



ADDITIONAL NOTES ON DELPHACIDAE, TETTIGOMETRIDAE AND CIXIDAE [AUCHENORRHYNCHA (INSECTA: HEMIPTERA)] FAUNA IN EAST AND SOUTHEAST ANATOLIA REGION OF TURKEY

Murat KARAVIN¹  Inanc OZGEN^{2*} 

¹Amasya University, Suluova Vocational School, Suluova, Amasya, Turkey



²Firat University, Bioengineering Department, Elazığ, Turkey

*Corresponding Author: inancozgen@gmail.com

ABSTRACT

This study was carried out to contribute the Delphacidae, Tettigometridae and Cixiidae (Hemiptera) fauna in the East and Southeast Anatolia Region of Turkey. Specimens were collected from different locations of the study area, in 2007, 2008, 2014 and 2015, and prepared according to standard methods. 7 species belonging to 6 genera from 3 families were determined: *Hyalesthes obsoletus*, *Pentastiridius leporinus*, *Laodelphax striatellus*, *Sogatella vibix*, *Toya propinqua*, *Tettigometra atra* and *Tettigometra macrocephala*. Number of examined specimens, host plants and distribution of species in Turkey have been given. In these species; *P. leporinus*, *L. striatellus*, *T. atra*, *T. macrocephala* were new records in these regions.

Keywords: Delphacidae, Tettigometridae, Cixiidae, New Regional Record, Turkey

Received: 30.10.2017  Accepted: 20.11.2017  Published: 20.12.2017

INTRODUCTION

Auchenorrhyncha is a suborder of the Hemiptera (true bugs). The hemipteran suborder Auchenorrhyncha includes planthoppers, leafhoppers, treehoppers, spittlebugs and cicadas. Members of the suborder Auchenorrhyncha occur in all major zoogeographic regions apart from Antarctica. The species rich in the tropics, the suborder includes a major component of the phytophagous fauna in privately many terrestrial ecosystem [1] In Turkey; many studies have carried out in 20. century. In the recent times; many studies have been carried out with on Auchenorrhyncha in the Eastern and Southeastern Anatolia, but these studies are limited [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18]. These studies were carried out in non-agricultural and intra-agricultural areas. They are important in terms of interactions with plant and insect species in habitats for detailed studies at future. Additionally; They are important out of their direct damage due to some of this species are vectors of viruses and phytoplasmic diseases that. The results of this study are contribute to biodiversity.

MATERIALS AND METHODS

Several sampling methods were used for collecting Auchenorrhyncha species, differing on the activity patterns of the different species. The species were captured individually using net trap during the morning period. One light trap on the ground was used at each area from the mid July to the mid October season. A 20 watt Philips energy that saver white day light bulb was used at each trap and traps were cleared at two weeks interval. The collected material was deposited in Suluova Vocational School, of Amasya University.

RESULTS AND DISCUSSION

Family Cixiidae

Hyalesthes obsoletus Signoret, 1865

Host Plant Area: Cherry, Vineyard

Material examined: 2♀, 5♂, 22.07.2014, Elazığ, Doğukent, 38° 40' 53.7564" N, 39° 16' 5.0376" E. Totally: 7 species.

Distribution in Turkey: Adana, Ankara, Adapazarı, Adıyaman, Ağrı, Ankara, Antalya, Aydın, Balıkesir, Bursa, Çanakkale, Çorum, Diyarbakır, Elazığ, Erzincan, Erzurum, Eskişehir, Gaziantep, Giresun, Hakkari, İstanbul, İçel, Kars, Konya, Manisa, Mardin, Muğla, Sinop, Sivas, Tokat, Trabzon, Urfa, Van, [10, 19]

***Pentastiridius leporinus* Linné, 1761**

Host Plant Area: Pistachio, Cotton

Material examined: 2♀, 5♂, 11.08.2007, Siirt, Aydınlar, 37° 57' 30.7908" N, 42° 2' 39.3720 E. 5♂, 01.06.2015 Şırnak, Silopi, 37° 7' 35.9724" N, 42° 25' 25.3704" E. **Totally:** 12 species

Distribution in Turkey: Adana, Antalya, Ağrı, Ankara, Aydın, Bitlis, Diyarbakır, Hatay, Kahramanmaraş, Mardin, Mersin, Niğde [20].

Family Delphacidae

***Laodelphax striatellus* Fallen, 1826**

Host Plant Area: Cherry, Vineyard, Pistachio, Cotton

Material examined: 3♀, 12♂, 01.08.2014, Elazığ, Doğukent, 38° 40' 53.7564" N, 39° 16' 5.0376" E 11♀, 12♂, 12.07.2007, Siirt, Aydınlar, 37° 57' 30.7908" N, 42° 2' 39.3720 E, 22♀, 13♂, 01.06.2015, Şırnak, Silopi, 37° 7' 35.9724" N, 42° 25' 25.3704" E. **Totally:** 73 species

Distribution in Turkey: Adana, Adıyaman, Amasya, Ankara, Antalya, Bilecik, Bitlis, Çorum, Diyarbakır, Erzincan, Erzurum, Eskişehir, Iğdır, İçel, İzmir, Kahramanmaraş, Kars, Malatya, Mersin, Muğla, Niğde, Ordu, Rize, Samsun, Siirt, Sinop, Tokat [2, 3, 9, 12, 13, 16, 18, 21]

***Sogatella vibix* Haupt, 1927**

Host Plant Area: Cherry, Vineyard, Pistachio, Cotton

Material examined: 2♀, 5♂, 01.08.2014, Doğukent, Elazığ, 38° 40' 53.7564" N, 39° 16' 5.0376" E, 6♀, 7♂, 12.07.2007, Siirt, Aydınlar, 37° 57' 30.7908" N, 42° 2' 39.3720 E 11♀, 8♂, 15.08.2015, Şırnak (Silopi, 37° 7' 35.9724" N, 42°

25' 25.3704" E. **Totally:** 39 species.

Distribution in Turkey: Adıyaman, Amasya, Bitlis, Diyarbakır, Elazığ, Erzurum, Gaziantep, İçel, İzmir, Konya, Mardin, Nevşehir, Samsun, Siirt, Şanlıurfa, Tokat, Van [4, 9, 12, 13, 18, 21, 21].

***Toya propinqua* Fieber, 1866**

Host Plant Area: Cotton

Material examined: 11♀, 8♂, 08, 08, 2015, Şırnak, Silopi, 37° 7' 35.9724" N, 42° 25' 25.3704" E. **Totally:** 19 species

Distribution in Turkey: Adana, Afyon, Amasya, Ankara, Antalya, Aydın, Çanakkale, Çorum, Denizli, Diyarbakır, Erzurum, Gaziantep, Hatay, Isparta, İçel, İskenderun, İzmir, Kastamonu, Mardin, Muğla, Ordu, Samsun, Siirt, Sinop, Şırnak, Tokat [2, 3, 9, 12, 13, 20].

Tettigometridae

***Tettigometra atra* Hagenbach, 1825**

Host Plant Area: Pistachio

Material examined: 2♀, 2♂, 22.09.2007, Siirt, Aydınlar, 37° 57' 30.7908" N, 42° 2' 39.3720 E. **Totally:** 4 species

Distribution in Turkey: Ankara, Mardin, Mersin [16, 22, 23].

***Tettigometra macrocephala* Fieber, 1865**

Host Plant Area: Pistachio

Material examined: 5♂, 22.08.2008, Siirt, Aydınlar, 37° 57' 30.7908" N, 42° 2' 39.3720 E. **Totally:** 5 species

Distribution in Turkey: Kocaeli, Van [23]

In total, 7 Auchenorrhyncha species from three families (Cixiidae, Delphacidae, Tettigometridae) were recorded in these provinces. The distribution of collected species in each province varied greatly; these were in total, 3 species from two families recorded at one sampling locations in Elazığ, 5 species from three families recorded at two sampling locations in Siirt, 3 species from three families at two sampling locations in Şırnak respectively.

REFERENCES

- [1] Anonymous, (2017). Dr. Metcalf.page. www.lib.ncsu.edu. Date: 01.10.2017.
- [2] Asche, M., (1982). Beitrage zur Delphaciden-Fauna der Türkei (Anatolien) (Homoptera, Cicadina, Delphacidae), Marburger Entomologische Publikationen, 1(7), 71-98.
- [3] Dlabola, J., (1957). Results of the Zoological Expedition of the National Museum in Prague to Turkey, 20 Homoptera, Auchenorrhyncha, Acta Entomologica Musei Nationalis Pragae, 31(469), 19-68.
- [4] Dlabola, J., (1971). Taxonomische und chorologische Ergänzungen der Zikadenfauna von Anatolien, Iran, Afghanistan und Pakistan (Homoptera, Auchenorrhyncha), Acta Entomologica Bohemoslovaca, 68, 377-396.
- [5] Dlabola, J. (1974). Zur Taxonomie und Chorologie einiger Mediterraner Zikaden (Homoptera, Auchenorrhyncha). Acta Zoologica Academia Scientiarum Hungaricae 20(3-4): 289-300
- [6] Dlabola, J. (1979). Neue Zikaden aus Anatolien, Iran und aus Südeuropäischen Landern (Homoptera, Auchenorrhyncha). Acta Zoologica Academia Scientiarum Hungaricae 25(3-4): 235-257.
- [7] Dlabola, J. (1981). Ergebnisse der Tschechoslowakisch-Iranischen Entomologischen Expeditionen nach dem Iran (1970 und 1973). Acta entomologica Musei Nationale Pragae 40: 127-311.
- [8] Dlabola, J. (1985). Zwei neue Fieberiella-Arten aus der Türkei und Spanien (Homoptera, Cicadellidae). Türkiye Bitki Koruma Dergisi 9: 75-78.
- [9] Güçlü, Ş. (1996). Studies on Delphacidae (Homoptera, Auchenorrhyncha) from Turkey, Turkish Journal of Zoology, 20(4), 407-411.
- [10] Güçlü, Ş. ve H. Özbek., (1988). Erzurum Koşullarında *Hyalestes obsoletus* Signoret (Homoptera: Cixidae)'un Biyolojisi Üzerinde Bazı Çalışmalar. Türk. entomol. derg., 12 (2): 103-111.
- [11] Kalkandelen, A., (1974). Orta Anadolu'da Homoptera, Cicadellidae Familyası Türlerinin Taksonomileri Üzerine Araştırmalar. Doktora Tezi, Zirai Mücadele ve Karantina Genel Müdürlüğü, Ankara, 220 s.
- [12] Karavin, M., (2012). Orta Karadeniz Bölgesi Delphacidae (Homoptera, Auchenorrhyncha) Familyası Türlerinin Taksonomik Yönden İncelenmesi. (Yayımlanmamış Doktora Tezi). Ondokuz Mayıs Üniversitesi, Fen Bilimleri Enstitüsü, Samsun.
- [13] Lodos N., Kalkandelen A., (1980). Preliminary list of Auchenorrhyncha with notes on distribution and importance of species in Turkey II. Family Delphacidae Leach, Türk Bitki Koruma Dergisi, 4(2), 103-117.
- [14] Lodos, N. & Kalkandelen, A. (1985a). Preliminary list of Auchenorrhyncha with notes on distribution and importance of species in Turkey XVII. Family Cicadellidae, Deltocephalinae: Grypotini, Goniagnathini and Opsiini (Part I). Türkiye Bitki Koruma Dergisi 9: 79-90.
- [15] Lodos, N. & Kalkandelen, A. (1985b). Preliminary list of Auchenorrhyncha with notes on distribution and importance of species in Turkey XVIII. Family Cicadellidae, Deltocephalinae: Macrostelini (Part II). Türkiye Bitki Koruma Dergisi 9(3): 147-161.
- [16] Özgen, İ., Karsavuran, Y., Zeybekoğlu, Ü. ve Karavin, M., (2009). Diyarbakır, Elazığ ve Mardin İlleri Bağ Alanlarındaki Auchenorrhyncha (Homoptera: Insecta) Türleri. HR. Ü.Z.F. 13 (3): 14-22.
- [17] Özgen, İ. and Karsavuran, Y., (2009). Diyarbakır, Elazığ ve Mardin illeri bağ alanlarında bulunan Cicadellidae (Homoptera) türleri. Türk entomol. derg., 33 (3): 217-240.
- [18] Sertkaya, E., Mutlu, Ç, Bayram, A., Bayram, Y. ve Güçlü, Ş.. (2010). Diyarbakır İli İkinci Ürün Mısır Alanlarında Farklı Örnekleme Yöntemleri ile *Laodelphax striatellus* (Fallen, 1826) ve *Sogatella vibix* (Haupt, 1927) (Homoptera: Delphacidae)'in Popülasyonlarının Belirlenmesi. Türk. entomol derg., 34(2): 251-262.
- [19] Kalkandelen, A., (2000). Türkiye Cixiidae (Homoptera) Türleri Üzerinde Taksonomik Çalışmalar - VII. Pentastirini : Hyalestes Signoret. Bitki Koruma Bülteni, 40 (3-4): 91-123.
- [20] Demir, E., (2008), The Fulgoromorpha and Cicadomorpha of Turkey . Part 1: Mediterranean Region (Homoptera). Mun.Ent. Zool. 3 (1): 447-522.
- [21] Demir, E., (2007a). Contributions to the Knowledge of Turkish Auchenorrhyncha (Homoptera, Fulgoromorpha and Cicadomorpha, excl. Cicadellidae) with a new record, *Setapius klapperichianus* Dlabola, 1988. Munis Entomology and Zoology, 2(1): 39-58.
- [22] Demir, E., (2007b). Auchenorrhyncha (Homoptera) Data From Ankara with two New Records to Turkey. Mun. Ent. Zool. Vol. 2 (2): 481-489.
- [23] Demirel, E., (2010). Bolkar Dağlarının Auchenorrhyncha'ları (Homoptera). Doktora Tezi. 567 s.