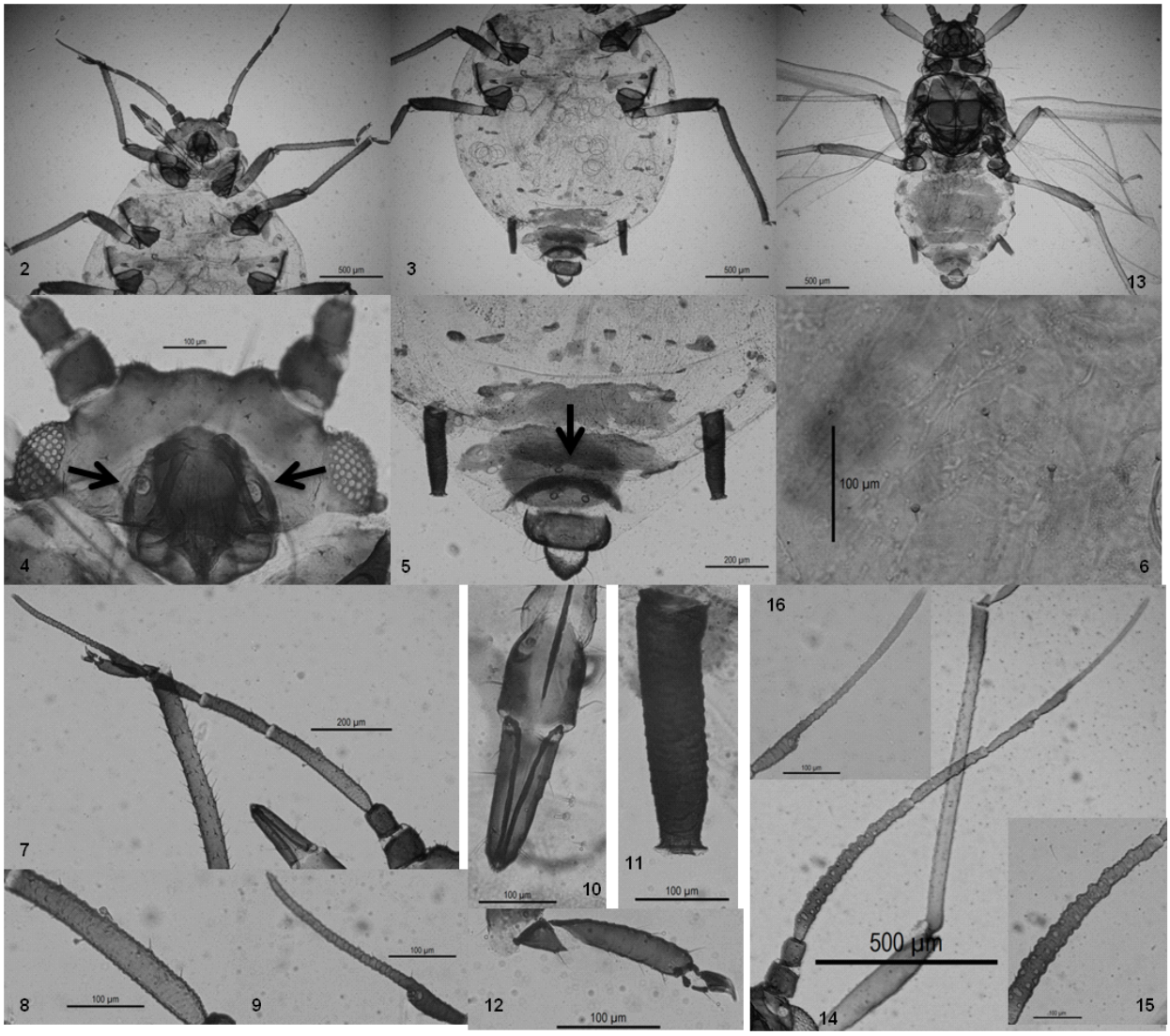
***Dysaphis (Pomaphis) plantaginea* (Passerini, 1860)**

Material examined. Çanakkale, Central, 11.V.2017, 4♀♀, alt. 1♀, *M. domestica*.

***Dysaphis radicola meridialis* Shaposhnikov, 1964**

Dysaphis radicola meridialis collected from root of *Rumex* sp. (Polygonaceae) is a new subspecies record for the aphid fauna of Turkey from Çanakkale.

Description. Color in living specimens is greenish gray to dark gray with waxy-powdered appearance. Color of apterous viviparous female specimens on slide; ANT I and II brown or dark brown, ANT III and IV pale or dusky, ANT V and base of ANT VI brown or dark brown, PT of ANT VI pale or dusky; head dusky; legs pale brown, brown or dark brown; coxa dark, trochanter dusky, femur dark brown with paler base, tibia pale or dusky with dark brown apices; II and III segments of rostrum generally pale, while URS dusky or brown; siphinculi and cauda dark. Alate viviparous females have a widely patch on ABD Tergite II between V. Body of apterous viviparous female elliptical (Figures 2 and 3); BW 0.62-0.68 x BL. ANT PT 2.67-2.95 x ANT VI Base. Antennal tubercle weakly developed. ANT III, IV and V of apterous female without secondary rhinaria while ANT III, IV and V of alate female 46-47, 11-12, 0 on secondary rhinaria, respectively (Figures 7, 8, 14 and 15). The number of hairs of antennal segments: ANT I 4-6, ANT II 2-3 and ANT III 9-11. Longest hairs on ANT III 0.014-0.015 mm, 0.50-0.52 x ANT BD III. Dorsum of head, thorax and abdomen reticulate. Marginal tubercle always present ABD Tergite I-VII; Spinal tubercles present on prothorax (1) and ABD tergite 7 (1) and 8 (2) (Figures 4 and 5). Rostrum about reaches to the hind coxae, URS 1.43-1.47 x HT II, 4 hairs present on URS (Figure 10). Hairs on ABD tergite III are 0.010-0.012 mm, shorter than ANT BD III. Siphunculi dark, cylindrical, narrowed to the apex and slightly sigmoid (Figure 11), siph. 1.89 x 2.22 cauda. Cauda escutcheon shape, its length 0.66-0.80 x width (Table 1).



Figures 2-16. *Dysaphis radicola meridialis:* 2,3 - body of apterous viviparous female; 4,5 - Spinal tubercles on head and ABD tergite 7 and 8 of apterous female; 6 - Hairs on ABD tergite 3 of apterous female; 7 - ANT segments of apterous female; 8,9 - ANT III and PT and base of ANT VI of apterous female; 10 - URS of apterous female; 11 - Siph. of apterous female; 12 - HT I and HT II of apterous female; 13 - body of alate viviparous female; 14 - ANT of alate female; 15,16 - seconder rhinaria on ANT III-IV and PT of ANT VI of alate female.

Material examined. To identify this new subspecies for the aphid fauna of Turkey, six apterous viviparous females and four alate viviparous females on three slides were examined and measurements made (Table 1). Specimens of this species were collected from the Biga District of Çanakkale, 40°15'17.1" N 27°13'12.5" E, 16.V.2017.

Table 1. The morphometric data (mm) of *Dysaphis radicola meridialis* from Çanakkale

Morphometric characters		*Dysaphis radicola meridialis*	
		Apterous female (n=6)	Alate female (n=4)
Length of body parts (mm)	BL	2.652-2.900	2.089-2.490
	HW	0.507-0.577	0.493-0.515
	ANT	1.135-1.193	1.526-1.542
	ANT I	0.083-0.092	0.081-0.082
	ANT II	0.074-0.081	0.079-0.080
	ANT III	0.300-0.383	0.490-0.501
	ANT III BD	0.027-0.030	0.026-0.028
	LsH on ANT III	0.014-0.015	0.011-0.012
	ANT IV	0.161-0.214	0.247-0.267
	ANT V	0.125-0.163	0.160-0.172
	ANT VI	0.376-0.414	0.446-0.463
	ANT VI base	0.100-0.115	0.106-0.109
	ANT VI PT	0.275-0.299	0.337-0.357
	Urs (R IV+V)	0.194-0206	0.183-0.200
	H Fem	0.542-0.656	0.643-0.701
	H Tib	0.951-1.110	1.203-1.291
	Ht I	0.041-0.051	0.042-0.043
	Ht II	0.132-0.140	0.135-0.136
	Siph.	0.246-0.274	0.210-0.229
	Cauda length	0.111-0.145	0.125-0.139
	Cauda width	0.160-0.180	0.135-0.147
	Hairs on ABD tergite III	0.010-0.012	0.009-0.010
Number of setae on various body parts	Ant I	4-6	4
	Ant II	2-3	2-3
	Ant III	9-11	6-7
	Urs (R IV+V)	4	4
	Cauda	5-6	4-6
Number of seconder rhinaria on antenal segments	Ant III	0	46-47
	Ant IV	0	11-12
	Ant V	0	0

Table 1. (Continued)

Morphometric characters		*Dysaphis radicola meridialis*	
		Apterous female (n=6)	Alate female (n=4)
Ratios of various body parts (mm)	Whole antenna / Body	0.40-0.69	0.62-0.73
	Pt / Base	2.67-2.95	3.09-3.53
	Pt / Ant III	0.78-0.92	0.67-0.73
	Urs / Ht II	1.43-1.47	1.36-1.47
	Siph. / Ant III	0.72-0.85	0.42-0.47
	Siph. / Body length	0.09-0.10	0.09-0.10
	Siph. / Cauda	1.89-2.22	1.65-1.68
	Siph. / Hind femur	0.42-0.47	0.33-0.34
	Cauda length / Cauda width	0.66-0.80	0.92-0.95
	LsH on Ant III / BD III	0.47-0.54	0.39-0.42

An identification keys the species of the genus of *Dysaphis* Börner, 1931 for apterous females found worldwide (After Blackman & Eastop, 2018);

1. Cauda helmet-shaped and bearing 4-8 hairs 2

- Cauda tongue-shaped, finger-shaped, rounded, bluntly triangular and bearing more than 8 hairs…….....other genera (including *Acyrthosiphon*, *Aphis*, *Brachyunguis* and *Macrosiphum*)

2. Spinal tubercles (STu) usually present on head and ABD tergite 8, or 7 and 8. Marginal tubercles (MTu) usually present. Siph. without subapical annular incision 3

- STu absent, and MTu sporadically present. Siph. with subapical annular …….....…..other genus (*Brachycaudus cardui* and *B. helichrysi*)

3. STu present on all segments from head to ABD tergite 8 4

- STu only on head and ABD tergite 8, or 7 and 8 5

4. Hairs on ANT III and ABD tergite 1-5 fine-pointed, on ANT III longer than 45 µm, 2 or more × ANT BD III. R IV+V 1.55-1.70 × HT II ..... *Dysaphis rumecicola*

- Hairs on ANT III and ABD tergite 1-5 with blunt apices, on ANT III being less than 45 µm long, less than 2 × BD III. R IV+V 1.3-1.6 × HT II ..... *Dysaphis emicis*

5. Siph. 1.2-1.8 × cauda. Longest hairs on ABD tergite 3: 24-39 µm long, as long as or longer than ANT BD III ..... *Dysaphis foeniculus*

- Siph. 2.0-2.5 × cauda. Longest hairs on ABD tergite 3: 8-23 µm long, shorter than ANT BD III 6

6. Longest hairs on ANT III 20-40 µm long, 0.9-1.5 × BD III ..... *Dysaphis radicola* s. str.

- Longest hairs on ANT III 8-13 µm long, 0.4-0.7 × BD III ..... *Dysaphis radicola meridialis*

Host plant: Apterous females and nymphs of *D. radicola meridialis* were collected from the roots of *Rumex* sp. (Polygonaceae).

Distribution. Armenia, Austria Hungary, Azerbaijan, Belarus, Britain, Bulgaria, Czech Republic, Denmark, France, Georgia, Great Greece, Iran, Italy, Japan. Lithuania, Moldova, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, South Korea, Spain, Sweden and Ukraine (Stekolshchikov, 2006).

Biology. Spring generations of *D. radicola* cause the rolling of and red galls on the lateral margins of the leaves of *Malus* spp. such as *M. domestica*, *M. orientalis and M. sylvestris*. While their fundatrix (first hatched aphid females following winter) occur in galls formed by a longitudinal down folding of the tip of leaf, fundatrigeniae live in galls formed by a downward enrolling of the margin of the leaf. Alate migrants arise from the second generation and migrate to stem and leaf bases near the root of *Rumex* spp. from early May to mid-June in the northern areas (Leningrad Province) and the southern areas (North Caucasus, Crimea). Subsequently, this species remigrates to *Malus* from late August to early November in the northern areas (Sweden, Leningrad Province) and in the southern areas (North Caucasus, Crimea). While the first males appear a few days later than gynoparae forms, the first oviparous females on leaves of *Malus* spp. were reported early September in Leningrad Province (Russian Federation) and in late October in the North Caucasus (Stekolshchikov, 2006).

Comments. *Dysaphis radicola* was initially identified by Mordvilko (1897) as a result of examination on numerous apterous and alate females collected from *R. crispus* in Poland in 1895. Afterwards, Shaposhnikov (1964) described the southern populations of this species as a subspecies, *Dysaphis radicola meridialis* Shaposhnikov, 1964, with short hairs on the body. However, after numerical analysis, it was suggested that *D. radicola meridialis* is a synonym of *D. radicola radicola* (Mordvilko, 1897). However, there are still differences of opinion between authors on this subject. Therefore, it was reported as *D. radicola meridialis* as in Blackman & Eastop (2018). This subspecies is newly recognized in Turkey. *Dysaphis* consists of 14 species in Turkey. These species are *Dysaphis affinis* (Mordvilko, 1928), *D. crataegi* (Kaltenbach, 1843), *D. devecta* (Walker, 1849), *D. emicis* (Mimeur, 1935), *D. foeniculus* (Theobald, 1923), *D. lauberti* (Börner, 1940), *D. tulipae* (Boyer de Fonscolombe, 1841), *D. (Cotoneasteria) microsiphon* (Nevsky, 1929), *D. (Pomaphis) aucupariae* (Buckton, 1879), *D. (Pomaphis) pavlovskyana* Narzikulov, 1957, *D. (Pomaphis) plantaginea* (Passerini, 1860), *D. (Pomaphis) pyri* (Boyer de Fonscolombe, 1841), *D. (Pomaphis) reaumuri* (Mordvilko, 1928) and *D. (Pomaphis) sorbi* (Kaltenbach, 1843) (Görür et al., 2012).

***Hayhurstia atriplicis* (Linnaeus, 1761)**

Material examined. Çanakkale, Musaköy, 31.V.2017, apt. 6♀♀, alt. 2♀♀, *C. album*.

***Hyalopterus amygdali* (Blanchard, 1840)**

Material examined. Balıkesir, Central, 14.V.2017, apt. 1♀, alt. 1♀, *Prunus. armeniaca* L. (Rosaceae); apt. 6♀♀, alt. 3♀♀, *Prunus dulcis* (Mill.) D. A. Webb and *Prunus cerasifera*, Çanakkale-Central,11.V.2017.

***Hyalopterus pruni* (Geoffroy, 1762)**

Material examined. Balıkesir, Balya, 13.V.2017; apt. 2♀♀, alt. 2♀♀, *Phragmites australis* (Cav.) Trin. ex Steud. (Poaceae); Çanakkale, Taşlıtarla, 16.V.2017, apt. 4♀♀, alt. 2♀♀, *P. domestica*.

***Hyperomyzus (Hyperomyzus) lactucae* (Linnaeus, 1758)**

Material examined. Balıkesir, Ida Mountains, 13.VI.2017, apt. 2♀♀, alt. 2♀♀, *Sonchus* sp. (Asteraceae); Çanakkale, Kepez, 04.IV.2017, apt. 2♀♀, alt. 2♀♀, *Sonchus* sp.

***Liosomaphis berberidis* (Kaltenbach, 1843)**

Material examined. Balıkesir, Central, 12.VI.2018, apt. 5♀♀, *Berberis thunbergii* DC. (Berberidaceae); Çanakkale, Central, 01.V.2017, apt. 5♀♀, alt. 2♀♀, *B. thunbergii*; 15.IV.2017, apt. 2♀♀, alt. 1♀, *Berberis aquifolium* Pursh.

***Macrosiphoniella (Macrosiphoniella) sanborni* (Gillette, 1908)**

Material examined. Çanakkale, Eceabat, 14.XII.2017, apt. 5♀♀, alt. 2♀♀, *Chrysanthemum* sp. (Asteraceae).

***Macrosiphum (Macrosiphum) euphorbiae* (Thomas, 1878)**

Material examined. Çanakkale, Central, 10.VI.2017, apt. 5♀♀, alt. 1♀, *Petunia* sp. (Solanaceae); Eceabat, 08.IV.2017, apt. 2♀♀, alt. 1♀, *Rosa* sp. (Rosaceae).

***Macrosiphum (Macrosiphum) funestum* (Macchiati, 1885)**

Material examined. Çanakkale, Yenice, Ida Mountains, 13.VI.2017, apt. 5♀♀, alt. 2♀♀, *Rubus* sp.

***Macrosiphum (Macrosiphum) rosae* (Linnaeus, 1758)**

Material examined. Balıkesir, Edremit, 13.VI.2017, 2♀♀, alt. 1♀, *Rosa* sp. (Rosaceae); Çanakkale, Biga, Hacıköy, 12.V.2018, 4♀♀, alt. 2♀♀, *Scabiosa* sp. (Caprifoliaceae); Eceabat, 08.IV.2017, apt. 5♀♀, *Rosa* sp.

***Myzus (Myzus) cerasi* (Fabricius, 1775)**

Material examined. Çanakkale, Musaköy, 13.V.2017, apt. 3♀♀, alt. 2♀♀, *P. avium*; Taşlıtarla, 19.V.2018, apt. 5♀♀, alt. 3♀♀, *P. avium.*

***Myzus (Nectarosiphon) persicae* (Sulzer, 1776)**

Material examined. Balıkesir, Edremit, 10.VI.2017, apt. 4♀♀, alt. 3♀♀, *Prunus persica* (Rosaceae); Çanakkale, Central, 02.VI.2017, apt. 2♀♀, alt. 1♀, *C. bignonioides*; Halileli, 05.XII.2017, apt. 5♀♀, alt. 3♀♀, *B. oleracea*; Lâpseki, 16.V.2017, apt. 2♀♀, alt. 2♀♀, *P. persica*.

***Ovatus (Ovatus) insitus* (Walker, 1849)**

Material examined. Çanakkale, Gallipoli Peninsula, 7.IV.2018, apt. 4♀♀, alt. 2♀♀, *C. oblonga*.

***Rhodobium porosum* (Sanderson, 1900)**

Material examined. Çanakkale, Eceabat, 16.IV.2017, apt. 3♀♀, alt. 1♀, *Rosa* sp.

***Rhopalosiphum maidis* (Fitch, 1856)**

Material examined. Çanakkale, Bayramiç, 26.IX.2017, apt. 3♀♀, *Zea mays* L. (Poaceae); Ezine, Akköy, 22.IV.2017, apt. 5♀♀, *Triticum aestivum* L. (Poaceae); Musaköy, 21.VII.2017, apt. 5♀♀, *Setaria* sp. (Poaceae).

***Schizaphis* (*Schizaphis*) *graminum* (Rondani, 1847)**

Material examined. Çanakkale, Musaköy, 21.VII.2017, apt. 3♀♀, alt. 2♀♀, *Sorghum* sp. (Poaceae); 21.VII.2017, apt. 4♀♀, *Setaria* sp. (Poaceae).

***Sitobion (Sitobion) avenae* (Fabricius, 1775)**

Material examined. Balıkesir, Balya, 10.V.2017, apt. 4♀♀, *T. aestivum*; Çanakkale, Batak Plain, 15.IV.2018, apt. 5♀♀, alt. 1♀, *T. aestivum*; Belen, 22.IV.2018, apt. 3♀♀, alt. 2♀♀, *Poa* sp. (Poaceae); Biga, 12.V.2018, apt. 2♀♀, alt. 2♀♀, *Dactylis glomerata* L. (Poaceae); Biga, Gerlengeç, 12.V.2018, apt. 4♀♀, alt. 2♀♀, *Hordeum bulbosum* L. (Poaceae).

***Sitobion (Sitobion) fragariae* (Walker, 1848)**

Material examined. Balıkesir, Ida Mountains, 13.V.2017, apt. 3♀♀, alt. 2♀♀, *Anthoxanthum odoratum* L. (Poaceae); apt. 5♀♀, alt. 1♀, *D. glomerata*; Çanakkale, Büyükanafarta, 06.V.2017, apt. 3♀♀, alt. 2♀♀, *Bromus arvensis* L. (Poaceae); apt. 4♀♀, alt. 2♀♀, *Hordeum murinum* L. (Poaceae).

***Uroleucon (Uromelan) jaceae aeneum* (Linnaeus, 1758)**

Material examined. Çanakkale, Biga, 12.V.2018, apt. 5♀♀, alt. 3♀♀, *Carlina* sp. (Asteraceae).

***Uroleucon (Uroleucon) sonchi* (Linnaeus, 1767)**

Material examined. Balıkesir, Balya, 18.V.2017, apt. 3♀♀, alt. 2♀♀, *Sonchus* sp. (Asteraceae); Çanakkale, Küçükanafarta, 06.V.2017, apt. 4♀♀, alt. 2♀♀, *Sonchus* sp.

***Wahlgreniella arbuti* (Davidson, 1910)**

Material examined. Çanakkale, Ida Mountains, 13.VI.2017, apt. 4♀♀, alt. 2♀♀, *Arbutus. Unedo* L. (Ericaceae).

Subfamily Calaphidinae

***Chromaphis juglandicola* (Kaltenbach, 1843)**

Material examined. Balıkesir, Gönen, 12.VI.2018, alt. 5♀♀, *Juglans regia* L. (Juglandaceae); Çanakkale, Musaköy, 16.V.2017, alt. 6♀♀, *J. regia*.

***Eucallipterus tiliae* (Linnaeus, 1758)**

Material examined. Çanakkale, Central, 20.V.2017, alt. 4♀♀, *Tilia tomentosa* Moench (Malvaceae).

***Myzocallis (Myzocallis) carpini* (Koch, 1855)**

Material examined. Çanakkale, Yenice, Ida Mountains, 13.VI.2017, alt. 6♀♀, *Carpinus betulus* L. (Betulaceae).

***Therioaphis (Pterocallidium) trifolii* (Monell, 1882)**

Material examined. Balıkesir, Gönen, 17.VII.2018, apt. 2♀♀, alt. 4♀♀, *M. sativa*; Çanakkale, Taşlıtarla, 14.VII.2017, apt. 2♀♀, alt. 2♀♀, *M. sativa*.

***Tinocallis (Sappocallis) saltans* (Nevsky, 1929)**

Material examined. Çanakkale, Central, 27.IV.2017, alt. 6♀♀, *Ulmus minor* Mill. (Ulmaceae).

Subfamily Chaitophorinae

***Chaitophorus leucomelas* Koch, 1854**

Material examined. Balıkesir, Balya, 13.V.2017, alt. 4♀♀, *Populus* sp. (Salicaceae); Çanakkale, Gallipoli Peninsula, 06.V.2017, alt. 3♀♀, *Populus* sp. (Salicaceae).

***Chaitophorus niger* Mordvilko, 1929**

Material examined. Çanakkale, Central, 22.IV.2017, apt. 5♀♀, *Salix alba L.* (Salicaceae).

***Chaitophorus tremulae* Koch, 1854**

Material examined. Çanakkale, Anzac Cove, 06.V.2017, alt. 5♀♀, *Populus* sp. (Salicaceae).

Subfamily Eriosomatinae

***Baizongia pistaciae* (Linnaeus, 1767)**

Material examined. Çanakkale, Ezine, 05.XII.2017, apt. 2♀♀, alt. 6♀♀, *Pistacia terebinthus* L. (Anacardiaceae).

***Patchiella reaumuri* (Kaltenbach, 1843)**

Material examined. Çanakkale, Central, 01.V.2017, apt. 5♀♀, *Tilia Tomentosa* Moench (Malvaceae).

***Pemphigus* sp.**

Material examined. Çanakkale, Gallipoli Peninsula, 06.V.2017, apt. (fundatrix) 3♀♀, *Populus* sp. (Salicaceae)

Comments. In this study, three apterous fundatrix of this species were obtained from galls on a poplar tree. The main identification keys for aphids forming galls or pseudogalls on *Populus* spp. are based on alate females, and apterous females in a rare case. Therefore, the identification of aphids based on the fundatrix could not be performed, and the species given as *Pemphigus* sp. in this study.

***Pemphigus* (*Pemphigus*) *immunis* Buckton, 1896**

Material examined. Çanakkale, Dardanos, 31.V.2017, alt. 5♀♀, *Populus* sp. (Salicaceae).

***Periphyllus obscurus* Mamontova, 1955**

Material examined. Çanakkale, Yenice, 13.VI.2017, apt. 5♀♀, *Acer campestre* L. (Sapindaceae).

***Tetraneura* (*Tetraneura*) *caerulescens* (Passerini, 1856)**

Material examined. Çanakkale, Central, 10.V.2017, alt. 4♀♀, *Ulmus* sp. (Ulmaceae).

***Tetraneura* (*Tetraneurella*) *nigriabdominalis* Sasaki, 1899**

Material examined. Çanakkale, Central, 20.V.2017, alt. 5♀♀, *Ulmus minor* Mill. (Ulmaceae).

***Tetraneura* (*Tetraneura*) *ulmi* (Linnaeus, 1758)**

Material examined. Çanakkale, Umurbey, 01.V.2017, apt. 6♀♀, *Alopecurus* sp. (Poaceae).

Subfamily Lachninae

***Cinara* (*Cinara*) *brauni* Börner, 1940**

Material examined. Balıkesir, Ida Mountains, 13.V.2017, apt. 3♀♀, *Pinus nigra* subsp. *pallasiana* (Lamb.) Holmboe sp. (Pinaceae).

***Cinara (Cinara) cedri* Mimeur, 1936**

Material examined. Çanakkale, Central, 08.VI.2017, apt. 5♀♀, *Cedrus deodara* (Roxb. ex D. Don) G. Don (Pinaceae).

***Cinara* (*Cupressobium*) *fresai* Blanchard, 1939**

Material examined. Çanakkale, Central, 15.IV.2017, apt. 5♀♀, *Cupressus arizonica* Greene (Cupressaceae); 22.IV.2017, apt. 4 ♀♀, *Juniperus sabina* L. (Cupressaceae).

***Cinara* (*Cupressobium*) *oxycedri* Binazzi, 1996**

Material examined. Çanakkale, Gallipoli Peninsula, 7.IV.2018, apt. 6♀♀, *Juniperus oxycedrus* L. (Cupressaceae).

***Cinara* (*Cinara*) *pini* (Linnaeus, 1758)**

Material examined. Çanakkale, Bayramiç, 26.IX.2017, apt. 6♀♀, alt. 2♀♀, *Pinus* sp. (Pinaceae).

***Cinara* (*Cupressobium*) *tujafilina* (Del Guercio, 1909)**

Material examined. Çanakkale, Central, 02.VI.2017, apt. 6♀♀, *Platycladus orientalis* (L.) Franco (Cupressaceae).

***Trama* (*Neotrama*) *caudata* Del Guercio, 1909**

Material examined. Çanakkale, Umurbey, 01.V.2017, apt. 8♀♀, *T. porrifolius*.

Comments. *Trama porrifolius* subsp. *longirostris* has not been recorded as host plant for *T. caudata* in Turkey. The apterous females and nymphs of *T. caudata* were collected from roots of the plant. The host plants determined in different regions of Turkey for *T. caudata* are given below.

Hosts in Turkey. This species was reported on *Cirsium arvense* (L.) Scop. and *C. pycnocephalus* from Elmadağ and Gölbaşı in Ankara (Özdemir et al., 2005).

The present and other studies show that the comprehensive regional faunal studies of aphids are important for reporting new records and to better understand their relationship with host plants. In Turkey, despite its location between Europe and Asia, and its floristic and faunistic richness, the aphid fauna of Turkey is still inadequately known compared neighboring countries in the same zoogeographic region. For example, the aphid fauna of Greece, Iran and Georgia includes 335, 486 and 320 species, respectively, despite having less floristic diversity than Turkey (Barjadze at al., 2010; Rezwani, 2010; Margaritopoulos et al., 2013). These data clearly show that local faunal studies should be conducted in different habitats to increase the knowledge of aphid species of Turkey. In this regard, there are many regions of Turkey that still need to be studied to add to the studies of aphids already conducted in some regions (Toros et al., 2002; Özdemir et al., 2005; Toper Kaygın et al., 2008; Görür et al., 2011; Özdemir & Barjadze, 2015; Şenol et al., 2015; Kök et al., 2016; Görür et al., 2017). Further local faunal studies are needed to increase the knowledge of aphid species in Turkey. Consequently, we conclude that the faunal studies examining aphid and their taxonomic characters and features in all regional areas of Turkey should be conducted. Also, the large number of aphids and their host plants from South Marmara Region should be a useful guide to other researchers undertaking detailed taxonomic and faunal studies of aphids in different parts of Turkey.

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