

Faunistic Study on Dytiscidae, Haliplidae and Noteridae (Coleoptera: Adephega) in Middle and Eastern Black Sea Regions, Turkey

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Abstract.- In this study, it was attempted to describe 47 species which were determined to belong to the Coleoptera: Adephega. Of all these species, 4 were from Haliplidae, one species was from Noteridae, and 42 species were from Dytiscidae. Six of them were new records for the Black Sea Region of Turkey (*Graptodytes veterator behningi*, *Herophydrus musicus*, *Hydroporus askalensis*, *Hygrotus enneagrammus*, *H. ahmeti*, *H. marklini*) and (*Herophydrus musicus*, *Hygrotus ahmeti*, *H. enneagrammus* and *H. marklini*) also second record for Turkey. And with this study 10 species for Amasya, 18 species for Bayburt, 3 species for Çorum, 26 species for Giresun, 9 species for Gümüşhane, 19 species for Ordu, 4 species for Samsun, 27 species for Tokat and 7 species for Trabzon provinces were recorded first time and distributions in Turkey of these newly recorded species are presented.

Key words: Coleoptera, aquatic beetles, Adephega.

INTRODUCTION

The family Dytiscidae, known as the largest family into the suborder Adephega with about 4000 species in 175 genera in the world, represented with 137 species and nine subspecies from Turkey in 885 species from Palearctic Region (Balke *et al.*, 2004; Jäch and Balke, 2008; Darılmaz and Kıyak, 2009; Taşar *et al.*, 2012).

The family Noteridae, known 3 species from Turkey, represented 250 species in the world which include about 30 species from Palearctic region (Darılmaz and Kıyak 2009).

Aim of this study is to determine the Adephega fauna in Black Sea Region and make a contribution to the Turkish aquatic Coleoptera fauna.

MATERIALS AND METHODS

For this article studied museum materials when collected in summer seasons between 2007 and 2008 from Black Sea Region. These specimens had collected by means of a sieves that having 3,15x1 mm pores and firstly had killed with ethyl

acetate and had stored in small bottles in the research area. The specimens conserved in the museum were cleaned with brush before identification, and then aedeagus of the beetles were dissected under a stereo microscope in the laboratory. All samples have been deposited in the Zoological Museum, Atatürk University, Science Faculty, Department of Biology, Erzurum, Turkey.

Family: HALIPLIDAE

Haliphus heydeni Wehncke, 1875

Material examined

Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 1ex.

Distribution in Turkey

Afyon, Ankara, Bolu, Eskişehir Kütahya (Darılmaz and Kıyak, 2009, 2010; Hizarcioglu *et al.*, 2010; Topkara and Balık, 2010).

Haliphus lineatocollis (Marsham, 1802)

Material examined

Ordu: Mesudiye; Zile plateau, 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 4ex.

Distribution in Turkey

Afyon, Çorum, Gümüşhane, İzmir,

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Kastamonu, Yozgat (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; Topkara and Balık, 2010).

Haliplus ruficollis (De Geer, 1774)

Material examined

Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 2ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 3ex. Ordu: Ünye; Asarkaya, 40°04'20N 37°19'16E, 24m, 30.VIII.2007, 1ex. Tokat: Zile; Utuk, 40°15'51N 36°03'14E 565m, 05.V.2008, 2ex.

Distribution in Turkey

Samsun (Darılmaz and Kıyak, 2009).

Peltodytes caesus (Duftschmid, 1805)

Material examined

Bayburt: Oruçbeyli, 40°13'44N 40°04'30E, 1679m, 04.IX.2008, 1ex. Ordu: Gököy; Ulugöl pond, 40°37'55N 37°32'43E, 1207m, 10.IX.2008, 1ex.; Korgan; Korgan plateau, 40°49'06N 37°20'48E, 802m, 10.IX.2008, 1ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 1ex.; Pazar; Kaz Lake, 40°16'48N 36°09'26E, 587m, 28.VI.2007, 1ex.

Distribution in Turkey

Adana, Afyon, Aksaray, Ankara, Aydın, Balıkesir, Bolu, Bursa, Çorum, Eskişehir, Isparta, İzmir, Kayseri, Konya, Kütahya, Samsun, Toros Mountains, Yozgat (Darılmaz and Kıyak, 2009; Hizarcioglu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010; Topkara and Balık, 2010)

Family: NOTERIDAE

Noterus clavicornis (De Geer, 1774)

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 6ex.; Suluova; Oğulbağ Lake, 40°47'23N 35°34'40E, 512m, 31.V.2007, 3ex. Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 5ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 7ex.; Değirmencik, 40°21'43N 40°15'19E, 1502m, 01.VI.2008, 1ex.; Oruçbeyli,

40°13'44N 40°04'30E, 1679m, 04.IX.2008, 5ex. Giresun: Şebinkarahisar; Alışar, 40°19'01N 38°34'58E 1461m, 02.VI.2008, 10ex.; Ekecek, 40°17'31N 38°22'33E, 1348m, 07.VIII.2008, 18ex. Gümüşhane: Kale, 40°31'32N 39°46'08E, 1992m, 22.V.2007, 10ex. Ordu: Göl; Ulugöl pond, 40°37'55N 37°32'43E, 1207m, 10.IX.2008, 2ex.; Korgan; Korgan plateau, 40°49'06N 37°20'48E, 802m, 10.IX.2008, 2ex.; Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 3ex.; Mesudiye; Cambaz plateau, 40°41'23N 37°11'37E, 1528m, 27.V.2007, 11ex.; Güneyce, 40°24'41N 37°47'42E, 1581m, 05.VIII.2008, 2ex.; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 31ex.; 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 1ex.; Ünye; Asarkaya, 40°04'20N 37°19'16E, 24m, 30.VIII.2007, 4ex. Samsun: Bafra; Gernek Lake, 41°38'50N 36°04'44E, 0m, 07.V.2008, 2ex.; Kızılırmak, 41°35'14N 35°53'46E, 14m, 30.V.2007, 3ex.; Terme; Dutluk Mah. 41°14'19N 36°58'29E, 1m, 29.V.2007, 2ex.; 19 Mayıs; Balık Lake 41°35'16N 36°06'42E, 30.V.2007, 4ex. Tokat: Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 6ex.; Pazar; Kaz Lake, 40°16'48N 36°09'26E, 587m, 28.VI.2007, 13ex.; 40°17'00N 36°09'27E, 527m, 30.VII.2007, 3ex.; Üzümlüören, 40°15'01N 36°07'11E, 539m, 28.VI.07, 6ex. Zile; Utuk 40°15'51N 36°03'14E, 565m, 05.V.2008, 22ex. Trabzon: Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 13ex.

Distribution in Turkey

Aksaray, Ankara, Antalya, Aydın, Balıkesir, Bilecik, Bolu, Çorum, Düzce, Eskişehir, Isparta, İzmir, Kayseri, Konya, Manisa, Sakarya, Samsun, Trabzon (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; Topkara and Balık, 2010).

Family: DYTISCIDAE

Agabus biguttatus (Olivier, 1795)

Material examined

Giresun: Çağlayan, 40°51'16N 39°09'18E, 1744m, 21.V.2007, 5ex.; Dereli; Kümbet plateau, 40°33'30N 38°23'09E, 1450m, 24.V.2007, 1ex.; 40°34'09N 38°26'46E, 1247m, 24.V.2007, 1ex.; Tirebolu; Çalıbaş plateau, 40°39'39N 38°51'44E,

1802m, 22.V.2007, 1ex. Gümüşhane: Bandırlık, 40°29'38N 39°46'25E, 2100m, 22.V.2007, 5ex. Trabzon: Araklı; Taştepe, 40°46'10N 39°58'25E, 236m, 22.V.2007, 2ex.; Şalpazarı; Doğançı, 40°53'37N 39°12'05E, 640m, 22.V.2007, 1ex.

Distribution in Turkey

Adana, Afyon, Aksaray, Ankara, Artvin, Bayburt, Bilecik, Bursa, Çankırı, Çorum, Erzurum, Gümüşhane, Isparta, İçel, İzmir, Kastamonu, Kayseri, Rize, Sakarya, Trabzon, Yozgat, Toros Mountains, Karaboga Mountains (Elazığ or Bingöl) (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Agabus bipustulatus (Linnaeus, 1767)

Material examined

Giresun: Çağlayan, 40°51'16N 39°09'18E, 1744m, 21.V.2007, 1ex. Ordu: Mesudiye; Zile Plateau, 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 1ex. Trabzon: Araklı; Taştepe, 40°46'10N 39°58'25E, 236m, 22.V.2007, 1ex.

Distribution in Turkey

Ankara, Antalya, Artvin, Bursa, Çorum, Denizli, Erzurum, Gümüşhane, Isparta, İçel, İstanbul, İzmir, Kars, Kastamonu, Kayseri, Kocaeli, Konya, Muğla, Rize Van, Trabzon, Toros Mountains, Yozgat (Darılmaz and Kıyak, 2009; Hizarcioglu *et al.*, 2010; Darılmaz *et al.*, 2010).

Agabus conspersus (Marsham, 1802)

Material examined

Çorum: Alaçam; Çapraşık, 40°10'55N 35°05'41E, 1027m, 01.VI.2007, 1ex. Gümüşhane: Kale, 40°31'32N 39°46'08E, 1992m, 22.V.2007, 1ex. Tokat: Avlunlar; 40°29'45N 36°43'52E, 814m, 28.V.2007, 1 ex.

Distribution in Turkey

Antalya, Bolu, Çorum, Denizli, Kastamonu, Kayseri (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Agabus nebulosus (Forster, 1771)

Material examined

Tokat: Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 2ex. Trabzon: Tonya; Sazalan Plateau, 40°44'25N 39°12'31E, 1715m, 20.VI.2007, 10ex.

Distribution in Turkey

Afyon, Ankara, Antalya, Aydın, Burdur, Bursa, Çorum, Denizli, İstanbul, İzmir, Kayseri, Muğla, Samsun, Sinop, Toros Mountains (Darılmaz and Kıyak, 2009; Hizarcioglu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Agabus labiatus (Brahm, 1790)

Material examined

Giresun: Dereli; Bektaş Plateau, 40°38'46N 38°14'29E, 2063m, 27.V.2007, 1ex.; Şebinkarahisar; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 2ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 2ex. Belbaşı, 40°31'22N 37°06'16E, 1315m, 27.V.2007, 4ex.

Distribution in Turkey

Çorum, İzmir, Kayseri (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Bidessus nasutus Sharp, 1887

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Tokat: Yeşilyurt, 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 1ex. Trabzon: Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 1ex.

Distribution in Turkey

Afyon, Kayseri, Konya, Samsun (Darılmaz and Kıyak 2009).

Graptodytes flavipes (Olivier, 1795)

Material examined

Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 3ex. Çorum: Alaçam; Çapraşık,

40°10'55N 35°05'41E, 1027m, 01.VI.2007, 4ex. Giresun: Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex.; Ekecek, 40°17'31N 38°22'33E, 1348m, 07.VIII.2008, 3ex.; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 4ex.

Distribution in Turkey

İzmir, Kayseri, Manastır (most probably Trabzon) (Darılmaz and Kıyak, 2009; İncekara *et al.*, 2010).

Graptodytes veterator behningi Zaitzev, 1927

Material examined

Bayburt: Gökpınar, 40°14'49N 40°10'50E, 1672m, 06.VIII.2008, 3ex. Giresun: Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 4ex. Ordu: Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 3ex.

Distribution in Turkey

Afyon, Ankara, Balıkesir, Bingöl, Bursa, Erzurum, İzmir, Konya (Darılmaz and Kıyak, 2009).

Remark

New record of Black Sea Region.

Herophydrus musicus (Klug, 1834)

Material examined

Çorum: Alaçam; Çapraşık, 40°10'55N 35°05'41E, 1027m, 01.VI.2007, 5ex. Samsun: Terme; Dutluk, 41°14'19N 36°58'29E, 1m, 29.V.2007, 1ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 2ex.; Zile; Utuk, 40°15'51N 36°03'14E, 565m, 05.V.2008 3ex.

Distribution in Turkey

Kütahya (Darılmaz and Kıyak, 2010).

Remark

Second record for Turkey and new record of Black Sea Region.

Hydroglyphus geminus (Fabricius, 1792)

Material examined

Bayburt: Oruçbeyli, 40°13'44N 40°04'30E,

1679m, 04.IX.2008, 1ex.; Değirmencik, 40° 21'43N 40°15'19E, 1502m, 01.VI.2008, 1ex.; Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 3ex.; Bel, 40°12'02N 40°17'59E, 1595m, 26.X.2007, 1ex.; Taht, 40°16'15N 40°26'14E, 1980m, 23.VII.2007, 6ex. Çorum: Alaçam; Çapraşık, 40°10'55N 35°05'41E, 1027m, 01.VI.2007, 3ex. Giresun: Dereli: Yüce, 40°37'53N 38°27'13E, 848m, 23.VI.2007, 1ex.; Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex.; 40°19'02N 38°34'55E, 1451m, 06.IX.2008, 2ex.; Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 4ex.; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 2ex. Gümüşhane: Kürtün; Özkürtün, 40°39'23N 39°08'32E, 665m, 23.V.2007, 2ex.; Torul; Limni Lake, 40°36'39N 39°24'47E, 2014m, 25.V.2007, 2ex. Ordu: Akkuş; Ormancık, 40°49'42N 37°00'03E, 1273m, 28.V.2007, 1ex. Kabadüz; Turnalık plateau, 40°39'36N 37°56'19E, 1645m, 26.V.2007, 1ex.; Mesudiye: Cambaz plateau, 40°41'23N 37°11'37E, 1528m, 27.V.2007, 2ex.; Güzle, 40°30'51N 37°41'21E, 1003m, 26.V.2007, 1ex.; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 1ex.; 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 2ex.; Ünye; Günpınar, 41°05'01N 37°18'57E, 4m, 28.V.2007, 1ex. Samsun: 19 Mayıs; 41°29'51N 36°04'12E, 27m, 07.V.2008, 1ex.; Bafra; Kızılırmak, 41°35'14N 35°53'46E, 14m, 30.V.2007, 5ex.; Terme; Dutluk, 41°14'19N 36°58'29E, 1m, 29.V.2007, 5ex.; Havza; 40°59'52N 35°45'52E, 720m, 31.V.2007, 1ex. Tokat: Yatmış, 40°06'58N 36°28'38E, 1125m, 28.VI.07, 2ex.; Pazar; Kaz Lake, 40°17'00N 36°09'27E, 527m, 30.VII.2007, 4ex.; 40°16'48N 36°09'26E, 587m, 28.VI.2007, 1ex.; 40°16'48N 36°09'26E, 587m, 28.VI.2007, 1ex.; Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 3ex.; Zile; Utuk 40°15'51N 36°03'14E, 565m, 05.V.2008, 1ex.; Erbaa; Canpolat, 40°32'02N 36°40'41E, 956m, 28.V.2007, 4ex. Trabzon: Şalpazarı; 40°56'13N 39°11'44E, 278m, 21.V.2007, 3ex.; Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 2ex.

Distribution in Turkey

Adana, Afyon, Aksaray, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bolu, Bursa, Çorum, Edirne, Erzurum, Eskişehir, Gümüşhane, Isparta, İçel, İzmir, Kastamonu, Kayseri, Konya, Kilis,

Manisa, Muğla, Rize, Samsun, Trabzon, Yozgat (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010).

Hydroporus askalensis Wewalka, 1992

Material examined

Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 3ex.

Distribution in Turkey

Çanakkale, Erzurum (Darılmaz and Kıyak, 2009).

Remark

New record of Black Sea Region.

Hydroporus discretus Fairmaire and Brisout, 1859

Material examined

Ordu: Mesudiye; Güzel, 40°30'51N 37°41'21E, 1003m, 26.V.2007, 2ex. Samsun: Bafra; Gernek Lake, 41°38'50N 36°04'44E, 0m, 07.V.2008, 3ex. Tokat: Erbaa; Canpolat, 40°32'02N 36°40'41E, 956m, 28.V.2007, 2ex.; Niksar; 40°33'15N 36°58'28E, 512m, 25.VI.2007, 5ex.; Belbaşı, 40°31'22N 37°06'16E, 1315m, 27.V.2007, 7ex. Trabzon: Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 1ex.; Şalpazarı; 40°56'13N 39°11'44E, 278m, 21.V.2007, 1ex.

Distribution in Turkey

Artvin, Bayburt, Erzurum, Gümüşhane, Iğdır, Rize (Darılmaz and Kıyak, 2009).

Hydroporus kozlovskii Zaitzev, 1927

Material examined

Giresun: Alucra; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 2ex. Tokat: Çamlıbel, 40°05'30N 36°28'15E, 1122m, 28.VI.2007, 1ex.

Distribution in Turkey

Antalya, Artvin, Erzincan, Erzurum, Gümüşhane, Kars, Muş, Rize (Darılmaz and Kıyak, 2009).

Hydroporus marginatus (Duftschmid, 1805)

Material examined

Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 3ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 3ex.; Gökpinar, 40°14'49N 40°10'50E, 1672m, 06.VIII.2008, 5ex.; Taht, 40°16'15N 40°26'14E, 1980m, 23.VII.2007, 1ex. Gümüşhane: Kelkit; Doğanca, 40°10'12N 39°16'08E, 1603m, 20.VI.2007, 13ex.; Kürtün; Özkürtün, 40°39'23N 39°08'32E, 665m, 23.V.2007, 1ex.; Torul; Limni Lake, 40°36'39N 39°24'47E, 2014m, 25.V.2007, 2ex. Ordu: Kabadüz; Çambaşı plateau, 40°37'38N 37°57'20E, 1864, 26.V.2007, 2ex.; Turnalık Plateau, 40°39'36N 37°56'19E, 1645m; 26.V.2007, 1ex.; Mesudiye; Zile Plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 2ex.; Ünye; Çakmak, 41°02'57N 37°18'50E, 169m, 28.V.2007, 3ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 3ex.; Belbaşı, 40°31'22N 37°06'16E, 1315m, 27.V.2007, 3ex.; Bozçam Plateau, 40°34'57N 37°18'08E, 1584m, 27.V.2007, 3ex. Trabzon: Araklı; Taştepe, 40°46'10N 39°58'25E, 236m, 22.V.2007, 2ex.; Çaykara; Aygır Lake, 40°31'41N 40°23'26E, 2727m, 19.VI.2007, 5ex.; Şalpazarı; Doğanca, 40°53'37N 39°12'05E, 640m, 22.V.2007, 1ex.; Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 2ex.

Distribution in Turkey

Ankara, Çorum, Erzurum, Kars, Kayseri, Konya, Muğla, Samsun, Sivas, Trabzon (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Hydroporus nigellus Mannerheim, 1853

Material examined

Giresun: Dereli; Yaylacık, 40°43'18N 38°27'59E, 312m, 23.VI.2007, 5ex.; Şebinkarahisar; Alishar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 2ex. Ordu: Mesudiye; Topçam, 40°37'40N 37°48'35E, 782m, 26.V.2007, 6ex.; Zile plateau, 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 1ex. Samsun: 19 Mayıs; Balık Lake, 41°35'16N 36°06'42E, 17m, 30.V.2007, 2ex. Tokat: Niksar; Hatipli, 40°32'58N 37°12'40E, 1277m, 27.V.2007,

15ex. Trabzon: Şalpaazarı; 40°56'13N 39°11'44E, 278m, 21.V.2007, 17ex.

Distribution in Turkey

Erzurum, Rize (Darılmaz and Kıyak, 2009).

Hydroporus palustris (Linnaeus, 1761)

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 1ex. Giresun: Dereli; Bektaş plateau, 40°38'46N 38°14'29E, 2063m, 27.V.2007, 6ex.; Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex.; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 2ex. Ordu: Mesudiye; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 11ex. Ünye; Asarkaya, 40°04'20N 37°19'16E, 24m, 30.VIII.2007, 2ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 2ex.

Distribution in Turkey

Ankara, Artvin, Çorum, Erzurum, Kayseri, Rize, Samsun, Trabzon (Darılmaz and Kıyak, 2009; Hizarcioğlu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Hydroporus planus (Fabricius, 1782)

Material examined

Bayburt: Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 1ex.; Aydıntepe; Kuşmer plateau, 40°28'37N 40°09'42E, 2381m, 03.IX.2008, 4ex. Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 1ex.; Dereli; Kümbet plateau, 40°33'30N 38°23'09E, 1450m, 24.V.2007, 5ex.; Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex. Gümüşhane: Dilaver plateau, 40°37'04N 39°41'05E, 2201m, 21.VI.2007, 3ex.; Şiran; Kavakpınarı, 40°10'15N 39°14'47E, 1548m, 20.VI.2007, 2ex.; Torul; Limni Lake, 40°36'39N 39°24'47E, 2014m, 25.V.2007, 1ex. Ordu: Akkuş; Ormancık, 40°49'42N 37°00'03E, 1273m, 28.V.2007, 1ex.; Mesudiye; Cambaz plateau, 40°41'23N 37°11'37E, 1528m, 27.V.2007, 1ex.; Topçam, 40°37'40N 37°48'35E, 782m, 26.V.2007, 3ex. Samsun: 19 Mayıs; 41°29'51N

36°04'12E, 27m, 07.V.2008, 10ex. Tokat: Çamlıbel, 40°05'30N 36°28'15E, 1122m, 28.VI.2007, 3ex. Trabzon: Araklı; Taştepe, 40°46'10N 39°58'25E, 236m, 22.V.2007, 9ex.; Tonya; Sazalan plateau, 40°44'25N 39°12'31E, 1715m, 20.VI.2007, 3ex.

Distribution in Turkey

Antalya, Artvin, Balıkesir, Bursa, Çorum, Erzincan, Erzurum, İstanbul, Kars, Kayseri, Rize, Samsun, Toros Mountains (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Hydroporus pubescens (Gyllenhal, 1808)

Material examined

Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 3ex. Giresun: Şebinkarahisar; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 9ex. Gümüşhane: Kelkit; Doğanca, 40°10'12N 39°16'08E, 1603m, 20.VI.2007, 2ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 3ex. Trabzon: Şalpaazarı; Doğançı, 40°53'37N 39°12'05E, 640m, 22.V.2007, 4ex.

Distribution in Turkey

Aksaray, Antalya, Artvin, Bursa, Erzincan, Erzurum, Gümüşhane, İçel, İzmir, Kayseri, Manisa, Niğde, Ordu, Rize, Sakarya, Trabzon (Darılmaz and Kıyak 2009; İncekara *et al.*, 2010).

Hydroporus tessellatus (Drapiez, 1819)

Material examined

Bayburt: Değirmencik, 40°21'43N 40°15'19E, 1487m, 18.VI.2007, 1ex. Çorum: Alaçam; Çapraşık, 40°10'55N 35°05'41E, 1027m, 01.VI.2007, 3ex. Gümüşhane: Cebeli, 40°33'15N 39°26'22E, 1223m, 21.VI.2007, 4ex. Ordu: Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 3ex. Tokat: Avlunlar; 40°29'45N 36°43'52E, 814m, 28.V.2007, 2ex.; Erbaa; Canpolat, 40°32'02N 36°40'41E, 956m, 28.V.2007, 1ex.; Niksar; 40°33'15N 36°58'28E, 512m, 25.VI.2007, 1ex.; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 9ex. Trabzon: Araklı; Taştepe, 40°46'10N 39°58'25E, 236m, 22.V.2007, 3ex.; Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 2ex.; Şalpaazarı; 40°56'13N 39°11'44E, 278m, 21.V.2007, 5ex.

Distribution in Turkey

Adana, Afyon, Bolu, Bursa, Erzurum, Ordu, Sinop, Sivas, Trabzon, Zonguldak (Darılmaz and Kıyak, 2009).

Hydroporus thracicus Guéorguiev, 1966

Material examined

Gümüşhane: Bandırlık, 40°29'38N 39°46'25E, 2100m, 22.V.2007, 2ex.

Distribution in Turkey

Ankara, Artvin, Erzurum, Kars, Kastamonu, Rize (Darılmaz and Kıyak, 2009).

Hydrovatus cuspidatus (Kunze, 1818)

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Tokat: Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 6ex.

Distribution in Turkey

Afyon, Ankara, Antalya, Kayseri, Samsun, Toros Mountains (Darılmaz and Kıyak, 2009; Hizarcioğlu *et al.*, 2010).

Hygrotus ahmeti Hájek, Fery and Erman, 2005

Material examined

Bayburt: Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 6ex.

Distribution in Turkey

Erzincan, Erzurum (Hájek *et al.*, 2005; Darılmaz and Kıyak, 2009).

Remark

H. ahmeti Hájek, Fery and Erman (2005) is endemic for Turkey and it has limited distribution. So far, this species *H. ahmeti* has been found on the provinces of Erzincan and Erzurum only (Hájek *et al.*, 2005; Erman and Aldemir, 2010). In this study, *H. ahmeti* is the second recorded from outside of the type locality. Our specimens comparison with the type material in the Naturhistorisches Museum Wien, Austria. Our specimens show no specific differences.

Hygrotus confluens (Fabricius, 1787)

Material examined

Bayburt: Taht, 40°16'15N 40°26'14E, 1980m, 23.VII.2007, 2ex. Tokat: Yatmış, 40°06'58N 36°28'38E, 1125m, 28.VI.07, 2ex.

Distribution in Turkey

Adana, Afyon, Ankara, Bolu, Erzurum, Eskişehir, Isparta, İçel, İzmir, Kayseri, Konya (Darılmaz and Kıyak, 2009).

Hygrotus enneagrammus (Ahrens, 1833)

Material examined

Tokat: Niksar: Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 1ex.

Distribution in Turkey

Tuz Lake (Guéorguiev, 1981).

Remark

So far, this species has been found only in Central Anatolia Guéorguiev 1981. In this study, *H. enneagrammus* is the second recorded from Turkey.

Hygrotus inaequalis (Fabricius, 1777)

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Bayburt: Bel, 40°12'02N 40°17'59E, 1595m, 26.X.2007, 3ex.; Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 4ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 2ex. Giresun: Şebinkarahisar; Alışar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex.; Ekecek, 40°17'31N 38°22'33E, 1348m, 07.VIII.2008, 5ex. Ordu: Mesudiye; Cambaz plateau, 40°41'23N 37°11'37E, 1528m, 27.V.2007, 3ex.; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 9ex.; 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 2ex.; Korgan: Korgan plateau, 40°49'06N 37°20'48E, 802m, 10.IX.2008, 1ex. Tokat: Pazar; Kaz Lake, 40°17'00N 36°09'27E, 527m, 30.VII.2007, 1ex.; Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 1ex.

Distribution in Turkey

Afyon, Ankara, Artvin, Bolu, Çorum, Erzurum, Isparta, Kayseri, Konya, Manisa, Samsun (Darılmaz and Kıyak, 2009; Hizarcioglu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Hygrotus impressopunctatus (Schaller, 1783)

Material examined

Bayburt: Değirmencik, 40°21'43N 40°15'19E, 1487m, 18.VI.2007, 1ex. Giresun: Alucra; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 1ex.; Şebinkarahisar; Ekecek, 40°17'31N 38°22'33E, 1348m, 07.VIII.2008, 16ex.; Alishar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex. Trabzon: Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 3ex.

Distribution in Turkey

Çorum, Erzurum, Konya (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010).

Hygrotus lernaeus (Schaum, 1857)

Material examined

Bayburt: Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 3ex.; Gökpınar, 40°14'49N 40°10'50E, 1672m, 06.VIII.2008, 3ex. Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 3ex. Gümüşhane: Kale, 40°31'32N 39°46'08E, 1992m, 22.V.2007, 2ex. Ordu: Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 1ex.; Mesudiye: Zile Plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 1ex.; Ünye: Asarkaya, 40°04'20N 37°19'16E, 24m, 30.VIII.2007, 1ex. Trabzon: Tonya; 40°52'14N 39°17'18E, 843m, 21.V.2007, 10ex.

Distribution in Turkey

Adana, Ankara, Antalya, Aydın, Diyarbakır, Elazığ, Erzurum, Eskişehir, Muğla, Kayseri, Kocaeli, Konya, Niğde, Samsun, Sivas, Van, Yozgat (Darılmaz and Kıyak, 2009).

Hygrotus marklini (Gyllenhal, 1813)

Material examined

Giresun: Dereli; Yüce, 40°37'53N 38°27'13E,

848m, 23.VI.2007, 24ex. Ordu: Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 1ex.

Distribution in Turkey

Erzurum (Darılmaz and Kıyak, 2009).

Remark

Second record for Turkey and new record of Black Sea Region.

Hygrotus parallellogrammus (Ahrens, 1812)

Material examined

Giresun: Şebinkarahisar; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 1ex.

Distribution in Turkey

Afyon, Ankara, Erzurum, Konya, Kütahya, Samsun, Tuz Lake, Toros Mountains (Darılmaz and Kıyak 2009).

Hygrotus saginatus (Schaum, 1857)

Material examined

Bayburt: Değirmencik, 40°21'43N 40°15'19E, 1487m, 18.VI.2007, 1ex.

Distribution in Turkey

Antalya, Hatay, İçel, Kayseri, Konya, Ordu, Toros Mountains (Darılmaz and Kıyak, 2009; İncekara *et al.*, 2010; Fery, 1995).

Hyphydrus ovatus (Linnaeus, 1761)

Material examined

Giresun: Alucra; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 1ex.

Distribution in Turkey

Amasya, Bolu, Çorum, Erzurum, Samsun (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010).

Ilybius chalconatus (Panzer, 1796)

Material examined

Gümüşhane: Şiran; Tersun mountain, 40°18'16N 39°18'26E, 1917m, 20.VI.2007, 5ex.

Distribution in Turkey

Afyon, Ankara, Bolu, Diyarbakır, Erzurum, Eskişehir, İzmir, Kars, Kastamonu, Kayseri, Konya, Muş, Van Lake (Darılmaz and Kıyak, 2009; İncekara *et al.*, 2010).

Ilybius fuliginosus fuliginosus (Fabricius, 1792)

Material examined

Giresun: Bulancak; Haçbeli, 40°40'17N 38°01'33E, 1655m, 24.VI.2007, 1ex. Gümüşhane: Kelkit; Doğanca, 40°10'12N 39°16'08E, 1603m, 20.VI.2007, 3ex. Ordu: Mesudiye; Topçam, 40°37'40N 37°48'35E, 782m, 26.V.2007, 5ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 3ex.; Hatipli, 40°32'58N 37°12'40E, 1277m, 27.V.2007, 1ex.

Distribution in Turkey

Ankara, Artvin, Çorum, Erzurum, Isparta, İçel, Kars, Kayseri, Konya, Rize, Trabzon, Yozgat, Karaboğa Mountain (Elazığ or Bingöl) (Darılmaz and Kıyak, 2009; Hizarcioğlu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010).

Platambus lunulatus (Fischer von Waldheim, 1829)

Material examined

Gümüşhane: Kürtün; Söğüteli, 40°32'37N 38°59'04E, 1789m, 26. VII.2007, 3ex.

Distribution in Turkey

Ankara, Artvin, Bursa, Çorum, Erzurum, Giresun, Gümüşhane, İçel, İstanbul, Kayseri, Niğde, Rize, Trabzon, Tunceli, Yozgat (Darılmaz and Kıyak, 2009; Hizarcioğlu *et al.*, 2010; Darılmaz *et al.*, 2010).

Laccophilus hyalinus hyalinus (De Geer, 1774)

Material examined

Giresun: Bulancak; Haçbeli, 40°40'17N 38°01'33E, 1655m, 24.VI.2007, 2ex.; Şebinkarahisar; Yedikardeş, 40°17'49N 38°15'56E, 1182m, 07.IX.2008, 2ex. Tokat: Niksar; Bozçam Plateau, 40°34'57N 37°18'08E, 1584m, 27.V.2007, 4ex.; Reşadiye; Zinav Lake, 40°26'46N 37°16'38E, 962m, 25.VI.2007, 4ex.; Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 2ex.

Distribution in Turkey

Adana, Antalya, Ankara, Artvin, Aydın, Bolu, Burdur, Bursa, Çorum, Düzce, Eskişehir, Erzurum, Isparta, İçel, İzmir, Kars, Kayseri, Kırşehir, Kilis, Konya, Kütahya, Manisa, Trabzon, Zonguldak, (Darılmaz and Kıyak, 2009; Hizarcioğlu *et al.*, 2010; Darılmaz *et al.*, 2010; İncekara *et al.*, 2010; Topkara and Balık, 2010).

Laccophilus minutus (Linnaeus, 1758)

Material examined

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex.; Suluova; Oğulbağ Lake, 40°47'23N 35°34'40E, 512m, 31.V.2007, 2ex. Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 1ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 3ex.; Değirmencik, 40°21'43N 40°15'19E, 1487m, 18.VI.2007, 6ex. Giresun: Alucra; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 2ex.; Bulancak; Haçbeli, 40°40'17N 38°01'33E, 1655m, 24.VI.2007, 3ex. Gümüşhane: Kale, 40°31'32N 39°46'08E, 1992m, 22.V.2007, 9ex.; Kürtün; Özkürtün, 40°39'23N 39°08'32E, 665m, 23.V.2007, 2ex. Ordu: Kumru; Eskiçokdeğirmen, 40°55'22N 37°15'24E, 612m, 28.V.2007, 2ex.; Mesudiye; Ulugöl plateau, 40°24'05N 37°49'59E, 1609m, 30.VI.2007, 3ex.; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 1ex.; 40°35'06N 37°52'28E, 1933m, 27.VII.2007, 1ex.; Ünye; Asarkaya, 40°04'20N 37°19'16E, 24m, 30.VIII.2007, 3ex. Samsun: Bafra; Kızılırmak, 41°35'14N 35°53'46E, 14m, 30.V.2007, 1ex.; Havza; 40°59'52N 35°45'52E, 720m, 31.V.2007, 13ex.; 19 Mayıs; 41°29'51N 36°04'12E, 27m, 07.V.2008, 2ex. Tokat: Yatmış, 40°06'58N 36°28'38E, 1125m, 28.VI.07, 7ex.; Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 30ex.; Zile; Utuk, 40°15'51N 36°03'14E, 565m, 05.V.2008, 1ex.

Distribution in Turkey

Afyon, Aksaray, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bolu, Burdur, Bursa, Çorum, Erzurum, Eskişehir, Gümüşhane, Isparta, İzmir, Kastamonu, Kayseri, Konya, Manisa, Rize, Samsun, Sinop, Sivas, Trabzon, Toros Mountains, Yozgat (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010; Topkara and Balık, 2010).

Laccophilus poecilus Klug, 1834*Material examined*

Ordu: Fatsa; Kilise Lake, 40°58'20N 37°30'18E, 483m, 27.V.2007, 5ex. Samsun: Bafra; Kızılırmak, 41°35'14N 35°53'46E, 14m, 30.V.2007, 1ex. Tokat: Pazar; Kaz Lake, 40°17'00N 36°09'27E, 527m, 30.VII.2007, 1ex.; Yeşilyurt; 40°00'30N 36°11'59E, 1065m, 01.VI.2007, 1ex.

Distribution in Turkey

Adana, Afyon, Antalya, Aydın, Bolu, Çorum, Erzurum, Isparta, İzmir, Kayseri, Konya, Manisa, Rize, Samsun (Darılmaz and Kıyak, 2009; Darılmaz et al., 2010).

Nebrioporus airumulus (Kolenati, 1845)*Material examined*

Giresun: Dereli; Bektaş Plateau, 40°38'46N 38°14'29E, 2063m, 27.V.2007, 1ex.; Kümbet Plateau, 40°34'09N 38°26'46E, 1247m, 24.V.2007, 2ex. Gümüşhane: Kürtün; Özkürtün, 40°39'23N 39°08'32E, 665m, 23.V.2007, 9ex. Tokat: Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 2ex.

Distribution in Turkey

Artvin, Erzurum, Gümüşhane, Kars, Van (Darılmaz and Kıyak, 2009).

Nebrioporus stearinus suavis (Sharp, 1882)*Material examined*

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Çorum: Alaçam; Çapraşık, 40°10'55N 35°05'41E, 1027m, 01.VI.2007, 1ex. Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 1ex.; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 3ex.; Bulancak; Bektaş plateau, 40°39'45N 38°15'01E, 2005m, 23.VI.2007, 2ex.; Şebinkarahisar; Alishar, 40°19'01N 38°34'58E, 1461m, 02.VI.2008, 1ex. Gümüşhane: Yağlıdere, 40°34'09N 39°35'31E, 2015m, 21.VI.2007, 2ex. Ordu: Akkuş; Ormancık, 40°49'42N 37°00'03E, 1273m, 28.V.2007, 1ex.; Kabadüz; Çambaşı plateau, 40°37'38N 37°57'20E, 1864, 26.V.2007, 1ex.; Turnalık plateau, 40°39'36N 37°56'19E,

1645m, 26.V.2007, 1ex.; Mesudiye; Zile plateau, 40°35'29N 37°53'49E, 1696m, 24.VI.2007, 1ex.; Ünye; Çakmak, 41°02'57N 37°18'50E, 169m, 28.V.2007, 2ex. Tokat: Reşadiye; Hanyeri, 40°31'07N 37°03'12E, 699m, 25.VI.2007, 2ex.

Distribution in Turkey

Bilecik, Çorum, Eskişehir, Tokat, Konya, Kastamonu, Sinop, Gümüşhane, Muğla, Antalya, Artvin, Erzurum, Ordu, Nevşehir, İçel (Toledo, 2009; Darılmaz et al., 2010)

Porhydrus lineatus (Fabricius, 1775)*Material examined*

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 8ex.

Distribution in Turkey

Manastır (Most probably Trabzon), Samsun (Darılmaz and Kıyak, 2009; Incekara et al., 2009).

Rhantus suturalis (W.S. MacLeay, 1825)*Material examined*

Tokat: Avlunlar; 40°29'45N 36°43'52E, 814m, 28.V.2007, 1ex.

Distribution in Turkey

Aksaray, Ankara, Çorum, Erzurum, Kayseri, Konya, Manisa, Rize, Trabzon (Darılmaz and Kıyak, 2009; Hizarcioglu et al., 2010; Darılmaz et al., 2010; Incekara et al., 2010).

Scarodytes halensis halensis (Fabricius, 1787)*Material examined*

Amasya: Belmebük, 40°32'43N 35°47'06E, 415m, 03.VI.2008, 1ex. Bayburt: Çorak, 40°15'37N 39°57'38E, 1635m, 20.X.2007, 1ex.; Danişment, 40°14'38N 40°09'54E, 1640m, 21.IX.2007, 1ex. Giresun: Alucra; 40°19'59N 38°44'26E, 1518m, 25.V.2007, 1ex.; Aktepe, 40°20'05N 38°43'11E, 1593m, 04.V.2008, 2ex.; Bulancak; Haçbeli, 40°40'17N 38°01'33E, 1655m, 24.VI.2007, 1ex.; Dereli; Yaylacık, 40°43'18N 38°27'59E, 312m, 23.VI.2007, 1ex. Ordu: Ünye; Asarkaya, 40°04'20N 37°19'16E, 24 m, 30.VIII.2007, 1ex. Tokat:

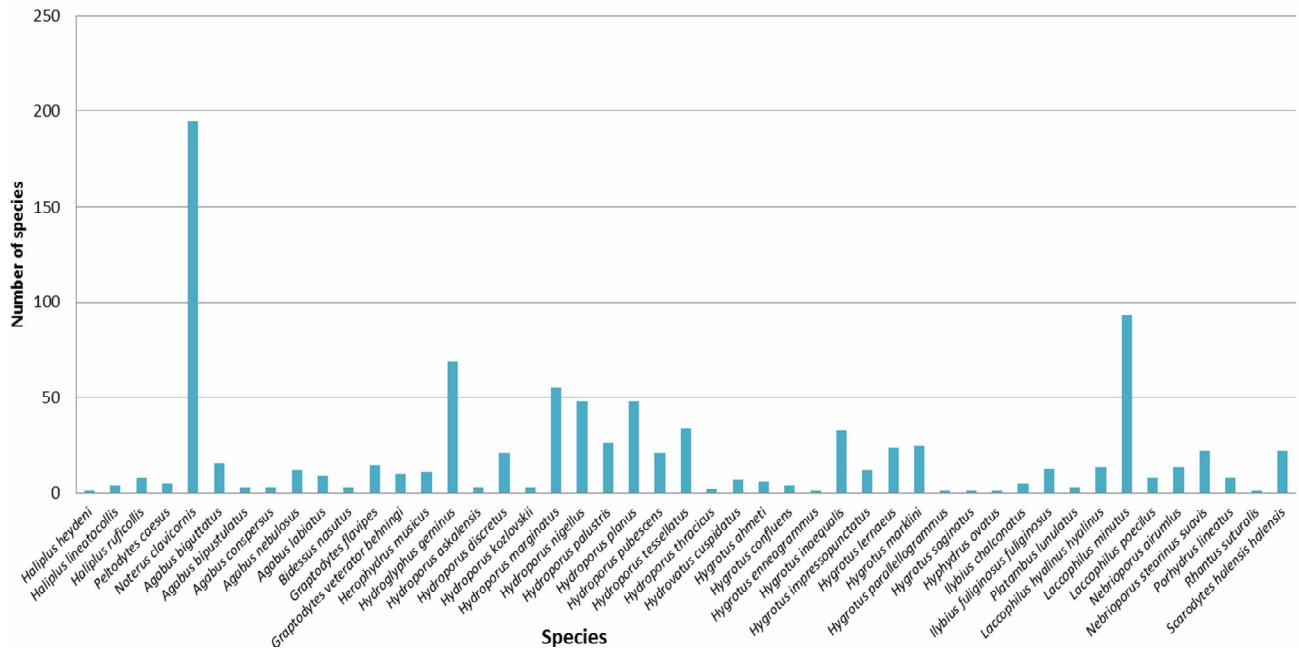


Fig. 1. Numbers of all collected specimens

Avlunlar; 40°29'45N 36°43'52E, 814m, 28.V.2007, 1ex.; Niksar; Alan, 40°39'56N 37°05'59E, 1273m, 30.VII.2007, 3ex.; Belbaşı, 40°31'22N 37°06'16E, 1315m, 27.V.2007, 1ex.; Bozçam plateau, 40°34'57N 37°18'08E, 1584m, 27.V.2007, 1ex.; Reşadiye; Bozçalı, 40°32'36N 37°16'43E, 1268m, 25.VI.2007, 6ex.; Zile; Utuk, 40°15'51N 36°03'14E, 565m, 05.V.2008, 1ex.

Distribution in Turkey

Aksaray, Ankara, Antalya, Artvin, Bursa, Çorum, Erzurum, Eskişehir, Gümüşhane, Isparta, İçel, İzmir, Kayseri, Van, Trabzon, Yozgat (Darılmaz and Kıyak, 2009; Darılmaz *et al.*, 2010).

DISCUSSION

For this study 943 specimens (17 specimens from Haliplidae, 195 specimens from Noteridae and 731 specimens from Dytiscidae) collected from research area and all of them analyzed one by one. In total 47 species were determined belong to the Coleoptera: Adepaga. Of all this specimens numbers were showed in Figure 1. And collected of which provinces showed in Table I.

The total number of specimens of aquatic

beetles collected in freshwater habitats of Black sea (Middle and Eastern) amounts to 943. Six species are dominant (> 5% of total abundance). In decreasing order, they are as follows (% of total abundance is given in parentheses): *Noterus clavicornis* (20.6%), *Laccophilus minutus* (9.8%), *Hydroglyphus geminus* (7.3%), *Hydroporus marginatus* (5.8%), *Hydroporus nigellus* and *Hydroporus planus* (5.0%). Nine species are subdominant (abundance of 2-5%): *Hydroporus tessellatus* (3.6%), *Hygrotus inaequalis* (3.4%), *Hydroporus palustris* (2.7%), *Hygrotus marklini* (2.6%), *Hygrotus lernaeus* (2.5%), *Nebrioporus stearinus suavis* and *Scarodytes halensis halensis* (2.3%), *Hydroporus discretus* and *H. pubescens* (2.2%). The remaining 33 species have abundance of <2%.

Faunistic studies on Turkish Aquatic Coleoptera has been increased recently (Bayram *et al.*, 2012; Bektaş *et al.*, 2014; Darılmaz and İncekara, 2011; Darılmaz *et al.*, 2012, 2013, 2014; İncekara *et al.*, 2011, 2013; Mart *et al.*, 2014; Polat *et al.*, 2010; Taşar *et al.*, 2012a, 2012b, 2014; Taşar, 2014a, 2014b; Taşar and Mascagni, 2014; Yılmaz *et al.*, 2014), but further studies aiming to improve our knowledge on Turkish water beetles should focus on

Table I.- Collected specimens from Black Sea Region.

Species	Amasya	Bayburt	Çorum	Giresun	Gümüşhane	Ordu	Samsun	Tokat	Trabzon
Haliplidae									
<i>Haliplus heydeni</i>				1*					
<i>Haliplus lineatocollis</i>						4*			
<i>Haliplus ruficollis</i>		5*				1*		2*	
<i>Pelodytes caesus</i>		1*				2*		2*	
<i>Noterus clavicornis</i>	9*	18*		28*	10*	56*	11	50*	13
Noteridae									
<i>Noterus clavicornis</i>	9*	18*		28*	10*	56*	11	50*	13
Dytiscidae									
<i>Agabus biguttatus</i>				8*	5				3
<i>Agabus bipustulatus</i>				1*		1*			1
<i>Agabus conspersus</i>			1		1*			1*	
<i>Agabus nebulosus</i>								2*	10*
<i>Agabus labiatus</i>				3*				6*	
<i>Bidessus nasutus</i>	1*							1*	1*
<i>Graptodytes flavipes</i>		3*	4*	8*					
<i>Graptodytes veterator behningi</i>		3*		4*		3*			
<i>Herophydrus musicus</i>			5*				1*	5*	
<i>Hydroglyphus geminus</i>		12*	3	8*	4	9*	7	21*	5
<i>Hydroporus askalensis</i>				3*					
<i>Hydroporus discretus</i>						2*	3*	14*	2*
<i>Hydroporus kozlovskii</i>				2*				1*	
<i>Hydroporus marginatus</i>		12*			16*	8*		9*	10
<i>Hydroporus nigellus</i>				7*		7*	2*	15*	17*
<i>Hydroporus palustris</i>	1*	1*		9*		13*		2*	
<i>Hydroporus planus</i>		5*		7*	6*	5*	10	3*	12*
<i>Hydroporus pubescens</i>		3*		9*	2			3*	4
<i>Hydroporus tessellatus</i>		1*	3*		4*	3		13*	10
<i>Hydroporus thracicus</i>					2*				
<i>Hydrovatus cuspidatus</i>	1*							6*	
<i>Hygrotus ahmeti</i>		6*							
<i>Hygrotus confluens</i>		2*						2*	
<i>Hygrotus enneagrammus</i>								1*	
<i>Hygrotus inaequalis</i>	1*	9*		6*		15*		2*	
<i>Hygrotus impressopunctatus</i>	1*			8*					
<i>Hygrotus lernaeus</i>		6*		3*	2*	3*			10*
<i>Hygrotus marklini</i>				24*		1*			
<i>Hygrotus parallelogrammus</i>				1*					
<i>Hygrotus saginatus</i>		1*							
<i>Hyphydrus ovatus</i>				1*					
<i>Ilybius chalconatus</i>					5*				
<i>Ilybius fuliginosus fuliginosus</i>				1*	3*	5*	4*		
<i>Platambus lunulatus</i>					3				
<i>Laccophilus hyalinus hyalinus</i>				4*				10*	
<i>Laccophilus minutus</i>	3*	10*		5*	11	10*	16	38*	
<i>Laccophilus poecilus</i>						5*	1	2*	
<i>Nebrioporus airumilus</i>				3*	9			2*	
<i>Nebrioporus stearinus suavis</i>	1*		1	8*	2	6		2	
<i>Porhydrus lineatus</i>	8*								
<i>Rhantus suturalis</i>								1*	
<i>Scarodytes halensis halensis</i>	1*	2*		5*		1*		13*	

*Firs record for the providence.

collecting in little known areas, revision of the still unstudied material from additional families and filling the large gaps in our knowledge regarding the diversity of water beetles in some specific habitats.

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