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Additional notes on heteroptera (Hemiptera) of Eastern Turkey

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Abstract

The research was based on a short but intensive collecting trip made in April-September 2018-2020. Twenty two species were reported, many firstly recorded for collecting sites. From these species, 1 species belonging to each of the Stenocephalidae, Pyrrhocoridae, Reduviidae, Nabidae, Tingidae, Orsillidae, Artheneidae, Cymidae, Coreidae and Scutelleridae families, 2 species belonging to each Miridae and Lygaeidae (sensu stricto) families, 2 species belonging to Rhopalidae family, 3 species belonging to Pentatomidae family and 3 species belonging to Rhyparochromidae family were obtained. The most of these taxa are new records for these locations.

Keywords: Heteroptera, fauna, eastern turkey, new records

Introduction

Heteroptera (Hemiptera) species are still less known in the Eastern and Southeastern Anatolia region of Turkey. During recent investigations made by the Fırat University of Elazığ.

In the last five year, many important studies have been carried out by researchers in the Eastern and Southeastern Anatolia region to determine the species belonging to the Heteroptera Ordo in the region (Matocq and Özgen, 2010; Matocq *et al.*, 2014; Yazıcı *et al.*, 2015; Çerçi *et al.*, 2018; Özgen and Dioli, 2018; Özgen and Dioli, 2019; Özgen *et al.*, 2020) [16, 17, 26, 5, 5, 12]. In this study, new faunistic contributions related to Heteroptera Ordo are presented.

Material and Method

Studied material was collected by using different methods in Bingöl, Diyarbakır, Elazığ and Tunceli provinces of Turkey and deposited in the private collection of the first author (Figure 1). Material was collected from wild area, under the stones and herbs. The samples were collected by using a net and they were preserved in 70% ethanol. Specimens were identified by the second author.



Fig 1: Survey Area of Study

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Results Family: Redüviidae*Peirates hybridus* (Scopoli, 1763)**Material examined:** Elazığ, Günbağı, 25.5.2020, 3 exx.. leg. Özgen.**Distribution in Turkey:** Adana, Ankara, Antalya, Artvin, Bursa, Edirne, Eskişehir, Erzurum, Giresun, Gümüşhane, Hatay, İzmir, Konya, Niğde, Rize, Uşak, Siirt (Önder *et al.*, 1981; Matocq and Özgen., 2010; Tezcan *et al.*, 2010; Dursun, 2011)^[18, 16, 24, 6].**Note:** First record in Elazığ province.**Family:** Nabidae*Prostemma guttula asiaticum* (Kerzhner, 1968)**Material examined:** Elazığ, Günbağı, 25.5.2020, 3 exx.. leg. Özgen.**Distribution in Turkey:** Adana, Amasya, Gümüşhane, Hatay, Isparta, İzmir, Kars, Tokat (Önder *et al.*, 2006; Dursun, 2011b; Fent and Japoshvili, 2012)^[7, 9].**Note:** First record in Elazığ province. This subspecies lives in Asia: Azerbaijan, Afghanistan, Armenia, Turkey, Cyprus, Georgia, Iran, Iraq, Israel, Jordan, Lebanon, Syria, Tadjikistan, Turkmenistan and Uzbekistan. In Europe it is present only in the Caucasian lands of Russia (Aukema, 2020)^[3].**Family:** Miridae*Brachycoleus steini* (Reuter, 1877)**Material examined:** Bingöl, 25.05.2018, 3 exx., leg. Özgen.**Distribution in Turkey:** Antalya, Afyon, Aydın, Balıkesir, Burdur, Bursa, Çanakkale, Denizli, Edirne, Gaziantep, Kahramanmaraş, Kayseri, Kırşehir, Konya, Niğde, Isparta, İstanbul, İzmir, Kırklareli, Konya, Kütahya, Manisa, Muğla, Muş, Niğde, Tekirdağ, Uşak (Önder *et al.*, 2006).**Note:** Widely distributed in Turkey*Leptopterna ferrugata* (Fallén, 1807)**Material examined:** Bingöl, 25.05.2018, 3 exx., leg. Özgen.**Distribution in Turkey:** Eastern and Central Anatolia (Yazıcı *et al.*, 2019)**Note:** Widely distributed in Turkey.**Family:** Tingidae*Catoplatys nigriceps* (Horvath, 1905)**Material examined:** Bingöl, 25.05.2018, 3 exx., leg. Özgen.**Distribution in Turkey:** Diyarbakır, Kars, Nevşehir (Önder *et al.*, 2006; Kıyak *et al.*, 2004; Yıldırım *et al.*, 2013b)^[13].**Note:** First record in Bingöl province of a species present from Eastern Europe to whole Asia (Pericart, m 1983, Aukema, 2020)^[3].**Family:** Lygaeidae*Lygaeus simulans* (Deckert, 1985)^[12]**Material examined:** Diyarbakır, Eğil, 22.05.2019, *Chenopodium* sp. leg Özgen.**Distribution in Turkey:** Ankara, Elazığ, İzmir, Kahramanmaraş, Kayseri, Malatya, Nevşehir, Niğde (Péricart, 1998a; Özgen and Doli, 2019)^[12].**Note:** The general distribution of *L. simulans* is not yet well-known, due to confusion with *L. equestris* in literature before 1985 (Heyden & Dioli, 2019; Aukema, 2020)^[12, 3]. The presence in Anatolia is confirmed, but needs more researches.*Melanocoryphus albomaculatus* (Goeze, 1778)**Material examined:** Malatya, Kale, 21.05.2017, 3 exx.. leg. Özgen**Family:** Redüviida**Distribution in Turkey:** Ankara, Çankırı, Erzincan, Erzurum (Küçükbasmacı, and Kıyak, 2015; Yazıcı *et al.*, 2015)^[16, 14].**Note:** First faunistic report in Malatya province.**Family:** Orsillidae*Nysius helveticus* (Herrich-Schäffer, 1850)**Material examined:** Elazığ, Keban, Nimri village, 18.05.2018, 3 exx., leg Özgen.**Distribution in Turkey:** Adana, Artvin, Erzurum, Muğla (Yazıcı *et al.*, 2015; Atakan *et al.*, 2017)^[26].**Note:** First faunistic report in Malatya province.**Family:** Cymidae*Cymus melanocephalus* (Fieber, 1861)**Distribution in Turkey:** Widely distributed (Yazıcı *et al.* 2015)^[26]**Material examined:** Tunceli, Geyiksuyu, 25.05.2018, 3 exx., leg. Özgen.**Note:** First record in Tunceli province.**Family:** Artheneidae*Artheneis alutacea* (Fieber, 1861)**Material examined:** Elazığ, Arındık, 29.04.2018, 2 exx. leg. Özgen.**Distribution in Turkey:** Adana, Aksaray, Ankara, Antalya, Balıkesir, Çanakkale, Eskişehir, Gaziantep, İçel, İzmir, Kahramanmaraş, Karaman, Kırkkale, Nevşehir, Niğde, Osmaniye (Önder *et al.*, 2006).**Note:** new confirmation of a rare species, known from S-Europe, N-Africa, Middle and Oriental Asia, but till now considered doubtful to Turkey by the Catalogue of Palearctic Heteroptera (Aukema, 2020)^[3].**Family:** Rhyparochromidae*Aphanus rolandri* (Linnaeus, 1758)**Material examined:** Elazığ, Işıkyolu, 01.04.2018, 2 exx., Keban, Nimri, 15.05.2018, leg. Özgen**Distribution in Turkey:** Adana, Elazığ, Bingöl, Kayseri, Kars, Kahramanmaraş, Konya, Mardin, Muğla, Samsun, Erzurum (Önder *et al.*, 2006; Matocq *et al.*, 2014; Yazıcı *et al.*, 2015)^[17, 26].*Beosus quadripunctatus* (Müller, 1766)**Material examined:** Elazığ, Işıkyolu, 01.04.2018, 2 exx., leg. Özgen.**Distribution in Turkey:** Wide spread (Önder *et al.*, 2006; Matocq & Özgen, 2010)^[16].**Note:** First faunistic report in Elazığ province.*Aellopus atratus* (Goeze, 1778)**Material examined:** Elazığ, Günbağı, 25.5.2020, 3 exx. leg. Özgen.**Distribution in Turkey:** Isparta (Fent and Japoshvili, 2012)^[9].**Note:** The second faunistic record in Turkey**Family:** Rhopalidae*Corizomorpha janowskyi* (Jakovlev, 1883)**Material examined:** Elazığ, Sütüce, 22.05.2018, 2 exx.. leg. Özgen.**Distribution in Turkey:** Diyarbakır, Erzurum (Önder *et al.*, 2006; Yıldırım *et al.*, 2013).**Note:** Rare species. New locality record in Turkey. This species is present only in Asia: Azerbaijan, Armenia, Turkey, Iran, Kirgizia, Tadjikistan, Turkmenistan, Uzbekistan and

Nort-West China (Aukema, 2020) [3].

Corizus fenestella fenestella (Horv ath, 1917)

Material examined: Diyarbakır, Eđil, 22.05.2019, *Chenopodium* sp. leg. Ozgen

Distribution in Turkey: This specimen is given to Diyarbakır Province. This is second record in Diyarbakır province ( nder *et al.*, 2006; Bolu, 2020).

Note: The nominal subspecies is medio-oriental, present from the island of Lesvos (Greece), to Turkey and Western Iran (Ghahari *et al.*, 2012) [11]. The subspecies *C. fenestella subsimilis* (Horv ath, 1917) has an oriental distribution, from Iran to Mongolia and India. Populations from Afghanistan, eastern part of Iran and Turkmenistan are intermediate between the two subspecies (Putshkov, 1986; Aukema 2020) [3].

Family: Coreiidae

Coriomeris scabricornis (Panzer, 1805)

Material examined: Bing l, 25.05.2018, 3 exx., leg. Ozgen.

Distribution in Turkey: Ankara, Isparta, Kayseri, Sinop ( nder *et al.*, 2006; Fent and Japoshvili, 2012; Fent and Dursun, 2019) [9, 10].

Note: First faunistic report in Bing l province.

Family: Scutelleridae

Odontotarsus plicatulus (Horvath, 1906)

Material examined: Bing l, Yedisu, 25.05.2019, 3 exx., leg. Ozgen.

Distribution in Turkey: Amasya, Ankara, Bing l, Elazıđ, Gaziantep, Kahramanmarař, Kayseri, Kilis, Mardin, Nevřehir, Siirt ( nder *et al.*, 2006; Kiyak *et al.*, 2004;  zgen and Paride, 2018) [13].

Note Distribution from Balkan Peninsula to Egypt, Turkey and Near Orient (Aukema, 2020) [3].

Family: Pentatomidae

Aelia virgata (Herrich-Sch ffer, 1841)

Material examined: Elazıđ, G nbađı, 25.5.2020, 3 exx.. leg. Ozgen.

Distribution in Turkey: Adana, Afyon, Antalya, Bolu, Burdur, Bilecik,  ankırı,  orum, Edirne, Eskiřehir, Gaziantep, Bilecik, İstanbul, İzmir, Kars, Kahramanmarař, Kocaeli, Kırklareli, Konya, Niđde, Sakarya, Tokat, Sakarya, Edirne, Tunceli, Zonguldak (Fent and Akta , 2009; Dursun and Fent, 2011).

Note: The distribution of this species is medio-oriental: from Macedonia and Greece to Iran (Aukema, 2020) [3].

Note: First faunistic report in Elazıđ province.

Ancyrosoma leucogrammes (Gmelin, 1790)

Material examined: Malatya, Kale, 01.05.2020, 2 exx.. leg. Ozgen.

Distribution in Turkey: Present in all countries of Turkey ( nder *et al.*, 2006; Matocq *et al.*, 2014  zgen and Dioli, 2018) [17, 12].

Tarisa virescens (Herrich Schaeffer, 1851)

Material examined: Elazıđ, Baskil, Harođlu Mountain, 15. IX. 2020, N. 38 36 987', E 38 57.882', 1860 m, 1 exx., leg  zgen.

Distribution in Turkey: Ankara, Denizli, Gaziantep, Isparta, Kayseri, K tahya, Kırřehir, Malatya and Nevřehir provinces (Lodos and  nder, 1978).

Note: A typical Centro-Asiatic, steppic, species (Aukema, 2020) [3]

Family: Stenocephalidae

Dicranocephalus albipes (Fabricius, 1781)

Material examined: Elazıđ, Iřık yolu, 01.04.2018, 2 exx., leg. Ozgen.

Distribution in Turkey: Erzurum,  ankırı, Kastamonu (Yıldırım *et al.*, 2013 a; K c kbasmacı, and Kiyak, 2015) [16, 14].

Note: First faunistic report in Elazıđ province.

Family: Pyrrhocoridae

Scantius aegyptius aegyptius (Linnaeus, 1758)

Material examined: Elazıđ, Iřık yolu, 01.04.2018, 2 exx., leg. Ozgen

Distribution in Turkey: Antalya, Elazıđ, Erzurum, Mersin, Isparta, řanlıurfa (Yazıcı *et al.*, 2015) [26].

Conclusions

The research highlights the importance of the studied Region as a crossroads and meeting point for many species with western and eastern gravitation. In fact, this area of Anatolia represents the point of maximum western expansion for *Corizomorpha janowskyi* and *Tarisa virescens*. In the other hand (e.g. *Aellopus atratus*, *Nysius helveticus*, *Peirates hybridus*) it is instead the easternmost region of their range. Finally, *Lygaeus simulans* has always been confused with *L. equestris* in old reports: this research confirms its presence in Anatolia and suggests to expand investigations throughout the territory of Turkey and the Middle East, but also to verify its presence in the major entomological collections of this country.

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