

FAUNISTICAL NOTES ON LIGHT TRAP COLLECTED AUCHENORRHYNCHA (HOMOPTERA) SPECIES OCCURRING IN INTEGRATED CHERRY ORCHARDS IN İZMİR PROVINCE OF WESTERN TURKEY

Serdar Tezcan* Nilay Gülperçin** and Ünal Zeybekoğlu***

* Plant Protection Department, Faculty of Agriculture, Ege University, 35100 Bornova, İzmir, TURKEY, e-mail: serdar.tezcan@ege.edu.tr

** Natural History Application and Research Center, Ege University, 35100 Bornova, İzmir, TURKEY, e-mail: nilay.gulpercin@ege.edu.tr

***Biology Department, Faculty of Science, Ondokuz Mayıs University, 55139 Kurupelit, Samsun, TURKEY, e-mail: unalz@omu.edu.tr

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ABSTRACT: In this study, information is given on 20 species of Auchenorrhyncha collected by light traps from western Turkey. Of these species, six (*Setapius apiculatus*, *Tshurtshurnella campestre*, *Agallia ribauti*, *Aguriahana germari*, *Fieberiella flori* and *Platymetopius rostratus*) were recorded for the first time from İzmir province and Aegean Region of Turkey.

KEY WORDS: Homoptera, Auchenorrhyncha, Fauna, Western Turkey, Light Trap

Some data on the Auchenorrhyncha fauna of Western Turkey has been given by Lodos & Kalkandelen (1980a, b; 1981a, b, c, d; 1984a, b; 1985a, b; 1986a, b, c; 1987a, b); Tezcan & Zeybekoğlu (2001); Tezcan et al. (2003, 2005, 2006); Demir (2006a, b); Yılmaz et al. (2007, 2009). But there is not any detailed study on the fauna of integrated cherry orchards collected by light traps.

In this paper, monitoring of Auchenorrhyncha species occurring in integrated cherry (*Prunus avium*) (Rosaceae) orchards by using light traps were given.

MATERIAL AND METHODS

Auchenorrhyncha species were collected in integrated cherry orchards in İzmir (Kemalpaşa) by using light traps in 2006-2007. Studies were conducted in four orchards in size of about 0,5 hectare for each. One light trap on the ground was used for each area from the mid June to the mid September. A 20 watt Philips energy saver white day light bulb was used at each trap and traps were cleared at two weeks' intervals. Material were identified by the third author.

RESULTS

Cixiidae

Setapius apiculatus (Fieber, 1876)

Material examined: 28.vi.2006, 3 exs., 14.vii.2006, 2 exs., 27.vii.2006, 5 exs., 11.viii.2006, 8 exs., 24.viii.2006, 6 exs., 28.vii.2007, 1 ex., 14.viii.2007, 3 exs. Totally 28 specimens.

Distribution in Turkey: Adıyaman, Mardin (Kalkandelen, 1990).

Remarks: First record for İzmir province and Aegean Region of Turkey.

Delphacidae***Laodelphax striatellus*** (Fallén, 1826)

Material examined: 11.viii.2006, 1 ex., 08.ix.2006, 1 ex., 14.viii.2007, 1 ex. Totally 3 specimens.

Distribution in Turkey: Adana (Kozan), Ankara (Hasanoğlan, Mogan Lake) and on the route of Bitlis-Baykan, Baykan-Silvan, Fevzipaşa-Mersin, Antalya (Aspendos-Perge), Eskişehir-Bilecik (Dlabola, 1957, 1971); Adıyaman (Besni), Diyarbakır, İzmir (Narlıdere, Yalakdere), Malatya (Hasırcılar), Muğla (Milas), Niğde (Ulukışla), Siirt (Şırnak) (Lodos & Kalkandelen, 1980a); Aydın, İzmir, Manisa (Yılmaz et al., 2009); Diyarbakır (Özgen et al., 2009); Bursa (Yenişehir) (Karsavuran et al., 2009).

Remarks: It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1980a).

Dictyopharidae***Dictyophara europaea*** (Linnaeus, 1767)

Material examined: 27.vii.2006, 1 ex., 11.viii.2006, 2 exs., 24.viii.2006, 3 exs., 14.viii.2007, 1 ex., 31.viii.2007, 1 ex. Totally 8 specimens.

Distribution in Turkey: Ankara (Çubuk, Karagöl, Lalahan), Denizli (Çardak), Diyarbakır (Central province, Çermik), Eskişehir (Laçın), Isparta (Eğirdir), İstanbul (Silivri), İzmir (Narlıdere, Tire, Torbalı-Ayrancılar), Iğdır, Kastamonu (Tosya), Manisa (Salihli), Muğla (Central province, Fethiye, Yatağan), Muş, Ordu (Kumru), Samsun, Siirt (Kozluk), Şırnak, Van (Muradiye) (Lodos & Kalkandelen, 1980b); Elazığ, Mardin (Özgen et al., 2009).

Remarks: It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1980b).

Issidae***Tshurtshurnella campestris*** (Lindberg, 1948)

Material examined: 28.vi.2006, 1 ex., 24.viii.2006, 1 ex., 31.viii.2007, 1 ex. Totally 3 specimens.

Distribution in Turkey: Adana, Niğde (Lodos & Kalkandelen, 1981d).

Remarks: First record for İzmir province and Aegean Region of Turkey.

Cicadidae***Cicadatra atra*** (Oliver, 1790)

Material examined: 28.vi.2006, 4 exs., 14.vii.2006, 20 exs., 27.vii.2006, 1 ex., 11.viii.2006, 1 ex., 14.viii.2007, 1 ex. Totally 27 specimens.

Distribution in Turkey: Adana, Kahramanmaraş (Göksun), Kayseri (Fahringer, 1922); Kayseri (Bodenheimer, 1958); Ankara, Gaziantep (Tuatay et al., 1972); Adana, Amasya, Ankara (Central province, Elmadağ), Antalya, Bitlis, Edirne, Erzincan, Gaziantep, İstanbul (Erenköy), İzmir (Bornova, Gaziemir, Karaburun, Torbalı-Ayrancılar), Muğla (Bodrum, Köyceğiz), Siirt (Sason), Sivas (Suşehri), Şanlıurfa (Central province, Akziyaret) (Lodos & Kalkandelen, 1981a).

Cicada mordoganensis Boulard, 1979

Material examined: 14.vii.2006, 1 ex., 27.vii.2006, 1 ex., 28.vii.2007, 1 ex., 14.viii.2007, 1 ex. Totally 4 specimens.

Distribution in Turkey: Antalya (Alanya, Side, Ulupınar, Yenice), İzmir (Balıklıova, Gaziemir, Karaburun, Mordoğan, Torbalı, Urla), Muğla (Bodrum) (Lodos & Kalkandelen, 1981a).

Lyristes plebejus (Scopoli, 1763)

Material examined: 14.vii.2006, 3 exs., 27.vii.2006, 1 ex., 28.vii.2007, 2 exs., 14.viii.2007, 1 ex. Totally 7 specimens.

Distribution in Turkey: Bursa (Mudanya), İzmir, Kahramanmaraş (Yarbaşı) (Fahringer, 1922); Adana-Toros (Bürücek), Ankara (Baraj) (Dlabola, 1957); Adana (Gülek) (Linnavuori, 1965); İzmir (Bayındır), Manisa (Tuatay et al., 1972); Adana, Ankara (Central province, Çubuk Baraj I), Antalya, Artvin, Aydın (Nazilli, Söke-Samsun Dağı), Balıkesir (Edremit), Denizli (Acıpayam), Erzincan, Gaziantep (Nizip), İzmir (Bayındır, Menemen), İstanbul, Kırklareli (Türkgeldi-Lüleburgaz), Manisa (Akhisar), Mardin, Muğla (Köyceğiz), Kütahya (Gediz) (Lodos & Kalkandelen, 1981a); Kahramanmaraş (Engizek Mountain) (Kanat & Akbulut, 2005).

Membracidae***Gargara genistae*** (Fabricius, 1775)

Material examined: 27.vii.2006, 13 exs., 11.viii.2006, 7 exs., 24.viii.2006, 4 exs., 08.ix.2006, 10 exs., 14.viii.2007, 3 exs., 31.viii.2007, 14 exs. Totally 51 specimens.

Distribution in Turkey: Ankara (Mogan Lake, Eymir Lake, Lalahan), Aydın (Kuşadası), Balıkesir (Dursunbey), Çorum (Bayat), Erzurum (Central province, Hasankale, Horasan, İspir-Serçeme Stream), İzmir (Bozdağ, Pamucak), Muğla (Bodrum, Köyceğiz) (Lodos & Kalkandelen, 1981b).

Cicadellidae***Agallia ribauti*** Ossiannilson, 1938***Anaceratagallia ribauti*** (Ossiannilson, 1938)

Material examined: 28.vi.2006, 3 exs., 14.vii.2006, 4 exs., 27.vii.2006, 24 exs., 11.viii.2006, 20 exs., 24.viii.2006, 15 exs., 08.ix.2006, 15 exs., 14.viii.2007, 10 exs., 31.viii.2007, 18 exs. Totally 109 specimens.

Distribution in Turkey: Adana (Central province, Karataş) (Dlabola, 1957); Ankara (Central province, Çubuk, Eymir Lake, Lalahan), Balıkesir (Susurluk), Çankırı (Festikhan), Malatya (Hasırçılar), Mardin (Kapılı-Silopi), Samsun (Bafra) (Lodos & Kalkandelen, 1981c).

Remarks: First record for İzmir province and Aegean Region of Turkey.

Aguriahana germari (Zetterstedt, 1840)

Material examined: 27.vii.2006, 2 exs., 11.viii.2006, 20 exs., 24.viii.2006, 9 exs., 08.ix.2006, 10 exs., 14.viii.2007, 10 exs., 31.viii.2007, 1 ex. Totally 52 specimens.

Distribution in Turkey: Amasya (Borabay), Artvin (Murgul), Kars (Sarıkamış), Çorum (İskilip), Çankırı (Lodos & Kalkandelen, 1984a).

Remarks: First record for İzmir province and Aegean Region of Turkey.

Zyginidia pullula (Boheman, 1845)

Material examined: 14.vii.2006, 1 ex., 27.vii.2006, 1 ex., 11.viii.2006, 1 ex., 08.ix.2006, 3 exs., 14.viii.2007, 1 ex., 31.viii.2007, 1 ex. Totally 8 specimens.

Distribution in Turkey: İzmir (Linnavuori, 1965; Dlabola, 1981); Amasya (Central province), Ankara (Çubuk, Elmadağ, Hasanoğlu, Kayaş), Bolu (Düzce, Kıbrısçık, Seben), Çankırı (Ilgaz, İnandık, Konak), Çorum (Osmançık), Kayseri (Yeşilhisar), Nevşehir (Avanos, Çat, Nar, Ürgüp), Sinop (Boyabat, Durağan) (Lodos & Kalkandelen, 1984b); Aydın, İzmir, Manisa (Yılmaz et al., 2007).

Opsius stactogalus Fieber, 1866

Material examined: 27.vii.2006, 1 ex., 11.viii.2006, 1 ex., 14.viii.2007, 1 ex. Totally 3 specimens.

Distribution in Turkey: Ankara (Central province) (Lodos & Kalkandelen, 1985a); Bursa (Karacabey) (Karsavuran et al., 2009); Antalya (Demir, 2006b).

Neoliturus fenestratus (Herrich-Schaffer, 1834)

Material examined: 14.vii.2006, 2 exs., 11.viii.2006, 2 exs., 24.viii.2006, 2 exs., 14.viii.2007, 2 exs., 31.viii.2007, 1 ex. Totally 9 specimens.

Distribution in Turkey: It distributes largely in Turkey (Lodos & Kalkandelen, 1985a).

Remarks: It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1985a).

Macrosteles quadripunctulatus (Kirschbaum, 1868)

Material examined: 28.vi.2006, 28 exs., 14.vii.2006, 84 exs., 27.vii.2006, 18 exs., 14.viii.2006, 180 exs., 24.viii.2006, 122 exs., 08.ix.2006, 71 exs., 28.vii.2007, 10 exs., 14.viii.2007, 66 exs., 31.viii.2007, 43 exs., 08.ix.2007, 2 exs. Totally 624 specimens.

Distribution in Turkey: It distributes largely in Turkey (Lodos & Kalkandelen, 1985b).

Remarks: It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1985b).

Fieberiella florii (Stal, 1864)

Material examined: 27.vii.2006, 6 exs., 11.viii.2006, 27 exs., 24.viii.2006, 17 exs., 08.ix.2006, 2 exs., 28.vii.2007, 1 ex., 14.viii.2007, 1 ex., 31.viii.2007, 3 exs. Totally 57 specimens.

Distribution in Turkey: Amasya, Ankara, Kocaeli, Samsun, Sinop, Tokat (Lodos & Kalkandelen, 1986a).

Remarks: First record for İzmir province and Aegean Region of Turkey.

Exitianus capicola (Stal, 1855)

Material examined: 27.vii.2006, 7 exs., 11.viii.2006, 2 exs., 24.viii.2006, 7 exs., 14.viii.2007, 4 exs., 31.viii.2007, 5 exs., 08.ix.2007, 4 exs. Totally 29 specimens.

Distribution in Turkey: Adana (Central province, Ceyhan, Misis, Pozantı), Antalya (Aksu, Gülloluk), İçel (Tarsus), İzmir (Narlidere, Ödemiş-Bozdağ), Muğla (Dalaman) (Lodos & Kalkandelen, 1986a); Antalya (Demir, 2006b); Aydın (Yılmaz et al., 2007).

Platymetopius rostratus (Herrich-Schaffer, 1834)

Material examined: 27.vii.2006, 3 exs., 11.viii.2006, 7 exs., 24.viii.2006, 6 exs., 08.ix.2006, 2 exs., 28.vii.2007, 1 ex., 14.viii.2007, 1 ex., 31.viii.2007, 1 ex. Totally 21 specimens.

Distribution in Turkey: Ankara (Çubuk Baraj I), Nevşehir (Ürgüp) (Kalkandelen, 1974); Erzurum (Kandilli) (Dlabola, 1981); Ankara (Çubuk, Kızılcahamam), Diyarbakır, Elazığ, Erzincan (Değirmencik, Central province, Yalınca), Erzurum, Gümüşhane (Kelkit), Kars (Aralık, Iğdır, Tuzluca), Muş, Sinop (Ahmetyeri) (Lodos & Kalkandelen, 1986b); Diyarbakır, Elazığ, Mardin (Özgen & Karsavuran, 2009).

Remarks: First record for İzmir province and Aegean Region of Turkey. It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1986b).

Selenocephalus pallidus Kirschbaum, 1868

Material examined: 28.vi.2006, 4 exs., 14.vii.2006, 22 exs., 27.vii.2006, 116 exs., 11.viii.2006, 78 exs., 24.viii.2006, 75 exs., 08.ix.2006, 7 exs., 28.vi.2007, 1 ex., 28.vii.2007, 31 exs., 14.viii.2007, 27 exs., 31.viii.2007, 5 exs. Totally 366 specimens.

Distribution in Turkey: Adana (Hasanbeyli), Ankara (Çubuk, Eymir, Lalahan, Kalecik, Kurtboğazi, Nallıhan), Antalya (Alanya, Manavgat), Aydın (Kuşadası, Samsun Dağı), Bolu, Burdur (Gülhisar), Bursa (Central province-Doğanköy), Çanakkale, Çankırı (Kursunlu), Çorum (Central province, Bayat), Denizli (Tavas), Isparta (Eğirdir), İzmir (Karaburun, Ödemiş, Menemen), Kayseri (Hacılar), Kırşehir (Yılandağı), Konya (Ermenek, Seydişehir), Manisa (Gördes), Sinop (Gerze), Tokat (Erbaa), Yozgat (Çekerek) (Lodos & Kalkandelen, 1986c).

Euscelidius mundus (Haupt, 1927)

Material examined: 28.vi.2006, 1 ex., 27.vii.2006, 1 ex., 11.viii.2006, 1 ex., 24.viii.2006, 1 ex., 08.ix.2006, 2 exs., 14.viii.2007, 1 ex., 31.viii.2007, 2 exs. Totally 9 specimens.

Distribution in Turkey: Adana, Ankara, Diyarbakır, Erzurum, Gaziantep, Hatay, Isparta, İçel, İzmir, Mardin, Şanlıurfa, Van (Lodos & Kalkandelen, 1987a); Antalya (Demir, 2006b).

Remarks: It was reported that some material of this species was collected by light traps (Lodos & Kalkandelen, 1987a).

Psammotettix alienus (Dahlbom, 1850)

Material examined: 28.vi.2006, 1 ex., 14.vii.2006, 2 exs., 27.vii.2006, 15 exs., 11.viii.2006, 6 exs., 24.viii.2006, 5 exs., 08.ix.2006, 9 exs., 28.viii.2007, 1 ex., 14.viii.2007, 5 exs., 31.viii.2007, 12 exs., 08.ix.2007, 1 ex. Totally 57 specimens.

Distribution in Turkey: Adana (Pozantı), Amasya (Central province, Taşova), Ankara (Central province, Çubuk, Elmadağ, Eymir, Karagöl, Lalahan, Kızılcahamam, Polatlı), Balıkesir (Balya), Bursa (Gemlik), Diyarbakır (Central province), Erzincan (Central province, Çağlayan, Dumanlı Dağları, Refahiye), Hakkari (Central province), Iğdır, Kastamonu (Tosya), Konya (Akşehir), Mardin (İdil), Muş (Solhan), Sakarya (Adapazarı, Hendek), Siirt (Kurtalan), Sinop (Boyabat, Duragan), Uşak (Bölme), Van (Başkale, Güzeldere, Edremit, Erciş), Yozgat (Boğazlıyan, Sorgun) (Lodos & Kalkandelen, 1987b); Antalya (Demir, 2006b).

DISCUSSION

In this study a total of 20 species belonging to seven families of Homoptera were recorded by light traps. Of these species, six (*Setapius apiculatus*, *Tshurtshurnella campestre*, *Agallia ribauti*, *Aguriahana germari*, *Fieberiella flori* and *Platymetopius rostratus*) were recorded for the first time from Izmir province and Aegean Region of Turkey.

Eight species, namely *Laodelphax striatellus*, *Dictyophara europaea*, *Aguriahana germari*, *Neoliturus fenestratus*, *Macrosteles quadripunctulatus*, *Platymetopius rostratus*, *Euscelidius mundus* and *Psammotettix alienus* were collected by light traps in previous studies (Lodos & Kalkandelen, 1980a, b; 1984a; 1985a, b; 1986b; 1987a, b). Collecting by light traps is also an effective method for other 12 species. It is hoped that current data will be contributed other studies that will be carried out both in other cultures and other locations in Turkey.

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