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Research Article

New and additional records of the family Coreidae (Hemiptera: Heteroptera) from the Thrace Region of Turkey

Ahmet Dursun[1*] Meral Fent[2]

[1]Amasya University, Faculty of Arts and Science, Department of Biology, 05100, Amasya/ Turkey. ORCID ID: 0000-0002-5114-7470. ahmetdursun55@hotmail.com

[2] Trakya University, Faculty of Science, Department of Biology, 22030, Edirne Turkey. ORCID ID 0000-0001-5787-6714. m_fent@hotmail.com

*Corresponding author email: ahmetdursun55@hotmail.com

ABSTRACT: As a result of field studies carried out in various localities in the Turkish Thrace Region between 2014–2020, 13 species from the Coreidae family were identified. Among these species, *Haploprocta sulcicornis* (Fabricius, 1794), *Gonocerus acuteangulatus* (Goeze, 1778), *Ceraleptus lividus* Stein, 1858 and *Spathocera dalmanii* (Schilling, 1829) are new records for the Turkish Thrace Region. In addition, new locality information's has been added to the distribution area of 9 species, which were previously known to be rare in the Turkish Thrace Region.

KEYWORDS: Coreidae, Heteroptera, new and additional records, Thrace Region, Turkey.

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INTRODUCTION

In the all zoogeographic regions of the World more than 45,000 described species are known within the suborder Heteroptera (Hemiptera) and more than 8,000 of them are distributed in the Palaearctic Region (Henry 2017). Coreidae, the largest family of the super-

family Coreoidea (Hemiptera: Heteroptera), is represented by 344 species belonging to 84 genera in the Palaearctic Region (Dolling 2006).

In Turkey, 49 species from 20 genera of Coreidae have been recorded, of those, 17 species of 12 genera were published in Thrace (Hoberlandt 1955; Moulet 1995; Önder *et al.* 2006; Dolling 2006; Dursun *et al.* 2010; Arslangündoğdu & Hızal 2010; Dursun 2011; Fent & Kment 2011; Kment *et al.* 2013; Dursun & Fent 2015, 2017; Fent & Dursun 2019; Zengin & Dursun 2019). From those, the species *Anoplocerus luteus* (Fieber, 1861) (from İzmir), *Arenocoris latissimus* Seidenstücker, 1960 (from Ulukışla- Niğde) and *Cercinthus griseus* (Fieber, 1861) (European Turkey,) have been described from the territory of Turkey. Although *Cercinthus griseus* (Fieber,1861) has been described by Fieber (1861) as *Coccocephalus griseus* Fieber,1861 from Thrace Region of Turkey, it has never been collected again in that area. The species of Coreidae are phytophagous, especially feeding on meristematic tissues of the trees and ripe seeds, many species are economically and biologically importance (Dolling 2006; Faúndez 2016).

The research area of the study, Thrace Region of Turkey, is situated in the south -eastern extension of Balkan Peninsula, surrounded by Bulgaria in the north and Greece, in the west. The Thrace Region is separated from Anatolian part of Turkey by the Dardanelles Strait, Marmara Sea, and Istanbul Strait. The southern parts of the region are covered by dry forests located in Ganos and Koru Mountains and the northern parts of the region are characterized by humid forests located in Istranca Mountains, and Mediterranean vegetation elements dominated by maquis are the typical floral elements of the coastal regions, and the central part of the region, the Ergene Basin, is covered by anthropogenic steppe with wide agricultural areas. The land covering of Thrace Region of Turkey is almost plain with Mahya Hill at 1035 m a.s.l. in Istranca Mountains as the highest point (Dursun & Fent 2017).

MATERIALS AND METHODS

The research material was collected from trees and shrubby plants with a Japanese umbrella and from herbaceous vegetation with a sweep net from 12 localities in Thrace Region of Turkey (Table 1, Fig. 1),

Loc. No	Locality	Altitude	Coordinates	Collection dates
1	Edirne – Centrum	41 m	41°40'28"N 26°33'39"E	21.08.2014
2	Kırklareli – Centrum – Üsküp	284 m	41°43'23"N 27°22'45"E	22.08.2015
3	Kırklareli – Vize – Kızılağaç	237m	41°41'45"N 27°52'55"E	26.06.2015
4	Kırklareli – Pınarhisar (Mahya Hill)	692 m	41°46'12"N 27°40'58"E	27.06.2015
5	Tekirdağ – Şarköy- Uçmakdere	107 m	40°48'08"N 27°21'48"E	27.06.2015
6	Kırklareli – Centrum – Kayalı	272 m	41°47'12' N 27°07'07"E	16.08.2015
7	Kırklareli – Centrum – Kavakdere	152 m	41°35'54"N 27°16'07"E	01.06.2016
8	Edirne – Keşan (Koru Mountains)	70 m	40°43'51"N 26°43'49"E	17.07.2016
9	Edirne – Keşan – Mecidiye	40 m	40°38'23"N 26°31'55"E	19.07.2016
10	Kırklareli – Babaeski – Ağayeri	76 m	41°28'04"N 26°57'45"E	19.05.2018
11	Kırklareli – Pınarhisar	246 m	41°37'47"N 27°35'51"E	04.06.2019
12	Edirne – Uzunköprü – Çöpköy	56 m	41°12'19"N 26°51'21"E	10.08.2020

Table 1. The localities, altitudes, coordinates, and dates where Coreidae species were recorded in Turkish Thrace.

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and new records and rarefied species in Thrace Region from Turkey were given. For preparation of the genitalia, samples were softened in hot water and their genitalia extracted. Male genital inspection (pygophores and parameres) was used for the identification of species. Genitalia of male and female were examined using a Leica SZX stereoscopic microscope. Stichel (1960), Kerzhner & Jaczewski (1964) and Moulet (1995) were used to identify of the material. The material was deposited in the Entomological Collections of Trakya University (Biology Department), Edirne, Turkey.

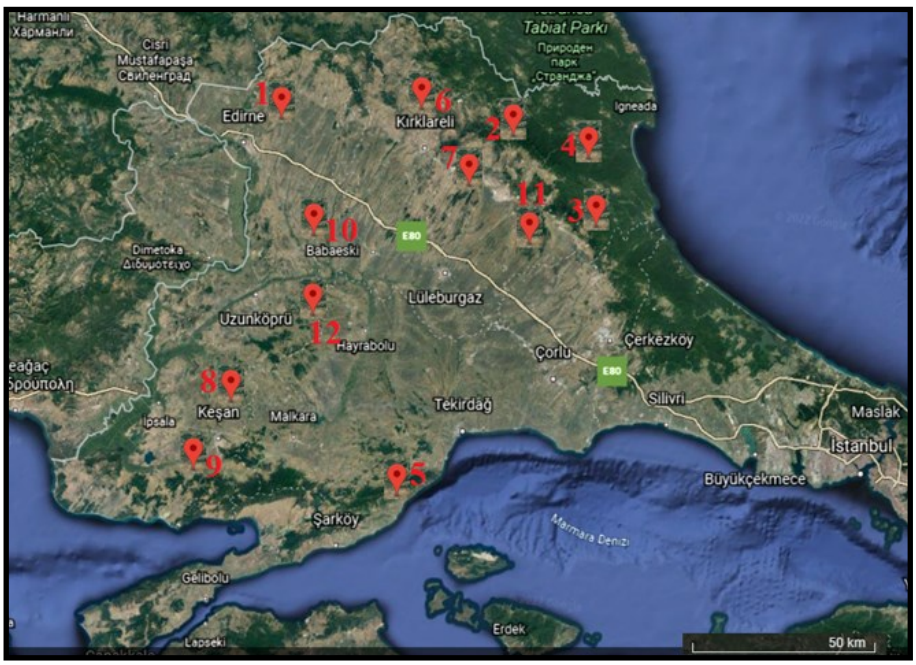

Figure 1. Collecting localities in Thrace Region (https://earth.google.com/)

RESULTS

Coreidae Leach, 1815

Pseudophloeinae Stål, 1868

Pseudophloeini Stål, 1868

***Bathysolen nubilus* (Fallén, 1807)** (Fig. 2)

Material examined: Edirne, Keşan, Mecidiye, 40m., 19.VII.2016, 1♀ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Afyonkarahisar, Edirne, İzmir, Kütahya (Hoberlandt, 1955; Moulet, 1995; Kıyak, 2000; Önder *et al.*, 2006); Erzurum, Kars (Yıldırım et al., 2011).

Distribution in Palaearctic: Europe: Albania, Austria, Bosnia Hercegovina, Belgium, Bulgaria, Byelorussia, Croatia, Czech Republic, Denmark, Estonia, European Kazakhstan, European Turkey, France, Great Britain, Germany, Greece, Hungary, Italy, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Poland, Romania, Russia, (CT: Kaliningrad Prov. ST: South European Territory) Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. **Asia:** Armenia, Azerbaijan, Asian Kazakhstan, Asian Turkey, Georgia, Israel, Kirgizia, Tadzhikistan, Turkmenistan, Uzbekistan, (Aukema, 2020).

***Ceraleptus obtusus* (Brullé, 1839)**

Material examined: Kırklareli, Babaeski, Ağayeri, 76m., 19.V.2018, 1♀, 1♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: Hatay (Puton,

1892); İzmir (Moulet 1995); Ankara, Çankırı (Kıyak 2000); Kırşehir (Özsaraç 2004); Tokat (Dursun & Fent 2009); Bursa, İstanbul, Konya, Samsun (Dursun 2011); Amasya (Zengin & Dursun 2019).

Distribution in Palaearctic: Europe: Albania, Bosnia Hercegovina, Bulgaria, Crete, Croatia, France, Greece, European Turkey, Hungary, Italy, Macedonia, Moldavia, Montenegro, Portugal, Romania, Russia (ST), Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. **North Africa:** Algeria, Canary Islands, Egypt, Madeira, Morocco. **Asia:** Azerbaijan, Armenia, Asian Turkey, Cyprus, Georgia, Iran, Iraq, Israel, Kirgizia, Tadzhikistan, Turkmenistan, Uzbekistan (Aukema 2020).

***Ceraleptus gracilicornis* (Herrich-Schaeffer, 1835)**

Material examined: Kırklareli, Centrum, Kavakdere, 152m., 01.VI.2016, 1♀, 1♂; Pınarhisar, Mahya Hill, 692m., 27.VI.2015, 1♀, 1♂ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Bursa (Horváth 1883); Aydın, Denizli, Edirne, Hatay, İstanbul (Hoberlandt 1955; Önder *et al.* 2006); Amasya, Kayseri (Dursun 2011; Zengin & Dursun 2019); Çankırı (Küçükbasmacı & Kıyak 2015); Kastamonu, Sinop (Fent & Dursun 2019); Kayseri (Kıyak & Baş 2020).

Distribution in Palaearctic: Europe: Albania, Andorra, Austria, Belgium, Bosnia Hercegovina, Bulgaria, Crete ? Croatia, Czech Republic, European Turkey, France, Germany, Greece, Hungary, Italy, Luxembourg, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia (CT ST) Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. **North Africa:** Algeria, Morocco, Madeira. **Asia:** Asian Turkey, Azerbaijan, Armenia, Cyprus, Georgia, Iran, Iraq, Syria (Aukema 2020).

***Ceraleptus lividus* Stein, 1858** (Fig. 3)

Material examined: Kırklareli, Pınarhisar, Mahya Hill, 692m. 27.VI.2015, 1♀ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Ankara (Kıyak 1993); Tokat (Dursun & Fent 2009).

Distribution in Palaearctic: Europe: Austria, Belgium, Bosnia Hercegovina, Bulgaria, Byelorussia Croatia, Czech Republic, Denmark France, Great Britain, Germany, Greece, Hungary, Italy, Luxembourg, Macedonia, Moldavia, Netherlands, Poland, Portugal, Romania, Russia (ST) Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. **Asia:** Armenia, Asian Turkey, Azerbaijan, Georgia, Iran, (Aukema 2020).

This species is first record for the Turkish Thrace

***Coriomeris affinis* (Herrich-Schaeffer, 1839)**

Material examined: Edirne, centrum, 21.08.2014, 41m., 1♂; Kırklareli, Vize, Kızılağaç, 237m., 26.VI.2015, 2♀♀, 2♂♂; Babaeski, Ağayeri, 76m., 19.V.2018, 3♀♀, 2♂♂; Pınarhisar, Mahya Hill, 692m. 27.VI.2015, 2♂♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: Bursa (Horváth 1883); Ağrı (Kiritshenko 1924); Adana (Hoberlandt 1955); Hatay (Linnavuori 1965); Elazığ (Kıyak 1990b); Ankara (Kıyak 1993); Aydın, İzmir, Mersin, Muğla, Muş (Önder *et al.* 2006); Antalya, Gaziantep, İstanbul, Kayseri, Konya, Van (Moulet 1995); Giresun, Gümüşhane, Sivas, Tokat (Dursun & Fent 2009); Iğdır, Isparta, Malatya, Niğde (Dursun 2011); Kastamonu, Sinop (Fent & Dursun 2019); Amasya (Zengin & Dursun 2019); Kayseri (Kıyak & Baş 2020).

Distribution in Palaearctic: Europe: Albania, Bosnia Hercegovina, Bulgaria, Crete, Croatia, European Turkey, France, Greece, Hungary, Italy, Macedonia, Portugal, Romania, Serbia, Slovenia, Spain, Switzerland. **North Africa:** Algeria, Canary Islands, Egypt, Libya, Madeira, Morocco, Tunisia. **Asia:** Asian Turkey, Cyprus, Iran, Iraq, Israel, Lebanon, Syria (Aukema 2020).

***Coriomeris hirticornis* (Fabricius, 1794)**

Material examined: Edirne, Keşan, Koru Mountains, 70m., 17.VII.2016, 4♂♂; Kırklareli, Babaeski, Ağayeri, 76m., 19.V.2018, 2♀♀, 1♂; Tekirdağ, Uçmakdere, 107m., 20.VII.2015, 2♀♀, 2♂♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: Bursa (Horváth 1883); Aydın (Horváth 1901); Adana, Ankara (Hoberlandt, 1955); Elazığ (Kıyak 1990b; Çerçi *et al.* 2018); Kırşehir (Özsaraç 2004); Balıkesir, Çanakkale, Hatay, İzmir, Konya (Önder *et al.* 2006); Giresun, Sivas, Tokat (Dursun & Fent 2009); Çanakkale, Muğla (Şerban 2010); Antalya, Gaziantep, Isparta, Mersin, İstanbul, Kayseri, Malatya, Niğde, Samsun (Dursun 2011); Çanakkale (Fent 2011); Ankara, Antalya, Erzurum, Giresun, İstanbul, Mersin, Muğla (Yıldırım *et al.* 2011); Çankırı, Düzce, Karabük, Katamonu (Fent & Dursun 2019).

Distribution in Palaearctic: Europe: Albania, Austria, Bosnia Hercegovina, Bulgaria, Crete, Croatia, European Turkey, France, Greece, Hungary, Italy, Malta, Macedonia, Moldavia, Montenegro, Portugal, Romania, Russia (CT ST) Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. **North Africa:** Algeria, Egypt, Morocco, Tunisia. **Asia:** Azerbaijan, Afghanistan, Armenia, Asian Turkey, Cyprus, Georgia, Iran, Iraq, Israel, Jordan, Lebanon, Syria (Aukema 2020).

Coreinae Leach, 1815

Coreini Leach, 1815

***Enoplops scapha* (Fabricius, 1794)** (Fig. 4)

Material examined: Kırklareli, Pınarhisar, Mahya Hill, 692m. 27.VI.2015, 2♀♀, 2♂♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: Bursa, Edirne (Hoberlandt 1955).

Distribution in Palaearctic: Europe: Albania, Austria, Belgium, Bosnia Hercegovina, Bulgaria, Croatia, Czech Republic, European Turkey, France, Great Britain, Germany, Greece, Hungary, Italy, Luxembourg, Macedonia, Moldavia, Netherlands, Poland, Portugal, Romania, Russia (CT ST) Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. **North Africa:** Algeria, Morocco. **Asia:** Armenia, Asian Turkey, Azerbaijan, Georgia, Iran, Israel, Kazakhstan, Russia (WS) (Aukema 2020).

***Haploprocta sulcicornis* (Fabricius, 1794)**

Material examined: Edirne, Keşan, Mecidiye, 40m., 19.VII.2016, 2♂♂ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Anatolia (Horváth 1883; Puton & Noualhier 1895; Kiritshenko 1924); Ankara, Aydın, Balıkesir, Bursa (Hoberlandt 1955; Linnavuori 1965; Wagner 1966); Elazığ (Kıyak 1990a; Önder *et al.* 2006); Çanakkale (Özsaraç & Kıyak 2001).

Distribution in Palaearctic: Europe: Albania, Austria, Bosnia Hercegovina, Bulgaria, Crete, Croatia, France, Germany, Greece, Italy, Liechtenstein Malta, Macedonia, Montenegro, Portugal, Romania, Serbia, Slovenia, Spain. **North Africa:** Algeria, Canary Islands, Egypt, Libya, Morocco, Madeira, Tunisia. **Asia:** Asian Turkey, Cyprus, Iran, Israel, (Aukema 2020).

This species is first record for the Turkish Thrace

***Spathocera dalmanii* (Schilling, 1829)** (Fig. 5)

Material examined: Kırklareli, Centrum, Kayalı, 272m. 16.VIII.2015, 2♀♀ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Ankara, İzmir (Hoberlandt 1955; Önder *et al.* 2006).

Distribution in Palaearctic: Europe: Austria, Belgium, Bulgaria, Byelorussia Crete, Croatia, Czech Republic,Denmark Estonia?, Finland France, Great Britain, Germany, Greece, Italy, Liechtenstein Lithuania?, Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Poland, Romania, Russia (CT: Kalinin-

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grad Prov.) Serbia, Slovakia, Spain, Sweden, Switzerland, Ukraine. **North Africa:** Madeira. **Asia:** Asian Turkey, Azerbaijan, Iran, Russia (ES) (Aukema 2020).

This species is first record for the Turkish Thrace

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

Material examined: Kırklareli, Pınarhisar, Mahya Hill, 692m., 27.VI.2015, 1♀, 1♂ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Bursa (Horváth, 1883); Gaziantep (Horváth, 1901); Kars (Kiritshenko, 1918); Ağrı (Kiritshenko, 1924); Ankara (Hoberlandt, 1955); Adana (Linnavuori, 1965); Kahramanmaraş, Kayseri (Kıyak, 1990a; Dursun, 2011); Elazığ (Kıyak, 1990b; Dursun, 2011); Kırşehir (Özsaraç, 2004); Artvin, Aydın, Balıkesir, Edirne, Hatay, Isparta, İstanbul, İzmir, Manisa (Önder *et al.*, 2006); Sivas, Tokat (Dursun and Fent, 2009); Van (Dursun, 2011); Aydın, Erzurum (Yıldırım *et al.*, 2011).

Distribution in Palaearctic: Europe: Albania, Andorra Austria, Bosnia Hercegovina, Belgium, Bulgaria, Byelorussia Croatia, Czech Republic, Denmark European Kazakhstan, European Turkey, France, Great Britain, Germany, Greece, Hungary, Italy, Liechtenstein, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia (CT: Kaliningrad Prov. ST: South European Territory) Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine. **North Africa:** Algeria, Canary Islands, Egypt, Madeira, Morocco, Madeira, Tunusia. **Asia:** Afghanistan, Armenia, Azerbaijan, Asian Kazakhstan, Asian Turkey, China (Northwestern Territory), Cyprus, Georgia, Iran, Iraq, Israel, Kirgizia, Lebanon, Syria Tadzhikistan, Turkmenistan, Uzbekistan (Aukema 2020).

Gonocerini Mulsant & Rey, 1870

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

Material examined: Edirne, centrum, 41m., 21.VIII.2014, 1♂; Uzunköprü, Çöpköy, 56m.,10.VIII.2020, 1♀, 2♂♂ (A. Dursun & M. Fent, leg. and det.).

Distribution in Turkey: Bursa (Horváth 1883); Adana (Hoberlandt 1955); Bolu (Linnavuori 1965); İzmir (Tezcan & Önder, 1999); Kırşehir (Özsaraç 2004); Aydın, Balıkesir, Çanakkale, Denizli, Hatay, Isparta, Manisa, Muğla (Önder *et al.* 2006); Giresun, Sivas, Tokat (Dursun & Fent, 2009); Burdur (Şerban, 2010); Ankara, Kayseri (Dursun 2011); Erzurum, Giresun, Manisa, Mersin, Trabzon, Tunceli (Yıldırım et al. 2011); Amasya (Zengin & Dursun 2019); Iğdır (Bulak & Yıldırım 2021).

Distribution in Palaearctic: Europe: Albania, Andorra Austria, Belgium, Bosnia Hercegovina, Bulgaria, Crete, Croatia, Czech Republic, Denmark European Kazakhstan, France, Great Britain, Germany, Greece, Hungary, Italy, Luxembourg, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia (CT ST) Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine Yugoslavia. **Asia:** Azerbaijan, Armenia, Asian Turkey, Cyprus, Georgia, Iran, Iraq, Jordan, Turkmenistan (Aukema 2020).

This species is first record for the Turkish Thrace

***Gonocerus juniperi* Herrich-Schaeffer, 1839**

Material examined: Kırklareli, Pınarhisar, 246m., 04.VI.2019, 1♀, 2♂♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: Bursa (Horváth 1883); Kars (Kiritshenko 1918); Adana, Artvin (Hoberlandt 1955; Dursun 2011); Ankara (Kıyak 1993); Burdur, Erzurum, Hatay, Isparta, İstanbul, Muğla (Önder *et al.* 2006); Sivas, Tokat (Dursun & Fent 2009); Mersin (Dursun 2011); Adana (Yıldırım *et al.* 2011); Çankırı (Küçükbasmacı & Kıyak 2015); Elazığ (Çerçi *et al.* 2018).

Distribution in Palaearctic: Europe: Austria, Belgium, Bosnia Hercegovina,

Bulgaria, Crete, Croatia, Czech Republic, European Turkey, France, Germany, Greece, Hungary, Italy, Macedonia, Moldavia, Montenegro, Netherlands, Poland, Portugal, Romania, Russia (ST: Caucasus) Serbia, Slovakia, Slovenia, Spain, Switzerland, Ukraine. **North Africa:** Algeria, Canary Islands, Libya, Morocco, Tunisia. **Asia:** Asian Turkey, Azerbaijan, Armenia, Cyprus, Georgia, Iran, Iraq, Israel, Syria Tadzhikistan (Aukema 2020).

Phyllomorphini Mulsant & Rey, 1870

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

Material examined: Kırklareli, Centrum, Üsküp, 284m. 22.VIII.2015, 1♀, 2♂♂ (A. Dursun & M. Fent, leg. and det.)

Distribution in Turkey: İstanbul (Fahringer 1922); Adana, Ankara, Edirne (Hoberlandt 1955); Kahramanmaraş, Kayseri (Kıyak 1990a); Elazığ (Kıyak 1990b; Çerçi *et al.* 2018); Adana, Bursa, Diyarbakır, Erzincan, Erzurum, Eskişehir, Gümüşhane, Hatay, Isparta, İzmir, Kayseri, Konya Malatya, Mersin, Niğde, Sivas, Şanlıurfa, Tunceli (Moulet 1995); Kırşehir (Özsaraç 2004); Afyonkarahisar, Amasya, Kars (Önder et al. 2006); Tokat (Dursun & Fent 2009); Antalya (Dursun 2011); Kırıkkale, Tunceli (Yıldırım *et al.* 2011); Amasya (Zengin & Dursun 2019).

Distribution in Palaearctic: Europe: Albania, Bosnia Hercegovina, Bulgaria, Crete, Croatia, European Turkey, France, Greece, Hungary, Italy, Macedonia, Moldavia, Portugal, Romania, Russia (ST) Serbia, Slovakia, Spain, Ukraine. **North Africa:** Algeria, Canary Islands, Egypt, Libya, Morocco, Tunisia, Sinai. **Asia:** Arab Emiritates, Armenia, Asian Turkey, Azerbaijan, Georgia, Iran, Israel, Jordan, Oman, Saudi Arabia, Sinai, Syria (Aukema 2020).

DISCUSSION

In this study, the examined material originating from different localities in Thrace Region of Turkey, of those new and additional records of rare species were given. The species *Haploprocta sulcicornis* (Fabricius, 1794), *Gonocerus acuteangulatus* (Goeze, 1778), *Ceraleptus lividus* Stein, 1858 and *Spathocera dalmanii* (Schilling, 1829) are new records for the fauna of Turkish Thrace and *Bathysolen nubilus* (Fallén, 1807), *Ceraleptus obtusus* (Brullé, 1839), *Ceraleptus gracilicornis* (Herrich-Schaeffer, 1835), *Coriomeris affinis* (Herrich-Schaeffer, 1839), *Coriomeris hirticornis* (Fabricius, 1794), *Enoplops scapha* (Fabricius, 1794), *Gonocerus juniperi* Herrich-Schaeffer, 1839, *Phyllomorpha laciniata* (Villers, 1789) and *Syromastus rhombeus* (Linnaeus, 1767) are additional records. Previous studies recorded 49 species from 20 genera of Coreidae from Turkey, of those, 17 species of 12 genera were found in Thrace.

The presence of *Ceraleptus obtusus* and *Coriomeris hirticornis* in Thrace Region was first mentioned by Dursun (2011) based on the specimens in the collection of Bavarian State Collection of Zoology – Germany, (Zoologische Staatssammlung München) from 1938 of Seidenstücker.

In this study, current locality reported for these species in Turkish Thrace for the first time. The presence of *Gonocerus juniperi* Herrich-Schaeffer, 1839 was first mentioned by Horváth (1918), *Ceraleptus gracilicornis* and *Enoplops scapha* by Hoberlandt (1955), *Phyllomorpha laciniata* by Fahringer (1922), *Coriomeris affinis* by Moulet (1995) in Thrace Region. *Bathysolen nubilus, Ceraleptus obtusus, Coriomeris hirticornis, C. affinis* and *Phyllomorpha laciniata* are the widespread species in Anatolia, but these species are rarely encountered in Turkish Thrace. Our records in this study are the second reports of these species in the region.

Ceraleptus lividus, Gonocerus acuteangulatus, Haploprocta sulcicornis and *Spathocera dalmanii*, here first recorded from Thrace Region, are known from many countries in Europe, including the neighboring Bulgaria, and Greece. The distributions of *C.*

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lividus of *S. dalmanii* are restricted to Anatolia and in this study only one female of *C. lividus* and two females of *S. dalmanii* were found from Kırklareli in Turkish Thrace.

Consequently, the number of species belonging to the Coreidae family known from Turkish Thrace has reached 21 with new records and old literature data.

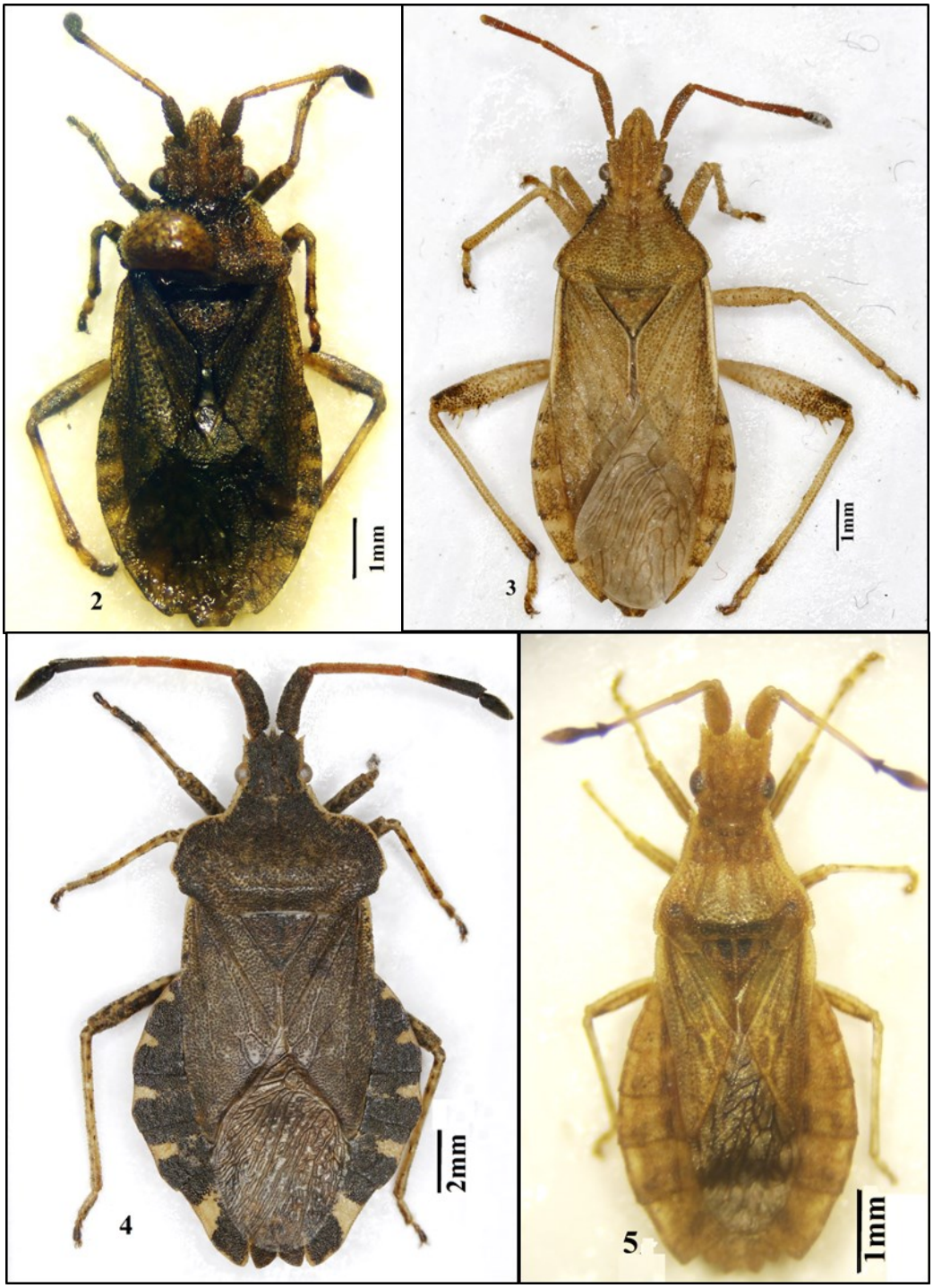
Table 2. presents an up-to-date list of Coreidae species distributed in the European (Thrace) and Asian (Anatolia) part of Turkey and in Bulgaria, and Greece, bordering the Thrace Region. According to this list, the number of known species from the Anatolian part of Turkey is 49, the number of known species from the Thrace part is 21 with the addition of 4 new records for the region in this study, 33 from Bulgaria, and 38 from Greece, (Dolling 2006; Dursun 2011; Kment *et al.* 2013; Aukema 2020). Distribution of *Cercinthus griseus* (Fieber, 1861), one of the listed species, in Turkey and, Bulgaria it was not taken into account numerically because it was given as "?" by Dolling (2006) and Aukema (2020). *Strobilotoma typhaecornis* (Fabricius, 1803) and *Ceraleptus obtusus* (Brullé, 1839) species were based on the material of Seidenstücker, whose locality was specified only as "Istanbul" by Moulet (1995) and Dursun (2011). However, it is unclear whether the material is from the European or Asian part of Istanbul. Therefore, these species are also are indicated with "?" and are not taken into account numerically for the Thrace fauna. Considering the distributions of the species, *Anoplocerus elevatus* (Fieber, 1861, *Arenocoris waltlii* (Herrich-Schaeffer, 1835), *Bothrostethus annulipes* (Herrich-Schaeffer, 1835), *Coriomeris scabricornis scabricornis* (Panzer, 1805) *Loxocnemis dentator* (Fabricius, 1794) *Haploprocta umbrina* Jakovlev, 1883 and *Spathocera obscura* (Germar, 1847) are known in Anatolia, Bulgaria and Greece, and are likely to be found in the Thrace Region in future studies.

Table 2. Coreidae species distributed in Turkey (European and Asian part) Bulgaria and Greece

COREIDAE	**European Turkey (Thrace)**	**Asian Turkey (Anatolia)**	**Bulgaria**	**Greece**
Subfamily PSEUDOPHLOEINAE				
Anoplocerus elevatus (Fieber, 1861		+	+	+
Anoplocerus luteus (Fieber, 1861)		+		+
Arenocoris fallenii (Schilling, 1829)	+	+	+	+
Arenocoris intermedius (Jakovlev, 1883)		+		+
Arenocoris latissimus Seidenstücker, 1960		+		
Arenocoris waltlii (Herrich-Schaeffer, 1835)		+	+	+
Bathysolen nubilus (Fallén, 1807)	+	+	+	+
Bothrostethus annulipes (Herrich-Schaeffer, 1835)		+	+	+
Ceraleptus gracilicornis (Herrich-Schaeffer, 1835)	+	+	+	+
Ceraleptus lividus Stein, 1858	*	+	+	+
Ceraleptus obtusus (Brullé, 1839)	+?	+	+	+
Ceraleptus sartus Kiritshenko, 1912		+		
Coriomeris affinis (Herrich-Schaeffer, 1839)	+	+	+	+
Coriomeris alpinus (Horváth, 1895)		+		+

Table 2. Continued

Coriomeris Armenia,cus Tshernova, 1978		+		
Coriomeris brevicornis Lindberg, 1923				+ **(Crete)**
Coriomeris denticulatus (Scopoli, 1763)	+	+	+	+
Coriomeris hirticornis (Fabricius, 1794)	+	+	+	+
Coriomeris pallidus Reuter, 1900		+		
Coriomeris scabricornis scabricornis (Panzer, 1805)		+	+	+
Coriomeris subglaber Horváth, 1917		+		+
Coriomeris validicornis Jakovlev, 1904		+		
Coriomeris vitticollis Reuter, 1900		+		+
Loxocnemis dentator (Fabricius, 1794)		+	+	+
Nemocoris fallenii R.F. Sahlberg, 1848			+	
Strobilotoma typhaecornis (Fabricius, 1803)	+?	+	+	+
Ulmicola spinipes (Fallén, 1807)			+	
Urartucoris ermolenkoi P.V. Putshkov, 1979		+		
Subfamily COREINAE				
Leptoglossus occidentalis Heidemann, 1910	+	+	+	+
Centrocoris degener (Puton, 1874)		+		
Centrocoris spiniger (Fabricius, 1781)	+	+	+	+
Centrocoris variegatus Kolenati, 1845	+	+	+	+
Centrocoris volxemi (Puton, 1878)		+		
Cercinthus griseus (Fieber, 1861)	+?	+?	+?	
Coreus marginatus marginatus (Linnaeus, 1758)	+	+	+	+
Enoplops disciger (Kolenati, 1845)	+	+	+	+
Enoplops scapha (Fabricius, 1794)	+	+	+	+
Haploprocta sulcicornis (Fabricius, 1794)	*	+	+	+
Haploprocta umbrina Jakovlev, 1883		+	+	+
Spathocera dalmanii (Schilling, 1829)	*	+	+	+
Spathocera laticornis (Schilling, 1829)		+	+	
Spathocera lobata (Herrich-Schaeffer, 1840)	+	+	+	+
Spathocera obscura (Germar, 1847)			+	+
Spathocera tenuicornis Jakovlev, 1883		+		
Spathocera tuberculata Horváth, 1882		+	+	
Syromastus rhombeus (Linnaeus, 1767)	+	+	+	+
Gonocerus acuteangulatus (Goeze, 1778)	*	+	+	+
Gonocerus insidiator (Fabricius, 1787)		+		+
Gonocerus juniperi Herrich-Schaeffer, 1839	+	+	+	+
Gonocerus patellatus Kiritshenko, 1916		+		
Plinachtus imitator (Reuter, 1891)		+		+
Phyllomorpha lacerata Herrich-Schaeffer, 1835	+	+		+
Phyllomorpha laciniata (Villers, 1789)	+	+	+	+
Prionotylus brevicornis (Mulsant & Rey, 1852)		+		



Figures 2-5: (Dorsal view) 2. *Bathysolen nubilus* (Fallén, 1807) (♀). 3. *Ceraleptus lividus* Stein, 1858 (♀). 4. *Enoplops scapha* (Fabricius, 1794) (♀). 5. *Spathocera dalmanii* (Schilling, 1829) (♀).

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REFERENCES

Arslangündoğdu A. & Hızal, E., 2010, The western conifer seed bug, *Leptoglossus occidentalis* (Heidemann, 1910), recorded in Turkey (Heteroptera: Coreidae). *Zoology in the Middle East*, 50: 138-139.

Aukema, B., 2020, Catalogue of Palaearctic Heteroptera. Naturalis Biodiversity Center. Available from https://catpalhet. linnaeus. naturalis.nl/ (Accessed on – 07.02-2022).

Bulak, K. Y. & Yıldırım, E., 2021, Contribution to the knowledge of Alydidae, Coreidae, Rhopalidae and Pentatomidae (Hemiptera) fauna from fruit orchards in Iğdır province of Turkey. *Munis Entomology & Zoology* 16 (2): 947-95.

Çerçi, B., Özgen, İ. & Dioli, P., 2018, Additional faunistic notes on Heteroptera (Hemiptera: Insecta) in East Anatolia (Turkey). *Journal of Entomology and Zoology Studies,* 6(1): 1225-1231.

Dolling, W. R., 2006, *Coreoidea Leach, 1815, pp.1-101.* In: Aukema, B., Rieger, C. (eds), *Catalogue of the Heteroptera of the Palaearctic Region.* Vol. 5, Pentatomomorpha II. The Netherlands, Entomological Society, Amsterdam, xiii + 550p.

Dursun, A., 2009, Kelkit Vadisi (Türkiye) Alydidae, Rhopalidae ve Stenocephalidae (Heteroptera: Coreoidea) türleri üzerine araştırmalar. *Turkish Journal of Entomology,* 33(3): 205-215.

Dursun, A., 2011, Additional Records of Coreidae (Hemiptera: Heteroptera) from Turkey, with Checklist. *Entomological News* ,122(2): 134-147.

Dursun, A. & Fent, M. 2009, A study on the Coreidae (Insecta: Heteroptera) of the Kelkit Valley, Turkey. *Acta Entomologica Serbica* 14(1): 13-25.

Dursun, A. & Fent, M., 2015, Notes on some little known species of Heteroptera from Turkey with new records for the fauna of Europe and the Turkish Thrace. *North-Western Journal of Zoology* 11(1): 92-96.

Dursun, A. & Fent, M. 2017. Type Localities of Heteroptera (Insecta: Hemiptera) from Turkey. *Zootaxa,* 4227(4), 451-494.

Dursun, A., Kaçar, G. & Ulusoy, M. R., 2010, The Alydidae (Heteroptera: Coreoidea) of Turkey: A Key to the Genera, New Records and A Species Checklist. *Entomological News,* 121(5): 487-497.

Fahringer, J.,1922, Eine Rhynchotenausbeute aus der Türkei, Kleinasien und benachbarten Gebieten. *Konowia,* 1: 137-144.

Faúndez, E. I., 2016, The Coreoidea Leach, 1815 (Hemiptera: Heteroptera) of Magallanes Region: Checklist and identification key to the species. *Anales Instituto Patagonia (Chile)* 44(1): 39-42.

Fent, M., 2011, Gökçeada ve Bozcaada Heteroptera (Insecta: Hemiptera) Faunasına Katkılar, *Trakya Univ. J. Sci.*, 12(1): 35-46 (2011).

Fent, M. & Kment, P., 2011, First record of the invasive western conifer seed bug *Leptoglossus occidentalis* (Heteroptera: Coreidae) in Turkey. *North-Western Journal of Zoology,* 7(1): 72-80.

Fent, M. & Dursun, A., 2019, Contributions to Coreoidea (Hemiptera: Heteroptera) fauna of Western Black Sea Region. *Munis Ent. & Zoology,* 14(1): 217-223.

Henry, T. J., 2017, *Biodiversity of Heteroptera.* In: Foottit, R. G. & Adler, P. H. (eds): *Insect Biodiversity. Science and Society.* Vol. I. Second edition. Wiley-Blackwell, Oxford, 904 pp.

Hoberlandt, L.,1955, Results of the zoological scientific expedition of the National Museum in Praha to Turkey. *Acta Entomologica Musei Nationalis Pragae*, 3: 162- 263.

Horváth, G., 1883, Heteroptera Anatolica in Regione Brussae Collecta. Editro separata e *Természetrajzi Füzetek,* 7: 21-30.

Horváth, G., 1901, Hemiptères du voyage de M. Martinez Escalera dans L' Asie-Mineure. *Termeszetrajzi Füzetek* 24: 469-485.

Horváth, G., 1918, Ad cognitionem faunae hemipterorum balcanicae.-*Annales Historico -Naturales Musei Nationalis Hungarici,* 16: 321-340.

Kerzhner, I. M. and T. L., Jaczewski, 1964, *Keys to the insects of the European USSR 1: Apterygota, Palaeoptera, Hemimetabola.* Academy of Sciences of the USSR Zoological Institute. Moskva-Leningrad (Transl. in 1967), 856-891.

Kiritshenko, A. N., 1918, Hemiptera-Heteroptera faunae Caucasiae. Paris I. *Mém. Mus. Caucase* ser. A, No. 6: 1-177.

Kiritshenko, A.N., 1924, Beitrag zur Hemipteren fauna des südlichen Armenian. *Wiener Entomologische Zeitung* 41: 1-5.

Kıyak, S., 1990a, Studies on the eco-faunistic and systematic of the terrestrial heteropteran adults in Binboğa Mountains (Kahramanmaraş-Kayseri). PhD Thesis (manuscr.), Gazi University, Science Institute, Ankara, XII, 172 pp. [in Turkish].

Kıyak, S., 1990b, Systematisch-Ökologische Untersuchungen über die Wanzen (Insecta - Heteroptera) aus dem Gebiet Hazar-See, Maden und Ergani (Prov. Elazığ). *Journal of Biology Faculty of Science and Arts Gazi University,* 1: 43-95.

Kıyak, S., 1993, Über Terrestrische Wanzenarten von Soğuksu Nationalpark (prov. Ankara, Türkei). Centre for Entomological Studies Ankara, *Priamus,* 6: 131-156.

Kıyak, S., 2000, Systematisch-Ökologische Untersuchungen über die Wanzen (Insecta - Heteroptera) von Işık Gebirge-II. *Journal Institute Science and Technology Gazi Univ.,*13(2): 347-367.

Kıyak, S. & Baş, A., 2020, Contributions to Coreoidea (Hemiptera: Heteroptera) fauna of Kayseri Province (Turkey). *J.Het.Turk.,* 2 (1):25-33

Kment, P., Fent, M., Japoshvili, G., 2013, Redescription of *Urartucoris ermolenkoi* (Hemiptera, Heteroptera, Coreidae) and a revised key to the genera of Pseudophloeini of the Western Palaearctic Region. *ZooKeys,* 319: 191–209.

Küçükbasmacı, İ. & Kıyak, S., 2015, A Study on the Fauna of Heteroptera of Ilgaz Mountains (Kastamonu, Çankırı) With a New Record for Turkey. *Nevşehir Bilim ve Teknoloji Dergisi,* 4(1): 1-33.

Linnavuori, R., 1965, Studies on the South- and Eastmediterranean Hemipterous Fauna. III. Hemipterological observations from Turkey. *Acta Entomologica Fennica,* 21: 44 -61.

Moulet, P., 1995, *Hémiptéres Coreoidea Euro-Mediterranéens. Faune de France*, 81. Fédération Française des Sociéteés de Sciences Naturelles. 336 pp.

Önder, F., Karsavuran, Y., Tezcan, S. & Fent, M., 2006, Türkiye *Heteroptera (Insecta) Kataloğu.* Meta Basım Matbaacılık Hizmetleri, İzmir. 164 pp.

Özsaraç, Ö., 2004, The Heteroptera fauna of Cicek Mountain. PhD Thesis (manuscr.), Gazi University, Science Institute, Ankara. 225 pp.

Özsaraç, Ö. & Kıyak, S. 2001, A Study on the Heteroptera Fauna of Bozcaada (Çanakkale Province). *Turkish Journal of Zoology* 25: 313-322

Puton, A., 1892, Hemipteres nouveaux ou peu.connues et notes diverses. (IV. ,Hemipteres d'Akbes, Region de l'Amanus (Syrie septentrionale) recoltes par M. Delagrange). *Revue d'Entomologie*, 11: 34-36.

Puton, A. & M. Noualhier, 1895, Supplement a la liste des Hemipteres d'Akbes. *Revue d'Entomologie (Caen),* 14: 170-177.

Seidenstücker, G., 1960, Heteroptera aus Anatolien III. *Istanbul Universitesi Fen Fakultesi Mecmuası* 25: 145-154.

Stichel, W., 1960, Illustrierte Bestimmungstabellen der Wanzen. II. Europa Berlin, 4(12-13): 361-407.

Şerban C. 2010. Faunistic data on some true bugs species (Insecta: Heteroptera) from west Turkey [Results of the "Taurus" - 2005 and „Focida" - 2006 expeditions]. *Travaux du Muséum National d'Histoire Naturelle* 53: 171-180.

Tezcan S. & Önder F. 1999. Heteropterous insects associated with cherry trees in Kemalpaşa district of İzmir, Turkey. *Ege Üniversitesi Ziraat Fakültesi Dergisi* 36: 119-124.

Wagner E. 1966. Eine Heteropterenausbeute aus der Türkei (Hemiptera, Heteroptera). *Bulletin des Recherches Agronomiques de Gembloux,* 4(1): 647-654.

Yıldırım, E., Yazıcı, G. & Linnavuori, R., 2011, Contribution to the knowledge of Alydidae, Coreidae, Rhopalidae and Stenocephalidae (Coreoidea: Heteroptera: Hemiptera) fauna of Turkey. *Linzer biol. Beit.* 43(2): 1625-1639.

Zengin. P. & Dursun. A.. 2019. A study on the Coreoidea (Hemiptera: Heteroptera) fauna of Amasya province. *Acta Biologica Turcica.* 32 (3). 160-167.