

Notes on some little known species of heteroptera from Turkey with new records for the fauna of Europe and the Turkish Thrace

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Abstract. In this study we report new localities for *Ectomocoris caucasicus* Linnavuori, 1972 (Reduviidae), *Aneurus (Aneurodes) avenius* (Dufour, 1833) and *Aradus cinnamomeus* Panzer, 1806 (Aradidae), *Brachycarenum languidus* (Horváth, 1891), *Leptoceraea viridis* Jakovlev, 1874 and *Myrmus miriformis* (Fallén, 1807) (Rhopalidae), *Spathocera lobata* (Herrich-Schaeffer, 1840) (Coreidae), *Alloerhynchus flavipes* (Fieber, 1836) (Nabidae), *Pausias martini* (Puton, 1890) and *Bagrada (Nitilia) amoenua* (Walker, 1870) (Pentatomidae). We give exact locality for *Leptoceraea viridis* in Turkey. We confirm the presence of *A. avenius*, a species reported in 1883 and 1918, but without any recent records till now. *Spathocera lobata*, *Alloerhynchus flavipes*, *Aradus cinnamomeus* and *Pausias martini* are new records for the Turkish Thrace (European Part of Turkey) fauna. *Pausias martini*, previously recorded in Anatolia (Asian Part of Turkey), is therefore considered a new record for Europe.

Key words: Europe, Turkey, Turkish Thrace, heteroptera, *Pausias martini*, new records.

Introduction

Knowledge regarding the distribution of animal taxa and maintenance of these for the future is an essential aspect of zoological research. The location of Turkey, between Asia and Europe makes it a dispersal corridor for different faunal elements, with various origins, including elements from Europe, the Balkans, Caucasus, Arabia and North Africa. Besides the geographic location of the country, the richness of its fauna is also the outcome of the different climate types and topographical conditions throughout its territory. Several studies have been carried out in order to provide an overview regarding the biological diversity of the country (Demirsoy 2002).

Studies on the Heteroptera in Turkey, revealed that Rhopalidae are currently represented by 30 species and 12 genera (Pehlivan 1981, Dolling 2006, Önder et al. 2006), Coreidae by 48 species and 20 genera (Dolling 2006, Dursun & Fent 2009, Dursun 2011a), Reduviidae by 58 species and 19 genera (Dursun & Salur 2013; Yıldırım et al, 2013), Nabidae by 24 species and 5 genera (Dursun 2011b), Aradidae by 19 species and 4 genera (Önder et al. 2006) and Pentatomidae by 165 species and 56 genera (Önder et al. 2006, Fent et al. 2013, Dursun & Fent 2013).

Materials and methods

The material was collected in eleven localities with vari-

ous vegetation and habitat types from the Black Sea, Eastern Anatolia, Southeast Anatolia, Mediterranean and Thrace regions of Turkey between 2007 and 2014 (Fig. 1). Male genital inspection (pygophores and parameres) was used for the identification of species. For preparation of the genitalia, samples were softened in hot water and their genitalia extracted. The following studies were used to identify the collected material Pehlivan (1981), Stichel (1959, 1960), Linnavuori (1972), Heiss & Péricart (2007) and Putshkov & Moulet (2010). The material is deposited in the collection of Amasya University, Faculty of Science and Arts, Department of Biology (Amasya) and Trakya University, Faculty of Science, Department of Biology (Edirne), Turkey.

Results

Reduviidae Latreille, 1807

Peiratinae Amyot & Serville, 1843

Genus *Ectomocoris* Mayr, 1865

Ectomocoris caucasicus Linnavuori, 1972

Material examined: Şanlıurfa province: Tülmen village, 25.VIII.2012, 1♂ (H. Çiftçi, leg., M. Fent and A. Dursun, det.).

Distribution in Turkey: Adıyaman (Yıldırım et al., 2013)

Distribution in the Palaearctic region: Azerbaijan, Iran, Iraq, Russia (Southwestern Territory), Turkey (Linnavuori 1972, Putshkov & Putshkov 1996, Putshkov & Moulet 2010; Yıldırım et al., 2013).

Comments: The Euro-Siberian species *E. caucasicus* is distributed in the Caucasus and the countries neighbouring the Eastern Anatolian re-



Figure 1. Map showing the sampling sites.

gion of Turkey. The species was found in South-east Anatolia (Adıyaman) by Yıldırım et al. (2013). Our finding is the second record for the Turkish fauna.

Aradidae Brullé, 1836

Aneurinae Douglas & Scott, 1865

Genus *Aneurus* Curtis, 1825

Aneurus (Aneurodes) avenius (Dufour, 1833)

Material examined: Artvin province: Borçka, Camili village, 04.VIII.2009, 1♂ (A. Dursun, leg. and det.).

Distribution in Turkey: Bolu, Bursa (Horvath 1883); Kars (Kiritshenko 1918).

Distribution in the Palaearctic region: Euro-Siberian region (Heiss 2001, Heiss & Péricart 2007).

Comments: Different authors mentioned as host plants for this species several trees and shrubs, including: *Tilia*, *Fagus*, *Quercus*, *Betula*, *Carpinus*, *Alnus*, *Abies*, *Larix*, *Salix*, *Ligustrum*, *Sambucus nigra*, *Opulus*, *Evonymus europaeus* (Heiss & Péricart, 2007). The identified specimen was found in the herbaceous layer of a pine (*Pinus* ?) forest.

Genus *Aradus* Fabricius, 1803

Aradus cinnamomeus Panzer, 1806

Material examined: Çorum province: Alacahöyük, 22.VIII.2012, 1♀, 2♂♂ (A. Dursun leg. and det.); Kırklareli province: Demirköy (Sarpdere-Istranca Mountain), 14.VIII.2012, 3♂♂ (M. Fent leg., A. Dursun det.); Edirne province: Korucuköy, 31.V.2014, 3♀♀, 2♂♂ (leg. and det. M. Fent A. Dursun).

Distribution in Turkey: Ankara, Antalya, Bilecik, Kars, Konya, Kütahya, İzmir, Manisa, Si-

nop, Uşak (Önder et al. 2006)

New record for the Fauna of Turkish Thrace.

Distribution in the Palaearctic region: Euro-Siberian region (Heiss 2001, Heiss & Péricart 2007).

Comments: This species is very common in the Palaearctic region. It is known from few localities in Anatolia, Turkey. The specimens in the present study were found under the bark of pine trees. The finding represents the first record for the fauna of Turkish Thrace.

Coreidae Leach, 1815

Coreinae Leach, 1815

Genus *Spathocera* Stein, 1860

Spathocera lobata (Herrich-Schaeffer, 1840)

Material examined: Kırklareli province: Demirköy (Sarpdere-Istranca Mountain), 27.VI.2012, 2♀♀ (M. Fent leg., M. Fent and A. Dursun det.).

Distribution in Turkey: Bursa (Horvath 1883); Kars (Kiritshenko 1918); Ankara, Kayseri, Mersin, Sivas (Moulet 1995); Konya, Van (Dursun 2011).

New record for the Fauna of Turkish Thrace.

Distribution in the Palaearctic region: Euro-Mediterranean region to Central Asia (Dolling 1996).

Comments: This species is very common in Europe, in the Near East and in Central Asia.

Nabidae Costa, 1853

Prosternmatinae Reuter, 1890

Genus *Alloerhynchus* Fieber, 1860

Alloerhynchus flavipes (Fieber, 1836)

Material examined: Kırklareli province: Demirköy (Istranca Mountain), 14.VIII.2012, 1 ♀

(A. Dursun leg., M. Fent and A. Dursun det.).

Distribution in Turkey: Adana (Önder et al. 2006).

New record for the Fauna of Turkish Thrace.

Distribution in the Palaearctic region: Europe, Azerbaijan, Iran, Israel and Turkey (Asian part) (Kerzhner 1996).

Comments: *Alloeorhynchus flavipes* is distributed in most parts of Europe and Asia (especially Central Asia). The specimen was found on the rotten trunk of a tree, probably hunting.

Pentatomidae Leach, 1815

Pentatominae Leach, 1815

Genus *Bagrada* Stål, 1862

Bagrada (Nitilia) amoenula (Walker, 1870)

Material examined: Iğdır province: Tuzluca, 29.VII.2009, 4♀♀, 3♂♂ (A. Dursun leg., M. Fent and A. Dursun det.).

Distribution in Turkey: Adiyaman, Şanlıurfa (Fent et al. 2010).

Distribution in the Palaearctic region: North Africa - Algeria, Egypt, Libya and Morocco; Asia - Iraq, Israel, Saudi Arabia, Turkey, Yemen; Extralimital - Sudan (Rider 2006).

Comments: *B. amoenula* was cited by Fent et al. (2010) for the first time from South-eastern Anatolia Region (Adiyaman, Şanlıurfa) and is recorded for the first time from Eastern Anatolia (present study) showing that the distribution of the species expands to Armenia.

Genus *Pausias* Jakowlew, 1905

Pausias martini (Puton, 1890)

Material examined: Edirne province: Centre, 25.XI.2013, 1♀ (M. Fent leg. and det.).

Distribution in Turkey: Diyarbakır (Wagner 1959; Gözüaçık et al., 2011) İzmir (Lodos 1963; Lodos et al., 1978); Karaman (Lodos et al. 1998), Çanakkale (Özsaraç & Kıyak 2001; Özsaraç et al. 2001); Elazığ (Bolu et al., 2006), Ankara, Konya, Erzincan (Önder et al., 2006); Amasya, Tokat (Dursun & Kartal, 2008).

New record for the Fauna of Europe and Turkish Thrace.

Distribution in the Palaearctic region: Armenia, Azerbaijan, Iran, Iraq, Syria and Turkey (Asian Part) (Rider, 2006).

Comment: The specimen was found during autumn in the balcony of a house. We think the insect came to the residential area in order to overwinter. Dursun & Kartal (2008) and Gözüaçık et al.

(2011) recorded this species on *Ficus carica*, *Morus* sp., *Elaeagnus* sp., *Punica granatum*.

The distribution range of this species includes Syria and the Caucasus (Rider, 2006) and a considerable part of Turkey. Wagner (1959) has recorded this species from Turkey for the first time; he reported the species from Diyarbakır, which is in the south east of Turkey. Lodos (1963), Lodos et al. (1978), Özsaraç & Kıyak (2001) and Özsaraç et al. (2001) reported the presence of this species on the Aegean sea coast in İzmir province and the islands of Bozcaada and Gökçeada in western Anatolia.

Rhopalinae Amyot & Serville, 1843

Genus *Brachycarenum* Fieber, 1860

Brachycarenum languidus (Horváth, 1891)

Material examined: Hatay province: Yayladağı, Kızılcıat Village, 18.VIII.2009, 450m, 35°6'N, 36°20'E, 1♀ (A. Dursun leg. and det.).

Distribution in Turkey: Kars (Horváth 1894, Kiritschenko 1918); Ankara (Göllner-Scheiding, 1978).

Distribution in the Palaearctic region: Afghanistan, Armenia, Azerbaijan, Iran, Turkey (Asian part) and Uzbekistan (Dolling 2006).

Comments: This species is distributed in Asia, especially in Caucasus. In Turkey it is found in Kars, at the Armenian border (Horváth 1894, Kiritschenko 1918). Our finding is the third record from Turkey and represents the southern and the western limit of the range of this species in the Palaearctic Region.

Genus *Leptoceraea* Jakovlev, 1873

Leptoceraea viridis Jakovlev, 1873

Material examined: Iğdır province: Karakoyunlu, 27.VII.2009, 856m, 39°58'N, 44°11'E, 2♂♂ (A. Dursun leg. and det.).

Distribution in Turkey: Minor Asia (Oshanin 1906); this paper. First exact record from Turkey.

Distribution in the Palaearctic region: Europe - Romania, Russia (Southwestern Territory), Ukraine; North Africa - Algeria, Egypt; Asia - Azerbaijan, Kazakhstan (Asian part), Cyprus, Iran, Iraq, Israel, Syria, Tadjikistan, Turkey (Asian part), Uzbekistan and Turkmenistan. (Dolling 2006).

Comments: In the present study, we confirm the presence in Turkey and give exact record from Iğdır in eastern Anatolia.

Genus *Myrmus* Hahn, 1832

Myrmus miriformis (Fallén, 1807)

Material examined: Kastamonu province: Daday, Taşçılar, 28.VI.2007, 992m, 41°28'N, 33°23'E, 1♀ (M. Fent leg. and det.).

Distribution in Turkey: Ağrı (Pehlivan 1981).

Distribution in the Palaearctic region: Europe - whole Europe; Asia - Armenia, Azerbaijan, China (Northwestern Territory), Georgia, Kazakhstan (Asian part), Iran, Kirgizia, Mongolia and Russia (Dolling 2006).

Comments: This species is distributed in Europe and Asia. It is known in almost every part of Europe, in Caucasus and Central Asia. It is located in Ağrı on the border with Armenia (Pehlivan, 1981). Our finding is the second locality in Turkey and a new record for the fauna of the Black Sea region.

Discussion

In this study, we report *Pausias martini* (Pentatomidae), *Aradus cinnamomeus* (Aradidae), *Spathocera lobata* (Coreidae) and *Alloeorhynchus flavipes* (Nabidae) as new genera and species for the Turkish Thrace fauna. *P. martini* is a new record for the fauna of Europe. The new record represents the western limit of the distribution of this species in the Palaearctic Region.

Leptoceraea viridis was found for the first time in Minor Asia by Oshanin (1906), but the exact locality was not reported. This finding was cited from Turkey by Putshkov (1986) but not by Hoberlandt (1955). The present study represents the first record with exact locality of *Leptoceraea viridis* from Turkey. A new exact locality is reported also for *Aneurys avenius*, a species that is very common and abundant throughout the Palaearctic region. It was first found in Bolu and Bursa by Horváth (1883) and mentioned later by Kiritshenko (1918) from Kars. It wasn't recorded in other localities from Turkey. Our study revealed that this species is distributed also in the east of the Black Sea region of Turkey.

Myrmus miriformis was reported for the first time from Turkey by Pehlivan (1981). Our finding is the second locality in the Western Black Sea Region from Turkey and the northern limit of the distribution of this species in Turkey. We reported *Bagrada amoenua* from eastern Anatolia for the first time. The record represents the eastern limit of the distribution of the species in the Palaearctic Region.

As a result of the findings of the current study, the number of Heteroptera known from Turkish Thrace has increased. The number of Aradidae has increased to 3 species with *Aradus cinnamomeus*; Coreidae, with *Spathocera lobata*, to 18 species of 13 genera; Pentatomidae, with *Pausias martini*, to 68 species of belonging to 37 genera and Nabidae, with *Alloeorhynchus flavipes*, to 9 species from 4 genera. Additionally, new distribution records of previously known species have been reported.

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