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Original research

A study on the Coreoidea (Hemiptera: Heteroptera) fauna of Amasya Province, Turkey

Pınar ZENGİN*,§, Ahmet DURSUN

Amasya University, Faculty of Arts and Science, Department of Biology, 05100 Amasya, TURKEY

*Corresponding author, e-mail: pinarzengin@windowslive.com

§: This study was produced from the MSc thesis.

Abstract: In this study, 2 species belonging to 1 genus of the Stenocephalidae family, 13 species belonging to 8 genera of the Rhopalidae family, 3 species belonging to 2 genera of the Alydidae family and 16 species belonging to 11 genera of the Coreidae family have been recorded from the environment of Amasya. Of them, 29 species are new records for the Heteroptera fauna of Amasya and *Brachycarenus languidus, Agraphopus suturalis, Coriomeris alpinus* and *Corizus brevicornis* for the Black Sea region of Turkey. While 20 species recorded in the present study originate from Holomediterranean, 3 species originate fromIrano-Turanian, 3 species from Pontomediterranean, 3 species from Euro-Siberian, 2 species from Mediterranean and 2 species have a cosmopolite distribution. Furthermore, the record of an endemic species has been reporded from Amasya.

Keywords: Heteroptera, Coreoidea, new records, Amasya, Turkey.

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Introduction

The superfamily Coreoidea Leach 1815 that includes monophyletic families Coreidae Leach 1815, Alydidae Amyot & Serville, 1843, Rhopalidae Amyot & Serville, 1843 and Stenocephalidae Dallas, 1852 in Palaearctic region take part in the infraorder Pentatomomorpha **Leston, Pendergrast & Southwood, 1954** (Dolling, 2006).

The Coreoidea is distributed all of the zoogeographic regions and includes 3099 species in the world (Faúndez, 2016). Superfamily Coreoidea has been listed by family Coreidae, which is largest family represented by 344 species belonging to 84 genera, family Alydidae that is represented by 69 species belonging to 26 genera, family Rhopalidae by 71 species belonging to 14 genera and family Stenocephalidae with 18 species of a genus in the Palearctic region. In Turkey, 48 species from 20 genera of Coreidae, 29 species in 11 genera of Rhopalidae, 7 species in 4 genera of Alydidae and 7 species in 1 genus of Stenocephalidae have been recorded (Hoberlandt, 1955; Moulet, 1995; Önder et al., 2006; Dolling, 2006; Dursun et al., 2010; Arslangündoğdu and Hızal, 2010; Dursun, 2011; Fent & Kment, 2011; Ghahari et al., 2012; Dursun & Fent, 2015; Fent & Dursun, 2019).

The members of Coreoidea are phytophagous and many species are economically and biologically important; especially are feeding to meristematic tissues and ripe seeds. Occasional records of feeding on excrement and carrion. Additionally, it has been reported that humans were bitten by members of this superfamily (Dolling, 2006; Faúndez, 2016).

Amasya has very rich areas in terms of microclimate, different vegetation and habitat properties. Amasya also shows a matchless feature of faunal elements and comprised a great area for type localities of numerous animals. Although there are a few taxonomic studies given records on the families of superfamily Coreoidea from

Amasya province (Dursun, 2011; Dursun & Fent, 2017) no detailed study has been carried out so far with superfamily Coreoidea in this study area. The purpose of this study is to give new records for superfamily Coreoidea fauna of Amasya, to available ecological data for the recorded species and to open a new way for scientific and ecological studies in the province.

Materials and Methods

The study material was obtained from 44 localities with different vegetation and habitat in Amasya province in the year 2018 (Fig. 1, 2). The specimens were collected by using insect nets on trees, grass and shrubs. All specimens were put in tubes in 70% ethanol and brought to the laboratory. In the laboratory, specimens were softened in hot water (80°C-100°C) for preparation of the male genitalia which was used for further identifications. Furthermore, the unpublished material previously collected second author in Amasya, which is preserved in the collection at the Biology Department of the Faculty of Arts and Science, Amasya University, were examined. The specimens were prepared and identified using the relevant diagnostic was investigated under a stereomicroscope (Leica EZ4) and keys of Stichel (1960), Pehlivan (1981) and Moulet (1995). The material is deposited in the collection of Amasya University, Faculty of Science and Arts, Department of Biology (Amasya, Turkey).

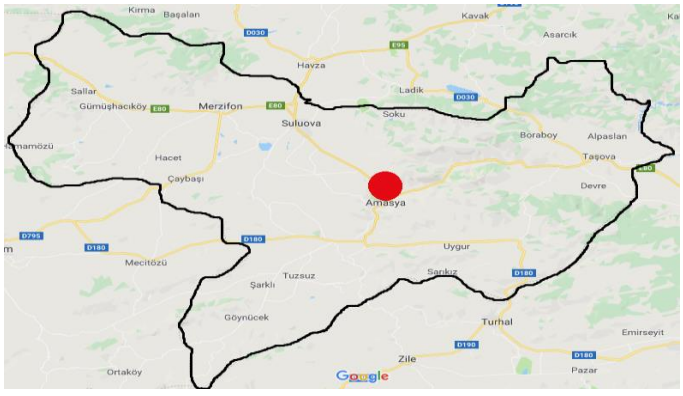

Figure1. The area of study in Amasya (from google earth)

Figure 2. Amasya in Tukey

Results

Ordo: Hemiptera Linnaeus, 1758
Subordo: Heteroptera Latreille, 1810
Coreoidea Leach 1815
Stenocephalidae Dallas, 1852
***Dicranocephalus* Hahn, 1826**
***Dicranocephalus agilis* (Scopoli, 1763)**

Material examined: Amasya: Harşena, 30.04.2018, 3♀♀, 2♂♂; **Merzifon:** Yazıköy, 06.06.2015, 2♀♀, 2♂♂; **Suluova:** Center, 14.07.2018, 1♀, 1♂; **Taşova**: Borabay, 20.06.2015, 1♀, 1♂; Arpaderesi, 20.05.2018, 2♀♀, 2♂♂.

Comments: This Holomediterranean species is widespread distributed and frequently found in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). The present record is the first record of the species for Amasya province.

***Dicranocephalus albipes* (Fabricius, 1781)**

Material examined: Amasya: Boğazköy, 20.04.2018, 2♀♀, 1♂; Dadıköy, 22.06,2018, 2♀♀, İlyasköy, 25.07.2018, 1♀, 1♂; Ziyaret, 25.07.2018, 1♂; Bağlıca, 23.07. 2018, 2♀♀, 3♂♂; **Göynücek:** Center, 23.07.2018, 1♂; Başpınar, 29.07.2018, 1♀; Yeniköy, 08.07.2018, 1♂; 18.07. 2018, 4♀♀, 1♂; **Merzifon:** Akören, 10.07.2018, 2♀♀, 1♂; **Taşova:** Kızgüldüren, 28.06.2018, 2♀♀, 2♂♂.

Comments: This Holomediterranean species is common distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Küçükbasmacı & Kıyak, 2015; Fent & Dursun, 2019). It is a new record for the fauna of Amasya.

Rhopalidae Amyot & Serville, 1843
Rhopalinae Amyot & Serville, 1843
***Brachycarenus* Fieber, 1860**
***Brachycarenus languidus* (Horváth, 1891)**

Material examined: Amasya: Kazanasmaz, 09.06.2018, 2♂♂; Bağlıca, 23.07. 2018, 2♀♀, 1♂; **Göynücek**: Başpınar, 29.07.2018, 1♂; **Suluova:** Saygılı, 14.07.2018, 1♀.

Comments: This Irano-Turanian species was first found by Horváth (1894) and later was mentioned by Kiritshenko (1918) in the surroundings of Kars in East Anatolia. Later the species were found from Ankara and Hatay. There is no other record of the species in Turkey except for records given in above. Consequently, the distribution of this species is known only from the eastern Anatolia. In this study *Brachycarenus languidus* (Horváth, 1891) recorded first time from Amasya and the Black Sea region. This species is rare in Turkey according to available records. But it was recorded by Heckmann et al. (2015) from the Greek island Crete and Europe. So it is most possible that can also be found in other regions of Turkey.

***Brachycarenus tigrinus* (Schilling, 1829)**

Material examined: Amasya: Boğazköy, 20.06.2018, 1♀, 1♂; Dadıköy, 22.06,2018, 1♀, 1♂; İlyasköy, 25.07.2018, 1♀, 1♂; **Göynücek:** Gediksaray, 14.08.2015, 2♀♀, 1♂; Çulpara, 07.09.2015, 1♀, 1♂; **Gümüşhacıköy**: Çitli, 16.07.2015, 1♀: Sarayözü, 24.06.2015, 1♀; **Hamamözü**: Yeniköy, 24.06.2015, 2♀♀, 1♂; **Merzifon:** Oymak, 23.06.2015, 2♀♀, 3♂♂.

Comments: This Holomediterranean species is widespread distributed and frequently found in Turkey. It was firstly found by Pehlivan (1981) from Amasya (Merzifon).

***Corizus* Fallén, 1814**

***Corizus brevicornis* Horváth, 1917**

Material examined: Göynücek: Başpınar, 30.08.2018, 1♀.

Comments: This species has been found only from Erzurum and Malatya in the east Anatolia up to now. In the present study, this endemic species was recorded from Amasya and the Black Sea region for the first time. It is rarely distributed in Turkey according to previously records (Önder et al., 2006).

***Corizus hyoscyami* (Linnaeus, 1758)**

Material examined: Amasya: Boğazköy, 29.10.2018, 1♀; İlyasköy, 25.07.2018, 2♀♀, 1♂; **Göynücek:** Konuralan, 23.08.2018, 2♀♀, 2♂♂; **Suluova**: Saygılı, 14.07.2018, 1♂; **Gümüşhacıköy**: Çitli, 16.07.2015, 1♀; Sarayözü, 24.06.2015, 1♂; **Taşova:** Borabay, 16.08.2015, 1♀, 1♂.

Comments: This Holomediterranean species is widespread distributed and frequently found in Turkey. It was firstly recorded by Pehlivan (1981) from Amasya.

***Liorhyssus* Stål, 1870**

***Liorhyssus hyalinus* (Fabricius, 1794)**

Material examined: Amasya: Aydoğdu, 23.08.2018, 1♂; Bağlıca, 23.07.2018, 1♀; Uygur, 27.07.2018, 1♀; **Göynücek:** Ayvalıpınar, 25.08.2018, 1♀; Konuralan, 23.08.2018, 1♀; Gafarlı, 23.08.2018, 1♂; **Gümüşhacıköy**: Çitli, 16.07.2015, 1♀, 1♂; **Merzifon:** Yazıköy, 06.09.2015, 2♀♀, 3♂♂; **Taşova:** Borabay, 16.08.2015, 1♀, 1♂; Mülkbükü, 30.08.2018, 1♀.

Comments: This *cosmopolitan* species is widespread and frequently distributed found in Turkey. The species is a new record for the Heteroptera fauna of Amasya (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019).

***Maccevethus* Dallas, 1852**

***Maccevethus corcicus* Signoret, 1862**

Material examined: Amasya: Bağlıca, 23.07.2018, 2♂♂.

Comments: This Ponto-Mediterranean species has been reported as *Maccevethus lutheri* Wagner, 1953 for the Heteroptera fauna of Turkey. The distribution of species is common. (Pehlivan, 1981; Önder et al., 2006; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

***Maccevethus errans caucasicus* (Kolenati, 1845)**

Material examined: Göynücek: Gafarlı, 23.08.2018, 1♀, 1♂; **Taşova:** Borabay, 16.08.2015, 2♀♀, 1♂.

Comments: This Ponto-Mediterranean subspecies was recorded from Amasya for the first time in the study.

***Rhopalus* Schilling, 1827**

***Rhopalus conspersus* (Fieber, 1837)**

Material examined: Göynücek: Ayvalıpınar, 25.08.2018, 1♀, 1♂.

Comments: This Euro-siberian species is rarely distributed in Turkey according to previous records (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

***Rhopalus parumpunctatus* Schilling, 1829**

Material examined: Amasya: Center, 10.06.2018, 1♀; Uygur, 27.07.2018, 2♀♀, 1♂; **Suluova**: Saygılı, 14.07.2018, 1♀; Yüzbey, 18.08.2018, 1♀, 1♂; **Merzifon:** Yazıköy, 06.09.2015, 1♀, 2♂♂; **Taşova:** Borabay, 16.08.2015, 1♀, 1♂; Mülkbükü, 30.08.2018, 1♂.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

Stictopleurus Stål, 1872

Stictopleurus abutilon (Rossi, 1790)

Material examined: Amasya: Uygur, 27.07.2018, 1♀, 1♂; **Taşova:** Borabay, 16.08.2015, 1♀, 1♂.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

Stictopleurus pictus (Fieber, 1861)

Material examined: Amasya: Aydoğdu, 23.08.2018, 1♂; **Göynücek:** Başpınar, 29.07.2018, 1♀, 1♂.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

Agraphopus Stål, 1872

Agraphopus suturalis Reuter, 1900

Material examined: Amasya: Kazanasmaz, 09.06.2018, 1♀.

Comments: This Holomediterranean species was firstly found by Pehlivan (1981) as *Agraphopus pallens* in the surroundings of Cizre (Şırnak) in eastern Anatolia. There is no another record in Turkey. Locality of the species reported in the study was the second record from Turkey.

Chorosoma Curtis, 1830

Chorosoma schillingii (Schilling, 1829)

Material examined: Amasya: Center, 10.06.2018, 2♀♀; Uygur, 27.07.2018, 2♀♀, 1♂; Amasya: Bağlıca, 26.06.2015, 2♀♀, 1♂; Doğantepe, 15.08.2015, 2♀♀, 2♂♂; Kurnaz, 16.06.2015, 2♀♀, 2♂♂; **Göynücek:** Gediksaray, 14.08.2015, 1♀, 2♂; **Gümüşhacıköy**: Çitli, 16.07.2015, 2♀♀, 1♂; **Hamamözü:** Yeniköy, 24.06.2015, 2♀♀, 1♂; **Merzifon:** Oymak, 23.06.2015, 2♀♀, 3♂♂; **Suluova**: Bayırlı, 22.06.2015, 3♀♀, 2♂♂; **Taşova**: Borabay, 16.08.2015, 2♀♀, 2♂♂.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was firstly recorded from Amasya.

Alydidae Amyot & Serville, 1843

Alydinae Amyot & Serville, 1843

Alydus Fabricius, 1803

Alydus calcaratus (Linnaeus, 1758)

Material examined: Taşova: Center, 02.09.2018, 2♀♀.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was recorded for the first time from Amasya.

Camptopus Amyot & Serville, 1843

Camptopus bifasciatus Fieber, 1864

Material examined: Amasya: Yassıçal, 15.05.2018, 1♀.

Comments: This Irano-Turanian species is rarely distributed in Turkey according to previously records. Type locality of this species is Amasya (Dursun & Fent, 2017).

Camptopus lateralis (Germar, 1817)

Material examined: Amasya: Harşena, 17.05.2018, 1♀; Ovasaraya, 15.06.2018, 3♀♀, 3♂♂; Damudere, 18.06.2018, 2♀♀, 2♂♂; **Gümüşhacıköy**: Çitli, 18.05.2015, 3♀♀, 1♂; **Göynücek: Center**, 25.06.2018, 5♀♀, 5♂♂; Ayvalıpınar, 25.08.2018, 1♀, 1♂; **Merzifon:** Oymak, 23.06.2015, 1♀, 1♂; **Suluova**: Bayırlı, 15.07.2018, 3♀♀, 3♂♂; **Taşova:** Center, 30.06.2018, 3♀♀, 2♂♂.

Comments: This Holomediterranean species is widespread and frequently distributed in Turkey (Pehlivan, 1981; Önder et al., 2006; Dursun, 2009; Fent & Dursun, 2019). In the study, this species was first recorded from Amasya.

Coreidae Leach, 1815

Pseudophloeinae Stål, 1868

Anoplocerus Kiritshenko, 1926

Anoplocerus elevatus (Fieber, 1861)

Material examined: Amasya: Küçükkızılca, 15.05.2018, 1♀.

Comments: This Holomediterranean species is rarely distributed in Turkey according to previous records (Hoberlandt, 1955; Seidenstücker, 1960; Moulet, 1995: Önder et al., 2006; Dursun, 2011). In the study, it was first recorded from Amasya.

Ceraleptus A. Costa, 1847

Ceraleptus gracilicornis (Herrich-Schaeffer, 1835)

Material examined: Amasya: Dadıköy, 12.5.2018, 1♀; Ziyaret, 13.5.2018, 1♂; **Suluova**: Çeltek, 11.07.2018, 2♀♀, 2♂♂.

Comments: This Holomediterranean species was recorded by Dursun (2011) in Amasya.

The known distribution of the species in Turkey is uncommon.

Ceraleptus obtusus (Brullé, 1839)

Material examined: Amasya: Kaleköy, 15.05.2018, 2♀♀, 1♂.

Comments: In the study, this Holomediterranean species was first recorded from Amasya. It is rarely distributed in Turkey according to previously records (Moulet, 1995; Kıyak, 2000; Dursun & Fent, 2009; Dursun, 2011).

Coriomeris Westwood, 1842

Coriomeris affinis (Herrich-Schaeffer, 1839)

Material examined: Taşova: Borabay, 27.05.2015, 2♂♂.

Comments: This Mediterranean species is widespread and frequently distributed in Turkey (Hoberlandt, 1955; Önder et al., 2006; Dursun, 2011). In the study, this species was first recorded from Amasya.

Coriomeris alpinus (Horváth, 1895)

Material examined: Göynücek: Gafarlı, 23.08.2018, 1♂.

Comments: In the study, this Mediterranean species was first recorded from Amasya and Black Sea region. It is rarely distributed in Turkey (Hoberlandt, 1955; Önder et al., 2006; Dursun, 2011).

Coriomeris denticulatus (Scopoli, 1763)

Material examined: Amasya: Küçükkızılca, 23.05.2018, 1♀.

Comments: This Euro-Siberian species is common and widely distributed in Turkey according to previously records (Horváth, 1883; Hoberlandt, 1955; Linnavuori, 1965; Önder et al., 2006; Dursun, 2011; Fent & Dursun, 2019). Record of the species given in the present study is for the first time from Amasya.

Coriomeris pallidus Reuter, 1900

Material examined: Suluova, Saygılı, 14.07.2018, 1♂; **Taşova:** Özbaraklı, 24.06.2018, 1♀.

Comments: The present records this Euro-Siberian species are for the first time from Amasya. It is rarely distributed in Turkey according to previous records (Hoberlandt, 1955; Önder et al., 2006; Dursun & Fent, 2009; Dursun, 2011).

Coreinae Leach, 1815

Leptoglossus Guérin-Méneville, 1831

Leptoglossus occidentalis Heidemann, 1910

Material examined: Amasya: İpekköy, 10.01.2018, 3♀♀, 1♂; 14.10.2018, 1♀; 17.10.2018, 1♀.

Comments: *Leptoglossus occidentalis* is known as the western conifer seed bug and it is an invasive alien species originated from North America. The presence of this species in Palaearktic region was firstly from Italy in 1999. The distribution of this Nearctic species rapidly expanded to the eastern and western Europe from Italy. This species was discovered in Turkey first time in Istanbul province (European part) of Turkey in 2009. Later considered on the presence of species surroundings of Antalya, Bursa, Çorum, Edirne, Kastamonu, Kayseri, Kırklareli, İzmir, Sakarya, Tokat and Zonguldak of Turkey. In addition, it was recently found near to Elazığ province in eastern Anatolia. It is most possible that of this alien species will expanded toward Iran and Caucasus over the Turkey (Fent & Kment, 2011; Hızal & İnan, 2012; Çerçi et al., 2017; Özgen et al., 2017; Parlak, 2017). Adult specimens are known to overwinter in aggregations under bark or other natural habitats, as well as in buildings and homes. In the study, the specimens were found in the laboratory from the Department of Biology for the first time in Amasya. These specimens probably must have entered in the laboratory to overwintering through the window, because there are many pine trees in front of the window of laboratory.

Centrocoris Kolenati, 1845

Centrocoris spiniger (Fabricius, 1781)

Material examined: Amasya: Aydoğdu, 23.08.2018, 1♂; Küçükkızılca, 15.05.2018, 1♂; **Göynücek:** Gafarlı, 29.07.2018, 1♂.

Comments: This Holomediterranean species is reported for the first time from Amasya in the study. It is common and widely distributed in Turkey (Horváth, 1883; Kiritshenko, 1918; Hoberlandt 1955; Wagner, 1966; Önder et al., 2006; Dursun & Fent, 2009; Dursun, 2011; Fent & Dursun, 2019).

Centrocoris variegatus Kolenati, 1845

Material examined: Taşova: Özbaraklı, 24.06.2018, 1♂.

Comments: This Holomediterranean species is reported for the first time from Amasya in the study. It is frequently and widely distributed in Turkey according to the available records (Horváth, 1901; Hoberlandt, 1955; Önder et al., 2006; Dursun, 2011; Fent & Dursun, 2019).

Coreus Fabricius, 1794

Coreus marginatus (Linnaeus, 1758)

Material examined: Amasya: Harşena, 14.05.2018, 1♀; 25.06.2018, 1♀, 1♂; İpekköy, 30.04.2018, 3♀♀, 3♂♂; 25.09.2018, 2♀♀, 2♂♂; Kaleköy, 28.04.2018, 2♂♂; Küçükkızılca, 30.04.2018, 3♀♀, 1♂; **Göynücek: Center**, 25.06.2018, 1♀, 2♂♂; Ayvalıpınar, 25.08.2018, 1♀, 1♂; **Merzifon:** Oymak, 23.06.2015, 1♀, 1♂; **Suluova**: Bayırlı,

15.07.2018, 2♀♀, 2♂♂; **Taşova:** Borabay, 06.05.2018, 2♀♀; Akdağ, 12.05.2018, 3♀♀.

Comments: This Holomediterranean species is frequently and widely distributed in Turkey according to the available records (Horváth, 1901; 1924; Hoberlandt, 1955; Kıyak, 1990a, b; Önder et al., 2006; Dursun & Fent, 2009; Dursun, 2011; Fent & Dursun, 2019).

***Enoplops* Amyot & Serville, 1843**

***Enoplops disciger* (Kolenati, 1845)**

Material examined: Taşova: Center, 28.05.2018, 1♀, 2♂♂.

Comments: This Pontomediterranean is commonly and widely distributed in Anatolia and Turkish Thrace region according to available records (Horváth, 1901; Kiritshenko, 1918; 1924; Hoberlandt, 1955; Linnavuori, 1965; Moulet, 1995; Kıyak, 2000; Önder et al., 2006; Dursun & Fent, 2009; Dursun, 2011).

***Spathocera* Stein, 1860**

***Spathocera tenuicornis* Jakovlev, 1883**

Material examined: Amasya: Küçükkızılca, 20.05.2018, 3♀♀, 1♂; Boğazköy, 10.05.2018, 1♀♀, 1♂.

Comments: The distribution of this Irano-Turanian species is rare in Turkey according to previous records (Hoberlandt, 1955; Kıyak, 1990b; Önder et al., 2006; Dursun, 2011).

***Syromastus* Berthold, 1827**

***Syromastus rhombeus* (Linnaeus, 1767)**

Material examined: Amasya: Kaleköy, 10.05.2018, 1♀; Küçükkızılca, 10.05.2018, 1♂.

Comments: This Holomediterranean species is common in Anatolia and Turkish Thrace region (Horváth, 1883; 1901; Kiritshenko, 1918; 1924); Hoberlandt, 1955; Linnavuori, 1965; Kıyak, 1990a, b; Önder et al., 2006; Dursun & Fent, 2009; Dursun, 2011; Fent & Dursun, 2019).

***Gonocerus* Berthold, 1827**

***Gonocerus acuteangulatus* (Goeze, 1778)**

Material examined: Taşova: Karsavul, 27.05.2018, 1♀, 1♂.

Comments: The distribution of this Holomediterranean species is known only from Anatolia. The species is quite common in there (Horváth, 1883; Hoberlandt, 1955; Linnavuori, 1965; Tezcan & Önder, 1999; Önder, et al. 2006; Dursun, 2011).

***Phyllomorpha* Laporte, 1833**

***Phyllomorpha laciniata* (Villers, 1789)**

Material examined: Amasya: Boğazköy, 07.05.2018, 1♀; **Merzifon:** Yazıköy, 15.08.2018, 1♀, 1♂.

Comments: This Holomediterranean species is frequently and widely distributed in Turkey (Fahringer, 1922; Hoberlandt, 1955; Kıyak, 1990a, b; Önder et al., 2006; Dursun, 2011; Fent & Dursun, 2019). In the study the specimens was found under *Acantholimon* sp. and *Astragalus* sp..

Discussion

The recognation of the specimens collected from 44 different localities in this studyrevealed 2 species belonging to 1 genus of the Stenocephalidae family, 13 species belonging to 8 genera of the Rhopalidae family, 3 species belonging to 2 genera of the Alydidae family and 16 species belonging to 11 genera of the Coreidae family from superfamily Coreoidea in Amasya (Fig. 3). Of them, 29 species are new records for the Heteroptera fauna of Amasya and *Brachycarenus languidus, Agraphopus suturalis, Coriomeris alpinus* and *Corizus brevicornis* for the Black Sea region of Turkey.

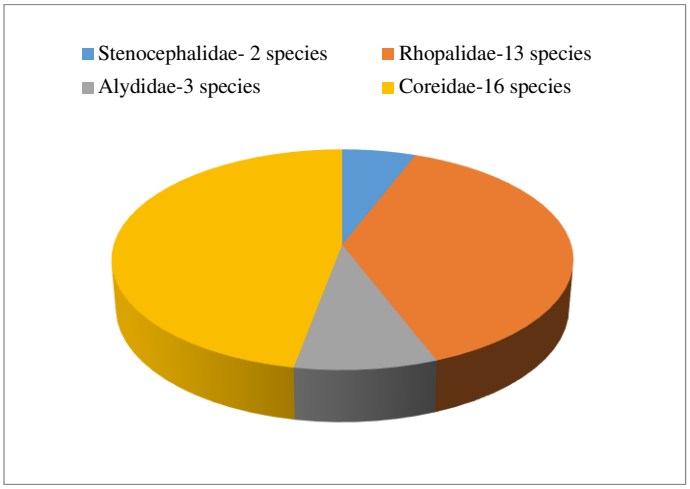

Figure 3. Distribution of species numbers by families of Coreoidea in Amasya.

Among the thirtyfour species of superfamily Coreoidea recorded in the surrounding of Amasya; *A. suturalis*, *A. elevatus, B. languidus, C. brevicornis, C. bifasciatus, C. gracilicornis, C. obtusus, C. alpines, C. pallidus, S. tenuicornis* and *R. conspersus* are rarely distributed in Turkey and also in our present study area. The species *A. suturalis* was found in one locality in the surrounding of Amasya in the study. Except for the data reported by Pehlivan (1981), there are no records belong to these species so far in Turkey. Our finding is the second locality in the Black Sea Region in Turkey and the northern limit of the distribution of this species in Turkey. Another

species *B. languidus*, which is the limited distribution in the fauna of Turkey. It was recorded by Heckmann et al. (2015) from the Greek island Crete and Europe, we think that this species can also be distribution in other regions (especially in Aegean region) of Turkey. *C. alpinus* has so far been mentioned from Ankara, Isparta and Kayseri of Turkey. The present report is the first for Black sea region. *C. alpinus* is a species distributed over altitudes of 800m. The Gafarlı (Göynücek-Amasya) area is located circa 850 m. Therefore, the habitat of Gafarlı village is suitable for this species. The endemic species *C. brevicornis* is known from Erzurum and Malatya in east Anatolia up till now. In the study, it was for the first time recorded from different region of Turkey. *L. occidentalis* an alien species can now be distribution almost the all region in Turkey. The distribution of this species in Turkey is very concerning especially for pine forests.

The geographical location of Amasya within many microclimate areas is very important for faunal component in Turkey. Amasya is dispersal corridors for different animal between Black Sea region and central Anatolia. In the study, 20 species origin of Holomediterranean, 3 species origin of Irano-Turanian, 3 species origin of Pontomediterranean, 3 species origin of Euro-Siberian, 2 species origin of Mediterranean, 2 species origin of cosmopolitan, 1 species endemic have been recorded from Amasya. Holomediterranean species are a very common and abundant in the surroundings of Amasya (Fig. 4). The present study has contributed to the distribution of superfamily Coreoidea fauna in Turkey, the identification of biodiversity of this superfamily in the surroundings of Amasya.

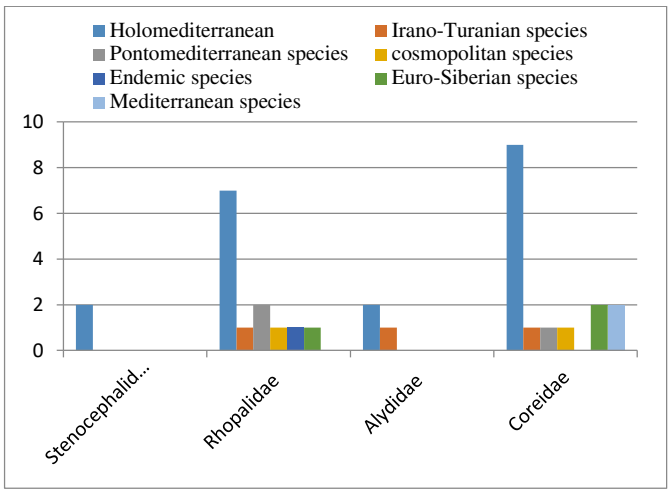

Figure 4. Origin of Coreoidea species distributed in Amasya.

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