

Water Scavenger Beetles (Coleoptera: Hydrophilidae) Provinces of Central Black Sea Region of Turkey

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ABSTRACT

In this study, we recorded the occurrence of 28 species and one subspecies of water scavenger beetles (Coleoptera: Hydrophilidae) belonging to 12 genera (*Paracymus*, *Anacaena*, *Berosus*, *Chaetarthria*, *Enochrus*, *Helochaeres*, *Hydrobius*, *Hydrochara*, *Laccobius*, *Coelostoma*, *Cercyon* and *Cryptopleurum*) based on the inventories conducted between 2007-2008. Of these, *Anacaena rufipes*, *Anacaena lutescens*, *Cercyon ustulatus*, *Cryptopleurum crenatum*, *Enochrus bicolor*, *Enochrus fuscipennis*, *Enochrus quadripunctatus*, *Enochrus melanocephalus*, *Helochaeres obscurus*, *Hydrobius fuscipes*, *Hydrochara dichroma*, *Laccobius halophilus*, *Paracymus aeneus*, *Paracymus chalconus* and *Paracymus scutellaris* were new record for the Hydrophilidae fauna of Black Sea region.

Key words: Coleoptera, Hydrophilidae, faunistics, Turkey, Black Sea region, Bayburt, Giresun, Gümüşhane, Ordu, Trabzon, Palaearctic.

INTRODUCTION

The Hydrophilidae is a large family, represented in all parts of the world and consisting of 172 genera and about 2716 known species. Of the four subfamilies recognized only two (Hydrophilinae, Sphaeridiinae) are recorded from the Palearctic region. Representatives of the subfamily Hydrophilinae, comprising more than 1784 described species, are mostly aquatic. In contrast, Sphaeridiinae, comprising more than 929 described species, are mostly terrestrial and aquatic species are found only in the tribe Coleostomatini and in the megasternine genus *Cercyon* Leach, 1817 (Fikáček, 2006). A total number of 34 genera of aquatic Hydrophilidae is known from the Palearctic region. So far, 13 genera and 58 species of Hydrophilidae have been recorded from Turkey (Gentili, 2000; Gentili and Whitehead, 2000; Incekara *et al.*,

2005a; Darılmaz and Kıyak, 2006a, 2006b; Kıyak *et al.*, 2006). In this study, twelve genera and twenty eight species and one subspecies have been recorded from the Turkish provinces of Bayburt, Giresun, Gümüşhane, Ordu and Trabzon, improving the knowledge on the hydrophilid fauna of the Black Sea region.

MATERIAL AND METHODS

The samples were collected by means of a sieve and net with 1 mm pores from shallow areas of various springs, streams, brackish water ponds and wet habitats near the water in Bayburt, Giresun, Gümüşhane, Ordu and Trabzon provinces between May 2007 and October 2008. The beetles were killed using ethyl acetate or 70% alcohol solution. Aedeagophores were dissected out under a stereo microscope and cleared in 10% KOH solution for 1-2 h. Voucher specimens have been deposited in the Zoological Museum, Atatürk University, Erzurum, Turkey. Collection and identification of all samples were made by myself.

A list of localities is given in Table 1 from provinces of Black Sea region. 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 Black Sea region is given in Table 2.

Table 1. List of sampling sites in provinces of Black Sea region.

Province	Sampling site	Coordinates	Altitude	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
	Aşağıçimayıl village	40°06'58"N 40°36'20"E	1973	B3
	Balkaynak village	40°20'47"N 39°57'20"E	1617	B4
	Başçimayıl 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

Table 1 continued.

Province	Sampling site	Coordinates	Altitude	Abbreviation
BAYBURT	Soğanlı mount	40°30'17"N 40°15'04"E	2096	B21
	Tahtköy village	40°16'15"N 40°26'14"E	1980	B22
	Taşkesen village	40°18'18"N 40°11'04"E	1625	B23
	Uluçayır village	40°15'30"N 40°18'44"E	1861	B24
	Üzengili village	40°29'39"N 40°23'50"E	2177	B25
	Yukarıkişlak village	40°06'31"N 40°08'53"E	1802	B26
GİRESUN	Alucra	40°19'59"N 38°44'26"E	1518	G1
	Ağaçbaşı plateau	40°42'00"N 38°14'31"E	1756	G2
	Bektaş plateau	40°38'46"N 38°14'29"E	2063	G3
	Berçin plateau	40°41'04"N 38°01'47"E	1680	G4
	Çağlayan village	40°51'16"N 39°09'18"E	1744	G5
	Çalca village	40°47'37"N 38°28'20"E	148	G6
	Çalı plateau	40°39'39"N 38°51'44"E	1802	G7
	Çamlı village	40°39'58"N 38°26'22"E	773	G8
	Dereli	40°44'35"N 38°26'57"E	261	G9
	Doğankent village	40°49'06"N 38°54'47"E	170	G10
	Düzköy village	40°52'06"N 39°08'41"E	1901	G11
	Ekecek village	40°17'30"N 38°22'34"E	1362	G12
	Elmalı village	40°46'52"N 38°07'54"E	310	G13
	Haciosman village	40°15'53"N 38°54'43"E	1700	G14
	Haçbeli village	40°40'17"N 38°01'33"E	1655	G15
	Kaledere village	40°08'05"N 38°48'43"E	1067	G16
	Kaynar village	40°05'27"N 38°47'11"E	1111	G17
	Kovanlık village	40°44'54"N 38°05'43"E	1300	G18
	Kulakkaya plateau	40°41'56"N 38°20'21"E	1629	G19
	Kuşköy village	40°52'08"N 36°03'35"E	373	G20
	Küçük Ahmet village	40°42'46"N 38°27'58"E	1333	G21
	Kümbet plateau	40°33'30"N 38°23'09"E	1450	G22
	Masat plateau	40°42'03"N 38°02'58"E	1701	G23
	Saplıca village	40°23'29"N 38°25'53"E	1452	G24
	Saraycık village	40°17'01"N 38°19'37"E	1179	G25
	Sis mountain	40°51'22"N 39°09'02"E	1775	G26
	Tepeköy village	40°18'53"N 38°41'00"E	1476	G27
	Turpcu village	40°20'37"N 38°33'59"E	1414	G28
	Yavuz Kemal	40°38'05"N 38°18'57"E	1181	G29
	Yaylacık village	40°40'42"N 38°26'43"E	339	G30
	Yıldız village	40°53'38"N 38°09'45"E	33	G31
	Yuva village	40°36'25"N 38°16'51"E	1359	G32
	Yüce village	40°37'53"N 38°27'13"E	848	G33

Table 1 continued.

Province	Sampling site	Coordinates	Altitude	Abbreviation
GİRESUN	Alucra	40°19'59"N 38°44'26"E	1518	G1
	Ağaçbaşı plateau	40°42'00"N 38°14'31"E	1756	G2
	Bektaş plateau	40°38'46"N 38°14'29"E	2063	G3
	Berçin plateau	40°41'04"N 38°01'47"E	1680	G4
	Çağlayan village	40°51'16"N 39°09'18"E	1744	G5
	Çalca village	40°47'37"N 38°28'20"E	148	G6
	Çalı plateau	40°39'39"N 38°51'44"E	1802	G7
	Çamlı village	40°39'58"N 38°26'22"E	773	G8
	Dereli	40°44'35"N 38°26'57"E	261	G9
	Doğankent village	40°49'06"N 38°54'47"E	170	G10
	Düzköy village	40°52'06"N 39°08'41"E	1901	G11
	Ekecek village	40°17'30"N 38°22'34"E	1362	G12
	Elmalı village	40°46'52"N 38°07'54"E	310	G13
	Haciosman village	40°15'53"N 38°54'43"E	1700	G14
	Haçbeli village	40°40'17"N 38°01'33"E	1655	G15
	Kaledere village	40°08'05"N 38°48'43"E	1067	G16
	Kaynar village	40°05'27"N 38°47'11"E	1111	G17
	Kovanlık village	40°44'54"N 38°05'43"E	1300	G18
	Kulakkaya plateau	40°41'56"N 38°20'21"E	1629	G19
	Kuşköy village	40°52'08"N 36°03'35"E	373	G20
	Küçük Ahmet village	40°42'46"N 38°27'58"E	1333	G21
	Kümbet plateau	40°33'30"N 38°23'09"E	1450	G22
	Masat plateau	40°42'03"N 38°02'58"E	1701	G23
	Saplıca village	40°23'29"N 38°25'53"E	1452	G24
	Saraycık village	40°17'01"N 38°19'37"E	1179	G25
	Sis mountain	40°51'22"N 39°09'02"E	1775	G26
	Tepeköy village	40°18'53"N 38°41'00"E	1476	G27
	Turpcu village	40°20'37"N 38°33'59"E	1414	G28
	Yavuz Kemal	40°38'05"N 38°18'57"E	1181	G29
	Yaylacık village	40°40'42"N 38°26'43"E	339	G30
	Yıldız village	40°53'38"N 38°09'45"E	33	G31
	Yuva village	40°36'25"N 38°16'51"E	1359	G32
	Yüce village	40°37'53"N 38°27'13"E	848	G33
GÜMÜŞHANE	Akbulak village	40°20'39"N 39°06'38"E	1374	G34
	Balahor plateau	40°29'28"N 39°57'22"E	2208	G35
	Bandırlık village	40°29'38"N 39°46'25"E	2100	G36
	Beytarla village	40°32'24"N 38°50'36"E	1797	G37
	Camiboğazi plateau	40°35'56"N 39°39'11"E	2449	G38
	Cebeli village	40°33'15"N 39°26'22"E	1223	G39
	Değirmenyurdu plateau	40°35'35"N 39°40'53"E	2453	G40
	Dilaver plateau	40°37'04"N 39°41'05"E	2201	G41
	Dilek yolu village	40°13'20"N 39°16'25"E	1590	G42
	Doğanca village	40°10'12"N 39°16'08"E	1603	G43
	Elmacukuru village	40°17'11"N 39°17'14"E	1838	G44
	Gülaçar village	40°23'27"N 39°09'25"E	1751	G45
	Günbatur village	39°56'21"N 39°37'03"E	1773	G46
	Hasköy village	40°26'17"N 39°20'31"E	1161	G47

Table 1 continued.

Province	Sampling site	Coordinates	Altitude	Abbreviation
GÜMÜŞHANE	İkiz village	40°32'33"N 39°47'50"E	1781	G48
	Kabaköy village	40°26'03"N 39°40'41"E	1878	G49
	Kabaktepe village	40°13'38"N 39°42'02"E	1649	G50
	Karaçayır village	40°08'08"N 39°29'00"E	1434	G51
	Kavakpınarı village	40°10'15"N 39°14'47"E	1548	G52
	Kazıkbeli plateau	40°32'33"N 38°55'23"E	2293	G53
	Kırıklı village	40°21'01"N 39°33'15"E	1372	G54
	Kocapınar village	40°28'14"N 39°34'23"E	1477	G55
	Köse	40°13'04"N 39°39'25"E	1608	G56
	Köycük village	40°08'34"N 39°25'16"E	1387	G57
	Mavluca plateau	40°30'08"N 38°54'57"E	2582	G58
	Orta plateau	40°35'45"N 39°39'54"E	2357	G59
	Özkürtün	40°39'23"N 39°08'32"E	665	G60
	Sadak village	40°01'28"N 39°36'19"E	1620	G61
	Salmankaş pass	40°29'47"N 39°59'22"E	2342	G62
	Salyazı village	40°14'47"N 39°48'18"E	1682	G63
	Seydibaba village	40°06'25"N 39°02'48"E	1800	G64
	Soranay plateau	40°36'36"N 39°23'49"E	1598	G65
	Söğütelı village	40°32'37"N 38°59'04"E	1789	G66
	Şaphane village	40°30'43"N 39°45'43"E	2234	G67
	Tersun pass	40°18'16"N 39°18'26"E	1917	G68
	Uzuntaş plateau	40°35'40"N 39°46'59"E	2136	G69
	Ünlüpinar plateau	40°15'54"N 39°28'53"E	1397	G70
	Yağlıdere village	40°34'09"N 39°35'31"E	2015	G71
	Yağmurdere village	40°34'28"N 39°53'16"E	1670	G72
	Yayladere village	40°28'47"N 39°46'50"E	1874	G73
	Yeşilbük village	40°12'51"N 38°59'31"E	1382	G74
Yeşilköy village	40°36'08"N 39°18'03"E	947	G75	
Zigana village	40°38'26"N 39°24'21"E	2026	G76	
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
	Asarkaya village	40°04'20"N 37°19'16"E	24	O6
	Aşıklı village	40°36'37"N 37°43'40"E	951	O7
	Aybastı	40°41'48"N 37°24'10"E	776	O8
	Balıköy village	40°50'56"N 37°14'03"E	611	O9
	Belalan village	40°46'56"N 37°15'21"E	1318	O10
	Beyagaç village	40°34'56"N 37°50'18"E	1692	O11
	Çakırlı village	40°38'52"N 37°31'14"E	1233	O12
	Çakmak village	41°02'57"N 37°18'50"E	169	O13
	Çambaşı plateau	40°37'29"N 37°57'20"E	1866	O14
	Çamlıca village	40°48'53"N 36°53'09"E	966	O15

Table 1 continued.

Province	Sampling site	Coordinates	Altitude	Abbreviation
ORDU	Çiğdemköy village	41°00'50"N 37°17'23"E	333	O16
	Çitlice village	40°45'05"N 37°17'22"E	710	O17
	Dayılı village	40°23'21"N 37°47'22"E	1458	O18
	Esenyurt village	40°53'09"N 37°54'16"E	169	O19
	Eskiçokdeğirmen village	40°55'22"N 37°15'24"E	612m	O20
	Gaga lake	40°58'20"N 37°30'18"E	93	O21
	Güneyce village	40°24'40"N 37°47'42"E	1575	O22
	Günpınar village	41°05'01"N 37°18'57"E	4	O23
	Güzle village	40°30'51"N 37°41'21"E	1003	O24
	Isırganlı village	40°40'10"N 37°55'58"E	1548	O25
	Kabataş village	40°44'20"N 37°26'30"E	452	O26
	Kadıncık village	40°53'45"N 37°16'26"E	564	O27
	Karaçal village	40°45'03"N 37°01'50"E	1198	O28
	Kayatepe village	40°53'51"N 37°27'39"E	920	O29
	Koççuvaz village	40°52'38"N 37°03'23"E	1105	O30
	Konakbaşı village	41°00'43"N 37°32'41"E	13	O31
	Konaklı village	40°48'26"N 37°13'32"E	1678	O32
	Korgan	40°49'06"N 37°20'48"E	802	O33
	Korgan Plateau	40°42'31"N 37°11'59"E	1477	O34
	Kumru	40°43'16"N 37°11'01"E	1243	O35
	Mesudiye	40°28'15"N 37°46'40"E	1135	O36
	Ormancık village	40°49'42"N 37°00'03"E	1273	O37
	Ortaköy village	40°48'54"N 37°27'26"E	282	O38
	Örencik village	40°57'36"N 37°30'09"E	52	O39
	Perşembe plateau	40°37'15"N 37°18'44"E	1422	O40
	Topçam	40°37'22"N 37°46'33"E	709	O41
Turnalık plateau	40°39'36"N 37°56'19"E	1645	O42	
Ulugöl plateau	40°24'05"N 37°49'59"E	1609	O43	
Yeniaslan village	40°23'18"N 37°47'20"E	1463	O44	
Yeşildere village	40°49'03"N 37°19'31"E	652	O45	
Zile plateau	40°35'00"N 37°52'24"E	1924	O46	
TRABZON	Akkese village	41°02'32"N 39°11'43"E	16	T1
	Alan plateau	40°43'53"N 39°17'35"E	2137	T2
	Arsin	40°57'16"N 39°56'01"E	0	T3
	Biçinlik village	40°52'10"N 39°17'20"E	768	T4
	Çamlı village	40°54'49"N 39°17'19"E	588	T5
	Çankaya village	40°43'22"N 39°54'41"E	382	T6
	Çayırbağı village	40°50'38"N 39°19'56"E	1078	T7
	Çayırçı village	40°49'26"N 39°17'48"E	953	T8
	Çoşandere village	40°45'08"N 39°37'39"E	547	T9
	Doğancı village	40°53'37"N 39°12'05"E	640	T10
	Erikbeli plateau	40°43'53"N 39°17'36"E	2146	T11
	Gökçeköy village	40°50'49"N 39°11'17"E	1279	T12

Table 2. List of Hydrophilidae occurring in provinces of Black Sea region in Turkey.

Species	Bayburt	Giresun	Gümüşhane	Ordu	Trabzon
<i>Anacaena limbata</i>	X	X	X	X	X
<i>Anacaena lutescens</i>	X	X	X	X	X
<i>Anacaena rufipes</i>	X	X	X	X	X
<i>Berosus luridus</i>	X				
<i>Berosus signaticollis</i>	X			X	
<i>Cercyon ustulatus</i>				X	
<i>Chaetarthria seminulum</i>	X	X	X	X	X
<i>Coelostoma orbiculare</i>	X	X	X	X	X
<i>Cryptopleurum crenatum</i>					X
<i>Enochrus bicolor</i>				X	
<i>Enochrus melanocephalus</i>					X
<i>Enochrus fuscipennis</i>	X	X	X	X	
<i>Enochrus quadripunctatus</i>				X	
<i>Helochares lividus</i>				X	X
<i>Helochares obscurus</i>	X	X		X	
<i>Hydrobius fuscipes</i>	X	X	X	X	X
<i>Hydrochara dichroma</i>	X		X	X	
<i>Laccobius gracilis</i>	X	X	X	X	X
<i>Laccobius bipunctatus</i>	X	X	X	X	X
<i>Laccobius halophilus</i>		X			
<i>Laccobius hindukuschi</i>		X	X	X	
<i>Laccobius o.aegaeus</i>	X	X	X	X	X
<i>Laccobius simulatrix</i>	X	X	X	X	X
<i>Laccobius striatulus</i>	X	X	X	X	X
<i>Laccobius sulcatulus</i>	X		X		
<i>Laccobius syriacus</i>	X	X	X	X	X
<i>Paracymus aeneus</i>	X				
<i>Paracymus chalceolus</i>	X				
<i>Paracymus scutellaris</i>	X		X	X	

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

Subfamily: Hydrophilinae Latreille, 1802

Tribus: Anacaenini Hansen, 1991

Genus: *Anacaena* Thomson, 1859

Anacaena limbata (Fabricius, 1792)

Material examined: **Bayburt:** 4 males, 10 females, B1, 18.VI.2007; 4 males, 3 females, B2, 27.VIII.2007; 4 males, 4 females, B9, 20. IX.2007; 23 males, 18 females, B17, 21.IX.2007; 2 males, 3 females, B8, 21.IX.2007; 2 males, B15, 21. IX. 2007. **Giresun:** 6 males, 5 females, G1, 25.V.2007; 3 males, 6 females, G3, 27.V.2007; 2 males, G12, 28.VIII. 2007; 2 males, G14, 25.VIII.2007. **Gümüshane:** 1 male, G74, 31.VIII.2007; 1 male, G64, 21.IX.2007. **Ordu:** 1male, O39, 27.V.2007; 7 males, 6 females, O27, 28.V.2007; 1 male, 2 females, O20, 28.V.2007; 3 males O45, 30.VIII.2007; 8 males, 4

females, O18, 28.IX.2007. **Trabzon:** 1 male, 1 female, T20, 20.V.2007.

Distribution in Turkey: Ankara, Artvin, Bingöl and Trabzon (Berge Henegouwen, 1986; Mart, 2005; Karaman *et al.*, 2008).

Distribution in world: **E:** AR, AU, BE, BH, BU, BY, CT, CZ, DE, FI, FR, GB, GE, GR, HU, IR, IT, LA, NL, NT, PL, PT, RO, SK, SP, ST, SV, SZ, UK, YU; **N:** AG; **A:** FE, IS, KZ, SY, TR, WS; **NAR** (Berge Henegouwen, 1986; Hansen, 1987; Balke and Hendrich, 1991; Hebauer, 1994; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004; Bouzid and Incekara, 2006; Jia & Zhao 2008).

Habitats: In stagnant or sometimes slowly running fresh water, well vegetated.

***Anacaena lutescens* (Stephens, 1829)**

Material examined: **Bayburt:** 5 females, B11, 20.V.2007; 2 females, B3, 27.VIII. 2007; 6 males, 14 females, B10, 20.IX.2007. **Giresun:** 2 males, G18, 24.VI.2007; 2 males, 7 females, G3, 23.VI.2007. **Gümüşhane:** 17 females, G41, 21.VI.2007; 5 females, G38, 21.VI. 2007; 6 females, G40, 21.VI.2007; 6 females, G53, 22.VI.2007. **Ordu:** 1 female, O46, 26.V. 2007; 3 males, 1 female, O14, 27.V.2007; 1 male, O40, 27.V.2007; 2 males, O44, 25.VI.2007; 1 male, O18, 28.IX.2007. **Trabzon:** 1 female, T12, 21.V.2007; 6 females, T13, 20.VI.2007; 8 males, 4 females, T2, 20.VI.2007; 6 males, T23, 28.VIII. 2007.

Distribution in Turkey: Artvin, Bingöl and Erzincan (Incekara *et al.*, 2004; Mart, 2005).

Distribution in world: **E:** AR, AU, BE, BH, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, GG, GR, IT, LA, LT, LU, MA, MC, MD, NL, NR, NT, PL, PT, RO, RU, SP, ST, SV, SZ, UK, YU; **N:** AG, EG, MO, TU; **A:** IN, KZ, TR, WS; **NAR** (Berge Henegouwen, 1986; Hansen, 1987, 1999; Balke and Hendrich, 1991; O' Connor, 1995; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004; Vafaei *et al.*, 2007).

Remark: First record of this species for the Black Sea region.

Habitats: In almost all kinds of fresh water, predominantly in well vegetated pools.

***Anacaena rufipes* (Guillebeau, 1896)**

Material examined: **Bayburt:** 1 male, B1, 26.X.2007. **Giresun:** 2 males, G9, 24.V.2007; 1 male, G22, 24.V.2007; 1 female, G28, 25.V.2007; 1 male, G33, 23.VI.2007; 3 males, 1 female, G26, 25.VII.2007; 2 females, G12, 28.VIII.2007. **Gümüşhane:** 2 females, G50, 20.X. 2007. **Ordu:** 1 male, O19, 26.V.2007; 1 male, 6 females, O5, 25.VI.2007; 6 males, 1 female, O25, 27.VII.2007; 4 males, 6 females, O27, 30.VIII.2007; 5 males, O45, 30.VIII.2007. **Trabzon:** 1 male, 1 female, T19, 21.VI.2007; 3 males, 1 female, T33, 25.VII.2007; 3 males, T24, 23.VII.2007; 2 females, T8, 26.X. 2007.

Distribution in Turkey: Istanbul and Bingöl (Berge Henegouwen, 1986; Incekara *et al.*, 2003a; Mart, 2005).

Distribution in world: **E:** BH, GR, IT, YU, TR; **A:** IS, LE, SY, TR (Berge Henegouwen, 1986; Hebauer and Klausnitzer, 1998; Hansen, 1999; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: Predominantly running waters, usually at the grassy edges these, submersed vegetation in shallow water.

Genus: *Paracymus* Thomson, 1867

***Paracymus aeneus* (Germar, 1824)**

Material examined: **Bayburt:** 3 males, B9, 20.IX.2007.

Distribution in Turkey: without detailed locality (Wooldridge, 1978)

Distribution in world: **E:** AL, AU, BU, CR, CZ, DE, FR, GB, GE, GR, IR, IT, NL, NR, PT, RO, SL, SP, ST, SV, UK; **N:** EG, TU; **A:** ES, FE, IN, IS, KI, KZ, MG, TD, TM, TR (Balfour-Browne, 1958; Wooldridge, 1978; Hebauer and Klausnitzer, 1998; Hansen, 1999; Löbl & Smetana, 2004).

Remarks: According to Wooldridge (1978) this species was recorded previously from Turkey, but precise locality was not provided by the authors. Above mentioned specimens represent the first concrete record of this species in Turkey and in the Black Sea region.

Habitats: At the edges of small shallow, well vegetated and often temporary pools.

***Paracymus chalceolus* (Solsky, 1874)**

Material examined: **Bayburt:** 1 male, B15, 21.IX.2007; 5 males, 7 females, B8, 21.IX.2007.

Distribution in Turkey: Bingöl (Mart *et al.*, 2006; Mart, 2005).

Distribution in world: **E:** AB, ST; **A:** AF, TR, UZ (Wooldridge, 1978; Hansen, 1999; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: At the edges of puddle, fresh water, temporary pools with well vegetated.

***Paracymus scutellaris* (Rosenhauer, 1856)**

Material examined: **Bayburt:** 1 male, B16, 20.X.2007. **Gümüşhane:** 1 male, G50, 20.X. 2007. **Ordu:** 1 male, 1 female, O3, 22.X. 2007.

Distribution in Turkey: Bingöl (Mart *et al.*, 2006; Mart, 2005).

Distribution in world: **E:** AL, BE, BU, FR, GB, GE, GR, IR, IT, NL, PT, SL, SP; **N:** AG, MO; **A:** CY, TR (Balfour-Browne, 1958; Wooldridge, 1978; Hebauer and Klausnitzer, 1998; Hansen, 1999; Löbl & Smetana, 2004).

Remark: First record of this species from the Black Sea region.

Habitats: At the edges of temporary pools with well vegetated.

Tribus: Berosini

Genus: *Berosus* Leach, 1817

***Berosus* (s. str.) *luridus* (Linnaeus, 1761)**

Material examined: **Bayburt:** 1 male, 1 female, B9, 20.IX.2007.

Distribution in Turkey: Erzincan, Hakkari, Ordu, Kars and Kastamonu (Schödl, 1993; Incekara *et al.*, 2003a).

Distribution in world: **E:** AL, AU, BE, BH, BU, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, HU, IR, IT, LA, LT, NL, NR, NT, PL, RO, SK, SL, ST, SV, SZ, UK, YU; **A:** TR (Hansen, 1987, 1999; Friday, 1988; Löbl & Smetana, 2004).

Habitats: In stagnant fresh water, mainly in rather eutrophic, shallow pools or ponds, with grassy and somewhat clayey bottom.

***Berosus* (s. str.) *signaticollis* (Charpentier, 1825)**

Material examined: **Bayburt:** 2 females, B9, 27. VIII.2007; 1 male 11 females; B15, 21.IX.2007; 1 male 2 females; B8, 21. X. 2007, 2 males 2 females. **Ordu:** 1 male, O22, 22.X.2007.

Distribution in Turkey: Amasya, Antalya, Aydın, Bingöl, Erzincan, İzmir, Kars, Kastamonu and Ordu (Schödl, 1993; Incekara *et al.*, 2003a; Mart, 2005).

Distribution in world: **E:** AL, AU, BE, BH, BU, BY, CR, CT, CZ, DE, EN, FR, GB, GE, GG, GR, HU, IR, IT, LT, MC, NL, NR, PL, PT, RO, SK, SL, SP, ST, SV, SZ, UK, YU; **N:** AG, MO; **A:** AF, FE, IN, KZ, TD, TM, TR, UZ, WS (Hansen, 1987, 1999; Friday, 1988; Löbl & Smetana, 2004).

Tribus: Chaetarthriini Bedel, 1881

Genus: *Chaetarthria* Stephens, 1835

***Chaetarthria seminulum* (Herbst, 1797)**

Material examined: **Bayburt:** 1 male, 1 female, B12, 18.VI.2007; 1 male, B17, 21.IX.2007. **Giresun:** 1 male, 1 female, G6, 24.V.2007; 2 males, G22, 24.V.2007; 1 male, G30, 24.V.2007; 2 males, G31, 24.VI.2007; 1 male, G13, 24.VI.2007; 1 male, G3, 23.VI.2007; 1 male, G28, 26.VII.2007. **Gümüşhane:** 1 female, G76, 23.V.2007; 1 male, 1 female, G62, 24.VII.2007; 1 male, G70, 31.VIII.2007. **Ordu:** 1 male, O16, 28.V.2007; 4 males, 1 female, O14, 27.VII. 2007; 1 male, O9, 27.VII.2007. **Trabzon:** 12 males, T29, 22.V.2007; 1 male, T7, 21.V.2007; 3 males, T25, 21.V.2007.

Distribution in Turkey: Balıkesir, Çanakkale, Erzincan, Trabzon and Van (Incekara

et al., 2003a).

Distribution in world: **E:** GE, AU, BH, CZ, DE, EN, FI, FR, CR, NL, GB, IN, SP, SV, SZ, IT, LA, LT, HU, MC, NR, PL, RU, SL, UK, YU, GR, TR (Hansen, 1987, 1999; Hebauer, 1993; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004).

Habitats: At the edges of stagnant, normally eutrophic, well vegetated fresh water.

Tribus: Hydrophilini Latreille, 1802

Genus: Enochrus Thomson, 1859

Enochrus (s.str.) bicolor (Fabricius, 1792)

Material examined: **Ordu:** 1 male, 3 females, O33, 04.VIII.2008.

Distribution in Turkey: Ankara, Antalya, Erzincan, İçel, Kars and Van (Schödl, 1998; Incekara *et al.*, 2005b; Darılmaz and Kıyak, 2006b).

Distribution in world: **E:** AB, AG, AR, AU, BU, BY, CI, CR, CT, CZ, DE, EG, EN, ES, FE, FI, FR, GB, GE, GR, HU, IR, IT, JA, KZ, LA, LT, MA, MG, MO, NL, NP, NR, NT, PL, PT, RO, SK, SP, ST, SV, TD, TM, TR, TU, UK (Hansen, 1987; Schödl, 1998; Riberia *et al.*, 2003; Löbl & Smetana, 2004; Incekara *et al.*, 2005b; Darılmaz and Kıyak, 2006b).

Remark: First record of this species for the Black Sea region.

Habitats: In brackish water near the coast.

Enochrus (Lumetus) fuscipennis (Thomson, 1884)

Material examined: **Bayburt:** 1 male, 4 females, B1, 20.V.2007; 4 males, B10, 18.VI.2007; 1 male, 7 females, B13, 27.VIII.2007; 4 males, 2 females, B9, 27.VIII.2007; 5 males, 8 females, B8, 21.IX.2007; 4 males, 3 females, B17, 21.IX.2007. **Giresun:** 1 male, 4 females, G21, 24.V.2007; 3 males, 7 females, G24, 24.V.2007; 1 male, G30, 23.VI.2007; 17 males, 8 females, G23, 24.VI.2007; 1 male, 4 females, G28, 31.VIII.2007; 2 males, 6 females, G14, 25.VIII.2007. **Gümüşhane:** 1 male, 1 female, G47, 23.V.2007; 1 male, G41, 21.VI.2007; 2 males, 5 females, G59, 21.VI.2007; 1 male, 1 female, G73, 19.VI.2007; 3 males, 2 females, G75, 31.VIII.2007; 2 males, 1 female, G74, 31.VIII.2007; 3 males, 6 females, G63, 23.IX.2007; 2 males, 8 females, G64, 21.IX.2007. **Ordu:** 1 male, 1 female, O22, 24.VI.2007; 1 male, 3 females, O11, 24.VI.2007; 4 males, 6 females, O46, 24.VI.2007; 3 males, 7 females, O12, 30.VIII.2007; 2 males, 4 females, O18, 28.IX.2007. **Trabzon:** 1 male, 1 female, T9, 21.VI.2007.

Distribution in Turkey: Aksaray, Bingöl, Denizli and Erzincan (Incekara *et al.*, 2005b; Darılmaz and Kıyak, 2006b; Kıyak *et al.*, 2006).

Distribution in world: **E:** GE, AU, AZ, BH, BU, DE, FI, IN, IR, SP, SV, IT, GB, LA, HU, NR, RU, SL, TR (Balfour-Browne, 1958; Endrödy-Younga, 1967; Valladares,

1995; Hansen, 1999; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: At the edges of stagnant, usually well vegetated fresh water.

Enochrus (s.str.) melanocephalus (Olivier, 1792)

Material examined: **Trabzon:** 1 male, 2 females, T3, 04.VIII.2008.

Distribution in Turkey: Aksaray, Erzincan (Incekara *et al.*, 2005b; Darılmaz and Kıyak, 2006).

Distribution in world: **E:** AG, AR, AU, BH, BU, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, HU, IR, IS, IT, LA, LT, NL, NR, NT, PL, PT, SK, SP, SV, SZ, UK, YU (Hansen, 1987; Riberia *et al.*, 2003; Löbl & Smetana, 2004; Incekara *et al.*, 2005b; Darılmaz and Kıyak, 2006b).

Remark: First record of this species for the Black Sea region.

Habitats: At the edges of stagnant, shallow, well vegetated water with clayey bottom near the coast.

Enochrus (Lumetus) quadripunctatus (Herbst, 1797)

Material examined: **Ordu:** 8 males, 4 females, O14, 26.V.2007; 1 male, O22, 24.VI.2007.

Distribution in Turkey: Antalya, Bingöl, Denizli, Isparta (Mart, 2005; Hebauer and Ryndevich, 2005).

Distribution in world: **E:** GE, AU, BH, GB, BU, CZ, WP, DE, EN, FI, FR, CR, NL, IN, IS, SV, SZ, IT, UK, KZ, LT, HU, NR, RU, SL (Balfour-Browne, 1958; Endrödy-Younga, 1967; Hansen, 1987, 1999; Hebauer, 1994; Schödl, 1998; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: In stagnant water, especially open, shallow pools with some vegetation and more or less clayey bottom.

Genus: *Helochaeres* Mulsant, 1844

Helochaeres (s.str.) lividus (Forster, 1771)

Material examined: **Ordu:** 2 males, 2 females, O6, 30.VIII.2007; 1 male, O29, 27.V.2007; 1 male, 1 female, O21, 25.VI.2007. **Trabzon:** 1 male, T15, 22.V.2007.

Distribution in Turkey: Aksaray, Bingöl and Trabzon (Mart, 2005; Darılmaz and Kıyak, 2006a; Karaman *et al.*, 2008).

Distribution in world: **E:** GE, AU, BH, GB, BU, AG, MO, FR, NL, SP, SZ, IT, HU, PL, PT, TU, GR, TR (Pirisuni 1981; Hansen, 1982, 1999; Hansen and Hebauer, 1988; Hebauer, 1994; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004).

Habitats: In stagnant water, often abundantly well vegetated fresh water.

Helochaeres (s.str.) obscurus (Müller, 1776)

Material examined: **Bayburt:** 2 males, B16, 20.X.2007. **Giresun:** 1 male, 3 females, G12, 28.VIII.2007. **Ordu:** 2 males, 1 female, O35, 27.V.2007; 16 males, 1 female, O22, 24.VI.2007; 1 male, 2 females, O11, 24.VI.2007; 6 males, 5 females, O43, 30.VI.2007; 1 male, O12, 30.VIII.2007; 10 males, 8 females, O22, 30.VIII.2007.

Distribution in Turkey: Bingöl (Mart, 2005).

Distribution in world: **E:** GE, AU, AZ, GB, CZ, DE, EN, FI, CR, NL, IS, SV, SZ, IT, KZ, LA, LT, HU, NR, PL, RU, GR, TR (Pirisinu, 1981; Hansen, 1982, 1987, 1999; Hebauer, 1994; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004; Mart, 2005).

Remark: First record of this species for the Black Sea region.

Habitats: In stagnant water, more or less eutrophic, often abundantly well vegetated fresh water.

Genus: *Hydrobius* Leach, 1815

Hydrobius fuscipes (Linnaeus, 1758)

Material examined: **Bayburt:** 2 males, B24, 23.VII.2007; 1 male, B23, 24.VII.2007; 2 males, 1 female, B19, 23.VII.2007; 4 males, 2 females, B9, 27.VIII.2007; 6 males, 6 females, B13, 27.VIII.2007; 1 male, B3, 27.VIII.2007. **Giresun:** 5 males, 8 females, G18, 24.VI.2007; 12 males, 11 females, G3, 27.V.2007; 4 males, G23, 24.VI.2007; 1 male, 3 females, G1, 26.VII.2007; 2 males, 1 female, G26, 25.VII.2007. **Gümüşhane:** 3 males, 1 female, G36, 22.V.2007; 2 males, 4 females, G67, 22.V.2007; 2 males, 2 females, G40, 21.VI.2007; 1 male, 1 female, G52, 20.VI.2007; 1 male, 1 female, G58, 22.VI.2007; 2 males, G53, 22.VI.2007; 2 males, 1 female, G35, 24.VII.2007. **Ordu:** 1 female, O14, 26.V.2007; 2 males, 5 females, O40, 27.V.2007; 1 female, O3, 22.X.2007. **Trabzon:** 1 male, T2, 20.VI.2007; 1 male, T18, 25.VII.2007; 1 male, 4 females, T23, 28.VIII.2007.

Distribution in Turkey: Erzincan and Bingöl (Incekara *et al.*, 2005a; Mart, 2005).

Distribution in world: **E:** BE, BH, BU, CR, CZ, DE, EN, FI, FR, GE, NL, GB, IR, SP, IS, SV, IT, KZ, CY, LA, LT, HU, MG, NR, PL, PT, RO, RU, SL, SY, YU, GR, TR, WP; **N:** AG; **A:** IN (Hansen, 1987, 1999; Löbl & Smetana, 2004; Bouzid and Incekara, 2006; Vafaei *et al.*, 2007).

Remark: First record of this species for the Black Sea region.

Habitats: In stagnant eutrophic water, often abundantly well vegetated.

Genus: *Hydrochara* Berthold, 1827***Hydrochara dichroma* (Fairmaire, 1892)**

Material examined: **Bayburt:** 1 male, B24, 23.VII.2007; 2 males, 4 females, B16, 20.X. 2007. **Gümüşhane:** 1 male, 1 female, G43, 20.VI.2007. **Ordu:** 1 male, 4 females, O40, 27.V.2007.

Distribution in Turkey: Adana, Ankara, Bingöl, Erzincan, Erzurum and Istanbul (Smetana, 1980; Incekara *et al.*, 2003a; Mart, 2005).

Distribution in world: **E:** BU, GR, HU, ST, TR, UK; **A:** CY, IN, IS, SY, TD, TM, TR, UZ, WS, XIN (Smetana, 1980; Hansen, 1987, 1999; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: In stagnant eutrophic fresh water with grassy and muddy bottom, usually occurring on very shallow water among vegetation.

Tribus: Laccobiini Bertrand, 1954**Genus: *Laccobius* Erichson, 1837*****Laccobius (Dimorpholaccobius) bipunctatus* (Fabricius, 1775)**

Material examined: **Bayburt:** 2 males, B10, 18.VI.2007; 1 male, 5 females, B13, 27.VIII. 2007. **Giresun:** 2 males, 1 female, G10, 25. VI.2007; 1 male, G20, 21.VI.2007; 4 males, 2 females, G12, 28.VIII.2007. **Gümüşhane:** 2 males, G42, 20.VI.2007; 1 male, G63, 23.IX. 2007. **Ordu:** 1 male, 2 females, O29, 27.V.2007; 4 males, 2 females, O27, 30.VIII.2007; 1 male, 2 females, O45, 30.VIII.2007. **Trabzon:** 1 male, 1 female, T26, 21.V.2007.

Distribution in Turkey: Afyon, Bingöl, Bolu, Erzincan, Erzurum, Kastamonu ve Trabzon (Gentili, 2000; Incekara *et al.*, 2003a, Mart *et al.*, 2003; Mart, 2005; Karaman *et al.*, 2008).

Distribution in world: **E:** AL, AR, AU, BE, BH, BU, BY, CR, CZ, DE, EN, FI, FR, GB, GE, GR, HU, IR, IT, LA, LT, MC, NL, NR, NT, PL, PT, RO, SK, SL, SP, SV, SZ, UK, YU; **N:** MO, TU; **A:** KZ, TM, TR (Gentili and Chiesa, 1975; Gentili, 1979, 1982, 1988, 1995; Shatrovskiy, 1984; Hansen, 1987, 1999; Hebauer, 1994; Valladares, 1995; Löbl & Smetana, 2004).

Habitats: Edges of stagnant or sometimes slow-flowing fresh water.

***Laccobius (Dimorpholaccobius) halophilus* Gentili, 1982**

Material examined: **Giresun:** 1 male, G17, 25.V.2007.

Distribution in Turkey: Antalya, Bingöl, Diyarbakır, Erzurum, Mersin and Muğla (Gentili, 2000; Incekara *et al.*, 2003a; Mart *et al.*, 2003; Mart, 2005).

Distribution in world: **A:** IN, TR (Gentili, 1982, 1988, 1991; Hansen, 1999; Löbl & Smetana, 2004).

Remark: This species new record for the Hydrophilidae fauna of Black Sea region.

Habitats: In brackish water with some vegetation.

***Laccobius (Microlaccobius) gracilis* Motchulsky, 1855**

Material examined: **Bayburt:** 4 males, 17 females, B9, 20.IX.2007. **Giresun:** 17 males, 14 females, G28, 25.V.2007; 2 males, 2 females, G6, 24.V.2007; 1 male, 3 females, G9, 24.V. 2007; 1 male, 5 females, G29, 24.V.2007; 1 male, 7 females, G21, 24.V.2007; 1 male, 6 females, G5, 21.V.2007; 2 males, 5 females, G27, 25.V.2007; 5 males, 3 females, G17, 25.V. 2007; 3 males, 6 females, G13, 24.VI.2007; 1 male, 5 females, G30, 23.VI.2007; 5 males, 1 female, G20, 21.VI.2007; 1 male, 2 females, G18, 24.VI.2007; 1 male, 2 females, G24, 28.X. 2007. **Gümüşhane:** 1male, 4 females, G60, 23.V.2007; 9 males, 7 females, G47, 23.V.2007; 2 males, 6 females, G45, 23.V.2007; 2 males, 1 female, G39, 21.VI.2007; 4 males, 1 female, G54, 19.VI.2007. **Ordu:** 5 males, 2 females, O31, 26.V.2007; 3 males, 3 females, O39, 27.V. 2007; 3 males, O24, 26.V.2007; 2 males, O7, 26.V.2007; 3 males, 8 females, O41, 24.VI. 2007; 1 male, 2 females, O46, 22.X.2007; 3 males, 2 females, O3, 22.X.2007. **Trabzon:** 1 male, 6 females, T17, 21.V.2007; 2 males, 6 females, T8, 26.X.2007; 1 male, 2 females, T6, 22.V.2007.

Distribution in Turkey: Adana, Adıyaman, Ankara, Antakya, Antalya, Artvin, Aydın, Bayburt, Balıkesir, Bilecik, Bingöl, Bitlis, Bolu, Burdur, Bursa, Çanakkale, Çorum, Denizli, Diyarbakır, Edirne, Erzincan, Erzurum, Gaziantep, Giresun, Hakkari, Isparta, İstanbul, İzmir, Kars, Kastamonu, Kayseri, Manisa, Mardin, Mersin, Muğla, Muş, Niğde, Ordu, Rize, Sinop, Sivas, Tatvan, Trabzon, Toros dağları and Van (Gentili, 2000; Incekara *et al.*, 2003a; Mart *et al.*, 2003; Mart, 2005; Karaman *et al.*, 2008).

Distribution in world **E:** AL, AU, BE, BH, BU, CR, CZ, FR, GE, GG, GR, HU, IT, PT, RO, SK, SL, SP, ST, SZ, TR, UK, YU; **N:** AG, LB, MO, TU; **A:** IN, IS, TR (Gentili and Chiesa, 1975; Gentili, 1979, 1982, 1988; Shatrovskiy, 1984; Hansen, 1987; Hebauer, 1994; Valladares, 1995; Löbl & Smetana, 2004; Vafaei *et al.*, 2007).

Habitats: At the edges of slowly running and stagnant water or mainly pools situated near rivers or streams.

***Laccobius (Dimorpholaccobius) hindukuschi* Chiesa, 1966**

Material examined: **Giresun:** 1 male, G28, 25.V.2007; 2 males, G17, 25.V.2007; 2 males 2 females, G16, 25.V.2007; 1 male 1 female, G24, 24.V.2007; 1 male 1 female, G25, 26.VII. 2007. **Gümüşhane:** 7 males 3 females, G47, 23.V.2007; 1 male 3 females, G39, 21.VI.2007; 3 males 4 females, G54, 19.VI.2007; 2 males 3 females, G49, 19.VI.2007; 2 males 5 females, G64, 21.IX.2007. **Ordu:** 1 male 4 females, O4, 26.V.2007.

Distribution in Turkey: Adıyaman, Artvin, Ankara, Antakya, Antalya, Bayburt, Bingöl, Bitlis, Burdur, Denizli, Diyarbakır, Erzincan, Erzurum, Gaziantep, Gümüşhane, Kastamonu, Kilis, Mardin, Mersin, Muş, Niğde and Tunceli (Gentili, 2000; Incekara *et al.*, 2003a, Mart *et al.*, 2003; Mart, 2005).

Distribution in world: **E:** AB, AR, GG, RU; **A:** AF, HP, IN, IQ, KI, NP, PA, TD, TM, TR, UP, UZ (Gentili and Chiesa, 1975; Gentili, 1979, 1982, 1988, 1991, 1995; Shatrovskiy, 1984; Hansen, 1999; Löbl & Smetana, 2004).

Habitats: In mountain brooks, springs and bodies of standing waters.

***Laccobius (Dimorpholaccobius) obscuratus aegaeus* Gentili, 1974**

Material examined: **Bayburt:** 1 male, 7 females, B21, 20.V.2007; 1 male, 9 females, B12, 18.VI.2007; 1 male, 3 females, B25, 18.VI.2007; 5 males, 8 females, B20, 18.VI.2007; 1 male, B14, 23.VII.2007; 1 male, 7 females, B22, 23.VII.2007; 15 males, 25 females, B2, 27.VIII.2007; 4 males, 7 females, B3, 27.VIII.2007; 2 males, 5 females, B9, 20.IX.2007; 1 male, 3 females, B8, 21.IX.2007; 1 male, 1 female, B17, 21.IX.2007. **Giresun:** 1 male, 5 females, G29, 24.V.2007; 2 males 2 females, G22, 24.V.2007; 15 males, 17 females, G3, 27.V.2007; 3 males, 4 females, G20, 21.VI.2007; 8 males, 12 females, G31, 24.VI.2007; 8 males, 12 females, G13, 24.VI.2007; 6 males, 8 females, G30, 23.VI.2007; 10 males, 12 females, G8, 23.VI.2007; 5 males, 1 female, G18, 24.VI.2007; 2 males, 8 females, G19, 23.VI.2007; 1 male, 3 females, G15, 24.VI.2007; 1 male, 3 females, G23, 24.VI.2007 ; 3 males, 6 females, G28, 31.VIII.2007; 1 male, 5 females, G14, 25.VIII.2007. **Gümüşhane:** 2 males, G65, 23.V.2007; 8 males, 11 females, G45, 23.V. 2007; 9 males, 8 females, G76, 23.V.2007; 1 male, 3 females, G36, 22.V.2007; 4 males, 8 females, G67, 22.V.2007; 1 male, 3 females, G47, 20.VI.2007; 5 males, 7 females, G39, 21.VI. 2007; 2 males, 4 females, G44, 20.VI.2007; 3 males, 11 females, G68, 20.VI.2007; 5 males, 3 females, G71, 21.VI.2007; 2 males, 2 females, G69, 24.VII.2007; 2 males, 5 females, G75, 31.VIII.2007; 7 males, 2 females, G70, 31.VIII.2007; 3 males, 8 females, G64, 21.IX.2007; 2 males, 3 females, G55, 20.X.2007. **Ordu:** 3 males, 5 females, O39, 27.V.2007; 5 males, 4 females, O13, 28.V.2007 ; 2 males, 4 females, O29, 27.V.2007; 3 males, O46, 26.V.2007; 1 male, 6 females, O40, 27.V. 2007; 2 males, 6 females, O38, 27.V.2007; 2 males, 2 females, O14, 19.VI.2007; 1 male, 2 females, O1, 25.VI.2007; 2 males, 1 female, O41, 24.VI.2007; 1 male, O9, 27.VII.2007; 2 males, 4 females, O15, 28.VII.2007; 2 male, 7 female, O2, 28.VII. 2007; 2 males, 5 females, O36, 22.VII.2007; 4 males, 3 females, O6, 30.VIII.2007; 2 males, 2 females, O27, 30.VIII.2007; 2 males, 7 females, O17, 22.X.2007; 2 males, 1 female, 22.X.2007. **Trabzon:** 3 males, 8 females, T20, 20.V.2007; 1 male, 2 females, T5, 21.V.2007; 2 males, 2 females, T25, 21.V.2007; 9 males, 11 females, T6, 22.V.2007; 2 males, 1 female, T10, 21.V.2007; 6 males, 5 females, T22, 19.VI.2007; 2 males, 5 females, T16, 20.VI.2007; 1 male, 1 female, T21, 21.VI. 2007; 3 males, 6 females, T24, 23.VII.2007; 2 males, 3 females, T8, 26.X.2007; 1 male, T4, 25.X.2007.

Distribution in Turkey: Adana, Ankara, Antalya, Artvin, Aydın, Bingöl, Bitlis, Bolu Burdur, Bursa, Çanakkale, Çorum, Denizli, Erzincan, Erzurum, Gümüşhane, İstanbul, İzmir, İzmit, Kastamonu, Kırklareli, Konya, Manisa, Mersin, Muğla, Ordu, Osmaniye, Rize, Sinop, Tatvan, Toros dağları and Van (Gentili, 2000, Incekara *et al.*, 2003a; Mart *et al.*, 2003; Mart, 2005; Karaman *et al.*, 2008).

Distribution in world: **E:** GR, TR, UK; **A:** TR (Gentili and Chiesa, 1975; Löbl & Smetana, 2004).

Habitats: In various kinds of water bodies.

***Laccobius (Dimorpholaccobius) simulatrix* d'Orchymont, 1932**

Material examined: **Bayburt:** 1 male, 5 females, B1, 20.V.2007; 4 males, 5 females, B9, 27.VIII.2007;

2 males, 2 females, B17, 21.IX.2007; 1 male, 4 females, B8, 21.IX.2007; 1 male, 3 females, B15, 21.IX.2007; 1 male, 2 females, B7, 26.X.2007. **Giresun:** 4 males, 6 females, G28, 25.V.2007; 3 males, G17, 25.V.2007; 2 males, 14 females, G27, 25.V.2007; 1 male, 2 females, G7, 22.VI.2007; 1 male, 2 females, G14, 25.VIII.2007. **Gümüşhane:** 2 males, 6 females, G45, 23.V.2007; 1 male, G47, 23.V.2007; 2 males, G54, 19.VI.2007; 1 male, 1 female, G57, 20.VI.2007; 1 male, 4 females, G70, 31.VIII.2007; 7 males, 6 females, G43, 20.X.2007; 1 male, 1 female, G34, 20.X.2007; 1 male, 3 females, G51, 20.X.2007. **Ordu:** 2 males, O26, 20.V.2007. **Trabzon:** 1 male, 5 females, T29, 22.V.2007.

Distribution in Turkey: Ağrı, Aksaray, Ankara, Antalya, Artvin, Aydın, Bayburt, Bingöl, Bitlis, Bolu, Bursa, Çanakkale, Çorum, Denizli, Edirne, Isparta, Erzincan, Erzurum, Hakkâri, İstanbul, İzmir, Kahramanmaraş, Kars, Kayseri, Kırklareli, Manisa, Muğla, Niğde, Osmaniye, Samsun, Sivas, Trabzon, Toros dağları and Van (Gentili, 2000; Incekara *et al.*, 2003a; Mart *et al.*, 2003; Mart, 2005; Darılmaz and Kıyak, 2006b; Kıyak *et al.*, 2006; Karaman *et al.*, 2008).

Distribution in world: **E:** AB, AU, BH, BU, CR, CZ, FR, GG, GR, HU, IT, MC, PL, RO, SK, TR, UK, YU; **A:** AF, IN, KZ, TM, TR (Orchymont, 1932; Gentili and Chiesa, 1975; Gentili, 1979, 1982, 1988; Shatrovskiy, 1984; Löbl & Smetana, 2004).

Habitats: In well warmed standing and slowly flowing waters.

Laccobius (Dimorpholaccobius) striatulus (Fabricius, 1801)

Material examined: **Bayburt:** 1 male, 5 females, B1, 20.V.2007; 1 male, 2 females, B3, 27.VIII.2007; 4 males, 11 females, B9, 20.IX.2007; 2 males, B8, 21.X.2007. **Giresun:** 2 males, 8 females, G27, 25.V.2007; 2 males, G20, 21.VI.2007; 1 male, 3 females, G3, 24.V.2007; 3 males, 5 females, G24, 24.V.2007; 10 males, 15 females, G31, 24.VI.2007; 2 males, G13, 24.VI.2007; 1 male, 1 female, G7, 22.VI.2007. **Gümüşhane:** 2 males, 3 females, G47, 27.V.2007; 5 males, 5 females, G48, 22.V.2007; 4 males, 4 females, G72, 22.V.2007; 1 male, 5 females, G36, 22.V.2007; 2 males, G41, 21.VI.2007; 3 males, 3 females, G69, 24.VII.2007; 1 male, 3 females, G74, 31.VIII.2007. **Ordu:** 4 males, 8 females, O23, 28.V.2007; 2 males, 4 females, O39, 27.V.2007; 2 males, O24, 26.V.2007; 5 males, 4 females, O42, 26.V.2007; 1 male, 8 females, O36, 26.V.2007; 2 males, 4 females, O46, 24.VI.2007; 5 males, 4 females, O6, 30.VIII.2007; 1 male, 2 females, O40, 30.VIII.2007; 1 male, 4 females, O30, 21.X.2007; 2 males, 4 females, O3, 22.X.2007. **Trabzon:** 1 male, T10, 21.V.2007; 2 males, 16 females, 21.V.2007; 1 male, 6 females, T14, 22.V.2007; 1 male, 3 females, T5, 21.V.2007; 5 males, 3 females, T22, 19.VI.2007; 5 males, 8 females, T32, 19.VI.2007; 4 males, 2 females, T8, 26.X.2007.

Distribution in Turkey: Adapazarı, Ankara, Antakya, Antalya, Artvin, Bayburt, Bingöl, Bitlis, Bolu, Bursa, Çanakkale, Erzincan, Erzurum, Eskişehir, Gümüşhane, Isparta, İstanbul, İzmit, İzmir, Kütahya, Konya, Malatya, Manisa, Muğla, Sivas and Van (Gentili, 2000; Incekara *et al.* 2003a, Mart *et al.* 2003; Mart, 2005; Karaman *et al.* 2008). Distribution in world: **E:** AL, AR, AU, BE, BH, BU, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, GG, GR, HU, IR, LA, MC, NL, NR, NT, PL, PT, RO, SK, SL, SP, ST, SV, SZ, TR, UK, YU; **A:** KI, KZ, TR, UZ (Gentili and Chiesa, 1975; Gentili, 1979, 1995; Hansen, 1999; Löbl & Smetana, 2004).

Habitats: At the edges of slowly running waters with clayey, muddy or sandy bottoms, well vegetated habitats.

***Laccobius (Dimorpholaccobius) sulcatulus* Reitter, 1909**

Material examined: **Bayburt:** 2 males, B2, 623.VII.2007; 2 males, B24, 23.VII.2007; 2 males, 1 female, B4, 24.VII.2007; 1 male, 2 females, B5, 27.VIII.2007; 3 males, 2 females, B3, 27.VIII.2007; 6 males, 10 females, B9, 20.IX.2007; 5 males, 7 females, B8, 21.IX.2007; 1 male, 5 females, B15, 21.IX.2007; 1 male, 3 females, B10, 20.IX.2007. **Gümüşhane:** 4 males, 7 females, G63, 23.IX.2007.

Distribution in Turkey: Amasya, Ankara, Antalya, Ardahan, Bayburt, Bingöl, Bitlis, Burdur, Diyarbakır, Ereğli, Erzincan, Erzurum, Gümüşhane, Kars, Konya, Manisa, Toros dağları and Van (Gentili, 2000; Incekara *et al.*, 2003a; Mart *et al.*, 2003; Mart, 2005; Kıyak *et al.*, 2006). Distribution in world: E: AB AR GG A: IN TD TM TR (Gentili and Chiesa, 1975; Gentili, 1979, 1991; Shatrovskiy, 1984; Löbl & Smetana, 2004).

Habitats: In standing bodies of water in elevated regions.

***Laccobius (Dimorpholaccobius) syriacus* Guillebeau, 1896**

Material examined: **Bayburt:** 2 males, 5 females, B21, 20.V.2007; 1 male, 5 females, B1, 18.VI.2007; 2 males, 18 females, B10, 18.VI.2007; 3 males, 3 females, B18, 24.VII.2007; 3 males, 1 female, B6, 24.VII.2007; 8 males, 11 females, B2, 27.VIII.2007; 4 males, 6 females, B5, 27.VIII.2007; 5 males, 11 females, B3, 27.VIII.2007; 1 male, 5 females, B13, 20.IX.2007; 21 males, 19 females, B9, 20.IX.2007; 4 males, 8 females, B17, 21.IX.2007; 6 males, 11 females, B8, 21.IX.2007; 1 male, 2 females, B15, 21.IX.2007; 1 male, 2 females, B7, 26.X.2007. **Giresun:** 6 males, 7 females, G33, 24.V.2007; 3 males, 5 females, G9, 24.V.2007; 4 males, G22, 24.V.2007; 10 males, 12 females, G18, 24.VI.2007; 10 males, 8 females, G32, 23.VI.2007; 6 males, 15 females, G19, 23.VI.2007; 6 males, 13 females, G4, 24.VI.2007; 10 males, 7 females, G23, 24.VI.2007; 2 males, 9 females, G7, 22.VI.2007; 1 male, 5 females, G11, 20.VI.2007; 5 males, G3, 23.VI.2007; 1 male, 1 female, G25, 26.VII.2007; 1 male, 4 females, G14, 25.VIII.2007; 25 males, 18 females, G12, 28.IX.2007; 3 males, 5 females, G24, 28.X.2007; 3 males, 2 females, G2, 21.X.2007. **Gümüşhane:** 2 males, 2 females, G60, 23.V.2007; 1 male, 4 females, G47, 27.V.2007; 1 male, G54, 19.VI.2007; 1 male, 5 females, G72, 19.VI.2007; 4 males, 6 females, G37, 22.VI.2007; 1 male, 4 females, G44, 20.VI.2007; 3 males, 1 female, G41, 21.VI.2007; 2 males, 4 females, G53, 26.VII.2007; 2 males, 1 female, G66, 26.VII.2007; 1 male, 15 females, G56, 24.VII.2007; 1 male, 3 females, G61, 23.VII.2007; 6 males, 2 females, G46, 23.VII.2007; 2 males, 3 females, G75, 31.VIII.2007; 3 males, 10 females, G63, 23.IX.2007; 2 males, 4 females, G43, 20.X.2007. **Ordu:** 1 male, O26, 20.V.2007; 4 males, 8 females, O29, 27.V.2007; 2 males, O24, 26.V.2007; 1 male, O32, 27.V.2007; 2 males, O37, 28.V.2007; 5 males, 5 females, O42, 26.V.2007; 3 males, 3 females, O14, 27.V.2007; 1 male, 3 females, O40, 27.V.2007; 2 males, 8 females, O38, 27.V.2007; 1 male, 4 females, O1, 25.VI.2007; 2 males, 2 females, O10, 25.VI.2007; 5 males, 5 females, O34, 25.VI.2007; 1 male, 4 females, O22, 24.VI.2007; 1 male, O9, 27.VII.2007; 2 males, 5 females, O25, 27.VII.2007; 2 males, 3 females, O36, 22.VII.2007; 6 males, 5 females, O12, 30.VIII.2007; 6 males, 2 females, O45, 30.VIII.2007; 19 males, 11 females, O18, 28.IX.2007; 3 males, 2 females, O10, 22.X.2007. **Trabzon:** 2 males, 2 females, T30, 21.V.2007; 2 males, 2 females, T15, 22.V.2007; 1 male, 4 females, T14, 22.V.2007; 3 males, 4 females, T16, 20.VI.2007; 1 male, 3 females, T9, 21.VI.2007; 1 male, 1 female, T21, 21.VI.2007; 2 males, T28, 21.VI.2007; 1 male, 2 females, T19, 21.VI.2007; 2 males, 2 females, T18, 25.VII.2007; 1 male, T27, 27.VIII.2007; 6 males, 4 females, T23, 28.VIII.2007; 6 males, 3 females, T11, 28.X.2007.

Distribution in Turkey: Adana, Aksaray, Ankara, Antakya, Antalya, Artvin, Aydın, Bayburt, Bingöl, Bitlis, Burdur, Çorum, Denizli, Diyarbakır, Edirne, Eğirdir, Erzincan, Erzurum, Gaziantep, Gümüşhane, Hakkari, Isparta, İzmir, Kahramanmaraş, Kars, Kayseri, Kastamonu, Konya, Mardin, Mersin, Muğla, Ordu, Osmaniye, Rize, Samsun, Sinop, Şanlıurfa, Trabzon, Toros dağları and Van (Gentili, 2000; Incekara *et al.*, 2003a, Mart *et al.*, 2003; Mart, 2005; Darılmaz and Kıyak, 2006b).

Distribution in world: **E:** AB, AU, BH, BU, CZ, GG, GR, HU, MC, RO, SK, YU, **N:** EG; **A:** AF, CY, IN, IQ, IS, JO, KI, KZ, LE, SY, TD, TM, TR; **ORR** (Gentili and Chiesa, 1975; Gentili, 1979, 1982, 1988; Shatrovskiy, 1984; Hansen, 1987, 1999; Hebauer, 1994; Löbl & Smetana, 2004).

Habitats: In various kinds of standing and flowing waters, sometime brackish.

Subfamily: Sphaerdiinae Latreille, 1802

Tribus: Coelostomatini L.Heyden, 1891

Genus: *Coelostoma* Brullé, 1835

***Coelostoma* (s.str.) *orbiculare* (Fabricius, 1775)**

Material examined: **Bayburt:** 1 male, B8, 21.IX.2007; 1 male, B10, 20.IX.2007. **Giresun:** 11 males, 8 females, G3, 27.V.2007; 1 female, G9, 23.VI.2007; 1 male, 1 female, G18, 24.VI. 2007; 1 female, G19, 23.VI.2007. **Gümüşhane:** 2 males, 3 females, G60, 23.V.2007; 1 male, 2 females, G37, 22.VI.2007; 1 male, G63, 20.X.2007. **Ordu:** 4 male, 4 females, O21, 27.V. 2007; 2 males, O8, 27.V.2007; 1 male, 1 female, O10, 25.VI.2007; 1 male, O44, 25.VI.2007; 6 males, 9 females, O22, 24.VI.2007; 2 males, O9, 27.VII.2007; 1 male, 1 female, O12, 30.VIII. 2007; 1 female, O34, 22.X.2007. **Trabzon:** 1 female, T31, 22.V.2007; 1 male, T25, 21.V. 2007; 1 female, T16, 20.VI.2007; 1 male, 1 female, T19, 21.VI. 2007; 2 males, T21, 21.VI. 2007; 12 males, T23, 28.VIII.2007; 1 male, 5 females, T7, 21.V.2007.

Distribution in Turkey: Bingöl, Erzincan, Erzurum and Trabzon (Incekara *et al.*, 2003a; Mart, 2005; Karaman *et al.*, 2008).

Distribution in world: **E:** AB, AR, AU, BE, BU, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, GR, HU, IT, LA, LT, NL, NR, NT, PL, PT, RO, SK, SL, SP, SV, ST, SZ, UK, YU; **A:** ES, FE, IN, JA, KZ, WS (Endrödy-Younga, 1967; Ienistea, 1978; Foster, 1987; Hansen, 1987; Mardzhanyan, 1997; Hebauer and Klausnitzer, 1998; Löbl & Smetana, 2004; Vafaei *et al.*, 2007).

Habitats: In stagnant fresh water, mainly at the edges of eutrophic, well vegetated ponds, among vegetation in shallow water at the edge.

Tribus: Megasternini Mulsant, 1844

Genus: *Cercyon* Leach, 1817

Cercyon (Dicyrtocercyon) ustulatus (Preyssler, 1790)

Material examined: **Ordu** : 1 female, O39, 27.V.2007.

Distribution in Turkey: Artvin, Bingöl and Erzincan (Incekara *et al.*, 2003b; Mart, 2005) Distribution in world E: AU BY CR CZ DE EN FI FR GB GE HU IR IT LA LT MC NL NR NT PL PT RO SK SP SV SZ TR UK YU A: "Siberia" NARi (Bellstedt and Merkl, 1987; Hansen, 1999; Löbl & Smetana, 2004).

Remark: First record of this species for the Black Sea region.

Habitats: In wet mud near the edge of the water or under moss.

Genus: *Cryptopleurum* Mulsant, 1844

***Cryptopleurum crenatum* (Kugelann 1794)**

Material examined: **Trabzon**: 1 female, T13, 20.VI.2007.

Distribution in Turkey: no detailed locality (Löbl & Smetana, 2004).

Distribution in world: **E**: AR, AU, BE, BY, CR, CT, CZ, DE, EN, FI, FR, GB, GE, HU, IT, LT, NL, NR, NT, PL, RO, SK, SL, SV, SZ, TR, YU (Hansen, 1987, 1999; Löbl & Smetana, 2004).

Remarks: According to Löbl & Smetana (2004) this species was recorded previously from Turkey but no detailed locality was provided by the authors. The above mentioned specimen represent the first precise record of this species in Turkey and the first record for the Black Sea region.

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DISCUSSION

In freshwater habitats of Bayburt, Giresun, Gümüşhane, Ordu and Trabzon Provinces, 28 species and one subspecies (Coleoptera: Hydrophilidae) belonging to 12 genera were recorded. Of these thirteen species were new records for the Hydrophilidae fauna of Black Sea region. According to literatures (Wooldridge 1978, Löbl & Smetana 2004) *Cryptopleurum crenatum* (Kugelann 1794) and *Paracymus aeneus* (Germar, 1824) were recorded previously from Turkey, but precise locality was not provided by the authors. Above mentioned specimens represent the first concrete records of these species in Turkey.

REFERENCES

- Balfour-Browne, F., 1958, *British Water Beetles III*, Ray Society, London, 210.
- Balke, M., Hendrich, L., 1991, Rote Liste der Wassekafergruppen Hydradephaga und Hydrophiloidea von Berlin (West). *Landschaftsentwicklung und Umweltforschung*, 6: 359-372.
- Bellstedt, R., Merkl, O., 1987, Hydraenidae, Spercheidae, Helophoridae, Hydrochidae and Georissidae of the Kiskunsag National Park (Coleoptera). *Natural History of the National Parks of Hungary*, 5: 169-174.
- Berge Henegouwen, A., L., van, 1986, Revision of the European species of *Anacaena* Thomson (Coleoptera: Hydrophilidae). *Entomologica Scandinavica*, 17: 393-417.
- Bouزيد, S., İncekara, U., 2006, Distributional Notes on Northeastern Algerian Hydrophilidae (Coleoptera), with Three New Records. *Turkish Journal of Zoology*, 30: 305-308
- Darılmaz, M., Kıyak, S., 2006a, *Helochares lividus*: New Distributional Records from Turkey (Coleoptera:Hydrophilidae). *Entomological Problems*, 36(1): 79.
- Darılmaz, M., Kıyak, S., 2006b, A contribution to the knowledge of the Turkish water beetles fauna (Coleoptera). *Munis Entomology and Zoology*, 1 (1):129-144.
- Endrödy-Younga, S., 1967, *Cisboralkatuak-Palpicorina. Fauna Hungariae* 87, VI. Köt., 10. Füz. Coleoptera I. Akademiai, Kiado, Budapest, 97.
- Fikáček, M., 2006, Taxonomic status of *Cercyon alpinus*, *C. exorabilis*, *C. strandi* and *C. tatricus* and notes on their biology (Coleoptera: Hydrophilidae: Sphaeridiinae). *Annalen des Naturhistorischen Museums in Wien*, 107B (2005): 145-164.
- Foster, G. N., 1987, Atlas of British Water Beetles. *Balfour-Browne Club Newsletter*, 40: 1-23.
- Friday, L. E., 1988, A Key to the Adults of British Water Beetles. *Field Studies*, 7: 1-123.
- Gentili, E., 1979, Aggiunte Alla Revisione Dei *Laccobius* Palearctici (Coleoptera: Hydrophilidae). *Bollettino della Società Entomologica Italiana*, 111: 43-50.
- Gentili, E., 1982, *Laccobius* Del Vecchio Mondo: Nuove Specie e Dati Faunistici (Coleoptera: Hydrophilidae). *Annuario Osservatorio di Fisica terrestre e Museo Antonio Stoppani del Seminario Arcivescoville di Milano*, 4 (1981): 31-38.
- Gentili, E., 1988, Verso una revisione del genere *Laccobius* (Coleoptera, Hydrophilidae). *Annuario Osservatorio di Fisica terrestre e Museo Antonio Stoppani del Seminario Arcivescoville di Milano*, 9: 31-47.
- Gentili, E., 1991, Elementi Per una revisione del genere *Laccobius* (Coleoptera, Hydrophilidae). *Giornale Italiano di Entomologia*, 5: 381-389.
- Gentili, E., 1995, *Hydrophilidae: 3. The Genus Laccobius Erichson in China and neighboring areas (Coleoptera)*. In: Jäch, M.A., Ji, L., (eds), *Water Beetles of China*, 1: 245–286.
- Gentili, E., 2000. Distribuzione del genere *Laccobius* (Coleoptera: Hydrophilidae) in Anatolia e Problemi Relativi. *Biogeographia*, XXI-2000: 173-214.
- Gentili, E., Chiesa, A., 1975, Revisione dei *Laccobius* Palearctici (Coleoptera: Hydrophilidae). *Memorie della Società Entomologica Italiana*, 54: 1-187.
- Gentili, E., Whitehead, P. E., 2000, A new species of *Laccobius* (Col., Hydrophilidae) from Lycia, Turkey. *The Entomologist's Montly Magazine*, 136: 73-76.
- Hansen, M., 1982, Revisional notes on some European *Helochares* Muls. (Coleoptera: Hydrophiloidea). *Entomologica Scandinavica*, 13: 201-211.
- Hansen, M., 1987, The Hydrophilidae (Coleoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica*, 18: 1-253.

- Hansen, M., 1999, *World Catalogue of Insects. Hydrophiloidea (Coleoptera)*. Apollo Books, Stenstrup, 2: 416.
- Hansen, M., Hebauer, F., 1988, A new species of *Helochaeres* from Israel, with a key to the European and some Near East species (Coleoptera, Hydrophilidae). *Entomologica Scandinavica*, 19: 27-30.
- Hebauer, F., 1994, The Hydrophilidae of Israel and Sinai (Coleoptera, Hydrophilidae). *Zoology in the Middle East*, 10: 74-137.
- Hebauer, F., Klausnitzer, B., 1998, *Süßwasserfauna von Mitteleuropa*, Bd. 20/7-10 Insecta: Coleoptera: Hydrophiloidea (Exkl. *Helophorus*). Heidelberg, Berlin, Spektrum Akademischer Verlag, 49-61.
- Hebauer, F., Ryndevich, S. K., 2005, New Data on the Distribution of World Hydrophilidae (Coleoptera). *Acta Coleopterologica*, 21(1): 43-51.
- Isenstejn, M. A., 1978, *Hydradephaga und Palpicornia*. In: Illies J. (ed.), *Limnofauna Europe*. Stuttgart, Gustav Fischer, 291-314.
- İncekara, Ü., Mart, A., Erman O., 2003a, Check List of the Hydrophilidae (Coleoptera) species of Turkey and a new record for the Turkish fauna. *Turkish Journal of Zoology*, 27: 47-53.
- İncekara, Ü., Mart A., Hayat, R., 2003b, A new record for the Turkish fauna: *Cercyon ustulatus* (Preyßler, 1970) (Coleoptera, Hydrophilidae). *Türk Entomoloji Dergisi*, 27(2): 91-94.
- İncekara, Ü., Mart A., Erman, O., 2004, First Records of the *Anacaena lutescens* (Stephens, 1829) and *Cercyon littoralis* (Gyllenhal, 1808) from Turkey (Coleoptera, Hydrophilidae). *Zoology in the Middle East*, 31: 103-106.
- İncekara, Ü., Mart A., Erman O., 2005a, Some Notes on Two Newly Recorded Aquatic Coleoptera (Hydrophilidae, Helophoridae) Species from Turkey. *Fırat Üniversitesi Fen ve Mühendislik Bilimleri Dergisi*, 17(2): 449-454.
- İncekara, Ü., Mart A., Erman O., 2005b, Studies on Turkish Hydrophilidae (Coleoptera) I. Genus *Enochrus* Thomson, 1859. *Turkish Journal of Zoology*, 29: 155-158.
- Jia F.-L., Zhao, L. 2008, Two newly recorded species of the genus *Anacaena* (Coleoptera: Hydrophilidae) from China. *Entomotaxonomia* 30(3): 222-224
- Kıyak, S., Canbulat S., Salur, A., Darılmaz, M., 2006 Additional notes on aquatic Coleoptera fauna of Turkey with a new record (Helophoridae: Hydrophilidae). *Munis Entomology and Zoology*, 1(2): 273-278.
- Mardzhanyan, M. A., 1997, Revision of the Hydrophilid Subfamily Spheridiinae (Coleoptera, Hydrophilidae) in the Fauna of Armenia. *Entomological Review*, 77(4): 423-438.
- Mart, A., İncekara, Ü., Erman, O., 2003, A new species of *Laccobius* Erichson, 1837 (Coleoptera: Hydrophilidae: Hydrophilinae) from Turkey. *Aquatic Insects*, 25(1): 75-80.
- Mart, A., 2005, *Bingöl İli Helophoridae, Hydrophilidae ve Hydrochidae (Coleoptera) Türleri Üzerine Sistematik Araştırmalar*. Doktora Tezi, Atatürk Üniversitesi Fen Bilimleri Enstitüsü, Erzurum, 157.
- Mart, A., İncekara, Ü., Erman, O., 2006, Studies on Turkish Hydrophilidae (Coleoptera) II. Genus *Paracymus* Thomson, 1867, *Journal of the Entomological Research Society*, 8(3): 1-4.
- Orchymont, A., 1932, *Palpicornes recueillis en Turquie d'Asie par M. Henri Gadeau De Kerville*, In: Société Entomologique de France. *Livre du Centenaire*, 393-401.
- Schödl, S., 1993, Revision der Gattung *Berosus* Leach, 3. Teil: Die palaarktischen und orientalischen Arten der Untergattung *Berosus* s. str. (Coleoptera: Hydrophilidae). *Koleopterologische Rundschau*, 63: 189-233.
- Schödl, S., 1998, Taxonomic revision of *Enochrus* (Coleoptera: Hydrophilidae) I. The *E. bicolor* species complex. *Entomological Problems*, 29: 111-127.
- Shatrovskiy, A., 1984, Revision of the Genus *Laccobius* Er. of the Soviet Union (Coleoptera, Hydrophilidae). *Entomologicheskoe Obozrenie*, 63(2): 301-325.

- Smetana, A., 1980, Revision of the genus *Hydrochara* Berth. (Coleoptera: Hydrophilidae). *Memoirs of the Entomological Society of Canada*, 111: 1-100.
- Vafaei, R., Ostovan, H., Incekara, U., Pešić V., 2007, Faunistic Study of the Aquatic Beetles (Coleoptera: Polyphaga) of Markazi Province (Central Iran) with New Records. *Archives of Biological Sciences, Belgrade*, 59(3): 239-242.
- Valladares, L. F., 1995, Los Palpicornia acuáticos de la provincia de León. III. Helophoridae, Hydrochidae e Hydrophilidae (Coleoptera). *Boletín de la Asociación española de Entomología*, 19(1-2): 281-308.
- Wooldridge, D. P., 1978, *Paracymus* of the Palearctic Faunal Region (Coleoptera: Hydrophilidae). *Journal of the Kansas Entomological Society*, 51(1): 123-130.

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