

Contributions to the Turkish Aphid Fauna from Aegean and Mediterranean Part of Turkey

Özhan ŞENOL*¹, Gazi GÖRÜRÜ¹, Gizem BAŞER¹, Hayal AKYILDIRIM BEĞEN²

¹Niğde Omer Halisdemir University, Arts and Science Faculty, Department of Biotechnology, 51100, Niğde, Turkey

²Artvin Coruh University, Health Services Vocational School, 08100, Artvin, Turkey

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Abstract: The study conducted in Antalya and Muğla provinces from March to June, 2020. *Aphis (Aphis) cirsioleracei* (Börner, 1932), *Aphis (Aphis) coronillae* Ferrari 1872, *Aphis (Aphis) multiflorae* Barbagallo & Stroyan 1982, *Aphis (Aphis) polygonacea*, Matsumura 1917, *Aphis (Aphis) sogdiana* Nevsky 1929, *Dasyaphis mirabilis* (Tseng & Tao 1938), *Hyperomyzus (Hyperomyzus) carduellinus* (Theobald 1915), *Rhopalosiphum padiformis* Richards 1962, *Toxoptera vandergooti* (Börner 1933), *Sinochaitophorus maoi* Takahashi 1936, *Sipha (Rungisia) taurica*, Mamontova 1959, *Sipha (Rungisia) burakowskii* Holman & Szelegiewicz 1974, *Sitobion (Sitobion) kamtshaticum* (Mordvilko 1919), were recorded as new entry for Turkey aphid fauna. This study aimed to give detailed information about thirteen new entries for Turkey aphid fauna.

Türkiye'nin Ege ve Akdeniz Bölgesinden Türkiye Afıt (Hemiptera: Aphidoidea) Faunasına Katkıları

Anahtar Kelimeler

Ege ve Akdeniz Bölgesi,
Afit,
Hemiptera,
Türkiye

Özet: Çalışma 2020 yılı Mart ile Haziran ayları arasında Antalya ve Muğla illerinde gerçekleştirilmiştir. *Aphis (Aphis) cirsioleracei* (Börner, 1932), *Aphis (Aphis) coronillae* Ferrari 1872, *Aphis (Aphis) multiflorae* Barbagallo & Stroyan 1982, *Aphis (Aphis) polygonacea*, Matsumura 1917, *Aphis (Aphis) sogdiana* Nevsky 1929, *Dasyaphis mirabilis* (Tseng & Tao 1938), *Hyperomyzus (Hyperomyzus) carduellinus* (Theobald 1915), *Rhopalosiphum padiformis* Richards 1962, *Toxoptera vandergooti* (Börner 1933), *Sinochaitophorus maoi* Takahashi 1936, *Sipha (Rungisia) taurica*, Mamontova 1959, *Sipha (Rungisia) burakowskii* Holman & Szelegiewicz 1974, *Sitobion (Sitobion) kamtshaticum* (Mordvilko 1919)'un Türkiye afıt faunası için yeni kayıt olarak belirlendi. Bu çalışmayla Türkiye afıt faunası için yeni kayıt olan on üç yeni türle ilgili detaylı bilgi aktarmak hedeflenmektedir.

1. Introduction

In the beginning of the 19th century, the primary study about Turkey aphid fauna started. Studies on the aphid fauna of our country have started to increase relatively since the 1950s and the distribution, locality and host plants information of aphid species, has been started to present by both foreign researchers and Turkish researchers [1], [2]. First detailed study about Turkey aphid fauna was conducted by Görür et al. [3] and with this study 464 species and 12 subspecies listed. Since 2012 the studies about Turkey aphid fauna gradually increased and recently with contributions of various researchers Turkey aphid fauna reached to nearly 585 species [3], [4], [5], [6], [7], [8], [9], [10]. When we considered Turkey geographic features and

climatic variations, it is expected that Turkey aphid diversity has to be richer than current findings, so there is need to be more detailed researches from different part of Turkey.

2. Material and Method

The study conducted in Antalya, Muğla and Karaman provinces from March to June 2020. Samples identified with Olympus BX51 microscope according to Blackman & Eastop [11] and current species status checked by Favret [12]. To describe new aphid entry for Turkey aphid fauna BL (body length), BW (body weight), PT (5th or 6th antennal segment process terminalis), BASE (5th or 6th antennal segment base), SIPH L (siphinculi length), SIPH W (siphinculi weight), RIV+V (ultimate rostral segments), HT II

(Hind tarsus II), ANT III (3rd antennal segment) used as distinctive morphometric characters. The voucher samples were stored at the Biotechnology Department of Nigde Ömer Halisdemir University.

3. Results

Aphis (Aphis) cirsioleracei

Antalya/Manavgat; 31.V.2020

Wax dusted black aptera individuals were feeding shoot of *Cirsium* sp.. The populations were densely ant attended. ANT 5 segmented. They have black siphunculi and cauda that with 6 hairs. B.L. 1.10 mm. PT/BASE (0,19 mm/0,07 mm) 2.71.

Aphis (Aphis) coronillae

Muğla/Fethiye; 15.III.2020

Black aptera individuals were feeding on undersides of leaves of *Medicago* sp. The dorsal abdomen of individuals with extensive dark sclerosation, divided into polygons. BL. 1.78 mm. PT/BASE (22/12) 1.83; SIPH L/Cauda (0.46 mm/0.22 mm) 2.09; SIPH L/BL (0.46 mm/1.78 mm) 0.25; SIPH L/ANT III (0.46 mm/0.35 mm) 1.3. Longest hairs on ANTIII 12 µm.

Aphis (Aphis) multiflorae

Antalya/it is on the way to between Manavgat and Akseki; Antalya/Manavgat 30.V.2020

Small yellowish black aptera individuals were feeding on leaf nodes of *Erica bocquetti*. They have uniformly dark siphunculi. BL 0.95 mm. PT/BASE (0.09 mm/0.05 mm) 1.8; SIPH L/Cauda (0.08 mm/0.11 mm) 0.72; RIV+V/HTII (0.09 mm/0.08 mm) 1.12.

Aphis (Aphis) polygonacea

Antalya/Kaş-Ovaköy 2.VI.2020

Yellow aptera individuals were feeding on stem and undersides of leaves of *Polygonum convolvus*. The individuals have black cauda and siphunculi. BL. 1.80 mm. PT/BASE (0.40 mm/0.10 mm) 4; SIPH L/Cauda (0.55 mm/0.25 mm) 2.2; RIV+V/HTII (0.15 mm/0.11 mm) 1.36.

Aphis (Aphis) sogdiana

Antalya/Manavgat 31.V.2020

Small pale green aptera individuals were feeding on undersides of leaves of *Ulmus* sp. BL. 1.40 mm. PT/BASE (0.16 mm/0.07 mm) 2.28; SIPH L/Cauda (0.14 mm/0.17 mm) 0.82; RIV+V/HTII (0.09 mm/0.07 mm) 1.28.

Dasyaphis mirabilis

Antalya/Serik-Uçansu waterfall 30.V.2020

Small yellow aptera individuals were feeding on undersides of leaves of *Juglans* sp. Antenna 3 segmented. BL 1.15 mm.

Hyperomyzus (Hyperomyzus) carduellinus

Muğla/Yatağan and Gülağzı 13.III.2020; Antalya/Alanya 16.III.2020; Antalya/Döşemealtı 01.VI.2020

Green aptera individuals were feeding on receptacle of *Sonchus* sp. BL 2.28 mm. ANTIII has 20 secondary rhinaria, ANTIV and ANT V have 0 secondary rhinaria. PT/BASE (0.63 mm/0.14 mm) 4.5; PT/Cauda (0.63 mm/0.27 mm) 2.33.

Rhopalosiphum padiformis

Antalya/Kumluca-Kargılı picnic site 01.VI.2020

Dark green aptera individuals were feeding on curved leaves of *Arundo* sp. BL. 1.70 mm. PT/BASE (0.38 mm/0.09 mm) 4.22; SIPH L/Cauda (0.26 mm/0.12 mm) 2.16; SIPH L/SIPH W (0.26 mm/0.08 mm) 3.25; SIPH L/BL (0.26 mm/1.70 mm) 0.15; RIV+V/HTII (0.12 mm/0.10 mm) 1.2.

Toxoptera vandergooti

Muğla/Akbük 14.III.2020

Green aptera individuals were feeding on receptacle of *Anthemis* sp. BL 1.50 mm. PT/BASE (0.47 mm/0.10 mm) 4.7; SIPH L/Cauda (20 mm/11 mm) 1.8. RIV+V 0.12 mm.

Sinochaitophorus maoui

Antalya/Alanya-Alara 30.V.2020; Antalya/Manavgat 31.V.2020

Small green aptera individuals were feeding on undersides of leaves of *Ulmus* sp. and densely ant attended. Cauda knobbed, siphunculi short truncate cones and anal plate bilobed. BL. 1.15 mm. SIPH L/SIPH W (0.07 mm/0.05 mm) 1.4; PT/BASE (0.07 mm/0.09 mm) 0.77; RIV+V/HTII (0.09 mm/0.09 mm) 1; ANT III 0.22 mm.

Sipha (Rungia) burakowskii

Antalya/Akdeniz University Campus area 01.VI.2020

Black aptera individuals were feeding on leaf stalks of *Hordeum* sp. and ant attended. BL. 1.50 mm. PT/BASE (0.07 mm/0.07 mm) 1; RIV+V/HTII (0.08 mm/0.10 mm) 0.8; BL/BW (1.50 mm/0.64 mm) 2.34.

Sipha (Rungisia) taurica

Antalya/ it is on the way to between Serik and Köprülü canyon 31.V.2020

Yellow aptera individuals were feeding on undersides of leaves of *Cynodon* sp. ANT 5 segmented. BL. 1.10 mm. PT/BASE (0.08 mm/0.06 mm) 1.33; BL/BW (1.10 mm/0.45 mm) 2.44; RIV+V/HTII (0.08 mm/0.12 mm) 0.66.

Sitobion (Sitobion) kamtshaticum

Antalya/ it is on the way to between Manavgat and Akseki 30.V.2020

Orange aptera individuals were feeding on spica of *Triticum* sp. ANT III bears one secondary rhinaria. Antenna and siphinculi black, cauda pale and tibia pale, but black distally. BL. 1.70 mm. PT/BASE (0.70 mm/0.11 mm) 6.36; SIPH L/Cauda (0.47 mm/0.30 mm) 1.56; SIPH L/BL (0.47 mm/1.70 mm) 0.27; RIV+V/HTII (0.12 mm/0.14 mm) 0.85. Longest hairs of ANTH is 20 µm.

4. Discussion and Conclusion

Up to date approximately 585 aphid species determined from Turkey. Currently Şenol et al. [13] added *Acyrtosiphon (Acyrtosiphon) papaverisuctum* (Zhang, Chen, Zhong & Li, 1999), *Aphis (Aphis) aquilonalis* Stekolshchikov & Khruleva, 2015, *Brachyunguis (Brachyunguis) tamaricophilus* (Nevsky, 1928), *Diuraphis (Diuraphis) muehlei* (Börner, 1950), *Melanaphis elisabethae* (Ossiannilsson, 1967), *Metopolophium (Metopolophium) chandrani* (David & Narayanan, 1968), *Paczoskia meridionalis* Holman, 1981, *Paracletus donisthorpei* Theobald, 1929, *Sitobion (Sitobion) rosaiformis* (Das, 1918), *Uroleucon (Uroleucon) murale* (Buckton, 1876) from south eastern part of Turkey. The genus *Dasyaphis* Takahashi, 1918 and *Sinochaitophorus* Takahashi, 1936 also new genus entry for Turkey aphid fauna. The genus *Dasyaphis* includes two species as *D.mirabilis* and *D.rhusae*, which are oriental originated. The genus *Sinochaitophorus* includes one species (*S.maoi*), which recorded from Siberia, Mangolia and China. With this study 13 aphid species determined as new records for Turkey aphid fauna and Turkish aphid fauna reached to nearly 598 aphid species. When we evaluate geographical and climatic features of Antalya, Muğla and Karaman, these findings were preliminary results of our project and it is expected that the more new entries will determine from study area.

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Declaration of Ethical Code

In this study, we undertake that all the rules required to be followed within the scope of the "Higher Education Institutions Scientific Research and Publication Ethics Directive" are complied with, and that none of the actions stated under the heading "Actions Against Scientific Research and Publication Ethics" are not carried out.

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