

Faunistic study of the aquatic beetles (Coleoptera: Helophoridae) in the Bayburt, Giresun, Gümüşhane, Ordu, and Trabzon provinces of Turkey

Abdullah MART*, Ümit İNCEKARA, Hanifi KARACA

Atatürk University, Science Faculty, Department of Biology, 25240 Erzurum - TURKEY

Received: 12.02.2009

Abstract: In this study, we established the presence of 25 aquatic beetle (Coleoptera: Helophoridae) species belonging to 5 subgenera from the Bayburt, Giresun, Gümüşhane, Ordu, and Trabzon provinces in the Black Sea region of Turkey. Specimens were collected between May 2007 and October 2007. Ten species are here recorded for the first time from the Black Sea region and 6 species are recorded for the first time in the research area. In addition, the habitats of these species found in the research area were given.

Key words: Coleoptera, Helophoridae, fauna, Turkey

Türkiye'nin Bayburt, Giresun, Gümüşhane, Ordu ve Trabzon illerindeki sucul kınkanatlılarına ait (Coleoptera: Helophoridae) faunistik çalışma

Özet: Bu çalışmada, Türkiye'nin Karadeniz bölgesi Bayburt, Giresun, Gümüşhane, Ordu ve Trabzon illerinden toplanan 5 altcinsine ait 25 sucul kınkanatlı (Coleoptera: Helophoridae) türü kaydedilmiştir. Örnekler Mayıs 2007 ve Ekim 2007 tarihleri arasında toplanmıştır. 10 tür Karadeniz bölgesinden, 6 tür ise araştırma bölgesinden ilk olarak kaydedilmiştir. Ayrıca, araştırma bölgesinden toplanan bu türlerin habitatları hakkında bilgiler verilmiştir.

Anahtar sözcükler: Coleoptera, Helophoridae, fauna, Türkiye

Introduction

The Helophoridae are among the most distinctive of all the aquatic Coleoptera; the adults are immediately recognizable by the pattern of 5 longitudinal grooves running down the surface of the pronotum (Angus, 1992). It is a large family comprising a single genus, *Helophorus*. This genus

comprises 186 species, represented in 3 major zoogeographical regions (Palearctic, Nearctic, and Ethiopian). Most species of *Helophorus* are aquatic and occur in a wide range of aquatic habitats from sea level to the alpine zone of high mountains, where they occur in snow-fed puddles and pools. Most species seem to prefer standing shallow water with plenty of

* E-mail: amart@atauni.edu.tr

organic debris, such as edges of small to medium sized water bodies; less frequently, species also occur in small, slow flowing streams. Many species occur in the transition zone between water and land, in debris, sand or mud, and in moss or other vegetation as long as the habitat is very wet. Some also occur in wet *Sphagnum* or other moss in bogs, swamps, marshes, etc. The species belonging to the subgenus *Empleurus* Hope, 1838 are strictly terrestrial and live on moist soil in vegetation, under rocks and in or under rotting plant debris. Some even live in the alpine zone under rocks and grass roots at the edges of snowfields or in alpine meadows (Angus, 1984, 1985a, 1985b, 1985c, 1988, 1992; Smetana, 1985; Hansen, 1987, 1999, 2004; Mart and Erman, 2001; İncekara et al., 2002, 2004, 2005a, 2005b). In this study, 5 subgenera and 25 species have been recorded from only the Bayburt, Giresun, Gümüşhane, Ordu, and Trabzon provinces of Turkey. The aim of this study was to make a contribution to the Turkish aquatic beetle fauna.

Material and methods

The samples were collected by means of a sieve, ladle, and net with 1 mm pores from shallow areas of various springs, streams, brackish water, and ponds in the Bayburt, Giresun, Gümüşhane, Ordu and Trabzon provinces between May 2007 and October 2007. The beetles were killed using ethyl acetate or 70% alcohol solution. Aedeagophores were dissected out under a stereo microscope and exposed in 10% KOH solution for 1-2 h. Materials have been deposited in the Zoological Museum, Atatürk University, Erzurum, Turkey. A list of localities from provinces of the Black Sea Region is given in Table 1. The localities are numbered with the full locality data provided. A locality number and date are mentioned for each record. A list of all species recorded from the Black Sea Region is given in Table 2.

Countries have been coded as follows after Löbl and Smetana (2004).

E-Europe AB Azerbaijan, AL Albania, AN Andorra, AR Armenia, AU Austria, AZ Azores, BE Belgium, BH Bosnia Herzegovina, BU Bulgaria, BY Belarus, CR Croatia, CT Russia: Central European Territory, CZ Czech Republic, DE Denmark, EN

Estonia, FA Faeroe Islands, FI Finland, FR France (incl. Corsica, Monaco), GB Great Britain (incl. Channel Islands), GE Germany, GG Georgia, GR Greece (incl. Kriti) HU Hungary, IC Iceland, IR Ireland, IT Italy (incl. Sardegna, Sicilia, San Marino), KZ Kazakhstan, LA Latvia, LS Liechtenstein, LT Lithuania, LU Luxembourg, MA Malta, MC Macedonia, MD Moldavia, NL The Netherlands, NR Norway, NT Russia: North European Territory, PL Poland, PT Portugal, RO Romania, RU Russia, SK Slovakia, SL Slovenia, SP Spain (incl. Gibraltar), SR Svalbard (Spitzbergen), ST Russia: South European Territory, SV Sweden, SZ Switzerland, TR Turkey, UK Ukraine, YU Yugoslavia (Serbia, Montenegro).

N-North Africa: AG Algeria, CI Canary Islands, EG Egypt, LB Libya, MO Morocco (incl. Western Sahara), MR Madeira Archipelago, TU Tunisia.

A-Asia: AE Arab Emirates, AF Afghanistan, AP India: Arunachal Pradesh, BA Bahrain, BT Bhutan, CE China: Central Territory, CH China, CY Cyprus, ES Russia: East Siberia, FE Russia: Far East, HP India: Himachal Pradesh, IN Iran, IQ Iraq, IS Israel, JA Japan, JO Jordan, KA India: Kashmir, KI Kyrgyzstan, KU Kuwait, KZ Kazakhstan, LE Lebanon, MG Mongolia, NP Nepal, NE China: Northeast Territory, NC North Korea, NO China: Northern Territory, NW China: Northwest Territory, OM Oman, PA Pakistan, QA Qatar (incl. United Arab Emirates), RU Russia, SA Saudi Arabia, SC South Korea, SD India: Sikkim, Darjeeling District, SE China: Southeastern Territory (incl. Macao, Hongkong), SI Egypt: Sinai, SW China: Southwestern Territory, SY Syria, TD Tajikistan, TM Turkmenistan, TR Turkey, UP India: Uttaranchal, Uttar Pradesh, UZ Uzbekistan, WP China: Western Plateau, WS, Russia: west Siberia, YE Yemen (incl. Socotra).

World zoogeographical region

AFR Afrotropical Region, **AUR** Australian Region, **NAR** Nearctic Region, **NTR** Neotropical Region, **ORR** Oriental Region.

Results

Family: *Helophoridae* Leach, 1815

Genus: *Helophorus* Fabricius, 1775

Subgenus: *Helophorus* Fabricius, 1775

Table 1. List of sampling sites.

Province	Sampling site	Coordinates	Altitude (m)	Abbreviation
BAYBURT	Akbulut village	40°24'56"N 40°14'48"E	1534	B1
	Akduran village	40°06'56"N 40°29'54"E	2192	B2
	Aşağıçimayıllı village	40°06'58"N 40°36'20"E	1973	B3
	Balkaynak village	40°20'47"N 39°57'20"E	1617	B4
	Başçimayıllı village	40°06' 51"N 40°32'57"E	2028	B5
	Başpınar village	40°26'09"N 40°03'29"E	1639	B6
	Çiğdemlik village	40°27'02"N 40°15'57"E	1610	B7
	Danişment village	40°14'38"N 40°09'54"E	1640	B8
	Değirmencik village	40°21'43"N 40°15'18"E	1489	B9
	Göloba village	40°29'58"N 40°19'33"E	2267	B10
	Kavlatan village	40°32'16"N 40°11'05"E	2163	B11
	Kılıçkaya village	40°29'47"N 40°15'23"E	1899	B12
	Kop pass	40°02'12"N 40°30'43"E	2409	B13
	Kopuz village	40°08'36"N 40°13'33"E	1746	B14
	Mutlu village	40°14'13"N 40°08'53"E	1635	B15
	Oruçbeyli village	40°13'57"N 40°02'48"E	1651	B16
	Sakızlı pond	40°09'26"N 40°03'38"E	1735	B17
	Samarova plateau	40°28'38"N 39°59'08"E	1963	B18
	Sancaktepe village	40°09'28"N 40°06'21"E	1743	B19
	Sarıçiçek plateau	40°30'01"N 40°25'36"E	2561	B20
	Soğanlı mount	40°30'17"N 40°15'04"E	2096	B21
	Tahtköy village	40°16'15"N 40°26'14"E	1980	B22
	Üzengili village	40°29'39"N 40°23'50"E	2177	B23
	Yukarıkışlak village	40°06'31"N 40°08'53"E	1802	B24
GİRESUN	Alucra	40°19'59"N 38°44'26"E	1518	G1
	Bektaş plateau	40°38'46"N 38°14'29"E	2063	G2
	Berçin plateau	40°41'04"N 38°01'47"E	1680	G3
	Çağlayan village	40°51'16"N 39°09'18"E	1744	G4
	Çalı plateau	40°39'39"N 38°51'44"E	1802	G5
	Çamlı village	40°39'58"N 38°26'22"E	773	G6
	Dereli	40°44'35"N 38°26'57"E	261	G7
	Doğankent village	40°49'06"N 38°54'47"E	170	G8
	Düzköy village	40°52'06"N 39°08'41"E	1901	G9
	Ekecek village	40°17'30"N 38°22'34"E	1362	G10
	Elmalı village	40°46'52"N 38°07'54"E	310	G11
	Hacıosman village	40°15'53"N 38°54'43"E	1700	G12
	Haçbeli village	40°40'17"N 38°01'33"E	1655	G13
	Kaynar village	40°05'27"N 38°47'11"E	1111	G14
	Kovanlık village	40°44'54"N 38°05'43"E	1300	G15
	Kulakkaya plateau	40°41'56"N 38°20'21"E	1629	G16
	Kuşköy village	40°52'08"N 36°03'35"E	373	G17
	Küçük Ahmet village	40°42'46"N 38°27'58"E	1333	G18
	Kümbet plateau	40°33'30"N 38°23'09"E	1450	G19
	Masat plateau	40°42'03"N 38°02'58"E	1701	G20
	Saplıca village	40°23'29"N 38°25'53"E	1452	G21
	Sis mountain	40°51'22"N 39°09'02"E	1775	G22
	Tepeköy village	40°18'53"N 38°41'00"E	1476	G23
	Turpcu village	40°20'37"N 38°33'59"E	1414	G24
	Yavuz Kemal	40°38'05"N 38°18'57"E	1181	G25
	Yaylacık village	40°40'42"N 38°26'43"E	339	G26
	Yuva village	40°36'25"N 38°16'51"E	1359	G27
Yüce village	40°37'53"N 38°27'13"E	848	G28	

Table 1. (Continued).

Province	Sampling site	Coordinates	Altitude (m)	Abbreviation
GÜMÜŞHANE	Akbulak village	40°20'39"N 39°06'38"E	1374	G29
	Balahor plateau	40°29'28"N 39°57'22"E	2208	G30
	Bandırlık village	40°29'38"N 39°46'25"E	2100	G31
	Beytarla village	40°32'24"N 38°50'36"E	1797	G32
	Camiboğazı plateau	40°35'56"N 39°39'11"E	2449	G33
	Değirmenyurdu plateau	40°35'35"N 39°40'53"E	2453	G34
	Dilaver plateau	40°37'04"N 39°41'05"E	2201	G35
	Dilek yolu village	40°13'20"N 39°16'25"E	1590	G36
	Doğanca village	40°10'12"N 39°16'08"E	1603	G37
	Elmacukuru village	40°17'11"N 39°17'14"E	1838	G38
	Gülaçar village	40°23'27"N 39°09'25"E	1751	G39
	Hasköy village	40°26'17"N 39°20'31"E	1161	G40
	İkiz village	40°32'33"N 39°47'50"E	1781	G41
	Kabaköy village	40°26'03"N 39°40'41"E	1878	G42
	Kabaktepe village	40°13'38"N 39°42'02"E	1649	G43
	Karaçayır village	40°08'08"N 39°29'00"E	1434	G44
	Kavakpınarı village	40°10'15"N 39°14'47"E	1548	G45
	Kazıkbeli plateau	40°32'33"N 38°55'23"E	2293	G46
	Kocapınar village	40°28'14"N 39°34'23"E	1477	G47
	Köse	40°13'04"N 39°39'25"E	1608	G48
	Köycük village	40°08'34"N 39°25'16"E	1387	G49
	Mavluca plateau	40°30'08"N 38°54'57"E	2582	G50
	Orta plateau	40°35'45"N 39°39'54"E	2357	G51
	Sadak village	40°01'28"N 39°36'19"E	1620	G52
	Salmankaş pass	40°29'47"N 39°59'22"E	2342	G53
	Salyazı village	40°14'47"N 39°48'18"E	1682	G54
	Soranay plateau	40°36'36"N 39°23'49"E	1598	G55
	Söğüteli village	40°32'37"N 38°59'04"E	1789	G56
	Şaphane village	40°30'43"N 39°45'43"E	2234	G57
	Tersun pass	40°18'16"N 39°18'26"E	1917	G58
	Uzuntaş plateau	40°35'40"N 39°46'59"E	2136	G59
	Ünlüpınar plateau	40°15'54"N 39°28'53"E	1397	G60
	Yağlıdere village	40°34'09"N 39°35'31"E	2015	G61
Yağmurdere village	40°34'28"N 39°53'16"E	1670	G62	
Yayladere village	40°28'47"N 39°46'50"E	1874	G63	
Zigana village	40°38'26"N 39°24'21"E	2026	G64	
ORDU	Absut plateau	40°45'20"N 37°13'37"E	1348	O1
	Alanköy village	40°49'02"N 36°50'28"E	1003	O2
	Alanyurt village	40°40'27"N 37°31'27"E	787	O3
	Arıcılar village	40°33'09"N 37°40'24"E	948	O4
	Arpalık village	40°53'03"N 37°24'05"E	695	O5
	Aşıklı village	40°36'37"N 37°43'40"E	951	O6
	Aybastı	40°41'48"N 37°24'10"E	776	O7
	Belalan village	40°46'56"N 37°15'21"E	1318	O8
	Beyabağç village	40°34'56"N 37°50'18"E	1692	O9
	Çakırlı village	40°38'52"N 37°31'14"E	1233	O10
	Çakmak village	41°02'57"N 37°18'50"E	169	O11
	Çambaşı plateau	40°37'29"N 37°57'20"E	1866	O12
	Çamlıca village	40°48'53"N 36°53'09"E	966	O13
	Çiğdemköy village	41°00'50"N 37°17'23"E	333	O14
	Çitlice village	40°45'05"N 37°17'22"E	710	O15
	Dayılı village	40°23'21"N 37°47'22"E	1458	O16

Table 1. (Continued).

Province	Sampling site	Coordinates	Altitude (m)	Abbreviation
ORDU	Esenyurt village	40°53'09"N 37°54'16"E	169	O17
	Eskiçokdeğirmen village	40°55'22"N 37°15'24"E	612	O18
	Güneyce village	40°24'40"N 37°47'42"E	1575	O19
	Günpınar village	41°05'01"N 37°18'57"E	4	O20
	Güzle village	40°30'51"N 37°41'21"E	1003	O21
	Isırganlı village	40°40'10"N 37°55'58"E	1548	O22
	Kabataş village	40°44'20"N 37°26'30"E	452	O23
	Kadıncık village	40°53'45"N 37°16'26"E	564	O24
	Karaçal village	40°45'03"N 37°01'50"E	1198	O25
	Kayatepe village	40°53'51"N 37°27'39"E	920	O26
	Koççuvaz village	40°52'38"N 37°03'23"E	1105	O27
	Konakbaşı village	41°00'43"N 37°32'41"E	13	O28
	Konaklı village	40°48'26"N 37°13'32"E	1678	O29
	Korgan Plateau	40°42'31"N 37°11'59"E	1477	O30
	Kumru	40°43'16"N 37°11'01"E	1243	O31
	Mesudiye	40°28'15"N 37°46'40"E	1135	O32
	Ormancık village	40°49'42"N 37°00'03"E	1273	O33
	Ortaköy village	40°48'54"N 37°27'26"E	282	O34
	Örencik village	40°57'36"N 37°30'09"E	52	O35
	Perşembe plateau	40°37'15"N 37°18'44"E	1422	O36
	Topçam	40°37'22"N 37°46'33"E	709	O37
	Turnalık plateau	40°39'36"N 37°56'19"E	1645	O38
	Ulugöl plateau	40°24'05"N 37°49'59"E	1609	O39
	Yeniaslan village	40°23'18"N 37°47'20"E	1463	O40
	Zile plateau	40°35'00"N 37°52'24"E	1924	O41
	TRABZON	Alan plateau	40°43'53"N 39°17'35"E	2137
Biçinlik village		40°52'10"N 39°17'20"E	768	T2
Çamlı village		40°54'49"N 39°17'19"E	588	T3
Çankaya village		40°43'22"N 39°54'41"E	382	T4
Çayırbağı village		40°50'38"N 39°19'56"E	1078	T5
Çayırıcı village		40°49'26"N 39°17'48"E	953	T6
Çoşandere village		40°45'08"N 39°37'39"E	547	T7
Doğancı village		40°53'37"N 39°12'05"E	640	T8
Erikbeli plateau		40°43'53"N 39°17'36"E	2146	T9
Gökçeköy village		40°50'49"N 39°11'17"E	1279	T10
Göllü alan village		40°46'38"N 39°13'47"E	1632	T11
Hasköy village		40°52'27"N 40°01'20"E	69	T12
Kadırga plateau		40°41'38"N 39°21'00"E	2373	T13
Kalegüney village		40°59'46"N 39°11'47"E	145	T14
Kayadibi village		40°47'55"N 39°37'03"E	379	T15
Maçka		40°49'21"N 39°36'59"E	136	T16
Pervane village		40°49'38"N 39°59'58"E	143	T17
Sazalan plateau		40°44'22"N 39°12'34"E	1717	T18
Sındıran village		40°48'34"N 39°26'46"E	1380	T19
Şekersu plateau		40°31'53"N 40°16'17"E	2350	T20
Taşköprü plateau		40°39'26"N 39°40'47"E	1707	T21
Taştepe village		40°46'10"N 39°58'25"E	236	T22
Tonya		40°51'47"N 39°17'17"E	814	T23
Tosunlu village		40°49'02"N 40°00'02"E	138	T24
Yerlice village		40°48'25"N 39°27'54"E	1450	T25

Table 2. List of Helophoridae occurring in provinces of Black Sea Region in Turkey.

Species	Bayburt	Giresun	Gümüşhane	Ordu	Trabzon
<i>Helophorus aquaticus</i>	X	X	X	X	X
<i>Helophorus syriacus</i>		X		X	
<i>Helophorus nubilus</i>	X	X	X	X	
<i>Helophorus micans</i>	X	X			
<i>Helophorus abeillei</i>	X		X		
<i>Helophorus armeniacus</i>		X	X		X
<i>Helophorus arvernicus</i>			X		
<i>Helophorus brevivalpis</i>	X	X	X	X	X
<i>Helophorus daedalus</i>	X	X	X	X	
<i>Helophorus difficilis</i>		X			
<i>Helophorus faustianus</i>	X	X	X	X	X
<i>Helophorus guttulus</i>	X		X		
<i>Helophorus lewisi</i>	X	X		X	
<i>Helophorus montenegrinus</i>		X		X	X
<i>Helophorus ponticus</i>	X		X		X
<i>Helophorus discrepans</i>	X	X	X	X	X
<i>Helophorus frater</i>	X	X	X		
<i>Helophorus fulgidicollis</i>	X	X	X	X	X
<i>Helophorus griseus</i>		X		X	
<i>Helophorus helenae</i>				X	
<i>Helophorus hiliaris</i>	X	X	X	X	
<i>Helophorus lapponicus</i>	X		X	X	X
<i>Helophorus longitarsis</i>			X	X	
<i>Helophorus nanus</i>				X	
<i>Helophorus obscurus</i>		X		X	X

Helophorus (Helophorus) aquaticus (Linnaeus, 1758)

Material examined: Bayburt: 1♂ 1♀, B1 B1, 20.V.2007; 1♂, B11, 20. V. 2007; 4♂♂ 2♀♀, B21, 20.V.2007; 1♂ 4♀♀, B12, 20.V.2007; 5♂♂ 4♀♀, B1 B1, 18.VI.2007; 2♂♂ 3♀♀, B10, 18.VI.2007; 5♂♂ 7♀♀, B23, 18.VI.2007; 2♂♂ 1♀, B13, 18.VI.2007; 2♂♂, B13, 23.VII.2007; 2♂♂ 6♀♀, B3, 27.VIII.2007; 1♂, B7, 26.X.2007; 1♀, B12, 26.X.2007; 1♂, B13, 20.X.2007. **Giresun:** 5♂♂, 6♀♀, G24, 25.V.2007; 1♀, G19, 24.V.2007; 12♂♂ 9♀♀, G2, 27.V.2007; 1♂ 3♀♀, G27, 23.VI.2007; 2♂♂ 1♀, G16, 23.VI.2007; 2♂♂, G3, 24.VI.2007; 1♀, G5, 22.VI.2007; 29♂♂ 38♀♀, G2, 23.VI.2007; 2♂♂ 1♀, G22, 25.VII.2007. 7♂♂ 8♀♀,

G2, 21.X.2007. **Gümüşhane:** 1♂ 3♀♀, G64, 23.V.2007; 1♂, G39, 23.V.2007; 4♂♂, 3♀♀, G55, 23.V.2007; 2♂♂, 9♀♀, G39, 23.V.2007; 1♀, G36, 20.VI.2007; 1♂ 3♀♀, G60, 19.VI.2007; 1♂, G49, 20.VI.2007; 3♂♂ 4♀♀, G38, 20.VI.2007; 1♂, G63, 19.VI.2007; 1♀, G42, 19.VI.2007; 3♂♂ 1♀, G58, 20.VI.2007; 11♂♂ 23♀♀, G45, 20.VI.2007m; 1♂ 1♀, G61, 21.VI.2007; 2♂♂ 1♀, G31, 19.VI.2007; 8♂♂ 5♀♀, G33, 21.VI.2007; 1♀, G34, 21.VI.2007; 1♂, G50, 22.VI.2007; 2♂♂ 7♀♀, G46, 26.VII.2007; 2♂♂ 5♀♀, G34, 24.VII. 2007; 3♂♂ 7♀♀, G59, 24.VII.2007; 1♂, G37, 20.X.2007. **Ordu:** 2♂♂, 2♀♀, O33, 28.V.2007; 2♂♂ 2♀♀, O6, 26. V. 2007; 2♂♂, 4♀♀, O41, 26.V.2007; 1♂, O12, 26.V.2007; 3♂♂ 12♀♀, O32, 26.

V. 2007; 1♀, O31, 27.V.2007; 2♂♂ 4♀♀, O10, 27.V.2007; 1♂, O29, 27.V.2007; 1♂ 4♀♀, O36, 27.V.2007; 1♂ 2♀♀, O12, 19.VI.2007; 1♂ 3♀♀, O1, 25. VI. 2007; 1♂ 4♀♀, O8, 25.VI.2007; 4♂♂ 3♀♀, O30, 25.VI.2007; 1♂ 2♀, O40, 25.VI.2007; 4♂♂ 8♀♀, O9, 24.VI.2007; 2♂♂, O41, 24.VI.2007; 2♂♂ 1♂, O12, 27.VII.2007; 1♂ 3♀♀, O30, 22. X. 2007; 1♂ 7♀♀, O3, 22.X.2007. **Trabzon:** 1♂ 1♀, T13, 20.VI.2007; 4♀♀, T1, 20.VI.2007; 1♂ 1♀, T18, 20.VI.2007; 2♂♂, T25, 25.VII.2007; 2♂♂, T18, 25.VII.2007; 2♂♂ 3♀♀, T1, 28.VIII.2007; 6♂♂, 3♀♀, T9, 28.X.2007.

Distribution in Turkey: Aksaray, Ankara, Artvin, Bingöl, Bitlis, Bolu, Bursa, Diyarbakır, Eskişehir, Erzurum, Erzincan, Hakkari, Isparta, İstanbul, İzmir, Kars, Kastamonu, Kırklareli, Mardin, Muş, Rize, Sinop, Şırnak and Van (Angus, 1988; Mart and Erman, 2001; Darılmaz and Kiyak, 2006).

World distribution: E: AU BE BY CT DE EN FI FR GE HU IT LA LT NL NT PL PT SK SP ST SZ TR UK “Caucasus” A: IN TR WS (Hansen, 2004). **Habitats:** In stagnant fresh water, usually in small, shallow, and muddy pools. **Remark:** This species is a new record for the Helophoridae fauna of the research area.

Helophorus (Helophorus) syriacus Kuwert, 1885

Material examined: Giresun: 1♀, G28 G28, 23.VI.2007. **Ordu:** 1♂, O33, 28.V.2007.

Distribution in Turkey: Adana, Antakya, Amanos mountains, Bingöl, Denizli, Diyarbakır, Erzincan, and Mardin (Angus, 1988; Mart and Erman, 2001; Kiyak et al., 2006).

World distribution: E: AB A: IN IS KZ SA TD TM TR (Hansen, 2004). **Habitats:** In stagnant water, temporary pools with muddy bottom. **Remark:** This species is a new record for Helophoridae fauna of the Black Sea region.

Subgenus: Empleurus Hope, 1838

Helophorus (Empleurus) nubilus Fabricius, 1776

Material examined: Bayburt: 1♂ 1♀, B1, 20.V.2007; 3♂♂ 3♀♀, B9, 18.VI.2007; 1♂1♀, B13, 18.VI.2007; 1♂ 3♀♀, B9, 27.VIII.2007. **Giresun:** 5♂♂, 2♀♀ G24, 25.V.2007; 3♂♂, G1, 25.V.2007. **Gümüşhane:** 1♂ 1♀, G39, 23.V.2007; 2♂♂ 7♀♀, G40, 27.V.2007; 1♀, G61, 21.VI.2007. **Ordu:** 1♂, 2♀♀, O41, 26.V.2007; 2♂♂ 8♀♀, O36, 27.V.2007.

Distribution in Turkey: Amanos mountains, Ankara, Bingöl, Bitlis, Diyarbakır, Hakkari, İstanbul, Isparta, Kırklareli, Konya, Mersin, Muğla, Muş, Sakarya, Toros mountains, Yalova and Zonguldak (Angus, 1988; Mart and Erman, 2001).

World distribution: E: AU BH BU BY CR CT CZ DE EN FI FR GB GE GR HU IR IT LA LT MC NL NR NT PL PT RO SK SL SP ST SV SZ TR UK YU “Transcaucasus” A: IN TR (Hansen, 2004). **Habitats:** On sandy or clayey, sunny ground, also on cultivated soil, usually rather dry places, but also on more humid habitats. **Remark:** This species is a new record for the Helophoridae fauna of the research area.

Subgenus: Eutrichelophorus Sharp, 1915

Helophorus (Eutrichelophorus) micans Falderman, 1835

Material examined: Bayburt: 2 ♂♂, B9, 18.VI.2007; 1♂ 1♀, B13, 18.VI.2007; 3♀♀, B9, 20.IX.2007; 1♀, B15, 21.IX.2007; 1♂, B10, 20.IX.2007. **Giresun:** 1♂, G24, 31.VIII. 2007.

Distribution in Turkey: Aksaray, Antakya, Balıkesir, Burdur, Diyarbakır, Erzurum, Erzincan, Gaziantep, İzmir, Trabzon, Tuz lake and Van lake (Angus, 1988; Mart and Erman, 2001; Darılmaz and Kiyak, 2006; Karaman et al., 2008).

World distribution: E: AB AR AU BU CZ GR PL SK ST “Transcaucasus” A: AF CY IN IQ IS PA TD TR UZ (Hansen, 2004). **Habitats:** Coast of pond with vegetation; fresh and brackish water.

Subgenus: Atracthelophorus Kuwert, 1886

Helophorus (Atracthelophorus) abeillei Guillebeau, 1896

Material examined: Bayburt: 1♂ 2♀♀, B12; 2♂♂ 1♀, B23, 18.VI.2007; 1♂ 2♀♀, B13, 18.VI.2007; 3♂♂ 3♀♀, B13, 40°01'43K 40°31' 00D, 2393m, 23.VII.2007; 1♂ 3♀♀, B2, 27.VIII. 2007. **Gümüşhane:** 1♂ 4♀♀, G64, 25.V.2007; 1♂ 4♀♀, G57, 22.V.2007; 1♂ 1♀, G38, 20.VI.2007; 2♂♂ 3♀♀, G58, 20.VI.2007; 2♂♂ 1♀, G61, 21.VI.2007; 2♂♂ 5♀♀, G31, 19.VI.2007; 1♂ 1♀, G53, 24.VII.2007.

Distribution in Turkey: Bitlis, Erzincan, Erzurum, Hakkari, Kars, Toros mountains and Van (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: AR A: IN LE SY TR (Hansen, 2004). **Habitats:** Cost of ponds or stagnant fresh and brackish water well vegetated. **Remarks:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Atracthelophorus) armeniacus Ganglbauer, 1901

Material examined: **Giresun:** 2♂♂, G9, 20.VI.2007. **Gümüşhane:** 2♂♂ 4♀♀, G57, 22.V.2007. **Trabzon:** 1♂, T1, 20.VI.2007.

Distribution in Turkey: Artvin (Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: AR GG A: TR (Hansen, 2004). **Habitats:** Generally prefers high ground (1500-2200m). In temporary pools or at the edges of slowly running water with vegetated. **Remarks:** This species is a new record for the Helophoridae fauna of the research area.

Helophorus (Atracthelophorus) arvernicus Mulsant, 1846

Material examined: **Gümüşhane:** 1♂, G43, 20.X.2007.

Distribution in Turkey: Erzurum and Erzincan (Mart and Erman, 2001).

World distribution: E: AU BE BY CR CT CZ DE EN FI FR GE IT LT NL NT PL RO SK SP SZ UK YU A: TR (Hansen, 2004). **Habitats:** Edges of sandy or gravelly running water with grassy banks. **Remarks:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Atracthelophorus) brevipalpis Bedel, 1881

Material examined: **Bayburt:** 1♂ 5♀♀, B1, 18.VI.2007; 1♂ 1♀, B22, 23.VII.2007; 2♂♂♀, B14, 23.VII.2007; 1♂ 2♀♀, B9, 27.VIII.2007; 3♂♂ 2♀♀, B5, 27.VIII.2007; 4♂♂ 2♀♀, B3, 27.VIII.2007; 2♂♂ 3♀♀, B15, 21.IX.2007. **Giresun:** 1♂ 1♀, G18, 24.V.2007; 1♂, 3♀♀, G24, 25.V.2007; 2♂♂ 2♀♀, G11, 24.VI.2007; 2♂♂ 3♀♀, G26, 23.VI.2007. **Gümüşhane:** 12♂♂ 11♀♀, G49, 20.VI.2007; 1♂ 7♀♀, G45, 20.VI.2007; 1♂ 1♀, G52, 23.VII.2007; 3♂♂ 4♀♀, G44, 20.X.2007; 2♂♂ 5♀♀, G54, 20.X.2007. **Ordu:** 7♂♂ 8♀♀, O20, 28.V.2007; 39♂♂

19♀♀, O28, 26.V.2007; 8♂♂ 17♀♀, O35, 27.V.2007; 5♂♂, O6, 26.V.2007; O17, 26.V.2007; 1♂ 4♀♀, O11, 28.V.2007; 1♂ 5♀♀, O24, 28.V.2007; 1♂, O29, 27.V.2007; 1♂, O18, 28.V.2007; 2♂♂ 4♀♀, O26; 27.V.2007; 2♂♂ 1♀, O41, 27.VII.2007, 1♂ 2♀♀, O19, 22.X.2007. **Trabzon:** 1♂, T24, 22.V.2007; 1♂ 8♀♀, T22, 22.V.2007; 4♂♂ 7♀♀, T4, 22.V.2007; 7♂♂ 5♀♀, T17, 19.VI.2007; 2♂♂ 1♀, T16, 21.VI.2007; 2♂♂, T15, 21.VI.2007.

Distribution in Turkey: Aksaray, Ankara, Antalya, Artvin, Bingöl, Bitlis, Bolu, Bursa, Diyarbakır, Eskişehir, Erzurum, Erzincan, Hakkari, Isparta, İstanbul, İzmir, Kahramanmaraş, Kars, Kastamonu, Kırklareli, Mardin, Muğla, Muş, Niğde, Rize, Samsun, Sinop, Şırnak, Trabzon, Tuz lake and Van lake (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a; Darılmaz and Kıyak, 2006; Karaman et al., 2008).

World distribution: E: AB AR AU BH BU BY CR CT CZ DE EN FA FI FR GB GE GG GRHU IR IT LA LT MD NL NRNT PL SK SP ST SV SZ TR UK YU A: CY IN IQ IS LE SY TR NARi (Hansen, 2004). **Habitats:** Usually in stagnant fresh water, preferring shallow, often temporary pools with grassy bottom.

Helophorus (Atracthelophorus) daedalus d'Orchymont, 1932

Material examined: **Bayburt:** 2♂♂ 7♀♀, B6, 24.VII.2007; 2♂♂ 7♀♀, B13, 27.VIII.2007; 1♂ 5♀♀, B2, 27.VIII.2007; 19♂♂ 17♀♀, B3, 27.VIII.2007; 1♂ 5♀♀, B13, 20.IX.2007. **Giresun:** 3♂♂, G1, 25.V.2007; 4♂♂ 1♀, G24, 26.VII.2007; 5♂♂ 3♀♀, G10, 28.VIII.2007; 2♂♂ 1♀, G12, 25.VIII.2007. **Gümüşhane:** 6♂♂, 6♀♀, G55, 23.V.2007; 3♂♂, 2♀♀, G60, 31.VIII.2007; 3♂♂, G43, 20.X.2007; 1♂ 3♀♀, G47, 20.X.2007. **Ordu:** 10♂♂ 7♀♀, O21, 26.V.2007; 1♂ 7♀♀, O32, 26.V.2007; 2♂♂ 6♀♀, O4, 26.V.2007; 1♂ 3♀♀, O39, 25.V.2007; 1♂ 3♀♀, O19, 24.VI.2007; 1♂ 1♀, O39, 30.VI.2007; 2♂♂ 4♀♀, O19, 27.VII.2007; 2♂♂, 21♂♂ 11♀♀, O19, 30.VIII.2007; 2♂♂ 9♀♀, O16, 28.IX.2007; 5♂♂ 8♀♀, O19, 28.IX.2007.

Distribution in Turkey: Bingöl, Diyarbakır, Erzurum, Erzincan, Hakkari, İzmir, Şırnak and Van (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: A: IN TR (Hansen, 2004).
Habitats: Edges of stagnant or slowly running fresh water with vegetated. **Remark:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Atracthelophorus) difficilis Angus, 1988

Material examined: Giresun: 1♂ 2♀♀, G7, 24.V.2007; 1♀, G8, 25.VI.2007.

Distribution in Turkey: Antakya, Amanos mountains, Erzincan, Erzurum, Kilis and Osmaniye (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: A: IS LE TR (Hansen, 2004).
Habitats: Edges of slowly running fresh water with grassy. **Remark:** This species is a new record for the Helophoridae fauna of Black Sea region.

Helophorus (Atracthelophorus) faustianus (Sharp, 1916)

Material examined: Bayburt: 6♂♂ 2♀♀, B11, 20.V.2007; 2♂♂, B21, 20.V.2007; 4♂♂ 6♀♀, B12, 20.V.2007; 2♂♂ 6♀♀, B20, 18.VI.2007; 1♂, B18, 24.VII.2007; 1♂ 9♀♀, B13, 27.VIII.2007. Giresun: 2♂♂, 8♀♀, G4, 21.V.2007; 19♂♂ 17♀♀, G2, 27.V.2007; 10♂♂ 13♀♀, G15, 24.VI.2007; 1♂ 1♀, G16, 23.VI.2007; 3♂♂ 3♀♀, G13, 24.VI.2007; 6♂♂ 5♀♀, G3, 24.VI.2007; 3♂♂ 8♀♀, G20, 24.VI.2007; 2♂♂ 2♀♀, G5, 22.VI.2007; 1♂ 3♀♀, G9, 20.VI.2007; 1♂ 4♀♀, G2, 23.VI.2007; 2♂♂ 1♀, G22, 25.VII.2007. Gümüşhane: 1♂ 1♀, G41, 22.V.2007; 8♂♂ 7♀♀, G31, 22.V.2007; 7♂♂ 5♀♀, G64, 25.V.2007; 15♂♂ 8♀♀, G57, 22.V.2007; 12♂♂ 1♀, G35, 21.VI.2007; 1♂ 5♀♀, G32, 22.VI.2007; 1♂ 1♀, G50, 22.VI.2007; 1♂ 5♀♀, G46, 26.VII.2007; 1♂ 3♀♀, G56, 26.VII.2007; 3♂♂, G53, 24.VII.2007; 2♂♂ 4♀♀, G59, 24.VII.2007. Ordu: 1♂ 1♀, O12, 26.V.2007; 4♂♂ 2♀♀, O41, 26.V.2007; 5♂♂ 7♀♀, O38, 26.V.2007; 10♂♂ 16♀♀, O12, 19.VI.2007; 4♂♂ 9♀♀, O1, 25.VI.2007; 2♂♂ 4♀♀, O30, 25.VI.2007; 6♂♂ 4♀♀, O41, 24.VI.2007; 2♂♂ 5♀♀, O41, 27.VII.2007; 5♂♂ 5♀♀, O12, 27.VII.2007. Trabzon: 2♂♂ 2♀♀, T10, 21.V.2007; 1♂ 2♀♀, T11, 20.VI.2007; 3♂♂ 1♀, T21, 21.VI.2007; 3♂♂ 6♀♀, T1, 20.VI.2007; 2♂♂ 1♀, T25, 25.VII.2007; 8♂♂ 9♀♀, T13, 25.VII.2007; 1♂ 3♀♀, T18, 25.VII.2007; 4♂♂, T20, 27.VIII.2007; 2♂♂ 12♀♀, T1, 28.VIII.2007.

Distribution in Turkey: Artvin, Bursa, Giresun, and Tokat (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: GG ST A: TR (Hansen, 2004). **Habitats:** Edges of stagnant cold water with vegetation.

Helophorus (Atracthelophorus) guttulus Motschulsky, 1860

Material examined: Bayburt: 1♂, B11, 20.V.2007. Gümüşhane: 1♂, G35, 21.VI.2007. **Distribution in Turkey:** Rize (Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: AR ST A: TR (Hansen, 2004). **Habitats:** In stagnant pools with sandy bottoms. **Remarks:** This species is a new record for the Helophoridae fauna of the research area.

Helophorus (Atracthelophorus) lewisi Angus, 1985

Material examined: Bayburt: 1♂, B13, 18.VI.2007. Giresun: 7♂♂, 2♀♀, G24, 25.V.2007. Ordu: 1♂ 3♀♀, O11, 28.V.2007.

Distribution in Turkey: Antakya, Bingöl, Diyarbakır, Erzincan, Gümüşhane, İzmir, and Şırnak (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: GG A: IS TR (Hansen, 2004). **Habitats:** Edges stagnant or slowly running fresh water with vegetation.

Helophorus (Atracthelophorus) montenegrinus Kuwert, 1885

Material examined: Giresun: 6♂♂ 8♀♀, G7, 24.V.2007; 3♂♂ 5♀♀, G26, 24.V.2007; 3♂♂ 4♀♀, G28, 24.V.2007; 4♂♂ 4♀♀, G8, 25.VI.2007; 18♂♂ 10♀♀, G2, 24.V.2007; 13♂♂ 10♀♀, G25, 24.V.2007; 8♂♂ 7♀♀, G2, 24.V.2007; 5♂♂ 7♀♀, G18, 24.V.2007; 2♂♂ 2♀♀, G17, 21.VI.2007; 3♂♂ 6♀♀, G11, 24.VI.2007; 17♂♂ 10♀♀, G26, 23.VI.2007; 1♂ 12♀♀, G6, 23.VI.2007; 4♂♂ 8♀♀, G28, 23.VI.2007; 18♂♂ 23♀♀, G25, 23.VI.2007; 20♂♂ 14♀♀, G27, 23.VI.2007; 3♂♂ 7♀♀, G16, 23.VI.2007; 1♂ 2♀♀, G13, 24.VI.2007; 1♂, G3, 24.VI.2007; 1♂ 3♀♀, G20, 24.VI.2007; 1♂, G5, 22.VI.2007; 3♂♂ 5♀♀, G16, 21.X.2007. Ordu: 4♂♂ 12♀♀, O20, 28.V.2007; 33♂♂ 25♀♀, O28, 26.V.2007; 11♂♂ 9♀♀, O35, 27.V.2007;

7♂♂ 5♀♀, O11, 28.V.2007; 12♂♂ 5♀♀, O14, 28.V.2007; 6♂♂ 5♀♀, O23, 20.V.2007; 16♂♂ 11♀♀, O24, 28.V.2007; 7♂♂, O37, 26.V.2007; 25♂♂ 32♀♀, O26, 27.V.2007; 3♂♂ 7♀♀, O4, 26.V.2007; 8♂♂ 10♀♀, O21, 26.V.2007; 8♂♂ 10♀♀, O10, 27.V.2007; 2♂♂, O41, 26.V.2007; 1♂ 9♀♀, O32, 26.V.2007; 4♂♂ 1♀, O29, 27.V.2007; 6♂♂ 5♀♀, O18, 28.V.2007; 1♂, 2♀♀, O33, 28.V.2007; 1♂, O12, 26.V.2007; 6♂♂, O17, 26.V.2007; 1♂ 1♀, O39, 25.V.2007; 3♂♂ 2♀♀, O34, 27.V.2007; 4♂♂ 9♀♀, O31, 27.V.2007; 1♂ 5♀, O40, 25.VI.2007; 2♂♂ ♀, 24.VI.2007, O37; 2♂♂ 5♀♀, O9, 24.VI.2007; 13♂♂ 19♀♀, O1, 25.VI.2007; 1♂ 3♀♀, O5, 25.VI.2007; 8♂♂ 12♀♀, O8, 25.VI.2007; 18♂♂ 12♀♀, O30, 25.VI.2007; 2♂♂ 7♀♀, O41, 27.VII.2007; 1♂, O19, 27.VII.2007; 1♂ 3♀♀, O13, 28.VII.2007; 2♂♂ 6♀♀, O2, 28.VII.2007; 1♂ 3♀♀, O22, 27.VII.2007; 1♂ 3♀♀, O27, 21.X.2007; 2♂♂ 6♀♀, O15, 22.X.2007; 2♂♂ 7♀♀, O25, 22.X.2007; 2♂♂ 6♀♀, O30, 22.X.2007. **Trabzon:** 3♂♂ 2♀♀, T10, 21.V.2007; 1♂ 1♀, T23, 21.V.2007; 3♂♂ 8♀♀, T12, 22.V.2007; 3♂♂ 9♀♀, T22, 22.V.2007; 3♂♂, T8, 22.V.2007; 17♂♂ 9♀♀, T4, 22.V.2007; 2♂♂, 8♀♀, T14, 21.V.2007; 5♂♂ 7♀♀, T5, 21.V.2007; 5♂♂ 8♀♀, T11, 20.VI.2007; 7♂♂ 5♀♀, T17, 19.VI.2007; 1♂ 5♀♀, T7, 21.VI.2007; 7♂♂ 19♀♀, T16, 21.VI.2007; 6♂♂ 5♀♀, T15, 21.VI.2007; 2♂♂ 3♀♀, T21, 21.VI.2007; 9♂♂ 14♀♀, T18, 20.VI.2007; 2♂♂ 5♀♀, T25, 25.VII.2007; 3♂♂ 1♀, T19, 23.VII.2007; 2♂♂ 11♀♀, T18, 25.VII.2007; 1♂ 1♀, T6, 26.X.2007; 2♂♂ 3♀♀, T2, 25.X.2007.

Distribution in Turkey: Ankara, Bolu, Bursa, Düzce, İstanbul, İzmir, Kastamonu, Kırklareli, Sinop, and Trabzon (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a).

World distribution: E: AU BH BU CR CZ GG HU IT MC PL RO SK TR UK YU A: TR (Hansen, 2004).

Habitats: Usually in stagnant fresh water or temporary pools with grassy bottom.

Helophorus (Atracthelophorus) ponticus Angus, 1988

Material examined: Bayburt: 1♂, B11, 20.V.2007; 6♂♂ 6♀♀, B12, 20.V.2007; 1♀, B21, 20.V.2007; 6♂♂ 3♀♀, B23, 18.VI.2007; 10♂♂ 15♀♀, B20, 18.VI.2007; 1♂, B10, 20.IX.2007. **Gümüşhane:** 4♂♂ 6♀♀, G46, 22.VI.2007; 7♂♂ 4♀♀, G50, 22.VI.2007; 6♂♂ 4♀♀, G46, 26.VII.2007; 3♂♂ 7♀♀, G56, 26.VII.2007; 1♂

1♀, G30, 24.VII.2007; 2♂♂ 3♀♀, G53, 24.VII.2007. **Trabzon:** 5♂♂ 8♀♀, T1, 20.VI.2007.

Distribution in Turkey: Artvin, Bursa, Erzincan, Erzurum, Kars, and Rize (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2005a, 2005b).

World distribution: A: TR (Hansen, 2004).

Habitats: Generally prefers habitats at 2000-3000 m in altitude. In stagnant fresh water apparently confined to very cold water at the edge of snow patches. **Remark:** This species is a new record for the Helophoridae fauna of the research area.

Altcons: *Rhopalhelophorus* Kuwert, 1886

Helophorus (Rhopalhelophorus) discrepans Rey, 1885

Material examined: Bayburt: 4♂♂, B11, 20.V.2007; 2♂♂ 1♀, B11, 18.VI.2007; 2♂♂ 3♀♀, B20, 18.VI.2007; 3♂♂ ♀, B13, 18.VI.2007; 2♂♂ 6♀♀, B18, 24.VII.2007; 2♂♂ 5♀♀, B13, 23.VII.2007; 2♂♂ 1♀, B24, 23.VII.2007; 2♂♂ 3♀♀, B14, 23.VII.2007; 3♂♂ 2♀, B19, 23.VII.2007; 3♂♂ B4, 24.VII.2007; 10♂♂ 11♀♀, B2, 27.VIII.2007; 21♂♂ 13♀♀, B3, 27.VIII.2007; 23♂♂ 18♀♀, B13, 27.VIII.2007; 9♂♂ 16♀♀, B5, 27.VIII.2007; 2♂♂ 8♀♀, B13, 20.IX.2007; 1♂ 3♀♀, B17, 21.IX.2007; 9♂♂ 5♀♀, B10, 20.IX.2007; 1♂, B12, 26.X.2007. **Giresun:** 1♂, 5♀♀ G24, 25.V.2007; 2♂♂, G14, 25.V.2007; 1♂ 3♀♀, G26, 23.VI.2007; 2♂♂ 5♀♀, G13, 24.VI.2007; 1♀, G3, 24.VI.2007; 1♂, G21, 28.X.2007. **Gümüşhane:** 2♂♂ 10♀♀, T12, 27.V.2007; 1♂ 5♀♀, G64, 23.V.2007; 3♂♂, 2♀♀, G55, 23.V.2007; 1♂ 1♀, G41, 22.V.2007; 7♂♂ 15♀♀, G64, 25.V.2007; 2♂♂ 7♀♀, G49, 20.VI.2007; 4♂♂ 13♀♀, G45, 20.VI.2007; 1♂ 1♀, G36, 20.VI.2007; 2♂♂ 5♀♀, G37, 20.VI.2007; 1♂ 5♀♀, G62, 19.VI.2007; 1♂ 5♀♀, 22.VI.2007; 2♂♂ ♀, G60, 19.VI.2007; 5♂♂ 6♀♀, G42, 19.VI.2007; 18♂♂ 25♀♀, G46, 22.VI.2007; 8♂♂ 5♀♀, G31, 19.VI.2007; 1♂ 9♀♀, G51, 21.VI.2007; 4♂♂ 7♀♀, G33, 21.VI.2007; 5♂♂ 1♀, G34, 21.VI.2007; 3♂♂ 12♀♀, G50, 22.VI.2007; 1♂ 17♀, G48, 24.VII.2007; 2♂♂ 7♀♀, G30, 24.VII.2007; 4♂♂ 10♀♀, G59, 24.VII.2007. **Ordu:** 1♂, O21, 26.V.2007; 2♂♂ 1♀♀ O38, 26.V.2007; 1♂ 2♀♀, O41, 26.V.2007; 2♂♂ 4♀♀, O12, 19.VI.2007; 1♂ 5♀♀, O5, 25.VI.2007; 1♂ 7♀♀, O30, 25.VI.2007; 6♂♂ 1♀, O41, 24.VI.2007; 1♂ 1♀, O39, 25.VII.2007; 2♂♂ 3♀♀, O12, 27.VII.2007. **Trabzon:** 1♂ 4♀♀, T13, 20.VI.2007; 11♂♂ 18♀♀,

T1, 20.VI.2007; 2♂♂ 3♀♀, T13, 25. VII. 2007; 7♂♂ 4♀♀, T20, 27.VIII.2007; 2♂♂ 17♀♀, T1, 28.VIII.2007; 1♂ 2♀♀, T18, 28.VIII. 2007.

Distribution in Turkey: Ankara, Ardahan, Artvin, Bingöl, Bolu, Erzincan, Erzurum, Hakkari, Kayseri, and Van (Angus, 1988; Mart and Erman 2001; İncekara et al., 2004; Kiyak et al., 2006).

World distribution: E: AU BY CR CT CZ EN FI FR HU IT LU NT PL SK SP ST UK “Trancaucasus” N: MO A: IN TR (Hansen, 2004). **Habitats:** In stagnant water, perhaps mainly in shallow, temporary pools. **Remark:** This species is a new record for the Helophoridae fauna of the research area.

Helophorus (Rhopalhelophorus) frater Orchymont, 1926

Material examined: Bayburt: 7♂♂ 10♀♀, B1, 20.V.2007; 1♂ 1♀, B14, 23.VII.2007; 3♂♂ 5♀♀, B3, 27.VIII.2007; 1♂, 5♀♀, B7, 26.X.2007. **Giresun:** 7♂♂, 17♀♀ G24, 25.V.2007; 3♂♂, G14, 25.V.2007. **Gümüşhane:** 27♂♂ 15♀♀, G45, 20.VI.2007; 15♂♂ 17♀♀, G49, 20.VI.2007; 1♂ 6♀♀, G48, 24.VII.2007; 2♂♂ 8♀♀, G44, 20.X.2007; 2♂♂ 3♀♀.

Distribution in Turkey: Bingöl, Erzincan, Erzurum and Van (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2004)

World distribution: A: ES IN KA NP TR UP XIZ (Hansen, 2004). **Habitats:** At the edges of stagnant water or temporary pools. **Remarks:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Rhopalhelophorus) fulgidicollis Motschulsky, 1860

Material examined: Bayburt: 2♂♂, B11, 20.V.2007; 1♂, B13, 18.VI.2007; 1♂, B22, 23.VII.2007; 1♂ 2♀♀, B2, 27.VIII.2007; 1♂ 3♀♀, B13, 20.IX.2007. **Giresun:** 2♂♂, 2♀♀ G24, 25.V.2007; 6♂♂ 3♀♀, G19, 24.V.2007. **Gümüşhane:** 4♂♂ 4♀♀, G64, 23.V.2007. **Ordu:** 1♂, G32, 22.VII.2007; 1♂ 1♀, O13, 28.VII.2007. **Trabzon:** 1♂ 1♀, T18, 20.VI.2007; 1♂ 1♀, T25, 25.VII.2007; 1♂, T19, 23.VII.2007; 2♂♂, T25, 25.VII.2007; 1♂ 1♀, T18, 25. VII.2007; 2♂♂ 3♀♀, T18, 28.VIII. 2007.

Distribution in Turkey: Bingöl, Erzurum and Erzincan (İncekara et al., 2002, 2004)

World distribution: E: DE FR GB GE IR IT NL PT SP SV N: AG MO TU (Hansen, 2004). **Habitats:** Predominantly in small, shallow, often temporary and sparsely vegetated, brackish pools. **Remark:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Rhopalhelophorus) griseus Herbest, 1793

Material examined: Giresun: 1♂, G2, 24.V.2007; 1♂, 24.VI.2007. **Ordu:** 1♂♂ 2♀♀, O10, 27.V.2007.

Distribution in Turkey: Bursa, Bolu, Edirne, Erzincan, Erzurum, Gümüşhane, İstanbul and Kayseri (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2004).

World distribution: E: AU AR BU BY CT CZ DE EN FI FR GB GE HU IT LA LT MD NL NR NT PL PT RO SK SP ST SV SZ TR UK “Caucasus” A: TR (Hansen, 2004). **Habitats:** In stagnant water with grassy and usually clayey bottom, only occasionally running fresh water, mainly shallow.

Helophorus (Rhopalhelophorus) helenae Angus, 1998

Material examined: Ordu: 1♂ 4♀♀, O41, 26.V.2007.

Distribution in Turkey: Gümüşhane, Erzincan and Kayseri (Angus, 1998; İncekara et al., 2004).

World distribution: A: TR (Hansen, 2004). **Habitats:** At the edges of stagnant water with grass.

Helophorus (Rhopalhelophorus) hilaris Sharp, 1916

Material examined: Bayburt: 1♂ 5♀♀, B9, 20.V.2007; 1♂, B22, 23.VII.2007; 1♂ ♀, 23. VII.2007, B14; 1♂, B22, 23.VII.2007; 3♂♂ 2♀♀, B4, 24.VII.2007, 3♂♂ 1♀, B8, 21.X. 2007; 3♂♂ 7♀♀, B16, 20.X.2007; 2♂♂ 4♀♀, B1, 26.X.2007. **Giresun:** 2♂♂, G1, 25.V. 2007. **Gümüşhane:** 6♂♂, G52, 23.VII.2007; 2♂♂ 6♀♀, G37, 20.X.2007; 2♂♂, G43, 20.X. 2007; 2♂♂ 2♀♀, G29, 20.X.2007; 1♂ 2♀♀, G47, 20.X.2007, 2♂♂ 3♀♀, G54, 20.X.2007. **Ordu:** 1♂, O39, 25. VII. 2007.

Distribution in Turkey: Bingöl, Bitlis, Diyarbakır, Erzincan, Erzurum Hakkari, Kayseri, Mardin, Muş, Şırnak and Van (Angus, 1988; Mart and Erman, 2001; İncekara et al., 2004).

World distribution: E: AB AR GG A: IN LE TR (Hansen 2004). **Habitats:** In stagnat water or temporary pools well vegetated. **Remark:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Rhopalhelophorus) lapponicus Thomson, 1854

Material examined: Bayburt: 1♂, B14, 23.VII.2007; 1♂ 1♀, B22, 23.VII.2007. **Gümüşhane:** 1♂, G34, 21.VI.2007; 1♂, G51, 21.VI.2007. **Ordu:** 1♂♂ 2♀♀, O20, 28.V.2007; 1♂ ♀, O40, 25.VI.2007. **Trabzon:** 2♂♂ 2♀♀, T6, 26.X.2007.

Distribution in Turkey: Ardahan, Erzincan, Erzurum and Kars (Angus, 1988; Mart and Erman, 2001).

World distribution: E: BY CT DE FI GG NT SP SV A: ES FE IN IS KZ LE TR WS (Hansen, 2004). **Habitats:** In stagnant fresh water, apparently preferring shallow, sparsely vegetated, temporary pools, surrounded by mosses. **Remark:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Rhopalhelophorus) longitarsis Wollaston, 1864

Material examined: Gümüşhane: 14♂♂ 12♀♀, G33, 21.VI.2007; 4♂♂, G34, 21.VI.2007; 3♂♂, G46, 22.VI.2007; 1♂ 1♀, G46, 26.VII.2007. **Ordu:** 1♂, O39, 25.VII.2007; 1♂ 2♀♀, O19, 22.X.2007.

Distribution in Turkey: Ankara, Aksaray, Bingöl, Burdur and Erzincan (Angus, 1988; Mart and Erman, 2001; Darılmaz and Kiyak, 2006).

World distribution: E: AU FR GB GE HU IT NL PL SP ST UK YU N: CI TU A: KZ TR (Hansen, 2004). **Habitats:** In stagnant, only occasionally running fresh water, mainly in shallow, pools with grassy and usually clayey bottom. **Remark:** This species is a new record for the Helophoridae fauna of the Black Sea region.

Helophorus (Rhopalhelophorus) nanus Sturm, 1836

Material examined: Ordu: 2♂♂, O40, 25.VI.2007.

Distribution in Turkey: Bingöl, Bolu, Gümüşhane, Erzincan and Hakkari (Angus, 1988; Mart and Erman, 2001).

World distribution: E: AU BY CR CT CZ DE EN FI FR GB GE HU IR IT LA LT NL NR NT PL SK SL

ST SV SZ UK “Transcaucasus” A: ES FE TR WS (Hansen, 2004). **Habitats:** In stagnant fresh water with clayey and grassy bottom.

Helophorus (Rhopalhelophorus) obscurus Mulsant, 1844

Material examined: Giresun: 1♂ 4♀♀, G7, 24.V.2007; 2♂♂ 2♀♀, G17, 21.VI.2007; 1♂ 1♀, G15, 24.VI.2007; 1♂ 2♀♀, G20, 24.VI.2007 3♂♂ 3♀♀, G16, 21. X.2007. **Ordu:** 1♂ 2♀♀, O35, 40°57'36K 37°30'09D, 52m, 27.V.2007; 1♂ 2♀♀, O11, 28.V.2007; 4♂♂ 2♀♀, O18, 28.V.2007; 2♂♂ 1♀, O14, , 28.V.2007; 3♂♂ 2♀♀, O24, 28.V.2007; 1♂, O17, 26.V.2007; 5♂♂ 4♀♀, O29, 27.V.2007; 5♂♂, 6♀♀, O33, 28.V.2007; 2♂♂ 2♀♀, O6, 26.V.2007; 1♂ 3♀♀, O4, 26.V.2007; 6♂♂ 5♀♀ O38, 26.V.2007; 1♂ 8♀♀, O1, 25.VI.2007; 1♂ 2♀♀, O8, 25.VI.2007; 3♂♂ 6♀♀, O27, 21.X.2007; 2♂♂ 6♀♀, O25, 22. X. 2007. **Trabzon:** 1♂, T10, 21.V.2007; 1♂, T8, 22.V.2007; 2♂♂ 3♀♀, T4, 22.V.2007; 6♂♂ 4♀♀, T11, 20.VI.2007; 1♂ 1♀, T21, 21.VI.2007; 1♂ 1♀, T11, 25.VII.2007; 1♂ 8♀♀, T1, 28.VIII.2007; 4♂♂ 6♀♀, T6, 26.X.2007; 2♂♂ 5♀♀, G6, 28.X.2007.

Distribution in Turkey: Artvin, Bingöl, Bolu, Bursa, Erzincan, Erzurum, İstanbul, Kırklareli, Sinop, and Trabzon (Angus, 1988; Mart and Erman, 2001; Incekara et al., 2004; Karaman et al., 2008).

World distribution: E: AU CZ DE FR GB GE GR IR IT NL PL PT SK SP ST SV TR UK “Transcaucasus” A: TR (Hansen, 2004). **Habitats:** Mainly in stagnant, often temporary pools with somewhat clayey bottom and grassy.

Discussion

In different habitats of the Bayburt, Giresun, Gümüşhane, Ordu, and Trabzon provinces, 25 species (Coleoptera: Helophoridae) belonging to 5 subgenera were recorded. Of these, *Helophorus syriacus* Kuwert, 1885, *H. daedalus* d’Orchymont, 1932, *H. abeillei* Guillebeau, 1896, *H. difficilis* Angus, 1988, *H. arvernensis* Mulsant, 1846, *H. frater* Orchymont, 1926, *H. fulgidicollis* Motschulsky, 1860, *H. lapponicus* Thomson, 1854, *H. longitarsis* Wollaston, 1864 and *H. hilaris* Sharp, 1916 were new records for the Hydrophilidae fauna both Black Sea region and the research area. *H. aquaticus* (Linnaeus, 1758), *H. nubilis* Fabricius, 1776, *H. guttulus* Motschulsky,

1860, *H. armeniacus* Ganglbauer, 1901, *H. ponticus* Angus, 1988 and *H. discrepans* Rey, 1885 were also new records only for the research area.

References

- Angus, R. B. 1984. Towards a Revision of the Palearctic Species of *Helophorus* F. (Coleoptera, Hydrophilidae) I. Ent. Rev. 63: 89–119.
- Angus, R. B. 1985a. A new species of *Helophorus* (Coleoptera: Hydrophilidae) from Mongolia. Results of the Mongolian-German Biological Expeditions Since 1962, No. 148. Mitteil. Zool. Mus. Berlin. 61:163–164.
- Angus, R. B. 1985b. A new species of *Helophorus* F. (Col., Hydrophilidae) from northern Spain. Entomologist's Mon. Mag. 121: 89–90.
- Angus, R. B. 1985c. Towards a Revision of the Palearctic Species of *Helophorus* F. (Coleoptera, Hydrophilidae) II. Ent. Rev. 64: 128–162.
- Angus, R. B. 1988. Notes on the *Helophorus* (Coleoptera, Hydrophilidae) occurring in Turkey, Iran and neighboring territories. Rev. Suisse Zool. 95: 209–248.
- Angus, R. B. 1992. Süßwasserfauna von Mitteleuropa (Insecta: Coleoptera: Hydrophilidae: Helophorinae). Gustav Fischer Verlag, Jena, 144 pp.
- Angus, R. B. 1998. A New Turkish *Helophorus*, with notes on *H. griseus* Herbst and *H. montanus* d'Orchymont (Col., Hydrophiloidea). Entomologist's Mon. Mag. 134: 5–9.
- Darılmaz, M. and Kiyak, S. 2006. A contribution to the knowledge of Turkish water beetles fauna (Coleoptera). Mun. Ent. & Zool. 1: 129–144.
- Hansen, M. 1987. The Hydrophilidae (Coleoptera) of Fennoscandia and Denmark. Fauna Ent. Scand. 18: 1–253.
- Hansen, M. 1999. World Catalogue of Insects. Hydrophiloidea (Coleoptera). Apollo Books, Stenstrup, Vol. 2. 416 pp.
- Hansen, M. 2004. Family Helophoridae. -in I. Löbl, and A. Smetana, 2004. Catalogue of Palearctic Coleoptera Volume 2. Hydrophilidae-Histeroidea-Staphylinoidea. Apollo Books, Stenstrup, pp. 36-41.
- İncekara, Ü., Mart, A. and Erman, O. 2002. Three Unrecorded *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) species for the Turkish fauna. Turk. J. Zool. 26: 289–292.
- İncekara, Ü., Mart, A. and Erman, O. 2004. Distribution of Turkish *Helophorus* Fabricius, 1775 (Coleoptera, Helophoridae) I. Subgenus *Rhopalhelophorus*, with two new Records. J. Ent. Res. Soc. 6: 51-62.
- İncekara, Ü., Mart, A. and Erman, O. 2005a. Distribution of Turkish *Helophorus* Fabricius, 1775 (Coleoptera, Helophoridae) II. Subgenus *Atracthelophorus*, with two new Records and Some Ecological Notes. Turk. J. Zool. 29: 237-242.
- İncekara, Ü., Mart, A. and Erman, O. 2005b. *Helophorus erzurumicus* sp. n. A New Species from Turkey and Some Notes on *H. ponticus* Angus, 1988 (Coleoptera: Hydrophilidae). Aquat. Insect. 27: 43-46.
- Karaman, B., Kiyak, S. and Darılmaz, M., C. 2008. Faunistic study of the aquatic beetles (Coleoptera) of Trabzon province (Turkey). Mun. Ent. & Zool. 3: 437–446.
- Kiyak, S., Canbulat, S., Salur, A. and Darılmaz, M. 2006. Additional notes on Aquatic coleoptera fauna of Turkey with a new record (Helophoridae, Hydrophilidae). Mun. Ent. & Zool. 1: 273–278.
- Mart, A. and Erman, O. 2001. A Study on *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) Species. Turk. J. Zool. 25: 35–40.
- Smetana, A. 1985. Revision of the subfamily Helophorinae of the Nearctic Region (Coleoptera: Hydrophilidae). Mem. Ent. Soc. Can. 131:1–151.

Acknowledgements

This research has been supported by TÜBİTAK (106T632).