



Checklist of Hydrophiloidea of Turkey (Coleoptera: Polyphaga)

Mustafa C. Darilmaz & Ümit İncekara

To cite this article: Mustafa C. Darilmaz & Ümit İncekara (2011) Checklist of Hydrophiloidea of Turkey (Coleoptera: Polyphaga), *Journal of Natural History*, 45:11-12, 685-735, DOI: [10.1080/00222933.2010.535916](https://doi.org/10.1080/00222933.2010.535916)

To link to this article: <https://doi.org/10.1080/00222933.2010.535916>



Published online: 10 Mar 2011.



Submit your article to this journal [↗](#)



Article views: 177



View related articles [↗](#)



Citing articles: 5 [View citing articles](#) [↗](#)

Checklist of Hydrophiloidea of Turkey (Coleoptera: Polyphaga)

Mustafa C. Darilmaz^{a*} and Ümit İncekara^b

^aAksaray University, Faculty of Arts and Science, Department of Biology, 68100, Aksaray, Turkey; ^bAtaturk University, Science Faculty, Biology Department, Erzurum, Turkey

(Received 14 April 2010; final version received 22 October 2010; printed 3 March 2011)

The superfamily Hydrophiloidea of Turkey is catalogued. A total of 23 genera and 161 valid species and subspecies are recorded of which six species (3.7%) are recorded as endemic. Forty-eight species and two subspecies are from the family Helophoridae, three species are from the family Georissidae, seven species are from the family Hydrochidae, two species are from the family Spercheidae and 95 species and four subspecies are from the family Hydrophilidae. Distributions of these species within Turkey are given according to the 81 administrative divisions of the country. The catalogue is based on examination of the primary literature and also includes some records from specimens examined in collections. Taxa are arranged hierarchically under the categories of family, subfamily, tribe, subtribe (where recognized), genus, subgenus (where recognized), species and subspecies (where recognized).

Keywords: Coleoptera; Polyphaga; Hydrophiloidea; water scavenger beetles; checklist; Turkey.

Introduction

Turkey is one of the most important countries in terms of high biological diversity, and has a very high number of ecosystem types, large numbers of animal and plant species, and often with great genetic variation. Along its eastern borders is the Irano-Anatolian hotspot, which is one of the world's 34 "biodiversity hotspots", places recognized by Conservation International for their high endemism and threatened habitat. The biodiversity of this hotspot, and of other parts of Turkey, have given rise to an endemic fauna and flora of significant size. For example, around 1200 of Turkey's 10,000 plant species are endemic to the country. In addition, over 100 Important Bird Areas have been identified in Turkey, largely wetlands providing nesting habitats and food sources for huge numbers of birds passing between Africa and Europe during their seasonal migrations. Although the invertebrate fauna of Turkey is not well studied, it is known to be particularly rich in butterfly species, with at least 240 species, around 20 of them endemic (Conservation International c.2007). Therefore, we might expect this geographical region to have a high diversity and endemism of the hydrophiloids but there has been no specific regional survey of the hydrophiloid fauna of Turkey.

The Hydrophiloidea is a fairly large group of beetles, worldwide in distribution, and contains about 180 genera and more than 3200 species. From the point of view of their biology, hydrophiloids have to be regarded as a very diverse group of

*Corresponding author. Email: mdarilmaz@yahoo.com

beetles. They can be found in a variety of habitats. Adult hydrophiloids are mostly long-lived whereas the larval stage is typically short, often completed within a few weeks. In Hydrophilidae the larvae are predaceous and the adults are saprophagous and feed on living algae. The larvae are mostly carnivorous and feed extra-orally (Lawrence and Newton 1982; Archangelsky et al. 2005; Short and Hebauer 2006). Hydrophilidae was ranked as a superfamily in alternative classifications (Crowson 1981; Hansen 1991, 1997, 1999, 2004) and divided into six families Helophoridae, Hydrochidae, Epimetopidae, Georissidae, Spercheidae and Hydrophilidae. This concept was followed by Archangelsky et al. (2005), with Hydrophilidae divided into nine subfamilies, among them the groups considered as families by Hansen (1991), and also Horelophinae, Horelophopsinae, Hydrophilinae and Sphaeridiinae. The application of this system in this article does not mean that Hansen's concept (1997, 1999) is less useful or not phylogenetically justified.

The knowledge of the diversity of the hydrophiloids in Turkey has been increased considerably since 2000 thanks to the contributions of a number of researchers who have contributed many new species and new records of the Hydrophiloidea from Turkey. The first records known for İçel province are from the second half of the 19th century (Peyron 1858). From then on, most of the published information has been restricted to faunistic records or compiler catalogues. This work attempts primarily to accomplish a faunistic revision of the five families of Coleoptera. Our catalogue, based on virtually all the relevant literature, attempts to summarize the state of knowledge about the hydrophiloid species of Turkey and their distributions.

Species lists are important because they are needed to successfully document and understand the causes and consequences of biotic diversity. The hope is that this checklist will generally facilitate future research in biodiversity, zoogeography, conservation and ecology.

Materials and methods

The present checklist is based on critically revised literature records and examined material. Using published records and original data derived from our research a checklist was generated of the reported hydrophiloid fauna from Turkey. The species referred to in undergraduate theses do not constitute formal publications and are consequently not considered herein.

The definition of Hydrophiloidea used here follows that of Hansen (1991, 1999, 2004) and Archangelsky (1998), excluding Hydraenidae and Histeridae; therefore Hydrophiloidea includes the following families: Helophoridae, Epimetopidae, Georissidae, Hydrochidae, Spercheidae and Hydrophilidae.

Information in the text is given in the following order: Data, i.e. the present name of the taxon; Synonyms, as far as possible including all synonyms proposed; Material studied; Distribution in Turkey, given by various authors in the preceding literature; Notes, any additional information regarded as relevant.

The collections where specimens are located are coded as follows: BMNH, the Natural History Museum, London, UK; CMP, Coll. M. Przewoźny, Ponzáń, Poland; NMPC, Národní Muzeum, Prague, Czech Republic; NMW, Naturhistorisches Museum Wien, Vienna, Austria; ZMHU, Zoological Museum, Helsinki University, Finland.

Order **COLEOPTERA**
Suborder **POLYPHAGA**
Superfamily **HYDROPHILOIDEA**
Family **HELOPHORIDAE**
Genus *Helophorus* Fabricius, 1775
Subgenus *Empleurus* Hope, 1838
Helophorus hirsutiventris Angus, 1984

Distribution in Turkey

İstanbul, Sakarya, Yalova (Angus 1988).

Helophorus nubilus (Fabricius, 1777)

Synonyms

Elophorus nubilus Fabricius, 1777; *Dermestes costatus* Goeze, 1777; *Dermestes striatus* Fourcroy, 1785; *Empleurus meridionalis* Motschulsky, 1860; *Helophorus nubilus* var. *nigro maculata* Dalla Torre, 1877; *Helophorus linearis* Kuwert, 1885; *Empleurus lineellus* Kuwert, 1886; *Helophorus mesopotamiae* Kuwert, 1886

Distribution in Turkey

Adana, Ankara, Bayburt, Bingöl, Bitlis, Erzurum, Giresun, Gümüşhane, Hakkâri, Isparta, İçel, İstanbul, İzmir, Kırklareli, Konya, Muğla, Ordu, Sakarya, Şırnak, Tokat, Zonguldak, Amanos Mountains (Sahlberg 1913; Angus 1988; Mart and Erman 2001; Mart et al. 2010b; Hizarcioglu et al. 2010; Polat et al. 2010).

Subgenus *Eutrichelophorus* Sharp, 1915
Helophorus micans (Faldermann, 1835)

Synonyms

Elophorus opalisans Sturm, 1826; *Elophorus opalisans* Dejean, 1833; *Elophorus micans* Faldermann, 1835; *Elophorus subcostatus* Kolenati, 1846; *Helophorus acutipalpus* Mulsant and Wachanru, 1852; *Empleurus opalisans* Motschulsky, 1860; *Helophorus elegans* Ballion, 1871; *Helophorus subcostatus* Redtenbacher, 1874; *Empleurus tessellatus* Kuwert, 1886; *Helophorus micans* var. *tigrinus* Kuwert, 1890; *Eutrichelophorus baklarensis* Sharp, 1915; *Eutrichelophorus besicanus* Sharp, 1915; *Eutrichelophorus ibericus* Sharp, 1915

Distribution in Turkey

Adana, Aksaray, Bayburt, Hatay, Balıkesir, Burdur, Çanakkale, Çorum, Diyarbakır, Erzurum, Giresun, İçel, İzmir, Kayseri, Samsun, Tokat, Trabzon, Tuz Lake, Van Lake (Peyron 1858; D'Orchymont 1940; Angus 1988; Hansen 1999; Mart and Erman 2001; Darılmaz and Kiyak 2006a; Karaman et al. 2008; İncekara, Darılmaz, et al. 2009;

Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

Subgenus *Helophorus* Fabricius, 1775
Helophorus aquaticus (Linnaeus, 1758)

Synonyms

Silpha aquatica Linnaeus, 1758; *Elophorus frigidus* Graells, 1847; *Helophorus grandis* var. *alpigena* Dalla Torre, 1877; *Helophorus aquaticus* var. *fuscoaeneus* Dalla Torre, 1879; *Helophorus dzieduszyckii* Lomnicki, 1894; *Helophorus pleistocenicus* var. *obsoletus* Lomnicki, 1894; *Meghelophorus aequalis* var. *splendens* Sharp, 1915; *Helophorus aquaticus* ssp. *aequalis natio caucasicola* Zaitzev, 1946

Distribution in Turkey

Adana, Aksaray, Ankara, Bayburt, Bilecik, Bingöl, Bursa, Bolu, Çorum, Diyarbakır, Erzurum, Hakkâri, Giresun, Gümüşhane, Isparta, İçel, İstanbul, Kars, Kastamonu, Kayseri, Kırklareli, Mardin, Muş, Ordu, Sakarya, Samsun, Sinop, Şırnak, Van (Bodemeyer 1900; D'Orchymont 1940; Angus 1988; Mart and Erman 2001; Darilmaz and Kiyak 2006a; İncekara, Darilmaz, et al. 2009; Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

Helophorus grandis (Illiger, 1798)

Synonyms

Elophorus grandis Illiger, 1798; *Hydrophilus stagnalis* Marsham, 1802

Distribution in Turkey

Antalya, Tokat (Kiyak et al. 2006; Polat et al. 2010).

Helophorus liguricus Angus, 1970

Distribution in Turkey

Ankara, Tokat (Angus 1988).

Helophorus syriacus Kuwert, 1885

Synonyms

Helophorus aquaticus var. *syriacus* Kuwert, 1885

Material studied

Turkey: Balıkesir, 6 km west of Balya, 39°46' N, 27°31' E, 290 m above sea level (a.s.l), 20 May 2005, 2 exx., leg. R. Królik (CMP).

Distribution in Turkey

Adana, Çorum, Denizli, Diyarbakır, Gaziantep, Hatay, İzmir, Mardin, Samsun, Tokat, Amanos Mountains (Angus 1988, 1992; Kiyak et al. 2006; Topkara and Balık, 2008; İncekara, Darılmaz, et al. 2009; Polat et al. 2010; Darılmaz, Salur, et al. 2010).

Subgenus *Orphelophorus* d'Orchymont, 1927
Helophorus turca İncekara, 2008

Distribution in Turkey

Giresun (İncekara, 2008).

Notes

This species is endemic to Turkey.

Subgenus *Rhopalohelophorus* Kuwert, 1886
Helophorus abeillei Guillebeau, 1896

Distribution in Turkey

Adana, Antalya, Bayburt, Erzurum, Bitlis, Gümüşhane, Hakkâri, Van (Angus 1988; İncekara et al. 2005b; Mart et al. 2010b).

Helophorus armeniacus Ganglbauer, 1901

Distribution in Turkey

Artvin (Ganglbauer 1901; Angus 1992; Mart and Erman 2001; İncekara et al. 2005b).

Helophorus arvernicus Mulsant, 1846

Distribution in Turkey

Çorum, Erzurum, Erzincan, Gümüşhane, Kayseri, Samsun, Tokat (Mart and Erman 2001; İncekara et al. 2005b, 2010; İncekara, Darılmaz, et al. 2009; Mart et al. 2010b; Polat et al. 2010; Darılmaz, Salur, et al. 2010).

Helophorus brevipalpis brevipalpis Bedel, 1881

Synonyms

Helophorus creticus Kiesenwetter, 1858; *Helophorus griseus* var. *mixtus* Rey, 1885; *Helophorus griseus* var. *insignis* Rey, 1885; *Helophorus griseus* var. *bulbipalpis* Kuwert, 1890; *Helophorus granularis* v. *rufipennis* Hubenthal, 1911

Material studied

Turkey: Balıkesir, 6 km west of Balya, 39°46' N, 27°31' E, 290 m a.s.l, 20 May 2005, 1 ex., leg. R. Królik (CMP).

Distribution in Turkey

Aksaray, Ankara, Bayburt, Antalya, Artvin, Bursa, Çorum, Erzurum, Erzincan, Giresun, Gümüşhane İstanbul, İzmir, Kahramanmaraş, Kayseri, Kırklareli, Muğla, Niğde, Ordu, Samsun, Sinop, Van, Trabzon, Tuz Lake (Sahlberg 1913; Mart and Erman 2001; İncekara et al. 2005b, 2010; Darılmaz and Kiyak 2006a; Karaman et al. 2008; İncekara, Darılmaz, et al. 2009; Hizarcioğlu et al. 2010; Mart et al. 2010b; Polat et al. 2010; Darılmaz, Salur, et al. 2010).

***Helophorus brevipalpis levantinus* Angus, 1988**

Distribution in Turkey

Diyarbakır (Angus 1988, 1992).

***Helophorus croaticus* Kuwert, 1886**

Synonyms

Helophorus strigifrons var. *croaticus* Kuwert, 1886; *Helophorus moscoviticus* A. Semenov, 1899; *Helophorus fausti* Sharp, 1916

Distribution in Turkey

Erzurum, Erzincan, Kayseri, Tokat (Mart and Erman 2001; İncekara et al. 2004a, 2010; Polat et al. 2010).

***Helophorus daedalus* d'Orchymont, 1932**

Distribution in Turkey

Ankara, Bayburt, Çorum, Diyarbakır, Erzincan, Erzurum, Giresun, Gümüşhane, Hakkâri, İzmir, Kayseri, Ordu, Samsun, Şırnak, Tokat, Van (D'Orchymont 1932; Angus 1988; Mart and Erman 2001; İncekara et al. 2005b, 2010; İncekara, Darılmaz, et al. 2009; Hizarcioğlu et al. 2010; Polat et al. 2010; Mart et al. 2010b; Darılmaz, Salur, et al. 2010).

Material studied

1 ex. İzmir Province, Coll. Sahlberg (ZMHU).

Notes

The species was recorded from İzmir Province under the name of *Helophorus dalmatinus* Ganglbauer, 1901 by Sahlberg (1913). We re-examined the specimen and found that it is *H. daedalus* not *H. dalmatinus*.

***Helophorus difficilis* Angus, 1988**

Distribution in Turkey

Erzurum, Erzincan, Hatay, Kilis, Osmaniye, Amanos Mountains (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2005b).

Helophorus discrepans Rey, 1885

Synonym

Helophorus iteratus Sharp, 1916

Distribution in Turkey

Artvin, Ankara, Antalya, Bayburt, Bolu, Çorum, Erzurum, Erzincan, Giresun, Gümüşhane, Hakkâri, Kayseri, Ordu, Tokat, Trabzon, Van, Yozgat (Angus 1988; Mart and Erman 2001; İncekara et al. 2004a, 2010; Kiyak et al. 2006; İncekara 2009; Hizarcioglu et al. 2010; Polat et al. 2010; Mart et al. 2010b; Darilmaz, Salur, et al. 2010).

Helophorus dorsalis (Marsham, 1802)

Synonyms

Hydrophilus dorsalis Marsham, 1802; *Helophorus quadrisignatus* Bach, 1851; *Elophorus demoulini* Mathieu, 1858

Distribution in Turkey

İstanbul, İzmir (Sahlberg 1913; Angus 1988; Mart and Erman 2001; İncekara et al. 2004a).

Helophorus erzurumicus İncekara, Mart and Erman, 2005

Distribution in Turkey

Erzurum (İncekara et al. 2005c; Short and Hebauer 2006).

Notes

This species is endemic to Turkey.

Helophorus faustianus (Sharp, 1916)

Synonym

Atracthelophorus faustianus Sharp, 1916

Distribution in Turkey

Artvin, Bayburt, Bursa, Giresun, Ordu, Tokat, Trabzon (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2005b; Polat et al. 2010; Mart et al. 2010b).

Helophorus flavipes Fabricius, 1792

Synonyms

Elophorus flavipes Fabricius, 1792; *Helophorus viridicollis* Stephens, 1828; *Helophorus granularis* var. *arcuatus* Mulsant, 1844; *Helophorus planicollis* Thomson, 1870;

Helophorus griseus var. *sphagnicola* Hardy, 1871; *Helophorus obscurus* var. *monticola* Rey, 1885; *Helophorus balticus* Kuwert, 1886; *Helophorus obscurus* var. *shetlandicus* Kuwert, 1890; *Helophorus phalleterus* Sharp, 1916

Material studied

Turkey: Balıkesir, 6 km west of Balya, 39°46' N, 27°31' E, 290 m a.s.l, 20 May 2005, 4 exx., leg. R. Królik (CMP).

Distribution in Turkey

Çorum, Erzincan, Gümüşhane, Kars, Kayseri, Tokat (Angus 1988, 1992; İncekara et al. 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

***Helophorus frater* d'Orchymont, 1926**

Synonym

Helophorus hingstoni d'Orchymont, 1926

Distribution in Turkey

Bayburt, Erzincan, Erzurum, Giresun, Gümüşhane, İzmir, Kayseri, Samsun, Tokat, Van (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2004a, 2010; Topkara and Balık, 2008; Mart et al. 2010b; Polat et al. 2010).

***Helophorus granularis* (Linnaeus, 1760)**

Synonyms

Buprestis granularis Linnaeus, 1760; *Elophorus pygmaeus* Fabricius, 1792; *Helophorus brevicollis* Thomson, 1868; *Helophorus granularis* var. *latus* Kuwert, 1886; *Helophorus granularis* var. *opacus* Kuwert, 1886; *Helophorus minimus* Kuwert, 1887; *Helophorus pusillus* Motschulsky, 1860; *Helophorus ytenensis* Sharp, 1914

Distribution in Turkey

Ankara, Bilecik, İcel (Peyron 1858; Bodemeyer 1900; D'Orchymont 1932).

***Helophorus griseus* Herbst, 1793**

Synonyms

Elophorus griseus Herbst, 1793; *Hydrophilus affinis* Marsham, 1802; *Helophorus griseus* var. *lateralis* Dalla Torre, 1877

Distribution in Turkey

Aydın, Bolu, Bursa, Çorum, Edirne, Erzincan, Erzurum, Giresun, Gümüşhane, İstanbul, Kayseri, Ordu, Samsun, Tokat (Angus 1988; Mart and Erman 2001; İncekara et al. 2004a, 2010; Kiyak et al. 2006; İncekara, Darilmaz, et al. 2009; Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur et al. 2010).

Helophorus guttulus Motschulsky, 1860

Synonyms

Helophorus insularis var. *caucasicus* Kuwert, 1885; *Atracthelophorus dormitans* Sharp, 1916

Distribution in Turkey

Rize (Angus 1992; Mart and Erman 2001; İncekara et al. 2005b).

Helophorus helenae Angus, 1998

Distribution in Turkey

Erzincan, Gümüşhane, Kayseri (Angus 1998; İncekara et al. 2004a).

Helophorus hilaris Sharp, 1916

Synonym

Helophorus minutus ssp. *eichleri* d'Orchymont, 1926

Distribution in Turkey

Bayburt, Diyarbakır, Erzincan, Erzurum, Giresun, Gümüşhane, Hakkâri, Kayseri, Mardin, Muş, Ordu, Samsun, Tokat, Şırnak, Van (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2004a; Mart et al. 2010b; Polat et al. 2010).

Helophorus illustris Sharp, 1916

Synonyms

Helophorus dorsalis Mulsant, 1844; *Helophorus elongatus* d'Orchymont, 1932

Distribution in Turkey

İçel, İzmir (Angus 1988, 1992).

Helophorus kerimi Ganglbauer, 1901

Distribution in Turkey

Erzincan (İncekara et al. 2004a).

Helophorus kervillei d'Orchymont, 1932

Synonym

Helophorus pallidipennis var. *kervillei* d'Orchymont, 1932

Distribution in Turkey

Ankara (D'Orchymont 1932).

***Helophorus kirgisticus* Kniz, 1914**

Synonym

Helophorus pallidus var. *kirgisticus* Kniz, 1914

Distribution in Turkey

Erzurum (Mart and Erman 2001; İncekara et al. 2004a).

***Helophorus lapponicus* Thomson, 1853**

Synonyms

Helophorus suturalis Motschulsky, 1860; *Helophorus lapponicus* var. *jeniseiensis* Kuwert, 1886; *Helophorus jakowlewi* A. Semenov, 1900; *Helophorus celatus* Sharp, 1916; *Helophorus satunini* Zaitzev, 1946

Distribution in Turkey

Ardahan, Bayburt, Erzincan, Erzurum, Gümüşhane, Kars, Ordu, Samsun, Tokat, Trabzon (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2004a; Mart et al. 2010b; Polat et al. 2010).

***Helophorus dixonii* Angus, 1987**

Distribution in Turkey

Erzincan (İncekara et al. 2005b).

***Helophorus lewisi* Angus, 1985**

Distribution in Turkey

Bayburt, Çorum, Diyarbakır, Erzincan, Giresun, Gümüşhane, Hatay, Kayseri, Ordu, Samsun, Şırnak, Tokat (Angus 1988; İncekara et al. 2005a, 2010; Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

***Helophorus longitarsis* Wollaston, 1864**

Synonyms

Helophorus erichsonii Bach, 1866; *Helophorus punientanus* L. W. Schaufuss, 1882; *Helophorus semifulgens* Rey, 1885; *Helophorus punicus* Sharp, 1916; *Helophorus diffinis* Sharp, 1916

Material studied

Turkey: Balıkesir: 6 km west of Balya, 39°46' N, 27°31' E, 290 m a.s.l, 20 May 2005, 5 exx., leg. R. Królik (CMP).

Distribution in Turkey

Aksaray, Ankara, Aydın, Burdur, Erzincan, Gümüşhane, Kayseri, Ordu (D'Orchymont 1932; Angus 1988; Mart and Erman 2001; İncekara et al. 2004a, 2010; Darilmaz and Kiyak 2006a; Kiyak et al. 2006; Mart et al. 2010b).

***Helophorus maculatus* Motschulsky, 1860**

Distribution in Turkey

Erzincan, Van (Angus 1988; Mart and Erman 2001; İncekara et al. 2005b).

***Helophorus minutus* Fabricius, 1775**

Synonym

Elophorus minutus Fabricius, 1775

Distribution in Turkey

İstanbul, Kayseri, Samsun (Angus 1988; Mart and Erman 2001; İncekara et al. 2004a, 2010; İncekara, Darilmaz, et al. 2009; Polat et al. 2010).

***Helophorus montenegrinus* Kuwert, 1885**

Synonyms

Helophorus griseus var. *montenegrinus* Kuwert, 1885; *Helophorus guttulus* d'Orchymont, 1927

Material studied

Turkey: Balıkesir, 6 km west of Balya, 39°46' N, 27°31' E, 290 m a.s.l, 20 May 2005, 1 ex., leg. R. Królik (CMP).

Distribution in Turkey

Ankara, Bolu, Bursa, Giresun, İçel, İstanbul, Kastamonu, Kırklareli, Ordu, Samsun, Sinop, Tokat, Trabzon (Angus 1988, 1992; Mart et al. 2010b; Polat et al. 2010).

***Helophorus nanus* Sturm, 1836**

Synonym

Elophorus nanus Sturm, 1836

Distribution in Turkey

Bolu, Erzincan, Gümüşhane, Hakkâri, Kayseri, Ordu, Tokat (Angus 1988; İncekara et al. 2004a, 2010; Mart et al. 2010b; Polat et al. 2010).

***Helophorus obscurus* Mulsant, 1844**

Synonyms

Helophorus granularis var. *obscurus* Mulsant, 1844; *Elophorus bipunctatus* Mulsant, 1844; *Helophorus aeneipennis* Thomson, 1853; *Helophorus obscurus* var. *simplex* Rey, 1885; *Helophorus obscurus* var. *subcrenatus* Rey, 1885; *Helophorus obscurus* var. *apicatus* Rey, 1885; *Helophorus obscurus* var. *krueperi* Kuwert, 1886; *Helophorus walkeri* Sharp, 1916

Distribution in Turkey

Artvin, Bolu, Bursa, Çorum, Erzincan, Erzurum, Giresun, İstanbul, İzmir, Kayseri, Kırklareli, Ordu, Samsun, Sinop, Tokat, Trabzon (Angus 1988; İncekara et al. 2004a, 2010; Karaman et al. 2008; Topkara and Balık, 2008; İncekara, Darilmaz, et al. 2009; Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

***Helophorus pallidipennis* Mulsant and Wachanru, 1852**

Synonyms

Helophorus reitteri Kuwert, 1885; *Helophorus vinctus* Sharp, 1916; *Helophorus pallidipennis* var. *kervillei* d'Orchymont, 1932

Distribution in Turkey

Adana, Ankara, Çanakkale, Diyarbakır, Erzincan, Erzurum, İçel, İzmir, Karaman, Kayseri, Şırnak (Peyron 1858; Sahlberg 1913; D'Orchymont 1932, 1940; Hansen 1999; Angus 1988; İncekara et al. 2004a, 2010).

***Helophorus paraminutus* Angus, 1986**

Distribution in Turkey

Antalya, Erzincan (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2004a).

***Helophorus paramontanus* Angus, 1985**

Distribution in Turkey

Erzincan (İncekara et al. 2004a).

***Helophorus ponticus* Angus, 1988**

Distribution in Turkey

Artvin, Bayburt, Bursa, Erzincan, Erzurum, Gümüşhane, Kars, Rize, Trabzon (Angus 1988; Mart and Erman 2001; Mart et al. 2010b; İncekara et al. 2005b, 2005c).

Helophorus similis Kuwert, 1887

Synonyms

Helophorus elongatus Motschulsky, 1860; *Helophorus motschulskyi* Angus, 1970

Distribution in Turkey

Erzincan, Erzurum, Kayseri (İncekara et al. 2002, 2004a, 2010).

Helophorus strigifrons Thomson, 1868

Synonym

Helophorus championi Sharp, 1915

Distribution in Turkey

Çorum, Kayseri, Samsun, Sivas, Tokat (İncekara, Darilmaz, et al. 2009; Polat et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

Helophorus subcarinatus Angus, 1985

Distribution in Turkey

Konya (Angus 1992).

Helophorus zagrosicus Angus, 1988

Distribution in Turkey

Hakkâri (Angus 1988, 1992; Mart and Erman 2001; İncekara et al. 2005b).

Subgenus ***Transithelophorus*** Angus, 1970

Helophorus terminassianae Angus, 1984

Distribution in Turkey

Çorum, Erzurum, İzmir, Konya, Samsun, Tokat (Angus 1988, 1992; Mart and Erman 2001; İncekara, Darilmaz, et al. 2009; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

Subgenus ***Trichohelophorus*** Kuwert, 1886

Helophorus oscillator Sharp, 1915

Distribution in Turkey

Tokat (Polat et al. 2010).

Family **GEORISSIDAE**

Genus ***Georissus*** Latreille, 1809

Subgenus ***Neogeorissus*** Sato, 1972

Georissus caelatus Erichson, 1847

Distribution in Turkey

İzmir (Sahlberg 1913).

Georissus costatus Laporte, 1840

Synonyms

Georissus latreillei Dufour, 1843; *Georissus carinatus* Rosenhauer, 1856; *Georissus pimelioides* Fairmaire, 1859; *Georissus cupreus* Reiche, 1879

Distribution in Turkey

İçel (Sahlberg 1913).

Georissus laesicollis Germar, 1832

Synonym

Georissus canaliculatus Motschulsky, 1843

Distribution in Turkey

İzmir, Trabzon (Sahlberg 1913; Fikáček and Falamarzi 2010).

Family **HYDROCHIDAE**

Genus ***Hydrochus*** Leach, 1817

Hydrochus brevis (Herbst, 1793)

Synonym

Elophorus brevis Herbst, 1793

Distribution in Turkey

Artvin, Erzurum, Samsun (İncekara et al. 2004b, 2010; Darilmaz and Kiyak 2008; Polat et al. 2010).

Hydrochus elongatus (Schaller, 1783)

Synonyms

Silpha elongata Schaller, 1783; *Elophorus elongatus* Fabricius, 1792; *Hydrophilus cincinnatioides* Marsham, 1802; *Hydrochus crenulatus* Motschulsky, 1860; *Hydrochus sibiricus* Motschulsky, 1860

Distribution in Turkey

Afyon (Darilmaz and Kiyak 2008).

Hydrochus flavipennis Kuster, 1852

Synonyms

Elophorus minutus Rossi, 1794; *Hydrochus foveostriatus* Fairmaire, 1859; *Hydrochus obtusicollis* Fairmaire, 1877; *Hydrochus flavipennis* var. *fuscipennis* Kuwert, 1887; *Hydrochus flavipennis* var. *filiformis* Kuwert, 1887; *Hydrochus testaceipennis* Kuwert, 1887

Distribution in Turkey

Bingöl, Erzurum, Kütahya, Tokat (Darilmaz and Kiyak 2008; Polat et al. 2010).

Hydrochus farsicus Hidalgo-Galiana, Jäch and Ribera, 2010

Distribution in Turkey

Bingöl (Mart et al. 2009a).

Notes

Some *Hydrochus farsicus* samples were recorded by Mart et al. (2009a) as *Hydrochus ibericus* because of similarities between these species. After *Hydrochus farsicus* was identified as a new species by Hidalgo-Galiana et al. (2010) from Iran, we rechecked the samples and found out that they most closely resembled the *Hydrochus farsicus* (especially the aedeagus). An illustration of the aedeagus of Turkish *H. farsicus* is shown for further comparison (Figure 1).

Hydrochus ignicollis Motschulsky, 1860

Distribution in Turkey

Artvin (İncekara et al. 2004b; Darilmaz and Kiyak 2008; İncekara 2009).

Hydrochus megaphallus Berge Henegouwen, 1988

Distribution in Turkey

İstanbul (Darilmaz and Kiyak 2008).

Hydrochus nodulifer Reitter, 1897

Distribution in Turkey

Bayburt, Gümüşhane, Ordu (Mart et al. 2009a).

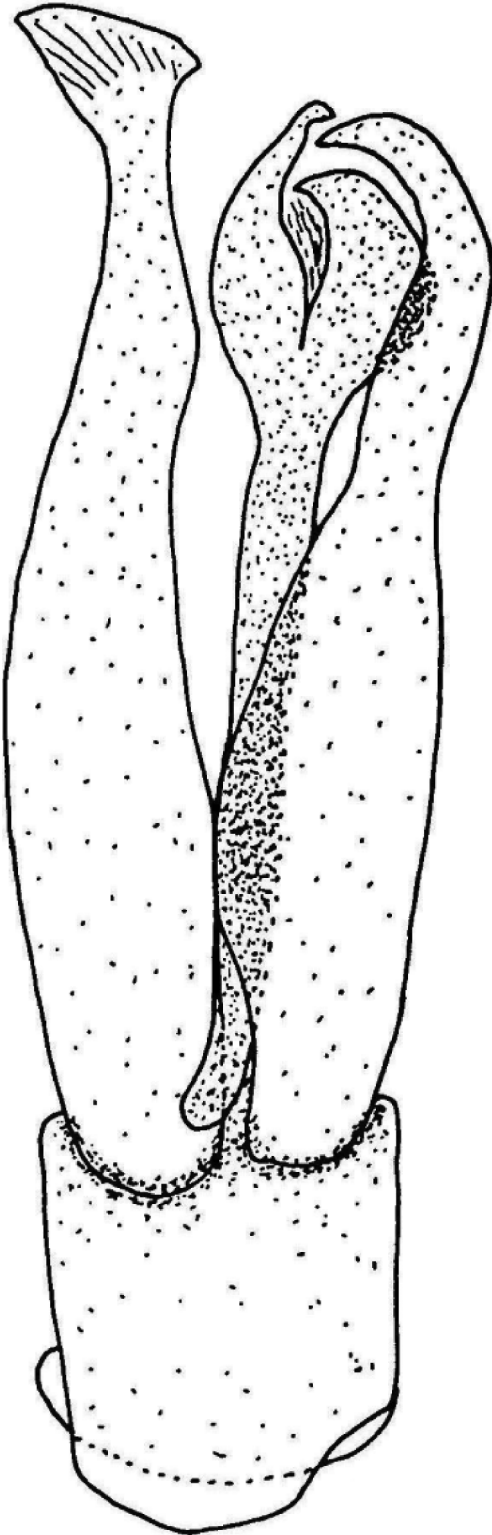


Figure 1. Aedeagus of *Hydrochus farsicus* from Turkey.

Family **SPERCHEIDAE**
Genus *Spercheus* Kugelann, 1798
Spercheus emarginatus (Schaller, 1783)

Synonyms

Dytiscus emarginatus Schaller, 1783; *Hydrophilus sordidus* Marsham, 1802; *Hydrophilus verrucosus* Marsham, 1802; *Spercheus luridus* Mathieu, 1858; *Spercheus texanus* Spangler, 1961

Distribution in Turkey

Afyon, Denizli, Edirne (Darilmaz and Kiyak 2011).

Spercheus senegalensis Laporte, 1832

Synonyms

Spercheus algoensis Péringuey, 1892; *Spercheus distinguendus* Fairmaire, 1893; *Spercheus sulcatus* Gory, 1834

Distribution in Turkey

İçel, Van Lake (Hebauer, 1997; Darilmaz and Kiyak 2011).

Family **HYDROPHILIDAE**
Subfamily **HYDROPHILINAE** Latreille, 1802
Tribe **Anacaeni** Hansen, 1991
Genus *Anacaena* Thomson, 1859
Anacaena globulus (Paykull, 1798)

Synonyms

Hydrophilus globulus Paykull, 1798; *Coelostoma allabroix* Laporte, 1840; *Hydrobius glabricollis* L. W. Schaufuss, 1869; *Anacaena globula* var. *nitidior* Kuwert, 1890; *Anacaena globulus* ssp. *elliptica* Sainte-Claire Deville, 1914

Distribution in Turkey

Balıkesir, İçel, İzmir, İzmit (Peyron 1858; D'Orchymont 1942; Chiesa 1964).

Anacaena limbata (Fabricius, 1792)

Synonyms

Sphaeridium limbatum Fabricius, 1792; *Hydrophilus foveolata* Haworth, 1807; *Hydrobius ochracea* Stephens, 1829; *Anacaena carinata* Thomson, 1870

Distribution in Turkey

Ankara, Bayburt, Çorum, Giresun, Gümüşhane, Ordu, Trabzon, Yozgat (D'Orchymont 1932; Van Berge Henegouwen 1986; Karaman et al. 2008; Mart 2009; Hizarcioglu et al. 2010; Darilmaz, Salur, et al. 2010).

Anacaena lutescens (Stephens, 1829)

Synonyms

Hydrobius lutescens Stephens, 1829; *Hydrobius lutescens* var. *sordens* Stephens, 1829; *Laccobius marshami* Stephens, 1839; *Hydrobius nitida* Heer, 1841; *Hydrobius ovata* Reiche, 1861; *Hydrobius praecox* Dufour, 1843; *Brachypalpus infuscata* Motschulsky, 1859; *Anacaena variabilis* Sharp, 1870; *Hydrobius castanea* J. L. LeConte, 1878; *Hydrobius feminalis* J. L. LeConte, 1878; *Brachypalpus ambigua* Rey, 1885; *Anacaena immatura* Abeille de Perrin, 1901

Distribution in Turkey

Artvin, Balıkesir, Bayburt, Bilecik, Bursa, Çanakkale, Giresun, Gümüşhane, Kocaeli, Ordu, Trabzon (İncekara et al. 2004c; Mart 2009; Ertorun and Tanatmış 2009).

Anacaena rufipes (Guillebeau, 1896)

Synonyms

Paracymus rufipes Guillebeau, 1896; *Anacaena globulus glabricollis* d'Orchymont 1940; *Anacaena jordanensis* Burmeister, 1985

Distribution in Turkey

Bayburt, Giresun, Gümüşhane, İstanbul, Ordu, Samsun, Tokat, Trabzon (Van Berge Henegouwen 1986; Mart 2009; Polat et al. 2010).

Genus ***Paracymus*** Thomson, 1867

Paracymus aeneus (Germar, 1824)

Synonyms

Hydrophilus aeneus Germar, 1824; *Hydrobius punctulatus* Sturm, 1836; *Hydrobius salinus* Bielz, 1851; *Laccobius cupreus* Dalla Torre, 1877

Distribution in Turkey

Bayburt, Kayseri, Samsun (Wooldridge 1978; Mart 2009; İncekara, Darilmaz, et al. 2009; İncekara et al. 2010).

Paracymus chalceolus (Solsky, 1874)

Synonyms

Hydrobius chalceolus Solsky, 1874; *Paracymus caucasicus* Kuwert, 1890

Distribution in Turkey

Bayburt, Bingöl (Wooldridge 1978; Mart, İncekara, Erman 2006; Mart 2009).

Paracymus relaxus Rey, 1884

Synonym

Paracymus schneideri Kuwert, 1888

Distribution in Turkey

Çorum, Denizli, Kayseri, Samsun (Darilmaz and Kiyak 2009a; Polat et al. 2010; İncekara et al. 2010; Darilmaz, Salur, et al. 2010).

Paracymus scutellaris (Rosenhauer, 1856)

Synonyms

Hydrobius scutellaris Rosenhauer, 1856; *Anacaena nigroaeneus* J. Sahlberg, 1875; *Paracymorphus globuloides* Kuwert, 1888

Distribution in Turkey

Bayburt, Bingöl, Gümüşhane, İçel, Muğla, Ordu, Sakarya, Samsun (Hebauer and Ryndevich 2005; Mart, İncekara, Erman 2006; Mart 2009; Ertorun and Tanatmış 2009; Polat et al. 2010).

Tribe **Berosini** Mulsant, 1844

Genus ***Berosus*** Leach, 1817

Subgenus ***Berosus*** Leach, 1817

Berosus affinis Brullé, 1835

Synonyms

Berosus murinus Küster, 1844; *Berosus suturalis* Küster, 1844; *Berosus salmuriensis* Ackermann, 1853; *Berosus suturalis* var. *pelagicus* Kuwert, 1888; *Berosus suturalis* var. *sardous* Kuwert, 1888; *Berosus affinis* var. *pelagicus* Kuwert, 1888; *Berosus affinis* var. *sardous* Kuwert, 1888; *Berosus affinis* var. *algericus* Kuwert, 1890

Distribution in Turkey

Adana, Antalya, Burdur, Bursa, Çanakkale, Hatay, İçel, İstanbul, İzmir, Kastamonu, Kırklareli, Kocaeli, Konya, Manişa, Muğla, Ordu, Sakarya, Samsun (Peyron 1858; D'Orchymont 1940; Schödl 1993; İncekara, Darilmaz, et al. 2009).

Berosus byzantinus Ganglbauer, 1904

Synonym

Berosus signaticollis byzantinus Ganglbauer, 1904

Distribution in Turkey

Aydın, İstanbul, İzmir (Ganglbauer 1904; Schödl 1993; İncekara, Mart, Erman 2003).

Berosus dispar Reiche and Saulcy, 1856

Distribution in Turkey

Adana, Ankara, İçel (Peyron 1858; D'Orchymont 1932; Schödl 1993; İncekara, Mart, Erman 2003).

Berosus hispanicus Küster, 1847

Synonyms

Berosus affinis var. *lineicollis* A. Costa, 1884; *Berosus affinis* var. *subciliaris* Rey, 1885

Distribution in Turkey

Çanakkale (Schödl 1993; İncekara, Mart, Erman 2003).

Berosus luridus (Linnaeus, 1761)

Synonyms

Dytiscus luridus Linnaeus, 1761; *Hydrophilus fuscus* DeGeer, 1774; *Hydrophilus chalcaspis* Eschscholtz, 1818; *Berosus globosus* Curtis, 1828; *Berosus sculptus* Solsky, 1873; *Berosus lapponicus* J. Sahlberg, 1894

Distribution in Turkey

Artvin, Bayburt, Hakkâri, Kars, Kastamonu, Ordu, Samsun, Tokat (Schödl 1993; İncekara, Mart, Erman 2003; Mart 2009; İncekara, Darilmaz, et al. 2009; Polat et al. 2010).

Berosus signaticollis (Charpentier, 1825)

Synonyms

Hydrophilus signaticollis Charpentier, 1825; *Berosus aericeps* Curtis, 1828; *Berosus corsicus* Desbrochers, 1869; *Berosus krueperi* Kuwert, 1890; *Berosus signaticollis* var. *aequepunctatus* Théry, 1933

Distribution in Turkey

Amasya, Ankara, Antalya, Aydın, Bayburt, İzmir, Kars, Kastamonu, Kayseri, Ordu, Samsun, Tokat (D'Orchymont 1932; Schödl 1993; İncekara, Mart, Erman 2003; İncekara, Darilmaz, et al. 2009; Mart 2009; Polat et al. 2010; İncekara et al. 2010).

Subgenus ***Enoplurus*** Hope, 1838

Berosus hispina Reiche and Saulcy, 1856

Synonyms

Berosus aethiops Kuwert, 1888; *Berosus numidicus* Kuwert, 1888

Distribution in Turkey

Adana, Afyon, Ankara, Kayseri, Hatay, Kayseri (D'Orchymont 1943; Özesmi and Önder 1988; Schödl 1991; İncekara, Mart, Erman 2003; İncekara et al. 2010).

***Berosus frontifoveatus* Kuwert, 1888**

Distribution in Turkey

Ankara, Balıkesir, Bursa, Elazığ, Isparta, İçel, Kars (Schödl 1991; İncekara, Mart, Erman 2003; Hizarcioglu et al. 2010).

***Berosus fulvus* Kuwert, 1888**

Distribution in Turkey

Burdur (Schödl 1991; İncekara, Mart, Erman 2003).

***Berosus jaechi* Schödl, 1991**

Distribution in Turkey

Adana, İzmir (Schödl 1991; İncekara, Mart, Erman 2003).

***Berosus spinosus* (Steven, 1808)**

Synonyms

Hydrophilus spinosus Steven, 1808; *Berosus apicalis* Samouelle, 1832; *Berosus lenkoranus* Kuwert, 1888; *Berosus samarkanti* Kuwert, 1888; *Berosus schusteri* Kuwert, 1888

Distribution in Turkey

Adana, Afyon, Aksaray, Ankara, Antalya, Aydın, Çorum, Denizli, Edirne, Elazığ, İçel, İzmir, Kars, Kayseri, Kırşehir, Malatya, Samsun, Van (Peyron 1858; Balfour-Browne 1938; Schödl 1991; İncekara, Mart, Erman 2003; Darilmaz and Kiyak 2006a; Kiyak et al. 2006; İncekara, Darilmaz, et al. 2009; Hizarcioglu et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

Tribe **Chaetarthriini** Bedel, 1881

Genus ***Chaetarthria*** Stephens, 1835

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

Synonyms

Hydrophilus seminulum Herbst, 1797; *Agathidium carbonaria* Sturm, 1807; *Hydrophilus hemisphaericus* Dejean, 1821; *Chaetarthria picea* Hochhuth, 1871; *Chaetarthria seminulum sithonica* Hebauer, 1993

Distribution in Turkey

Aydın, Balıkesir, Bayburt, Bilecik, Bursa, Çanakkale, Erzincan, Erzurum, Giresun, Gümüşhane, İstanbul, İzmir, Muğla, Ordu, Rize, Sakarya, Samsun, Tokat, Trabzon

(Chiesa 1964; Hebauer 1993; Gentili and Whitehead 2000; Vorst and Cuppen 2003; İncekara, Mart, Erman 2003; Mart 2009; Ertorun and Tanatmış 2009; Polat et al. 2010).

Tribe **Hydrophilini** Latreille, 1802
Subtribe **Acidocerina** Zaitzev, 1908
Genus **Chasmogenus** Sharp, 1882
Chasmogenus livornicus (Kuwert, 1890)

Synonym

Helochares livornicus Kuwert, 1890

Distribution in Turkey

Denizli, Ordu (Darilmaz and Kiyak 2009a; Mart et al. 2009b).

Notes

Chasmogenus orbus (Watanabe, 1987) was recorded from Ordu province by Mart et al. (2009b). We rechecked the samples and find out that they most closely resembled *C. livornicus*.

Genus **Cymbiodyta** Bedel, 1881
Cymbiodyta marginella (Fabricius, 1792)

Synonyms

Hydrophilus marginellus Fabricius, 1792; *Hydrophilus margipallens* Marsham, 1802; *Hydrophilus marginatus* Duftschmid, 1805; *Philhydrus ovalis* Thomson, 1853; *Philydrus carbonarius* Kuwert, 1892; *Cymbiodyta marginella* v. *testacea* Speiser, 1893

Distribution in Turkey

Kayseri, Samsun (Mart et al. 2009b; İncekara et al. 2010).

Genus **Enochrus** Thomson, 1859
Subgenus **Enochrus** Thomson, 1859
Enochrus melanocephalus (Olivier, 1792)

Synonyms

Hydrophilus melanocephalus Olivier, 1792; *Hydrophilus bicolor* Gyllenhal, 1808; *Hydrobius atricapillus* Stephens, 1829; *Hydrophilus melanocephalus* var. *striatus* Cristofori and Jan, 1832; *Enochrus bicolor* var. *italus* Kuwert, 1890

Distribution in Turkey

Aksaray, Erzincan, İçel, Trabzon (Peyron 1858; İncekara et al. 2005d; Darilmaz and Kiyak 2006a, 2009b; Mart 2009).

Subgenus *Lumetus* Zaitzev, 1908

Enochrus ater (Kuwert, 1888)

Synonym

Philydrus ater Kuwert, 1888

Distribution in Turkey

Antalya (Hebauer and Ryndevich 2005; Darilmaz and Kiyak 2009b).

Enochrus bicolor (Fabricius, 1792)

Synonyms

Dytiscus chrysomelinus Fabricius, 1787; *Hydrophilus bicolor* Fabricius, 1792; *Hydrophilus fulvus* Marsham, 1802; *Hydrophilus torquatus* Marsham, 1802; *Hydrophilus grisescens* Gyllenhal, 1827; *Hydrobius grisescens* Dejean, 1833; *Hydrobius ferrugineus* Küster, 1849; *Philhydrus maritimus* Thomson, 1853; *Philydrus grisescens* var. *labiatus* Rey, 1885; *Philydrus ferrugineus* var. *rubicundus* Kuwert, 1888; *Philydrus sternospina* Kuwert, 1888; *Philydrus atricornis* Kuwert, 1888; *Philydrus unguidebilis* Kuwert, 1888; *Philydrus sahlbergi* Kuwert, 1888; *Philydrus flavus* Kuwert, 1890; *Philhydrus levanderi* J. Sahlberg, 1892; *Philhydrus mediterraneus* J. Sahlberg, 1900; *Enochrus yukinoae* Matsui, 1994

Distribution in Turkey

Aksaray, Ankara, Antalya, Denizli, Edirne, Erzincan, İçel, İzmir, Kars, Kayseri, Kırşehir, Ordu, Van (Sahlberg 1913; Schödl 1998; İncekara, Mart, Erman 2003; Darilmaz and Kiyak 2006a, 2009b; Kiyak et al. 2006; Mart 2009; Hizarcioglu et al. 2010; İncekara et al. 2010).

Enochrus fuscipennis (Thomson, 1884)

Synonyms

Philydrus nigricans Schwarz, 1872; *Philydrus marginatus* Sahlberg, 1875; *Philydrus fuscipennis* Thomson, 1884; *Philydrus sahlbergi* Fauvel, 1887; *Philydrus berolinensis* Kuwert, 1888; *Philydrus caspius* Kuwert, 1888; *Philydrus melanocephalus* var. *fasciatus* Kuwert, 1888; *Philydrus nigricans* var. *similis* Kuwert, 1888

Distribution in Turkey

Artvin, Aksaray, Ankara, Balıkesir, Bayburt, Bursa, Çanakkale, Çorum, Denizli, Giresun, Gümüşhane, Erzincan, Erzurum, İzmir, Kayseri, Ordu, Rize (Sahlberg 1913; İncekara et al. 2005d, 2010; Darilmaz and Kiyak 2006a, 2009b; Kiyak et al. 2006; Mart 2009; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; Darilmaz, Salur, et al. 2010).

Enochrus halophilus (Bedel, 1878)

Synonyms

Philydrus halophilus Bedel, 1878; *Philydrus salinus* Kuwert, 1888; *Philydrus brevipalpis* Sharp, 1914

Distribution in Turkey

Afyon, Kayseri (Darilmaz and Kiyak 2009b; İncekara et al. 2010).

Enochrus ochropterus (Marsham, 1802)

Synonyms

Hydrophilus ochropterus Marsham, 1802; *Hydrobius frontalis* Erichson, 1837; *Hydrophilus nigricans* Zetterstedt, 1838

Distribution in Turkey

Bolu (Chiesa, 1964; Darilmaz and Kiyak 2009b).

Enochrus politus (Küster, 1849)

Synonyms

Hydrobius politus Küster, 1849; *Philhydrus agrigentinus* Rottenberg, 1870; *Philydrus atlanticus* C. E. Blanchard, 1853; *Philydrus cossyrensis* Rey, 1885; *Philhydrus sahariensis* Fairmaire, 1879

Distribution in Turkey

Uşak (Darilmaz and Kiyak 2009b).

Enochrus quadripunctatus (Herbst, 1797)

Synonyms

Hydrophilus quadripunctatus Herbst, 1797; *Hydrophilus minutus* Paykull, 1798; *Hydrophilus melanocephalus* Fabricius, 1801; *Hydrophilus melanocephalus* var. *dichrous* Krynicki, 1832; *Philhydrus dermestoides* Castelnau, 1840; *Philydrus rectus* J. Sahlberg, 1875; *Philhydrus melanocephalus* var. *frontalis* Dalla Torre, 1877; *Philydrus melanocephalus* var. *fulvipennis* Rey, 1885; *Philydrus ytenensis* Sharp, 1915; *Philydrus quadripunctatus* var. *marginatus* Gozis, 1916

Distribution in Turkey

Antalya, Denizli, Edirne, Isparta, Ordu (Hebauer and Ryndevich 2005; Mart 2009; Darilmaz and Kiyak 2009b).

Enochrus salomonis (Sahlberg, 1900)

Synonym

Philhydrus salomonis Sahlberg, 1900

Distribution in Turkey

Adana (Ribera et al. 1997; İncekara, Mart, Erman 2003; Darilmaz and Kiyak 2009b).

Enochrus segmentinotatus (Kuwert, 1888)

Synonyms

Philydrus segmentinotatus Kuwert, 1888; *Philydrus apicinotus* Kuwert, 1888; *Philydrus maculiapex* Kuwert, 1888; *Philydrus vultur* Kuwert, 1888; *Philhydrus mediterraneus* var. *transcaspicus* J. Sahlberg, 1900

Distribution in Turkey

Adana, Ankara, Aydın, Çanakkale, İçel, İstanbul, İzmir, Kayseri, Kırşehir, Konya, Hakkâri, Muğla (Schödl 1998; İncekara, Mart, Erman 2003; Hebauer 2004; Darilmaz and Kiyak 2006a, 2009b; İncekara et al. 2010).

Enochrus testaceus (Fabricius, 1801)

Synonyms

Hydrophilus testaceus Fabricius, 1801; *Philhydrus testaceus* var. *maculicollis* Dalla Torre, 1877; *Philydrus lederi* Kuwert, 1888; *Philydrus testaceus* var. *lineatus* Kuwert, 1888

Distribution in Turkey

Balıkesir, Çanakkale, İçel, Kayseri (Peyron 1858; Özesmi and Önder 1988; Darilmaz and Kiyak 2009b; Ertorun and Tanatmış 2009; İncekara et al. 2010).

Subgenus ***Methydrus*** Rey, 1885

Enochrus coarctatus (Gredler, 1863)

Synonyms

Philhydrus coarctatus Gredler, 1863; *Philhydrus marginellus* Schwarz, 1872; *Philhydrus suturalis* Sharp, 1872; *Philhydrus coarctatus* var. *fulvipennis* Westhoff, 1881; *Philhydrus labiatus* Kuwert, 1888

Distribution in Turkey

Afyon, Ordu (Mart et al. 2009b; Darilmaz and Kiyak 2009b).

Enochrus nigrinus (Sharp, 1872)

Synonyms

Philhydrus nigrinus Sharp, 1872; *Enochrus isotae* Hebauer, 1981

Distribution in Turkey

Afyon, İstanbul, Kırklareli (Schödl 1997; Darilmaz and Kiyak 2009b).

Enochrus tetraspilus (Régimbart, 1903)

Synonym

Philhydrus tetraspilus Régimbart, 1903

Distribution in Turkey

Adana, Antalya, Gaziantep (Hebauer and Ryndevich 2005; Darilmaz and Kiyak 2009b).

Genus ***Helochares*** Mulsant, 1844

Subgenus ***Helochares*** Mulsant, 1844

Helochares lividoides Hansen and Hebauer, 1988

Distribution in Turkey

Çanakkale; Muğla (Gentili and Whitehead 2000; Hebauer and Ryndevich 2005).

Helochares lividus (Forster, 1771)

Synonyms

Dytiscus lividus Forster, 1771; *Hydrophilus fulvus* Geoffroy, 1785; *Hydrophilus griseus* Fabricius, 1787; *Hydrophilus pallidus* P. Rossi, 1792; *Hydrophilus chrysomelinus* Herbst, 1797; *Hydrophilus lividus* Herbst, 1797; *Hydrophilus bicolor* Paykull, 1798; *Helochares ludovici* L. W. Schaufuss, 1869; *Helochares lividus* v. *pallidetestaceus* Stierlin, 1900

Material studied

1 ex. İzmir Province, Coll. Sahlberg (ZMHU).

Distribution in Turkey

Adana, Aksaray, Ankara, Bingöl, Çorum, Erzurum, Edirne, İzmir, Ordu, Samsun, Tokat, Trabzon (Burmeister 1985; Darilmaz and Kiyak 2006b; Karaman et al. 2008;

Topkara and Balık, 2008; Mart 2009; Mart et al. 2010a; Hizarcioglu et al. 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

Notes

The species was recorded from İzmir Province by Sahlberg (1913). We re-examined the specimen from ZMHU collections and determined that it was confirmed.

Helochares obliquus Mart, İncekara and Karaca, 2010

Distribution in Turkey

Ordu (Mart et al. 2010a).

Notes

This species is endemic to Turkey.

Helochares obscurus (O. F. Müller, 1776)

Synonyms

Hydrophilus obscurus O. F. Müller, 1776; *Hydrophilus erythrocephalus* Fabricius, 1792; *Hydrophilus variegatus* Herbst, 1797; *Helochares subcompressus* Rey, 1885; *Helochares erythrocephalus* var. *substriatus* J. Sahlberg, 1903; *Helochares griseus* a. *Mülleri* Reitter, 1909

Distribution in Turkey

Adana, Ankara, Balıkesir, Bayburt, Bursa, Çanakkale, Giresun, İzmir, Kayseri, Sakarya, Samsun, Ordu (Sahlberg 1913; İncekara, Darilmaz, et al. 2009; Mart 2009; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; Mart et al. 2010a; İncekara et al. 2010).

Helochares pallens W.S. MacLeay, 1825

Distribution in Turkey

Adana (Mart et al. 2010a).

Helochares punctatus Sharp, 1869

Distribution in Turkey

Artvin, Çorum (İncekara 2009; Darilmaz, Salur, et al. 2010).

Subtribe **Hydrobiusina** Mulsant, 1844

Genus **Hydrobius** Leach, 1815

Hydrobius arcticus Kuwert, 1890

Synonym

Hydrobius fuscipes ssp. *frigidus* Poppius, 1909

Distribution in Turkey

Bingöl (Mart, İncekara, Hayat 2006).

Hydrobius convexus Brullé, 1835

Distribution in Turkey

Kayseri, Ordu (İncekara et al. 2010; Mart et al. 2010a).

Hydrobius fuscipes (Linnaeus, 1758)

Synonyms

Dytiscus fuscipes Linnaeus, 1758; *Dytiscus scarabaeoides* Linnaeus, 1758; *Scarabaeus aquaticus* Linnaeus, 1760; *Hydrophilus fuscipes* O. F. Müller, 1776; *Dytiscus gyri-noides* Schrank, 1781; *Hydrophilus fuscipes* Steven, 1808; *Hydrobius chalconotus* Stephens, 1829; *Hydrobius subrotundus* Stephens, 1829; *Hydrobius substriatus* Curtis, 1829; *Hydrobius arcadius* Brullé, 1832; *Hydrobius ovalis* Dejean, 1833; *Hydrobius aeneus* Dejean, 1833; *Hydrobius aeneus* Solier, 1834; *Hydrophilus angustatus* A. Villa and G. B. Villa, 1838; *Hydrobius levigatus* Castelnau, 1840; *Hydrobius insculptus* J. L. LeConte, 1855; *Hydrobius seriatus* J. L. LeConte, 1855; *Hydrobius regularis* J. L. LeConte, 1855; *Hydrobius fuscipes rottenbergii* Gerhardt, 1872; *Hydrobius fuscipes* var. *balearicus* L. W. Schaufuss, 1882; *Hydrobius picicrus* Thomson, 1884; *Hydrobius fuscipes* var. *aestivus* Rey, 1885; *Hydrobius fuscipes* var. *brevior* Kuwert, 1890.

Distribution in Turkey

Ankara, Artvin, Bayburt, Bilecik, Çorum, Erzincan, Erzurum, Giresun, Gümüşhane, İçel, İzmir, Kayseri, Konya, Ordu, Rize, Samsun, Tokat, Trabzon (Peyron 1858; Bodemeyer 1900; Sahlberg 1913; D'Orchymont 1932, 1940; Balfour-Browne 1938; Darilmaz and Kiyak 2005; İncekara et al. 2005a, 2010; Topkara and Balık, 2008; İncekara, Darilmaz, et al. 2009; Mart 2009; Hizarcioglu et al. 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

Genus ***Limnoxenus*** Motschulsky, 1853

Limnoxenus niger (Gmelin, 1790)

Synonyms

Hydrophilus niger Gmelin, 1790; *Hydrophilus oblongus* Herbst, 1797

Distribution in Turkey

Aydın, Bursa, Kayseri, Samsun, Tokat (Kiyak et al. 2006; İncekara, Darilmaz, et al. 2009; Ertorun and Tanatmış 2009; Polat et al. 2010; İncekara et al. 2010).

Subtribe ***Hydrophilina*** Latreille, 1802

Genus ***Hydrochara*** Berthold, 1827

Hydrochara caraboides (Linnaeus, 1758)

Synonyms

Dytiscus caraboides Linnaeus, 1758; *Hydrophilus nigricornis* DeGeer, 1774; *Dytiscus scarabaeoides* Schrank, 1781; *Hydrophilus scrobiculata* Panzer, 1799; *Hydrophilus*

caraboides var. *aeneus* Cristofori and Jan, 1832; *Hydrophilus substriata* Sturm, 1843; *Hydrous caraboides* var. *intermedia* Mulsant, 1844; *Hydrophilus subaeneae* Motschulsky, 1845; *Hydrophilus smaragdina* Bach, 1856; *Hydrous caraboides* var. *flavipes* Thomson, 1867; *Hydrous caraboides* var. *costata* Lüderwaldt, 1897; *Hydrophilus caraboides* var. *flaviventris* G. Ochs, 1923; *Hydrophilus caraboides* a. *carinatus* Jander, 1927

Distribution in Turkey

Bayburt, Isparta, İzmir, Kayseri, Samsun, Tokat (İncekara, Mart, Erman 2003; Kiyak et al. 2006; İncekara, Mart, et al. 2009; Polat et al. 2010; İncekara et al. 2010).

Hydrochara dichroma (Fairmaire, 1892)

Synonyms

Hydrous dichroma Fairmaire, 1892; *Hydrophilus sartus* A. Semenov, 1900; *Hydrophilus subvariolosa* A. Semenov, 1900; *Hydrophilus sartus* aberr. *costulatus* A. Semenov, 1900

Distribution in Turkey

Adana, Ankara, Amasya, Balıkesir, Bayburt, Bingöl, Çanakkale, Erzincan, Erzurum, Giresun, Gümüşhane, İstanbul, İzmir, Kayseri, Ordu, Rize, Samsun, Tokat, Trabzon (Sahlberg 1913; D'Orchymont 1932, 1940; İncekara, Mart, Erman 2003; İncekara, Darılmaz, et al. 2009; İncekara, Mart, et al. 2009; Mart 2009; Ertoran and Tanatmış 2009; İncekara et al. 2010).

Hydrochara flavipes (Steven, 1808)

Synonyms

Hydrophilus flavipes Steven, 1808; *Hydrophilus profanifuga* A. Semenov, 1900; *Hydrophilus flavipes* a. *roubali* Vávra, 1934

Distribution in Turkey

Adana, Aksaray, Ankara, Kayseri, Samsun (D'Orchymont 1932; İncekara, Mart, Erman 2003; Darılmaz and Kiyak 2006a; İncekara, Mart, et al. 2009; İncekara et al. 2010).

Genus ***Brownephilus*** Mouchamps, 1959

Brownephilus major (İncekara, Mart, Polat and Karaca, 2009)

Synonym

Hydrochara major İncekara, Mart, Polat and Karaca, 2009

Distribution in Turkey

Afyon, Samsun (İncekara, Mart, et al. 2009; Polat et al. 2010; Darılmaz, Kiyak, et al. 2010).

Notes

This species is endemic to Turkey.

Genus *Hydrophilus* Geoffroy, 1762
Subgenus *Hydrophilus* Geoffroy, 1762
Hydrophilus aterrimus Eschscholtz, 1822

Synonyms

Hydrophilus morio Sturm, 1835; *Hydrophilus aterrimus* var. *barbatus* Letzner, 1884;
Hydrous africanus Kuwert, 1893

Distribution in Turkey

Erzurum, Samsun (İncekara, Mart, Erman 2003; İncekara, Darilmaz, et al. 2009).

Hydrophilus piceus (Linnaeus, 1758)

Synonyms

Dytiscus piceus Linnaeus, 1758; *Hydrophilus ruficornis* DeGeer, 1774; *Hydrous piceus*
var. *pleurites* Cristofori and Jan, 1832; *Hydrophilus viridicollis* L. Redtenbacher, 1844;
Hydrophilus piceus var. *niger* G. Eichler, 1876; *Hydrophilus angustior* Rey, 1885;
Stethoxus piceus var. *plicifer* Bedel, 1891; *Hydrous turkestanus* Kuwert, 1893

Distribution in Turkey

Çorum, Denizli, Erzurum, Kayseri, Samsun (Özesmi and Önder 1988; İncekara, Mart,
Erman 2003; Kiyak et al. 2006; İncekara, Darilmaz, et al. 2009; Darilmaz, Salur, et al.
2010; İncekara et al. 2010).

Subgenus *Temnopterus* Solier, 1834
Hydrophilus aculeatus (Solier, 1834)

Synonyms

Temnopterus aculeatus Solier, 1834; *Hydrophilus spinipennis* Gory, 1834; *Hydrophilus*
armatus Laporte, 1840; *Hydrophilus lugubris* Motschulsky, 1845; *Hydrophilus aegypti-*
acus Peyron, 1856

Distribution in Turkey

Detailed locality details no known (Balfour-Browne 1951; Hebauer 1994).

Notes

One specimen in BMNH is labeled “Trebizond” (registration number 54–76), which
refers to Trabzon in northeastern Anatolia from Turkey.

Tribe **Laccobiini** Bertrand, 1954
Genus **Laccobius** Erichson, 1837
Subgenus **Dimorpholaccobius** Zaitzev, 1938
Laccobius bipunctatus (Fabricius, 1775)

Synonyms

Hydrophilus bipunctatus Fabricius, 1775; *Hydrophilus minutus* Gyllenhal, 1808;
Laccobius alutaceus Thomson, 1868; *Laccobius emmeryanus* Rottenberg, 1874;
Laccobius alutacius var. *graecus* Rottenberg, 1874

Distribution in Turkey

Afyon, Artvin, Bayburt, Bolu, Çorum, Erzurum, Giresun, Gümüşhane, Kastamonu, Ordu, Trabzon (Chiesa 1964; Gentili and Chiesa 1975; Gentili 1981, 1988, 2000; Karaman et al. 2008; İncekara 2009; İncekara et al. 2010; Mart 2009; Darılmaz, Salur, et al. 2010).

Laccobius chiesai Gentili, 1974

Distribution in Turkey

Ankara (Gentili 1988, 2000; İncekara, Mart, Erman 2003).

Laccobius halophilus Gentili, 1982

Distribution in Turkey

Antalya, Bayburt, Diyarbakır, Giresun, Erzurum, İçel, Kayseri, Muğla (Gentili 1991, 2000; İncekara, Mart, Erman 2003; Mart 2009; İncekara et al. 2010).

Laccobius hauserianus Kniz, 1914

Distribution in Turkey

İçel, Muğla (Gentili 1991, 2000; İncekara, Mart, Erman 2003).

Laccobius hindukuschi Chiesa, 1966

Synonym

Laccobius farsicus Gentili, 1975

Distribution in Turkey

Adana, Adyaman, Ankara, Antalya, Artvin, Balıkesir, Bayburt, Bitlis, Burdur, Denizli, Diyarbakır, Erzurum, Gaziantep, Giresun, Gümüşhane, Hatay, İstanbul, İçel, İzmir, Kastamonu, Kayseri, Mardin, Muş, Ordu, Tokat, Tunceli, Van (Gentili and Chiesa 1975; Gentili 1988, 1991, 2000; İncekara, Mart, Erman 2003; Mart 2009; Polat et al. 2010; İncekara et al. 2010).

***Laccobius hoberlandti* Gentili, 1982**

Synonym

Laccobius znojtkoi Shatrovskiy, 1984

Distribution in Turkey

Erzurum (Mart et al. 2003).

***Laccobius hopaensis* Mart, İncekara and Erman, 2003**

Distribution in Turkey

Artvin (Mart et al. 2003; Short and Hebauer 2006).

Notes

This species is endemic to Turkey.

***Laccobius lycius* Gentili and Whitehead, 2000**

Distribution in Turkey

Muğla (Gentili and Whitehead 2000; İncekara, Mart, Erman 2003; Short and Hebauer 2006).

Notes

This species is endemic to Turkey.

***Laccobius obscuratus aegaeus* Gentili, 1974**

Synonym

Laccobius aegaeus Gentili, 1974

Distribution in Turkey

Adana, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bayburt, Bilecik, Bitlis, Bolu, Burdur, Bursa, Çanakkale, Çorum, Denizli, Erzincan, Erzurum, Giresun, Gümüşhane, Isparta, İçel, İstanbul, İzmir, Kastamonu, Kayseri, Kırklareli, Kocaeli, Konya, Manisa, Muğla, Niğde, Ordu, Osmaniye, Rize, Samsun, Sinop, Tokat, Trabzon, Van (Gentili and Chiesa 1975; Gentili 1974, 1981, 1988; Burmeister 1985; İncekara, Mart, Erman 2003; Karaman et al. 2008; İncekara, Darilmaz, et al. 2009; Mart 2009; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

***Laccobius obscuratus obscuratus* Rottenberg, 1874**

Synonyms

Laccobius nigriceps var. *obscuratus* Rottenberg, 1874; *Laccobius nigriceps* var. *minor* Rottenberg, 1874; *Laccobius nigriceps* var. *rufescens* Rottenberg, 1874; *Laccobius obscurus* Gerhardt, 1877; *Laccobius regularis* Rey, 1885

Distribution in Turkey

Isparta, Van (Gentili 1979, 1981, 2000; İncekara, Mart, Erman 2003).

***Laccobius obscuratus orchymonti* Gentili, 1976**

Distribution in Turkey

Adıyaman, Gaziantep, Hatay, Kilis (Gentili 2000).

Notes

Hansen (1999, 2004) have the subspecies *Laccobius obscuratus orchymonti*, but not listed for Turkey. However, in a personal communication, Dr Elio Gentili (Italy) stated, "I can confirm that, if the subspecies (or species) is valid, *L. obscuratus orchymonti* is present in the provinces of Antakya (Amanos Gebirge; Yayladagi), Adıyaman (Adıyaman 30 km north) and Gaziantep (near Kilis)" (2010 letter from E. Gentili to first author; unreferenced, see 'Acknowledgements').

***Laccobius sculptus* d'Orchymont, 1935**

Synonym

Laccobius simulatrix ssp. *sculptus* d'Orchymont, 1935

Distribution in Turkey

Diyarbakır, Şanlıurfa (Gentili 1988, 1991, 2000; İncekara, Mart, Erman 2003).

***Laccobius scutellaris* Motschulsky, 1855**

Synonym

Laccobius sternocrinis Kuwert, 1890

Distribution in Turkey

Adana, Antalya, Balıkesir, Bilecik, Bitlis, Bursa, Çanakkale, İçel, İstanbul, İzmir, Kahramanmaraş, Konya, Muğla, Samsun, Siirt (Bodemeyer 1900; D'Orchymont 1932, 1940; Gentili and Chiesa 1975; Gentili 1981, 1988, 2000).

***Laccobius simulatrix* d'Orchymont, 1932**

Synonyms

Laccobius cinereus Kuwert, 1890; *Laccobius kuwertii* Zaitzev, 1938

Material studied

Turkey: Balıkesir, river near Gölcük village, 40°41' N, 27°05' E, 106 m a.s.l., 31 August 2007, 1 ex. leg. R. Jaskuła (CMP).

Distribution in Turkey

Adana, Ağrı, Aksaray, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bayburt, Bitlis, Bolu, Bursa, Çanakkale, Çorum, Denizli, Edirne, Erzincan, Erzurum, Giresun, Gümüşhane, Hakkâri, Isparta, İçel, İstanbul, İzmir, Kahramanmaraş, Kars, Kayseri, Kırklareli, Kırşehir, Kocaeli, Manisa, Muğla, Niğde, Ordu, Osmaniye, Samsun, Sivas, Tokat, Trabzon, Van, Yozgat (D'Orchymont 1932; Gentili and Chiesa 1975; Gentili 1981, 1988, 2000; İncekara, Mart, Erman 2003; Darilmaz and Kiyak 2006a; Kiyak et al. 2006; Karaman et al. 2008; Mart 2009; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

Laccobius sipylus d'Orchymont, 1939

Distribution in Turkey

Antalya, Artvin, Balıkesir, Çanakkale, Çorum, Denizli, Diyarbakır, Hatay, İçel, Kayseri, Samsun, Tokat (Gentili and Chiesa 1975; Gentili 1981, 1988, 1991, 2000; İncekara, Mart, Erman 2003; Polat et al. 2010; İncekara et al. 2010).

Laccobius striatulus (Fabricius, 1801)

Synonyms

Hydrophilus striatulus Fabricius, 1801; *Limnebius minutus* Brullé, 1835; *Laccobius nigriceps* Thomson, 1853; *Laccobius nigriceps* var. *maculiceps* Rottenberg, 1874; *Laccobius maculiceps* Gerhardt, 1877; *Laccobius sinuatus* var. *signiceps* Kuwert, 1890; *Laccobius purpurascens* Newbery, 1908; *Laccobius perla* Gozis, 1917; *Laccobius bucciarellii* Gentili, 1974; *Laccobius belgicus* Gentili, 1979

Material studied

Turkey: Balıkesir, river near Gölcük village, 40°41' N, 27°05' E, 106 m a.s.l., 31 August 2007, 1 ex. leg. R. Jaskuła (CMP).

Distribution in Turkey

Ankara, Antalya, Artvin, Balıkesir, Bayburt, Bilecik, Bitlis, Bolu, Bursa, Çanakkale, Erzurum, Eskişehir, Giresun, Gümüşhane, Hatay, Isparta, İstanbul, İzmir, Kayseri, Kocaeli, Konya, Kütahya, Malatya, Manisa, Muğla, Ordu, Sakarya, Samsun, Sivas, Tokat, Trabzon (Chiesa 1964; Gentili and Chiesa 1975; Gentili 1979, 1981, 2000; Karaman et al. 2008; İncekara, Darilmaz, et al. 2009; İncekara 2009; Mart 2009; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; Polat et al. 2010; İncekara et al. 2010).

Laccobius sulcatulus Reitter, 1909

Distribution in Turkey

Amasya, Ankara, Antalya, Bayburt, Bitlis, Burdur, Diyarbakır, Erzincan, Erzurum, Gümüşhane, Kars, Kayseri, Konya, Manisa, Samsun, Van (D'Orchymont 1932;

Gentili and Chiesa 1975; Gentili 1979, 1981, 1991, 2000; Kiyak et al. 2006; İncekara et al. 2010; Mart 2009; Polat et al. 2010).

Laccobius syriacus Guillebeau, 1896

Synonyms

Laccobius alutaceus var. *laevicollis* Ganglbauer, 1904; *Laccobius afghanus* Chiesa, 1966

Distribution in Turkey

Adana, Afyon, Aksaray, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bayburt, Bilecik, Bitlis, Bolu, Burdur, Bursa, Çorum, Denizli, Diyarbakır, Edirne, Gaziantep, Giresun, Gümüşhane, Erzincan, Erzurum, Hakkâri, Hatay, Isparta, İçel, İzmir, Kars, Kayseri, Kahramanmaraş, Kastamonu, Konya, Mardin, Muğla, Ordu, Osmaniye, Rize, Sakarya, Samsun, Sinop, Şanlıurfa, Tokat, Trabzon, Van (D'Orchymont 1932, 1940; Gentili and Chiesa 1975; Gentili 1979, 1981, 1988, 2000; Darılmaz and Kiyak 2006a; İncekara 2009; Mart 2009; İncekara, Darılmaz, et al. 2009; Ertorun and Tanatmış 2009; Hizarcioğlu et al. 2010; Polat et al. 2010; Darılmaz, Salur, et al. 2010; İncekara et al. 2010).

Subgenus ***Laccobius*** Erichson, 1837

Laccobius albipes Kuwert, 1890

Distribution in Turkey

Ankara, Balıkesir, Erzurum (D'Orchymont 1932; Gentili and Chiesa 1975; Gentili 1991, 2000; İncekara, Mart, Erman 2003).

Laccobius minutus (Linnaeus, 1758)

Synonyms

Chrysomela minuta Linnaeus, 1758; *Dytiscus dermestoides* Forster, 1771; *Hydrophilus chrysomelinus* O. F. Müller, 1776; *Dytiscus coccinelloides* Schrank, 1781; *Dytiscus marginellus* Herbst, 1784; *Scarabaeus perla* Geoffroy, 1785; *Brachypalpus pallidus* Laporte, 1840; *Laccobius globosus* Heer, 1841; *Laccobius minutus* var. *minimus* Gredler, 1863

Distribution in Turkey

Erzurum, İçel, İzmir, Kars, Rize (Peyron 1858; Sahlberg 1913; Gentili 1991, 2000; İncekara, Mart, Erman 2003).

Subgenus ***Microlaccobius*** Gentili, 1974

Laccobius alternus Motschulsky, 1855

Synonyms

Laccobius alternus var. *gracilis* Rottenberg, 1874; *Laccobius alternus* var. *nigritus* Rottenberg, 1874; *Laccobius alternus* ssp. *peezi* Chiesa, 1959

Distribution in Turkey

Erzincan (Darilmaz and Kiyak 2010).

Laccobius exilis Gentili, 1974

Distribution in Turkey

Antalya, Denizli, İçel, Mardin, Muğla, Niğde (Gentili 2000; Gentili and Whitehead 2000; İncekara, Mart, Erman 2003; Darilmaz and Kiyak 2010).

Laccobius gracilis Motschulsky, 1855

Synonyms

Laccobius intermittens Kiesenwetter, 1870; *Laccobius subtilis* Kiesenwetter, 1870; *Laccobius viridiceps* Rottenberg, 1870; *Laccobius signatus* Kuwert, 1890; *Laccobius gracilis* var. *flavosplendens* Endrödy-Younga, 1967

Distribution in Turkey

Adana, Adıyaman, Ankara, Antalya, Artvin, Aydın, Bayburt, Balıkesir, Bilecik, Bingöl, Bitlis, Bolu, Burdur, Bursa, Çanakkale, Çorum, Denizli, Diyarbakır, Edirne, Erzincan, Erzurum, Gaziantep, Giresun, Gümüşhane, Hakkâri, Hatay, Isparta, İçel, İstanbul, İzmir, Kars, Kastamonu, Kayseri, Kilis, Kocaeli, Manisa, Mardin, Muğla, Muş, Niğde, Ordu, Rize, Samsun, Sinop, Sivas, Şırnak, Tokat, Trabzon, Van, Yozgat (Bodemeyer 1900; D'Orchymont 1932; Gentili and Chiesa 1975; Gentili 1981, 1988, 2000; Karaman et al. 2008; Mart 2009; İncekara, Darilmaz, et al. 2009; Ertorun and Tanatmış 2009; Darilmaz and Kiyak 2010; Polat et al. 2010; Darilmaz, Salur, et al. 2010).

Laccobius persicus Gentili, 1974

Distribution in Turkey

Erzincan (Darilmaz and Kiyak 2010).

Laccobius quaesitus Gentili, 1988

Distribution in Turkey

Adana, Erzincan (Gentili 2000; Darilmaz and Kiyak 2010).

Subfamily **SPHAERIDIINAE** Latreille, 1802

Tribe **Coelostomatini** Heyden, 1891

Genus ***Coelostoma*** Brullé, 1835

Subgenus ***Coelostoma*** Brullé, 1835

Coelostoma orbiculare (Fabricius, 1775)

Synonyms

Hydrophilus orbicularis Fabricius, 1775; *Hydrophilus pilula* O. F. Müller, 1776; *Dytiscus punctatus* Goeze, 1777; *Sphaeridium immaculatum* P. Rossi, 1790; *Cyclonotum dalmatinum* Küster, 1848; *Cyclonotum brevitarse* L. Heyden, 1870; *Cyclonotum minor* Sharp,

1872; *Cyclonotum breve* Sharp, 1874; *Coelostoma orbiculare* var. *graecum* Kuwert, 1890; *Coelostoma orbiculare* var. *puncticolle* Reitter, 1906; *Coelostoma orbiculare* var. *subaereum* Reitter, 1906

Distribution in Turkey

Ankara, Artvin, Bayburt, Bursa, Çanakkale, Çorum, Erzurum, Giresun, Gümüşhane, İçel, Kayseri, Ordu, Samsun, Tokat, Trabzon (Sahlberg 1913; D'Orchymont 1932; İncekara, Mart, Erman 2003; Karaman et al. 2008; İncekara, Darilmaz, et al. 2009; İncekara 2009; Mart 2009; Ertorun and Tanatmış 2009; Polat et al. 2010; Darilmaz, Salur, et al. 2010; İncekara et al. 2010).

Subgenus *Lachnocelostoma* Mouchamps, 1958
Coelostoma transcaspicum Reitter, 1906

Distribution in Turkey

Bingöl (Mart, İncekara, Hayat 2006).

Tribe **Megasternini** Mulsant, 1844
Genus *Cercyon* Leach, 1817
Subgenus *Cercyon* Leach, 1817
Cercyon abeillei Guillebeau, 1896

Material studied

Turkey: Osmaniye (Adana), 20.iv.1966, Türki-Expedition 1966, Naturhist. Mus. Wien, 1 male (NHMW), M. Fikáček det. Mardin, 1300 m, 10/15 May 1969, Asm, F. Schubert leg., 1 spec. (NHMW), det. M. Fikáček.

Cercyon arenarius Rey, 1885

Material studied

1 ex. İzmir Province, Coll. Sahlberg (ZMHU).

Notes

The species was recorded from İzmir Province by Sahlberg (1913). We re-examined the specimen from ZMHU collections and determined that it was confirmed.

Cercyon circumcinctus Reitter, 1889d

Distribution in Turkey

Adana, İzmir, Kayseri (Sahlberg 1913; Fikáček 2005; Polat et al. 2010).

Cercyon haemorrhoidalis (Fabricius, 1775)

Synonyms

Dermestes calthae Scopoli, 1763; *Sphaeridium haemorrhoidalis* Fabricius, 1775; *Sphaeridium flavipes* Fabricius, 1792; *Hydrophilus obscurus* Fabricius, 1792; *Dermestes picinus* Marsham, 1802; *Dermestes similis* Marsham, 1802; *Hydrophilus striatus* Turton, 1802; *Sphaeridium nigricollis* Say, 1825; *Cercyon femorale* Stephens, 1829; *Cercyon infuscatum* Stephens, 1829; *Cercyon suturale* Stephens, 1829; *Cercyon erythropterum* Mulsant, 1844; *Cercyon erythropterum* Küster, 1851; *Cercyon haemorrhoidalis* var. *discoidalis* Sahlberg, 1913; *Cercyon haemorrhoidalis basillaris* Notman, 1920; *Cercyon haemorrhoidalis aquatilis* Donisthorpe, 1932; *Cercyon haemorrhoidalis* ab. *Bifenestratellus* Endrödy-Younga, 1967

Distribution in Turkey

Antalya, Düzce, İzmir, Manisa (Sahlberg 1913; Burmeister 1985; İncekara, Mart, Erman 2003; Anlaş et al. 2008).

Cercyon impressus (Sturm, 1807)

Synonyms

Dermestes piceus Marsham, 1802; *Sphaeridium impressum* Sturm, 1807; *Cercyon xanthocephalum* Stephens, 1829; *Cercyon haemorrhoidalis* var. *apicalis* Dalla Torre, 1877; *Cercyon impressus* var. *melanocephalus* Kuwert, 1890; *Cercyon impressus* ab. *Rufipennis* Csiki, 1953

Material studied

Turkey: Rize, Ayder (43), 2 June 1989, Schödl leg. 2 males and 1 spec. (NHMW), M. Fikáček det.

Cercyon littoralis (Gyllenhal, 1808)

Synonyms

Sphaeridium littorale Gyllenhal, 1808; *Cercyon binotatum* Stephens, 1829; *Cercyon dilatatum* Stephens, 1829; *Cercyon ruficornis* Stephens, 1829; *Cercyon littorale* var. *ruficolle* Schilsky, 1888; *Cercyon littorale* var. *normannus* L. Benick, 1916

Distribution in Turkey

Bursa, Rize (İncekara et al. 2004c; Ertorun and Tanatmış 2009).

Cercyon marinus Thomson, 1853

Synonyms

Cercyon aquaticum Dejean, 1833; *Cercyon aquaticus* Villa and Villa, 1833; *Cercyon aquaticus* Laporte, 1840; *Cercyon aquaticus* Castelnau, 1840; *Cercyon heilongjiangensis* Wu and Pu, 1995

Distribution in Turkey

Düzce (Burmeister 1985).

Cercyon nigriceps (Marsham, 1802)

Synonyms

Dermestes nigriceps Marsham, 1802; *Dermestes atricapillus* Marsham, 1802; *Dermestes inustus* Marsham, 1802; *Dermestes laevis* Marsham, 1802; *Sphaeridium centrimaculatus* Sturm, 1807; *Cercyon atriceps* Stephens, 1829; *Cercyon bimaculatus* Stephens, 1829; *Cercyon testaceus* Stephens, 1829; *Cercyon ustulatus* Stephens, 1829; *Cercyon nubilipennis* Stephens, 1835; *Cercyon troglodytes* Dejean, 1836; *Cercyon pulchellus* Heer, 1841; *Cercyon mundus* Melsheimer, 1844; *Cercyon vicinalis* Walker, 1859; *Cercyon nigriceps* Motschulsky, 1863; *Cercyon atriceps* Gemminger and Harold, 1868; *Cercyon nigriceps* a. *simplex* Delahon, 1913

Material studied

Turkey: İçel province, Olukkoyagi, 20 May 2005, Pozanti env., J. Vavra lgt., M. Fikacek det (NMPC).

Cercyon quisquilius (Linnaeus, 1760)

Synonyms

Scarabaeus quisquilius Linnaeus, 1760; *Scarabaeus minimus* Scopoli, 1763; *Sphaeridium xantopterus* Laicharting, 1781; *Sphaeridium dispar* Paykull, 1798; *Dermestes flavus* Marsham, 1802; *Cercyon quisquilius* var. *scutellare* Mulsant, 1844; *Cercyon flavipenne* Küster, 1848; *Cercyon quisquilius* var. *mulsanti* Ganglbauer, 1904

Material studied

Turkey: İçel province, Olukkoyagi, Pozanti env., 20 May 2005, J. Vavra lgt., Fikacek det. (NMPC); Turkey, Canakkale Prov., south of Ayvacik, 39°34'38" N, 26°24'04" E, cow excrement, 27 September 2006, M., Fikacek lgt. et det. (NMPC)

Distribution in Turkey

İçel (Peyron 1858; D'Orchymont 1940).

Cercyon strandi Roubal, 1938

Distribution in Turkey

Rize (Fikáček 2006).

Subgenus ***Dicyrtocercyon*** Ganglbauer, 1904

Cercyon ustulatus (Preyssler, 1790)

Synonyms

Sphaeridium ustulatum Preyssler, 1790; *Hydrophilus haemorrhoidalis* Fabricius, 1792; *Sphaeridium haemorrhoum* Gyllenhal, 1808; *Cercyon xanthorhoeus* Stephens, 1829

Material studied

Turkey: 60 km SÖ [= southeast] von Tatvan, 8 June 1997, Jäch leg., 1 female (NHMW), M. Fikáček det.; Anat.b., Cangal Dagħ, 7–15 June 1960, F. Schubert leg., 1 female (NHMW), M. Fikáček det. 1 additional Turkish specimen is in our coll: TR: Erzurum prov., 15 km southwest of Erzurum, Palandöken Dagħari Mountains, Tekederesi village env., 26–28 June 2004, 1930–2625 m, 39°49.0' N, 41°08.7' E to 39°46.1' N, 41°10.3' E, J. Hajek and J. Ruzicka lgt., M. Fikacek det., (NMPC).

Distribution in Turkey

Artvin, Bilecik, Erzincan, Ordu (İncekara, Mart, Hayat 2003; Mart 2009; Ertorun and Tanatmış 2009).

Subgenus *Paracercyon* Seidlitz, 1888
Cercyon analis (Paykull, 1798)

Synonyms

Hydrophilus analis Paykull, 1798; *Cercyon acutum* Stephens, 1829; *Cercyon apicale* Stephens, 1829; *Cercyon aquaticum* Stephens, 1829; *Cercyon maculatum* Melsheimer, 1844; *Cercyon falli* Winters, 1944

Distribution in Turkey

Detailed locality details not known (Hansen 2004).

Subgenus *Paracycreon* d'Orchymont, 1942
Cercyon laminatus Sharp, 1873

Synonym

Cercyon sharpi Harold, 1878

Material studied

Turkey: Adana (45 km north-northeast of Adana), 10 km west of Boztahta, 25–26 June 2001. 37°21' N, 35°07' E, 1 ex. M. Fikacek, J. Hajek and J. Straka lgt., M. Fikacek det. (NMPC).

Genus *Cryptopleurum* Mulsant, 1844
Cryptopleurum crenatum (Kugelann, 1794)

Synonyms

Sphaeridium crenatum Kugelann, 1794; *Cryptopleurum vaucherii* Tournier, 1867

Distribution in Turkey

Trabzon (Mart 2009).

Genus *Megasternum* Mulsant, 1844
Megasternum concinnum (Marsham, 1802)

Synonyms

Dermestes concinnum Marsham, 1802; *Dermestes stercorarius* Marsham, 1802; *Dermestes obscurum* Marsham, 1802; *Cercyon testaceum* Stephens, 1829; *Cercyon acutum* Stephens, 1829; *Cercyon aquaticum* Stephens, 1829; *Cercyon contaminatum* Stephens, 1829; *Cercyon convexior* Stephens, 1829; *Cercyon immaculatum* Stephens, 1829; *Cercyon immune* Stephens, 1829; *Cercyon castaneum* Heer, 1841; *Megasternum boletophagum* var. *brunneum* Dalla Torre, 1877; *Megasternum boletophagum* var. *ferrugineum* Dalla Torre, 1877; *Pachysternum pusillum* Kuwert, 1890; *Megasternum calabricum* Kuwert, 1890; *Megasternum caucasicum* Kuwert, 1890; *Megasternum calabricum* var. *algiricum* J. Sahlberg, 1903

Material studied

1 ex. İzmir Province, Coll. Sahlberg (ZMHU).

Distribution in Turkey

Manisa (Anlaş et al. 2008).

Notes

The species was recorded from İzmir Province under the name of *Megasternum boletophagum* Marsh. by Sahlberg (1913), which is now a species synonym of *Megasternum concinnum*. We re-examined the specimen from ZMHU collections and determined that it was confirmed.

Tribe **Sphaeridiini** Latreille, 1802
Genus *Sphaeridium* Fabricius, 1775
Sphaeridium bipustulatum (Fabricius, 1781)

Synonyms

Dermestes haemorrhoum Schrank, 1781; *Sphaeridium quadrimaculatum* Herbst, 1783; *Dermestes testudinarium* Geoffroy, 1785; *Sphaeridium marginatum* L. G. Scriba, 1790; *Sphaeridium lunulatum* Stephens, 1829; *Sphaeridium daltoni* Stephens, 1829; *Sphaeridium semistriatum* Laporte, 1840; *Sphaeridium scarabaeoides* var. *renipustulatum* Heer, 1841; *Sphaeridium testaceum* Heer, 1841; *Sphaeridium tauricum* Motschulsky, 1849; *Sphaeridium bipustulatum* var. *basalis* Dalla Torre, 1877; *Sphaeridium 2-bipustulatum* var. *humerales* Westhoff, 1881; *Sphaeridium bipustulatum* var. *bimaculatum* Kuwert, 1890

Material studied

1 ex. İzmir Province Coll. Sahlberg (ZMHU).

Distribution in Turkey

Afyon, İcel (Peyron 1858; Bodemeyer 1900).

Notes

The species was recorded from İzmir Province by Sahlberg (1913). We re-examined the specimen from ZMHU collections and determined that it was confirmed.

Sphaeridium marginatum Fabricius, 1787

Distribution in Turkey

Manisa (Anlaş et al. 2008).

Sphaeridium scarabaeoides (Linnaeus, 1758)

Synonyms

Dermestes scarabaeoides Linnaeus, 1758; *Hister testudinarius* Degeer, 1774; *Dermestes quadrimaculatum* Schrank, 1781; *Dermestes tricolor* Geoffroy, 1785; *Dermestes quadrimaculatum* Marsham, 1802; *Sphaeridium crenatum* Palisot de Beauvois, 1817; *Sphaeridium pictum* Ménétries, 1832; *Sphaeridium pictum* Faldermann, 1835; *Sphaeridium striolatum* Heer, 1841; *Sphaeridium quadrimaculatum* Küster, 1845; *Sphaeridium scarabaeoides* ab. *Marginatum* Normand, 1933; *Sphaeridium scarabaeoides* ab. *Confluens* Endrödy-Younga, 1967

Material studied

Turkey: Adıyaman, Nemut Dagi Mt., 38°00' N, 38°35' E, 2150 m a.s.l, 2 June 2002, 1 ex., leg. R. Dobosz (CMP); Bolu, road below Abant Lake, ca. 8 km southwest of Açaalan, 40°39' N, 31°20' E, 22 June 2002, 1 ex., leg. R. Dobosz.

Distribution in Turkey

Bilecik, İçel, İzmir, Manisa, Sakarya (Peyron 1858; Bodemeyer 1900; Sahlberg 1913; Anlaş et al. 2008).

Sphaeridium substriatum Faldermann, 1838

Synonyms

Sphaeridium substriatum v. *atratum* Ragusa, 1891; *Sphaeridium substriatum* ab. *transitum* Csiki, 1953; *Sphaeridium substriatum* ab. *immarginatum* Csiki, 1953; *Sphaeridium substriatum* ab. *apicatum* Endrödy-Younga, 1967; *Sphaeridium substriatum* ab. *obscuratum* Endrödy-Younga, 1967; *Sphaeridium substriatum* ab. *satanas* Endrödy-Younga, 1967

Distribution in Turkey

Düzce, İzmir, Manisa (Sahlberg 1913; Burmeister 1985; İncekara, Mart, Erman 2003; Anlaş et al. 2008).

Excluded Hydrophiloid species from the checklist

We excluded the following 13 hydrophiloid species from our checklist.

Helophorus kozlovi Zaitzev, 1908

Distribution in Turkey

Erzincan (İncekara et al. 2005a).

Notes

Some specimens were sent to Dr Robert Angus for checking of their identification. According to his suggestions they were not *H. kozlovi* but most probably *H. aquaticus*. The parameres were straight, but short compared with the basal piece. The last fixed abdominal segment had clear fine square-ended teeth – absent in *kozlovi*.

Helophorus fulgidicollis Motschulsky, 1860

Synonyms

Helophorus mulsanti Cox, 1874; *Helophorus filitarsis* L. W. Schaufuss, 1882; *Helophorus dorsalis* var. *emaciatius* Kuwert, 1886; *Helophorus exasperatus* Sharp, 1916

Notes

A western species occurring in Central and southern Europe and reaching northern Africa (Hansen 2004). The species was recorded from Turkey (Bayburt, Çorum, Erzurum, Erzincan, Giresun, Gümüşhane, Ordu, Samsun, Tokat, Trabzon) (İncekara et al. 2002, 2004a; Mart et al. 2010b; Polat et al. 2010; Darilmaz, Salur, et al. 2010). Two specimens were sent to Dr Robert Angus for checking of their identification. His answer was that the specimens, without any doubt, belonged to *Helophorus dorsalis* (Marsham, 1802).

Helophorus subarcuatus Rey, 1885

Synonyms

Helophorus obscurus var. *subarcuatus* Rey, 1885; *Helophorus obscurus* var. *purpuratus* Rey, 1885; *Helophorus aritzuensis* Sharp, 1916; *Helophorus lancifer* Sharp, 1916

Notes

An endemic species from France (Corsica) and Italy (Sardinia) (Hansen 2004). The species was recorded from Turkey (Erzurum, Erzincan, Tokat) (İncekara et al. 2002, 2004a; Polat et al. 2010). Specimens were sent to Dr Robert Angus for checking of their identification. His answer was that the specimens, without any doubt, belonged to *Helophorus hilaris* Sharp, 1916.

***Helophorus shatrovskyi* Angus, 1985**

Notes

An endemic species from Mongolia (Hansen 2004). The species was recorded from Turkey (Erzincan) (İncekara et al. 2005b). Specimens were sent to Dr Robert Angus for checking of their identification. His answer was that the specimens, without any doubt, belonged to *Helophorus helenae* Angus, 1998.

***Helophorus nevadensis* Sharp, 1916**

Synonym

Atracthelophorus nevadensis Sharp, 1916

Notes

According to Angus (1992), *H. nevadensis* is endemic to the alpine zone of Spanish mountains. The species was recorded from Turkey (Tokat) (Polat et al. 2010). We checked an *H. nevadensis* specimen from BNHM labelled as “6: SPAIN: GRANADA: 2400–2700 m on S side of Sierra Nevada on Pampaneira: 15 April 1985 R.B. Angus and G.N. Foster” and compared it with the Turkish materials. Two of four Turkish specimens were rather spoiled. General appearance, body length, aedeagophore structure and length of two other specimens were as in the Spanish material, but elytra was darker in Spanish specimens. Specimens were sent to Dr Robert Angus for checking the identification. His answer was that the specimens, without any doubt, belong to *Helophorus montenegrinus* Kuwert, 1885.

***Helochares melanophthalmus* (Mulsant, 1844)**

Synonyms

Hydrobius melanophthalmus Dejean, 1833; *Helophilus melanophthalmus* Mulsant, 1844

Notes

An Afrotropical species occurring in Cameroon, Ghana, Nigeria, Senegal, Seychelles and Sudan (Hansen 1999). The species was recorded from İçel by Sahlberg (1913). However, no voucher specimens are available for these data and the records are most probably based on misidentifications or mislabelling

***Helochares dilutus* (Erichson, 1843)**

Synonyms

Hydrobius dilutus Erichson, 1843; *Helochares niloticus* Sharp, 1903

Notes

An Afrotropical species (Hansen 1999). The species was recorded from İçel by Peyron (1858), but his record may be based on misidentifications or mislabelling.

Laccobius revelieri Perris, 1864

Synonyms

Laccobius pallidus var. *debilis* Rottenberg, 1874; *Laccobius elongatus* Tournier, 1878

Notes

An Afrotropical species occurring in Central and northern Africa, northwards into France, Italy, Portugal and Spain (Hansen 1999). The species was recorded from İzmir by Sahlberg (1913), but his record is in need of confirmation.

Laccobius sinuatus sinuatus Motschulsky, 1849

Synonyms

Laccobius cupreus Rey, 1884; *Laccobius oblongus* Gorham, 1907

Notes

A widespread European species, ranging from southern Scandinavia to North Africa and reaching the Balkans and European Russia in the east (Hansen 1999). The species was recorded from İzmir by Sahlberg (1913), but his record is in need of confirmation.

Enochrus affinis (Thunberg, 1794)

Synonyms

Hydrophilus affinis Thunberg, 1794; *Hydrophilus marginellus* var. *affinis* Thunberg, 1794; *Hydrophilus minutus* Fabricius, 1801; *Philhydrus marginellus* var. *minutus* Fabricius, 1801

Notes

A widespread Palaearctic species, more common especially in central and northern Europe but reaching as far as the Russian Far East (Hansen 1999, 2004). *Philhydrus marginellus* var. *minutus* F. was recorded from İçel by Peyron (1858), but his record is in need of confirmation.

Cercyon pygmaeus (Illiger, 1801)

Synonyms

Sphaeridium ferrugineum Herbst, 1792; *Sphaeridium pygmaeus* Illiger, 1801; *Sphaeridium conspurcatus* Sturm, 1807; *Sphaeridium merdarius* Sturm, 1807; *Sphaeridium apicalis* Say, 1823; *Cercyon erythropus* Stephens, 1829; *Cercyon fuscescens* Stephens, 1829; *Cercyon stercorator* Stephens, 1829

Notes

Widespread across the Palaearctic Region, missing only in the Russian Far East and the Iberian Peninsula; introduced also to North America (Hansen 1999, 2004). The species was recorded from İçel by Peyron (1858), but his record is in need of confirmation.

Cercyon melanocephalus (Linné, 1758)

Synonyms

Dermestes melanocephalus Linné, 1758; *Cercyon melanocephalus* var. *rubripennis* Kuwert, 1890

Notes

A widespread Palaearctic species ranging from Iceland across Europe to western Siberia (Hansen 1999, 2004). The species was recorded from İçel by Peyron (1858), but his record is in need of confirmation.

Cercyon convexiusculus Stephens, 1829

Synonyms

Sphaeridium lugubre Paykull, 1798; *Cercyon tristis* var. *intermixtus* Sharp, 1918; *Cercyon alni* Vogt, 1969

Notes

A Palaearctic species occurring in northern and central Europe, eastwards to the Caucasus and Siberia (Hansen 1999). *Cercyon lugubris* Payk. was recorded from the Sultan Mountains (Province of Afyon) by Bodemeyer (1900), but his record is in need of confirmation.

Results and Discussion

The total number of species and subspecies of Hydrophiloid beetles recorded in Turkey amounts to 161. Two families are dominant (>5% of total species). In decreasing order, they are as follows (% of total species is given in parentheses): Hydrophilidae (61.5%), Helophoridae (31.1%). One family is subdominant (abundance of 2–5%): Hydrochidae (4.3%). The abundance of the remaining two families (Georissidae and Spercheidae) is <2%.

There are a total of 81 administrative divisions in Turkey (Figure 2) of which 22 provinces (Aksaray, Amasya, Ankara, Artvin, Balıkesir, Bayburt, Bilecik, Bingöl, Bursa, Çanakkale, Çorum, Erzincan, Erzurum, Giresun, Gümüşhane, Kayseri, Ordu, Samsun, Tokat, Trabzon, Rize and Yozgat) were relatively well studied for Hydrophiloids (Darilmaz and Kiyak 2006a, 2006b, 2008, 2009a, 2009b, 2010, 2011; Darilmaz, Kiyak, et al. 2010; Darilmaz, Salur, et al. 2010; Ertorun and Tanatmış 2009; Hizarcioglu et al. 2010; İncekara 2008, 2009; İncekara et al. 2004a, 2004b, 2004c, 2005a, 2005b,

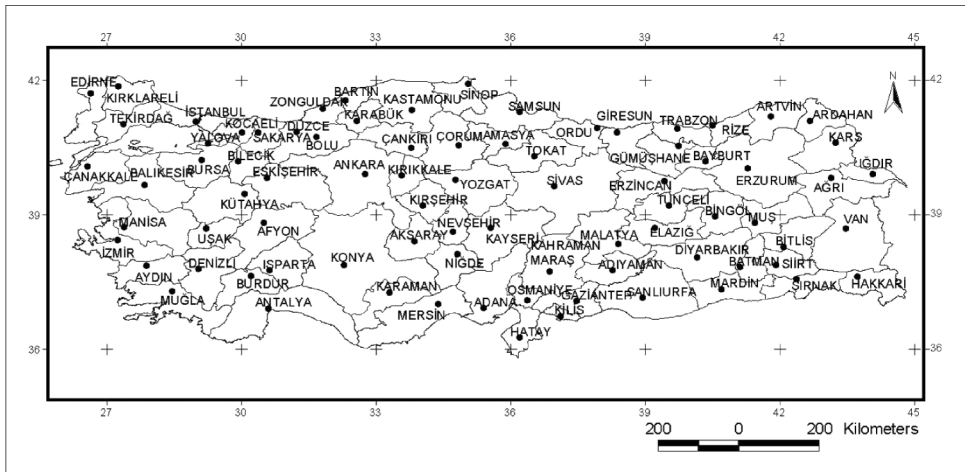


Figure 2. Map of Turkey showing administrative divisions.

2005c, 2005d, 2010; İncekara, Mart, Erman 2002, 2003; İncekara, Mart, Hayat 2003; İncekara, Darilmaz, et al. 2009; İncekara, Mart, et al. 2009; Karaman et al. 2008; Kiyak et al. 2006; Mart 2009; Mart and Erman 2001; Mart, İncekara, Erman 2003, 2006; Mart, İncekara, Hayat 2006; Mart, İncekara, Polat et al. 2009a, 2009b, Mart, İncekara, Karaca 2010a, 2010b; Özemesi and Önder 1988; Polat et al. 2010).

Further studies aiming to improve our knowledge on Turkish water beetles should focus on collecting in little-known areas, revision of still unstudied material from additional families and filling the large gaps in our knowledge regarding the diversity of water beetles in some specific habitats.

Acknowledgements

The authors thank Martin Fikacek, NMPC and Marek Przewoźny, Adam Mickiewicz University, Department of Systematic Zoology, Poland for the contributed of materials data; and Dr. Olof Biström and Dr. Hans Silfverberg loan of specimens from ZMHU; and Dr. Abdullah Mart, Atatürk University, Biology Department, Erzurum, Turkey for drawing of *H. farsicus*; and Dr. Elio Gentili (Italy) who have kindly given permission for information of *Laccobius obscuratus orchymonti* Gentili, 1976; and Ms. Christine Taylor, BNHM who have kindly allowed for information of *H. aculeatus*; and Dr. Robert Angus, BNHM who contributed to this study.

References

- Angus R. 1988. Notes on the *Helophorus* (Coleoptera, Hydrophilidae) occurring in Turkey, Iran and neighbouring territories. *Rev Suisse Zool.* 95(1):209–248.
- Angus R. 1992. *Insecta, Coleoptera, Hydrophilidae, Helophorinae*. Süßwasserfauna von Mitteleuropa 20/10–2. Jena: Gustav Fischer Verlag.
- Angus R. 1998. A new Turkish *Helophorus*, with notes on *H. griseus* Herbst and *H. montanus* d'Orchymont (Col., Hydrophiloidea). *Entomol Mon Mag.* 134(1604–1607):5–9.

- Anlaş S, Fikáček M, Tezcan S. 2008. Notes on the seasonal dynamics of the coprophagous Hydrophilidae (Coleoptera) in western Turkey, with first record of *Megasternum concinnum* for Turkish fauna. *Linz Biol Beitr.* 40(1):409–417.
- Archangelsky M. 1998. Phylogeny of Hydrophiloidea using characters from adult and preimaginal stages. *Syst Entomol.* 23:9–24.
- Archangelsky M, Beutel RG, Komarek A. 2005. Coleoptera, Vol. I. Morphology and Systematics (Archostemata, Adephaga, Myxophaga, Polyphaga partim). *Handbook of Zoology Vol. IV, Arthropoda: Insecta.* Berlin-New York: Walter de Gruyter. Chapter 10, Hydrophiloidea; p. 157–158.
- Balfour-Browne J. 1938. A contribution to the knowledge of the Palpicornia of Palestine. *Bull Soc Fouad Ier Entom.* 22:28–35.
- Balfour-Browne J. 1951. Coleoptera: Haliplidae, Dytiscidae, Gyrinidae, Hydraenidae, Hydrophilidae. *Br Mus Exped SW Arabia.* 1(16):179–220.
- Bodemeyer E. 1900. Quer durch Klein–Asien in den Bulghar Dagh Eine naturwissenschaftliche studien–reise. Emmendingen: Druck und Verlag.
- Burmeister EG. 1985. Die von R. Kinzelbach in Südosteuropa und dem Vorderen Orient gesammelten Hydrophiliden (Exkursionsausbeuten) (Coleoptera; Hydrophilidae, Helophoridae, Dytiscidae). *Entomofauna.* 6(23):381–395.
- Chiesa A. 1964. Hydrophilidae de Grece et de Turquie (Recoltes Em. Jannsens 1959–1962). *Bull Ann Soc Roy Entomol Belg.* 100:315–322.
- Conservation International: Biodiversity Hotspots [Internet]. c2007. Arlington, Virginia: Center for Applied Biodiversity Science at Conservation International; [cited 2010 April 10]. Available from: <http://www.biodiversityhotspots.org/>
- Crowson RA. 1981. The biology of the Coleoptera. London: Academic Press.
- Darilmaz MC, Kiyak S. 2005. Two new records of palpicornia for the Central Anatolia Region's Fauna, Turkey-II (Insecta: Coleoptera). Paper presented at: II. International Environmental Protection Symposium, Kütahya.
- Darilmaz MC, Kiyak S. 2006a. A contribution to the knowledge of the Turkish Water Beetles Fauna (Coleoptera). *Mun Entomol Zool.* 1(1):129–144.
- Darilmaz MC, Kiyak S. 2006b. *Helochaeres lividus*: new distributional records from Turkey (Coleoptera: Hydrophilidae). *Entomol Probl.* 36(1):79.
- Darilmaz MC, Kiyak S. 2008. An annotated checklist and key to the Turkish Elongated Water Scavenger Beetles (Coleoptera: Hydrochidae). *Baltic J Coleopterol.* 8(2): 149–154.
- Darilmaz MC, Kiyak S. 2009a. Further study on *Chasmogenus* and *Paracymus* from Turkey (Coleoptera: Hydrophilidae). *Acta Zool Bulg.* 61(1):105–108.
- Darilmaz MC, Kiyak S. 2009b. The genus *Enochrus* (Coleoptera: Hydrophilidae) from Turkey, checklist and new records. *Arch Biol Sci Belgrade.* 61(4):762–772.
- Darilmaz MC, Kiyak S. 2010. Occurrences of the subgenus *Microlaccobius* GENTILI in Turkey (Coleoptera: Hydrophilidae, *Laccobius*) with taxonomic notes. *Turk J Zool.* 34(1):63–68.
- Darilmaz MC, Kiyak S. Forthcoming 2011. A study on the family Spercheidae (Coleoptera) from Turkey. *Turk J Zool.*
- Darilmaz MC, Kiyak A, Short AEZ. 2010. Discovery of the water scavenger beetle genus *Brownephilus* Mouchamps in Turkey (Coleoptera, Hydrophilidae, Hydrophilini). *Zookeys.* 53:13–16.
- Darilmaz MC, Salur A, Mesci S. 2010. Aquatic Coleoptera fauna of Çorum and Yozgat Provinces (Turkey). *Bio Di Con.* 3(2):89–96.
- D'Orchymont A. 1932. Palpicornes recueillis en Turquie d'Asie par M. Henri Gadeau De Kerville. *Soc Entomol Fr.* 393–401.
- D'Orchymont A. 1940. Palpicornia de Chypre. Voyage de M. A. Ball (Octobre–Novembre 1932). *Mem Mus Royal Hist Nat Belgique.* 19:1–35.
- D'Orchymont A. 1942. Contribution a l'étude de la tribu Hydrobini Bedel, spécialement de sa sous-tribu Hydrobiae (Palpicornia–Hydrophilidae). *Mem Mus Royal Hist Nat Belg.* 24:1–68.

- D'Orchymont A. 1943. Notes sur la tribu Berosini Bedel. (Coleoptera Palpicornia Hydrophilidae). Bull Mus Roy Hist Nat Belg. 19(42):1–12.
- Ertoran N, Tanatmıř M. 2009. Contributions to the Hydrophilidae (Polyphaga: Coleoptera) species diversity of South Marmara Region (Turkey). Bio Dio Con. 2(3):7–17.
- Fikáček M. 2005. Taxonomic revision of the *Cercyon* (*Arcocercyon*) *dieganus* species group (Coleoptera: Hydrophilidae: Sphaeridiinae). Bull Ann Soc R Entomol Belg Entomol. 75:79–102.
- Fikáček M. 2006. Taxonomic status of *Cercyon alpinus*, *C. exorabilis*, *C. strandi* and *C. taticus* and notes of their biology (Coleoptera: Hydrophilidae: Sphaeridiinae). Ann Naturhist Mus Wien. 107B:145–164.
- Fikáček M, Falamarzi S. 2010. *Georissus persicus* sp. nov. from Iran, with notes on the West-Palaeartic species of the *G. laesicollis* group (Coleoptera: Georissidae). Acta Entomol Mus Nat Pragae. 50(1):107–116.
- Ganglbauer L. 1901. Beiträge zur Kenntnis der paläarktischen Hydrophiliden. Verh zool bot Ges Wien. 51:312–332.
- Ganglbauer L. 1904. Die Käfer von Mitteleuropa. Vierter Band, erste Hälfte. Dermestidae, Byrrhidae, Nosodendridae, Georyssidae, Dryopidae, Heteroceridae, Hydrophilidae. Wien: K. Gerolds Sohn.
- Gentili E. 1974. Descrizione di nuove entia appartenenti al genere *Laccobius* ERICHSON, 1837 e proposta per un nuovo inquadramento sottogenérico. Mem Mus Civ St Nat Verona. XX(1972):549–565.
- Gentili E. 1979. Aggiunte alla revisione dei *Laccobius* paleartici (Coleoptera, Hydrophilidae). Boll Soc Entomol Ital. 111(1–3):43–50.
- Gentili E. 1981. Risultati delle spedizioni entomologiche Cecoslovacco–Iraniche in Iran Coleoptera: Hydrophilidae. IColeotteri del genere *Laccobius*. Acta Entomol Mus Nat Pragae. 40:91–94.
- Gentili E. 1988. Verso una revisione del genere *Laccobius* (Coleoptera, Hydrophilidae). Annuario Oss Fis Terr Mus Stoppani Semin Arc Milano. 9:31–47.
- Gentili E. 1991. Elementi per una revisione del genere *Laccobius* (Coleoptera, Hydrophilidae). G Ital Entomol. 5:381–389.
- Gentili E. 2000. Distribuzione del genere *Laccobius* (Coleoptera, Hydrophilidae) in Anatolia e problemi relativi. Biogeographia. XXI(2000):173–214.
- Gentili E, Chiesa A. 1975. A Revisione dei *Laccobius* paleartici (Coleoptera: Hydrophilidae). Mem Soc Entomol Ital. 54:1–187.
- Gentili E, Whitehead PF. 2000. A new species of *Laccobius* (Col., Hydrophilidae) from Lycia, Turkey. Entomol Mon Mag. 136:73–76.
- Hansen M. 1991. The Hydrophiloid beetles. Phylogeny, classification and a revision of genera (Coleoptera: Hydrophiloidea). Biol Skr. 40:1–365.
- Hansen M. 1997. Phylogeny and classification of the staphyliniform beetle families (Coleoptera). Biol Skr. 48:1–339
- Hansen M. 1999. World catalogue of insects. Volume 2. Hydrophiloidea (s. str.) (Coleoptera). Stenstrup: Apollo Books.
- Hansen M. 2004. Hydrophiloidea. pp. 36–68. In: Löbl I, Smetana A. editors. Catalogue of Palaeartic Coleoptera, Vol. 2. Stenstrup: Apollo Books; 942 pp.
- Hebauer F. 1993. European *Chaetarthria*. Latissimus. 3:1–3.
- Hebauer F. 1994. The Hydrophiloidea of Israel and the Sinai (Coleoptera, Hydrophiloidea). Zool Middle East. 10:74–137.
- Hebauer F. 1997. Revision der arten der Familie Spercheidae Erichson, 1837 (Coleoptera, Hydrophiloidea). Entomol Bl. 93:9–42.
- Hebauer F. 2004. Taxonomische studien zur Hydrophiliden–Gattung *Enochrus* Thomson, 1859. 6. Teil: Die afrikanischen arten der untergattungen *Lumetus* Zaitzev, 1908 und *Enochrus* s. str. (Coleoptera, Hydrophilidae). Beitr Entomol. 54(1):75–88.

- Hebauer F, Ryndevich SK. 2005. New data on the distribution of old world Hydrophilidae (Coleoptera). *Acta Coleop.* XXI(1):43–51.
- Hidalgo-Galiana A, Jach MA, Ribera I. 2010. *Hydrochus farsicus* sp. n. from Iran and notes on other Palearctic species of the genus (Coleoptera: Hydrophiloidea: Hydrochidae). *Zootaxa* 2344: 61–64.
- Hizarcioglu R, Kiyak S, Darilmaz MC. 2010. Some aquatic Coleoptera from Ankara province, Turkey. *Mun Entomol Zool.* 5(1):278–282.
- İncekara Ü. 2008. A new species of *Helophorus* Fabricius 1775 (Coleoptera: Helophoridae) from Turkey, with a remark on the key to subgenera in Angus 1992. *Entomol News.* 119(4):420–424.
- İncekara Ü. 2009. Records of Aquatic Beetles (Helophoridae, Hydrophilidae, Hydrochidae, Dytiscidae) and physico-chemical parameters in a Natural Lake (Artvin, Turkey). *Turk J Zool.* 33(1):89–92.
- İncekara Ü, Mart A, Erman O. 2002. Three unrecorded *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) species for the Turkish Fauna. *Turk J Zool.* 26(3): 289–292.
- İncekara Ü, Mart A, Erman O. 2003. Check list of the Hydrophilidae (Coleoptera) species of Turkey and a new record for the Turkish Fauna. *Turk J Zool.* 27:47–53.
- İncekara Ü, Mart A, Hayat R. 2003. A new record for the Turkish fauna: *Cercyon ustulatus* (Preyssl, 1790) (Coleoptera, Hydrophilidae). *Turk Entomol Derg.* 27(2):91–94.
- İncekara Ü, Mart A, Erman O. 2004a. Distribution of Turkish *Helophorus* Fabricius, 1775 (Coleoptera, Helophoridae) I. Subgenus *Rhopalhelophorus*, with two new records. *J Entomol Res Soc.* 6(2):51–62.
- İncekara Ü, Mart A, Erman O. 2004b. Two new records of Hydrochidae (Coleoptera) species from Turkey, with some ecological notes. *Turk J Zool.* 28(3):213–216.
- İncekara Ü, Mart A, Erman O. 2004c. First records of *Anacaena lutescens* (Stephens, 1829) and *Cercyon littoralis* (Gyllenhal, 1808) from Turkey (Coleoptera, Hydrophilidae). *Zool 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. *F. Ü. Fen ve Mühendislik Bilimleri Dergisi.* 17(2):449–454.
- İncekara Ü, Mart A, Erman O. 2005b. Distribution of Turkish *Helophorus* Fabricius, 1775 (Coleoptera, Helophoridae) II. Subgenus *Atracthelophorus*, with two new records and some ecological notes. *Turk J Zool.* 29(3):237–242.
- İncekara Ü, Mart A, Erman O. 2005c. *Helophorus erzurumicus* sp. n. A new species from Turkey and some notes on *H. ponticus* Angus, 1988 (Coleoptera: Hydrophilidae). *Aquat Insects.* 27(1):43–46.
- İncekara Ü, Mart A, Erman O. 2005d. Studies on Turkish Hydrophilidae (Coleoptera) I. Genus *Enochrus* Thomson, 1859. *Turk J Zool.* 29:155–158.
- İncekara Ü, Darilmaz MC, Mart A, Polat A, Karaca H. 2009. Faunistic study on two sister plain (Bafra and Çarşamba) aquatic Coleoptera fauna in Turkey: two similar geography but rather different fauna, with a new record. *Mun Entomol Zool.* 4(1):125–138.
- İncekara Ü, Mart A, Polat A, Karaca H. 2009. Turkish Hydrophilidae (Coleoptera) III. genus *Hydrochara* Berthold 1827 with the description of a new species, *Hydrochara major* sp. n. *Turk J Zool.* 33(3):315–319.
- İncekara Ü, Polat A, Darilmaz MC, Mart A, Taşar GE. Forthcoming 2010. Aquatic Coleoptera fauna of Ramsar site Sultan Sazlığı (Kayseri Turkey) and surroundings, with new distribution records of four species from the southern limit of its ranges. *Arch Biol Sci Belgrade.* 62(4).
- Karaman B, Kiyak S, Darilmaz MC. 2008. Faunistic study of the aquatic beetles (Coleoptera) of Trabzon province (Turkey). *Mun Entomol Zool.* 3(1):437–446.
- Kiyak S, Canbulat S, Salur A, Darilmaz MC. 2006. Additional notes on aquatic Coleoptera fauna of Turkey with a new record (Helophoridae, Hydrophilidae). *Mun Entomol Zool.* 1(2):273–278.

- Lawrence JF, Newton AF. 1982. Evolution and classification of beetles. *Annu Rev Entomol.* 13:261–290.
- Mart A. 2009. Water scavenger beetles (Coleoptera: Hydrophilidae) provinces of Central Black Sea Region of Turkey. *J Ent Res Soc.* 11(1):47–70.
- Mart A, Erman O. 2001. A Study on *Helophorus* Fabricius, 1775 (Coleoptera, Hydrophilidae) species. *Turk J Zool.* 25(1):35–40.
- Mart A, İncekara Ü, Erman O. 2003. A new species of *Laccobius* Erichson, 1837 (Coleoptera: Hydrophilidae: Hydrophilinae) from Turkey. *Aquat Insects.* 25(1):75–80.
- Mart A, İncekara Ü, Erman O. 2006. Studies on Turkish Hydrophilidae (Coleoptera) II. genus *Paracymus* Thomson, 1867. *J Entomol Res Soc.* 8(3):1–4.
- Mart A, İncekara Ü, Hayat R. 2006. Two new records of Hydrophilid (Coleoptera: Hydrophilidae) species of the Turkish Fauna. *Turk J Zool.* 30:267–269.
- Mart A, İncekara Ü, Polat A, Karaca H. 2009a. *Hydrochus ibericus* and *Hydrochus nodulifer*, two new records for the Hydrochidae (Coleoptera) Fauna of Turkey. *Turk J Zool.* 33(2):249–250.
- Mart A, İncekara Ü, Polat A, Karaca H. 2009b. New genera and species of the Family Hydrophilidae (Coleoptera) from Turkey. *Turk J Zool.* 33(2):237–240.
- Mart A, İncekara A, Karaca H. 2010a. A new species and new records of Hydrophilidae (Coleoptera) from Turkey. *Turk J Zool.* 34(3):297–303.
- Mart A, İncekara A, Karaca H. 2010b. Faunistic study of the aquatic beetles (Coleoptera: Helophoridae) provinces (Bayburt, Giresun, Gümüşhane, Ordu and Trabzon) of Turkey. *Turk J Zool.* 34(4) 509–521.
- Özesmi U, Önder F. 1988. A faunistic study on the aquatic Heteroptera and Coleoptera species of Sultan Marshes, Kayseri. Paper presented at: Proceedings of the 9th Biology Congress. Sivas.
- Peyron E. 1858. Catalogue des coléoptères des environs de Tarsous (Caramanie). *Ann Soc Entomol Fr.* (3)6:353–434.
- Polat A, İncekara Ü, Mart A. 2010. A faunistic study on the Helophoridae, Hydrophilidae and Hydrochidae (Coleoptera) in Samsun and Tokat provinces (Turkey). *Turk Entomol Derg.* 34(2):227–239.
- Ribera I, Schödl S, Hernando C. 1997. *Enochrus ater* (Kuwert) and *E. salomonis* (Sahlberg) (Coleoptera: Hydrophilidae), two widespread but overlooked species new to the European fauna. *Hydrobiologia.* 354:183–188.
- Sahlberg J. 1913. Coleoptera mediterranea orientalia, quae in Aegypto, Palestina, Syria, Caramania atque in Anatolia occidentali anno 1904 collegerunt John SAHLBERG et Unio SAALAS. *Öfver Finska Vetensk Soc Förhandl.* 55(1912–1913)A19:1–281.
- Schödl S. 1991. Revision der Gattung *Berosus* LEACH 1. Teil: Die palaarktischen Arten der Untergattung *Enophurus* (Coleoptera: Hydrophilidae). *Koleopterol Rundsch.* 61:111–135.
- Schödl S. 1993. Revision der Gattung *Berosus* LEACH 3. Teil: Die palaarktischen und orientalischen Arten der Untergattung *Berosus* s.str. (Coleoptera: Hydrophilidae). *Koleopterol Rundsch.* 63:189–233.
- Schödl S. 1997. Taxonomic studies on the genus *Enochrus* (Coleoptera: Hydrophilidae). *Entomol Probl.* 28(1):61–66.
- Schödl S. 1998. Taxonomic revision of *Enochrus* (Coleoptera: Hydrophilidae) I. The *E. bicolor* species complex. *Entomol Probl.* 29(2):111–127.
- Short AEZ, Hebauer F. 2006. World Catalogue of Hydrophiloidea – additions and corrections, 1 (1999–2005) (Coleoptera). *Koleopterol Rundsch.* 76:315–359.
- Topkara ET, Balik S. 2008. Karagöl (Yamanlar, İzmir) ün Sucul Coleoptera (Classis: Insecta) Faunasına Katkılar. *E.Ü. Su Ürünleri Dergisi.* 25(4):343–345.
- Van Berge Henegouwen AL. 1986. Revision of the European species of *Anacaena* Thomson (Coleoptera, Hydrophilidae). *Entomol Scand.* 17:393–407.
- Vorst O, Cuppen JGM. 2003. A third Palearctic species of *Chaetarthria* (Hydrophilidae). *Koleopterol Rundsch.* 73:161–167.
- Wooldridge DP. 1978. *Paracymus* of the Palearctic faunal region (Coleoptera: Hydrophilidae). *J Kans Entomol Soc.* 51(1):123–130.