

DYTISCIDAE SPECIES (COLEOPTERA) IN ARTVIN AND RİZE PROVINCES OF NORTHEASTERN TURKEY

Ö. Köksal Erman* and Orhan Erman**

*Atatürk University, Science and Art Faculty, Biology Department, 25240 Erzurum-TURKEY. e-mails: okerman1@hotmail.com, okerman@atauni.edu.tr

**Firat University, Science and Art Faculty, Biology Department, Elazığ, Turkey.

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ABSTRACT: This study was carried out in order to identify Dytiscidae species in the Artvin and Rize provinces in 2000 and 2001. A total of 24 species and 4 subspecies from 14 genera were identified at the localities including the centre of Artvin, Rize and their environs.

KEY WORDS: Coleoptera, Dytiscidae, Fauna, Artvin, Rize, Turkey.

The Dytiscidae is a moderate-sized family of aquatic beetles and commonly called predaceous diving beetles. Dytiscids range in size from 1 to 47 mm. The antennae are filiform and 11-segmented. The head has prognathous mouthparts. The eyes are entire, flush with the side of the head. The pronotum is broadest at its base, with sharp lateral margins. The elytra have few or no striae, and completely cover the abdomen. The legs have the metacoxae greatly enlarged and invading the metasternum, reaching to the elytra. The metatarsi are tapering, often fringed with swimming hairs. The abdomen has the first visible sternite divided by metacoxae: the first 3 segments are connate. The tarsal formula is usually 5-5-5, sometimes 4-4-5 (Booth et al., 1990). The males of some species have peculiar front tarsi that bear large suction discs; these discs are used to hold the smooth elytra of the female during mating (Borror et al., 1981). Some dytiscids have expanded fore and mid tarsi, with smaller suction hairs, in both sexes.

Most dytiscids are excellent swimmers with compact, flattened, streamlined bodies. The flattened oar-like mid and hind legs often bear fringes of long swimming hairs. Adults and larvae of dytiscids occur together and have adapted to almost all aquatic habitats imaginable. Most dytiscids occur in lentic habitats such as shallow, weedy lakes, ponds, ditches, stock ponds, and springs while some occur in more specialized habitats (Spangler, 1981).

Both adults and larvae are aquatic and predaceous, feeding not only on a wide range of invertebrates such as molluscs, annelids, and insect larvae, but also on vertebrates such as fish fry and small amphibians (Booth et al., 1990). Most dytiscids occur in shallow waters to about 1 metre in depth because most have to rise to the surface periodically to renew their air supply (Spangler, 1981). Generally, densely vegetated waters have a more diverse dytiscid fauna than barren ones (Nilsson & Holmen, 1995).

The family Dytiscidae is the second largest family assigned to the suborder Adephaga (Spangler, 1981). It includes 3,892 species and 177 genera. Nine hundred and twenty one species have been recorded from the Palaearctic region. The number of Palaearctic genera is currently 66 (Nilsson, 2001, 2003, 2004, 2005). There have been a lot studies about Turkish Fauna (Balfour-Browne, 1963; Guéorguiev, 1968, 1981; Zaitzev, 1972; Uygar & Önder, 1988; Wewalka, 1992; Fery & Nilsson, 1993; Fery & Brancucci, 1997; Fery & Hosseinie, 1998; Erman, 2000; Erman & Fery, 2000; Fery et Al. 2001; Erman & Erman, 2002; Fery, 2003; Erman & Erman, 2004; Shaverdo, 2004; Erman, 2005; Erman et al., 2005; Hájek et al., 2005).

ABBREVIATIONS AND GENERAL NOTES

Since many older literature records refer to geographical units that correspond to more than one of the currently recognized Turkish provinces, the names of all provinces included in a particular unit are given in brackets as potentially part of the distribution in Turkey of each species.

The geographical unit Toros Dağları (Toros Mountains) is situated in the Mediterranean and extends from the province of Isparta to Mersin (Isparta, Antalya, Konya, Karaman, Mersin, Adana).

Some species were also recorded by ZAITZEV (1927) in Erzurum. The names of localities he used were probably based on Russian transcriptions of Armenian names. That's why we couldn't find exactly places although we research on two Turkish works (T. C. DAHİLİYE VEKALETİ, 1928; T. C. İÇİŞLERİ BAKANLIĞI, 1971). However we try to present some localities approximately when we give the species recorded by ZAITZEV (1927). Also we were unable to find some localities given on some works in the distribution in Turkey of species.

Countries have been coded as follows, as in NILSSON (2003, 2005).

E - Europe: AB Azerbaijan, AL Albania, AN Andorra, AR Armenia, AU Austria, AZ Azores, BE Belgium, BH Bosnia Herzegovina, BU Bulgaria, BY Byelorussia, CR Croatia, CT Russia: Central European Territory, CZ Czech Republic, DE Denmark, EN Estonia, FA Faeroe Islands, FI Finland, FR France (incl. Corsica, Monaco), GB Great Britain (incl. Channel Islands), GE Germany, GG Georgia, GR Greece (incl. Crete), HU Hungary, IC Iceland, IR Ireland, IT Italy (incl. Sardinia, Sicily, San Marino), KZ Kazakhstan, LA Latvia, LS Liechtenstein, LT Lithuania, LU Luxembourg, MA Malta, MC Macedonia, MD Moldavia, NL The Netherlands, NR Norway, NT Russia: North European Territory, PL Poland, PT Portugal, RO Roumania, RU Russia, SK Slovakia, SL Slovenia, SP Spain, SR Svalbard (Spitzbergen), ST Russia: South European Territory, SV Sweden, SZ Switzerland, TR Turkey, UK Ukraine, YU Yugoslavia (Serbia, Montenegro).

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

A - Asia: AE Arab Emirates, AF Afghanistan, AP Arunachal Pradesh, BA Bahrain, BT Bhutan, CH China, [CE Central Territory: ANH Anhui (Anhui), HUB Hubei (Hupei)], HUN Hunan, JIA Jiangsu (Kiangsu), JIX Jiangxi (Kiangsi), SHG Shanghai, ZHE Zhejiang

(Chekiang), NE Northeastern Territory (HEI Heilongjiang (Heilungkiang), JIL Jilin (Kirin), LIA Liaoning), NO Northern Territory (BEI Beijing (Peking or Peiping), GAN Gansu (Kansu), HEB Hebei (Hopeh), HEN Henan (Honana), NIN Ningxia (Ningsia), NMO Nei Mongol (Inner Mongolia), SHA Shaanxi (Shensi), SHN Shandong (Shantung), SHX Shanxi (Shansi), TIA Tianjin (Tsiensin), NW Northwestern Territory (GAN Gansu (Kansu), NMO Nei Mongol (Inner Mongolia), XIN Xinjiang (Sinkiang), SE Southeastern Territory (FUJ Fujian (Fukien), GUA Guangdong (Kwantung), GUX Guangxi (Kwangsi), HAI Hainan, HKG Hong Kong, MAC Macao, TAI Taiwan (Formosa), SW Southwestern Territory (GUI Guizhou (Kweichow), SCH Sichuan (Szechwan), YUN Yunnan), WP Western Plateau (QIN Qinghai (Tsinghai), XIZ Xizang Tibet)], CY Cyprus, ES Russia: East Siberia, FE Russia: Far East, HP Himachal Pradesh, IN Iran, IQ Iraq, IS Israel, JA Japan, JO Jordan, KA Kashmir (India), KI Kyrgyzstan, KU Kuwait, KZ Kazakhstan, LE Lebanon, MG Mongolia, NC North Korea, NE China: Northeast Territory, NP Nepal, NO China: Northern Territory, NW China: Northwest Territory, OM Oman, PA Pakistan, QA Qatar (incl. United Arab Emirates), RU Russia, SA Saudi Arabia, SC South Korea, SD Sikkim, Darjeeling (India), Darjeeling, SE China: Southeastern Territory (incl. Macao, Hongkong), SI Egypt: Sinai, SW China: Southwestern Territory, SY Syria, TD Tadjikistan, TM Turkmenistan, TR Turkey, UP Uttar Pradesh (India), UZ Uzbekistan, WP China: Western Plateau, WS Russia: West Siberia, YE Yemen (incl. Socotra) .

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

MATERIAL AND METHODS

The samples were collected by means of a sieve, ladle and net having a mesh diameter of 0.5 mm. The beetles were killed with ethyl acetate or in 70% alcohol solution and then the muddy substance on their surfaces was brushed off with a small paint brush in the laboratory. Genitalia were dissected under the microscope. The illustrations of genitalia and some taxonomic characters were prepared using a Nikkon type SMZ-U stereo microscope.

Family DYTISCIDAE Leach, 1815
Subfamily Agabinae Thomson, 1867

Genus *Agabus* Leach, 1817
Agabus biguttatus (Olivier, 1795)

Dytiscus biguttatus Olivier, 1795, Entom. 3: 26.

Examined material: Artvin: Borçka: Çiftepınar village, 3 males, 7 females, 02.07.2001; Hopa: Baykanlar brook, 1 male, 1 female, 26.07.2001; Sundura brook, 1 female, 26.07.2001; Çamlıköy, 1 female, 26.07.2001; Şavşat: Ciritdüzü village-Karagöl way, 3 males, 7 females, 03.07.2001. Rize: İkizdere: Cimil plateau way, 3 females, 29.07.2001; Gölyayla, 9 males, 3 females, 01.09.2001; Rüzgarlı village, 2 males, 8 females, 30.07.2001; Sivrikaya village, 10 males, 5 females, 29.06.2001.

Distribution in Turkey: Akmilar (?), Aksaray, Beynam (Ankara), Bilecik, Bolkar Dağları (Mersin or Karaman), Bulgharmaden (?), Bursa, Bürücek-Toros (Mersin), Çankırı, Çay (This locality is in 5 provinces: Afyon, Ağrı, Antalya, Bingöl, Isparta), Gyaur Dağları (may be Gavur Dağları, Erzurum), Ephesus (İzmir), Erzurum, Horos Dağları (Horoz Dağları, Gümüşhane or Trabzon), Isparta-Salur (Isparta), Karaboğa Dağı (Elazığ or Bingöl), Karaköy (Bilecik), Karsu (Hatay), Kastamonu, Kilikia-Taurus (Toros Dağları), Sadagh (most probability Sadak, Gümüşhane), Sapanca (Sakarya), Sultan Dağı (Afyon), Toros Dağları, Trabzon, Torut (may be Toruk: Adana or Sirt), Yamanlar Dağı (İzmir), Yeniköy-Toros (Mersin or Adana), Yozgat (Guéorguiev, 1968, 1981; Erman, 2000; Darılmaz and Kiyak, 2006).

Distribution in the world: E: AB AL AR AU BE BH BU BY CR CZ FR GB GE GG GR HU IR IT LS LU MC NL PL PT RO RU (CT ST) SK SL SP SZ UK YU N: AG CI EG LB MO TU A: AF CH (SCH XIN) CY HP IN IQ IS JO KA KI LE PA RU (WS) SA SI SY TM TR UZ.

Agabus bipustulatus (Linnaeus, 1767)

Dytiscus bipustulatus Linnaeus, 1767, Syst. Nat. (12) 1(2):666.

Examined material: Artvin: Borçka: Karagöl, 3 males, 9 females, 02.07.2001; Çifttepinar village, 2 males, 1 female, 02.07.2001; Hopa: Çamlıköy, 1 female, 26.07.2001; Şavşat: Aşağı Koyunlu village, 1 male, 04.07.2001; Ciritdüzü village-Karagöl way, 2 females, 03.07.2001; Kirazlı village, 4 males, 2 females, 24.07.2001; Şavşat-Artvin way 20. km, 9 males, 15 females, 03.07.2001. Rize: Çayeli-Pazar way, 2 females, 01.07.2001; Pazar-Ayder crossroads, 1 male, 1 female, 01.07.2001; İkizdere: Anzer village, 1 female, 29.06.2001; Anzer village plateau, 7 males, 2 females, 29.07.2001; Cimil plateau, 15 males, 35 females, 29.07.2001; Gölyayla, 11 males, 15 females, 01.09.2001; Rüzgarlı village, 5 males, 6 females, 30.07.2001; Sivrikaya village, 2 males, 2 females, 29.06.2001.

Distribution in Turkey: Alemdağı (most probability İstanbul), Başkale (Van), Boz Dağ (a geographical unit covering the following provinces: Ağrı, Bilecik, Eskişehir, Konya, Manisa, Muğla, Van), Bozburun Dağı (Antalya), Derbent (Konya), Efes (İzmir), Erciyes Dağı (Kayseri), Ereğli (Konya or Zonguldak), Erzurum, Ilgaz Dağları (Kastamonu or Çankırı), İnegöl (Bursa), Kayoli Dağı (Uşak), Kızılviran (a geographical unit covering the following provinces: Çorum, Erzurum, Konya, Kars, Afyon, Ankara, Kayseri, Niğde), Kozik (Erzurum ?), Manastır (a geographical unit covering the following provinces: Konya, Denizli, Bayburt, Gümüşhane, Giresun, İzmir, Mersin, Giresun), Mollafeneri (Kocaeli), Muğla, Sadagh (most probability Sadak, Gümüşhane), Sarıkamış (Kars), Toros Dağları, Trabzon, Uludağ (Bursa), Van Gölü (Van) (Guéorguiev, 1981; Erman, 2000; Kıyak et al., 2007).

Distribution in the world: E: AB AL AN AR AU AZ BE BH BU BY CR CZ DE EN FA FI FR GB GE GG GR HU IC IR IT LA LS LT LU MC NL NR PL PT RO RU (CT NT ST) SK SL SP SV SZ TR UK YU N: AG LB MO TU A: AF CH (XIN) CY IN IS KI KZ LE RU (WS) SY TD TR UZ "Manchuria" AFR.

Agabus glacialis Hochhuth, 1846

Agabus glacialis Hochhuth, 1846, in Chaudoir & Hochhuth, Enum. Carab. Hydroc. Cauc. 218.

Examined material: Artvin: Borçka: Karagöl, 2 males, 2 females, 25.07.2001; Şavşat: Şavşat-Artvin way 20. km, 11 males, 11 females, 03.07.2001. Rize: İkizdere: Anzer village plateau, 1 male, 30.06.2001; Cimil plateau, 15 males, 22 females, 29.07.2001; Rüzgarlı village, 2 males, 6 females, 30.07.2001; Sivrikaya village, 1 male, 7 females, 29.06.2001; 1 male, 4 females, 29.06.2001; Pazar: Pazar-Ayder crossroads, 6 males, 5 females, 01.07.2001.

Distribution in Turkey: Ardahan, Artvin, Erzurum, Horoz Dağları (Horoz Dağları, Gümüşhane or Trabzon), İkizdere (Rize), Sadagh (most probability Sadak, Gümüşhane), Trabzon, Ulu Dağ (Bursa) (Zaitzev, 1972; Guéorguiev, 1968, 1981; Erman, 2000).

Distribution in the world: E: AB AR GG RU (ST) A: IN TR.

Agabus paludosus (Fabricius, 1801)

Dytiscus paludosus Fabricius, 1801, Syst. Eleuth. 1: 266.

Examined material: Artvin: Şavşat: Aşağı Koyunlu village, 1 female, 04.07.2001. Rize: İkizdere: Anzer village plateau, 1 female, 29.07.2001.

Distribution in Turkey: Çamlidere-Işık Dağı (Ankara or Çankırı), Pashaki (Güllüce village, Erzurum) (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000).

Distribution in the world: E: AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU NL NR PL PT RU (CT NT ST) SK SL SP SV SZ UK YU A: RU (WS) TR.

Genus *Ilybius* Erichson, 1832

Ilybius fuliginosus fuliginosus (Fabricius, 1792)

Dytiscus fuliginosus Fabricius, 1792, Ent. Syst. 1(1): 191.

Examined material: Artvin: Şavşat: Yukarı Koyunlu village, 6 males, 5 females, 04.07.2001. Rize: İkizdere: Gölyayla, 2 males, 2 females, 01.09.2001; Pazar-Ayder crossroads, 3 males, 2 females, 01.07.2001.

Distribution in Turkey: Erzurum, Isparta, Karaboğa Dağı (Elazığ or Bingöl), Konya, Kilek (Adana), Sarıkamış (Kars) (Guéorguiev, 1981; Erman, 2000; Kıyak et al., 2007).

Distribution in the world: E: AB AN AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LT LU MC MD NL NR PL PT RU (CT NT ST) SK SL SP SV SZ UK YU N: MO A: IN KZ MG RU (WS) TR.

Ilybius satunini (Zaitzev, 1913)

Agabus satunini Zaitzev, 1913, Mitt. Kaukas. Mus. 7: 196.

Examined material: Artvin: Şavşat: Meşeli village, 1 male, 1 female, 03.07.2001.

Distribution in Turkey: Erzurum, Kars (Fery and Nilsson, 1993).

Note: This species was recorded by Zaitzev (1927) in Erzurum. The localities: Tsaban, Kurt darası. In Turkish: Tsaban:?, Kurt Deresi. We couldn't find Tsaban in Turkish Works (T. C. Dahiliye Vekaleti, 1928; T. C. İçişleri Bakanlığı, 1971).

Distribution in the world: E: GG RU (ST) A: RU (WS) TR.

Genus *Platambus* Thomson, 1859

Platambus lunulatus (Fischer von Waldheim, 1829)

Colymbetes lunulatus Fischer von Waldheim, 1829, Mus. Hist. Nat. Univ. Mosq. 2: 26.

Examined material: Artvin: Borçka: Karagöl, 1 female, 25.07.2001; Hopa: Baykanlar brook, 3 males, 4 females, 26.07.2001; Şavşat: Aşağı Koyunlu village, 4 males, 7 females, 04.07.2001; Ciritdüzü village-Karagöl way, 3 males, 5 females, 03.07.2001. Rize: İkizdere: Cimil plateau, 6 males, 6 females, 29.07.2001; Rüzgarlı village, 1 female, 30.07.2001.

Distribution in Turkey: Erzurum, Giresun, Horos Dağları (most probability Horoz Dağları, Gümüşhane or Trabzon), Sadagh (most probability Sadak, Gümüşhane), Tunceli, Uludağ (Bursa) (Guéorguiev, 1981; Erman, 2000).

Distribution in the world: E: AB AR GG GR RU (ST) TR N: EG A: IN LE TR.

Subfamily Colymbetinae Erichson, 1837

Genus *Rhantus* Dejean, 1833

Rhantus suturalis (W. S. Macleay, 1825)

Colymbetes suturalis W. S. Macleay, 1825, Annul. Javan. 1: 31.

Examined material: Rize: Pazar-Ayder crossroads, 2 females, 01.07.2001.

Distribution in Turkey: Aksaray, Erzurum, Konya, Manisa, Marmara Gölü (Manisa), Trabzon, (Guéorguiev, 1981; Erman, 2000; Darılmaz and Kıyak, 2006).

Distribution in the world: E: AB AR AU AZ BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LT LU MA MC NL NR PL PT RU (CT ST) SK SL SP SV SZ UK YU N: EG LB MO A: AF CH (BEI FUJ GAN GUA GUI GUX HEB HEI HUB JIA JIL LIA MAC NMO QIN SCH SHN SHX TAI XIZ YUN ZHE) CY HP IN IQ IS JA KA KI KU KZ MG NC NP PA RU (ES FE WS) SA SC SD SI TD TM TR UZ **AUR ORR.**

Subfamily Dytiscinae Leach, 1815

Genus *Acilius* Leach, 1817

Acilius sulcatus Linnaeus, 1758

Dytiscus sulcatus Linnaeus, 1758, Syst. Nat. (10) 1: 412.

Examined material: Artvin: Borçka: Karagöl, 1 male, 02.07.2001; Şavşat: Aşağı Koyunlu village, 3 females, 04.07.2001.

Distribution in Turkey: Erciyes Dağı (Kayseri), Erzurum, Ilgaz Dağları (Kastomonu or Çankırı) (Guéorguiev, 1981; Erman, 2000).

Distribution in the world: E: AB AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG HU IR IT LA LS LT LU NL NR PL PT RU (CT NT ST) SK SL SP SV SZ UK YU N: AG A: KZ RU (ES FE WS) TR.

Subfamily Hydroporinae Aubé, 1836

Genus *Hydroglyphus* Motschulsky, 1853

Hydroglyphus geminus (Fabricius, 1792)

Dytiscus geminus Fabricius, 1792, Ent. Syst. 1(1): 199.

Examined material: Artvin: Borçka: Karagöl, 16 males, 28 females, 02.07.2001; Çiftepınar village, 4 males, 6 females, 02.07.2001; Hopa: Sundura brook, 7 males, 7 females, 26.07.2001; Hopa-Borçka way, 4 males, 7 females, 02.07.2001; Şavşat: Ciritdüzü village-Karagöl way, 1 male, 1 female, 03.07.2001; Karagöl, 1 male, 03.07.2001; Yukarı Koyunlu village, 1 male, 04.07.2001. Rize: Çayeli-Pazar way, 2 males, 3 females, 01.07.2001; Pazar-Ayder crossroads, 2 males, 6 females, 01.07.2001; İkizdere: Anzer village plateau, 1 male, 29.07.2001; Sivrikaya village, 1 female, 29.06.2001.

Distribution in Turkey: Acı Göl (Afyon, Denizli or Nevşehir), Adana, Akçaabat (Trabzon), Aksaray, Aydın, Ayvalık (Balıkesir), Beyşehir Gölü (Konya), Ceyhan (Adana), Edirne, Eğirdir (Isparta), Erdemli (Mersin), Erzurum, Finike (Antalya), Gerede (Bolu), İnegöl (Bursa), Kelkit (Gümüşhane), Kızılviran (a geographical unit covering the following provinces: Çorum, Erzurum, Konya, Kars, Afyon, Ankara, Kayseri, Niğde), Kilis, Konya, Manisa, Marmara Gölü (Manisa), Menemen (İzmir), Mogan Gölü (Ankara), Muğla, Sivrihisar (Eskişehir), Tosya (Kastamonu), Tuz Gölü (Aksaray or Konya), Yeniköy- Toros Dağları (Kahramanmaraş or Hatay) (Guéorguiev, 1981; Erman, 2000; Darılmaz and Kiyak, 2006; Kiyak et al., 2007).

Distribution in world: E: AB AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IT LA LS LT LU MC MD NL NR PL PT RO RU (CT NT ST) SK SL SP SV SZ UK YU N: AG CI EG LB MO TU A: AF BT CH (GUI GUX HEI HEN JIL LIA SCH YUN) CY HP IN IQ IS KA KI KZ LE MG NC NP PA RU (ES) SA SI SY TD TM TR UP UZ **ORR**.

Genus *Deronectes* Sharp, 1882

***Deronectes doriae* Sharp, 1882**

Deronectes doriae Sharp, 1882, Sci. Trans. R. Dublin Soc. (2) 2: 421.

Examined material: Artvin: Şavşat: Meşeli village, 1 male, 03.07.2001.

Distribution in Turkey: Artvin, Erzurum Karaköy (Bilecik), Kızılcahamam (Ankara), Köse (Gümüşhane), Muğla, Sarıkamış (Kars), Uludağ (Bursa) (Guéorguiev, 1981; Fery and Brancucci, 1997; Erman, 2000; Fery et al., 2001).

Distribution in world: E: Caucasus A: AR TR.

Genus *Hydroporus* Clairville, 1806

***Hydroporus discretus discretus* Fairmaire & Brisout, 1859**

Hydroporus discretus Fairmaire and Brisout, 1859, in Fairmaire, Annl. Soc. Ent. Fr. (3) 7: 28.

Examined material: Artvin: Borçka: Çiftepınar village, 1 male, 2 female, 02.07.2001; Şavşat: Aşağı Koyunlu village, 1 male, 04.07.2001; Ciritdüzü village-Karagöl way, 1 male, 1 female, 03.07.2001; Meşeli village, 1 male, 2 females, 03.07.2001; Şavşat-Artvin way 20. km, 1 male, 1 female, 03.07.2001. Rize: İkizdere: Cimil plateau, 5 males, 8 females, 29.07.2001; Gölyayla, 1 female, 01.09.2001; Ortaköy-Başköy way, 1 male, 29.07.2001; Rüzgarlı village, 1 male, 3 females, 30.07.2001; Sivrikaya village, 2 males, 1 female, 29.06.2001.

Distribution in Turkey: Artvin, Bayburt, Erzurum, Iğdır, Kesalar (Erzurum ?) (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LU MC NL NR PL PT RU (CT NT ST) SK SL SP SV SZ UK YU N: MO A: AF CH (XIN) CY ES IN KA NP PA TR.

***Hydroporus kozlovskii* Zaitzev, 1927**

Hydroporus kozlovskii Zaitzev, 1927, Trav. Stat. Biol. Cauc. Nord 2: 15.

Examined material: Rize: İkizdere: Anzer village plateau, 1 male, 3 females, 29.07.2001.

Distribution in Turkey: Antalya, Artvin, Bingöl, Erzurum, Gümüşhane, Hakkari, Kars, Muş Rize (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000; Shaverdo, 2004).

Distribution in world: E: AR GG RU(ST) A: LE TR.

***Hydroporus nigellus* Mannerheim, 1853**

Hydroporus nigellus Mannerheim, 1853, Bull. Soc. Imp. Nat. Moscou 26: 163.

Examined material: Rize: İkizdere: Anzer village plateau, 2 males, 4 females, 29.07.2001; 9 males, 8 females, 30.06.2001; Ortaköy-Başköy way, 1 female, 29.07.2001.

Distribution in Turkey: Erzurum (Erman et al. 2005).

Distribution in world: E: AN AR AU BU DE FI FR GE GG IT NR PL RU (CT) SP SV SZ
A: IN KZ RU (FE WS) TR NAR.

Hydroporus palustris (Linnaeus, 1761)

Dytiscus palustris Linnaeus, 1761, Fauna Suecica (2), 216.

Examined material: Artvin: Şavşat: Karagöl, 2 males, 2 females, 03.07.2001; Yukarı Koyunlu village, 11 female, 04.07.2001. Rize: İkizdere: Ortaköy-Başköy way, 4 males, 6 females, 29.07.2001.

Distribution in Turkey: Asie Mineur, Erzurum (Guéorguiev, 1981; Erman, 2000)

Note: Guéorguiev (1981) didn't give detailed locality data in his work.

Distribution in world: E: AB AN AR AU BE BH BU BY CR CZ DE EN FA FI FR GB GE GG GR HU IR IT LA LS LT LU MC NL NR PL RU (CT NT ST) SK SL SP SV SZ UK YU A: IN RU (ES WS) TR.

Hydroporus planus (Fabricius, 1782)

Dytiscus planus Fabricius, 1782, Spec. Ins. 2: 501.

Examined material: Artvin: Borçka: Karagöl, 1 male, 25.07.2001; Şavşat: Meşeli village, 1 female, 03.07.2001. Rize: Pazar-Ayder crossroads, 1 female, 01.07.2001; İkizdere: Anzer village plateau, 3 males, 1 female, 30.06.2001.

Distribution in Turkey: Antalya, Ayvalık (Balıkesir), Beykoz (İstanbul), Bursa, Erzurum, Keşiş Dağları (Esence Dağları, Erzincan), Manastır (a geographical unit covering the following provinces: Konya, Denizli, Bayburt, Gümüşhane, Giresun, İzmir, Mersin, Giresun), Sarıkamış (Kars), Toros Dağları (Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AB AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU MC NL NR PL PT RU (CT NT ST) SK SL SP SV SZ TR UK YU

N: AG MO **A:** IN IQ KZ LE RU (WS) TM TR.

Hydroporus pubescens (Gyllenhal, 1808)

Hyphydrus pubescens Gyllenhal, 1808, Ins. Suecica 1(1): 536.

Examined material: Artvin: Şavşat: Kirazlı village, 4 females, 24.07.2001; Rize: İkizdere: Anzer village plateau, 1 male, 6 females, 29.07.2001; Cimil plateau, 15 males, 22 females, 29.07.2001; Çayeli-Pazar way, 2 females, 01.07.2001; Gölyayla, 3 males, 6 females, 01.09.2001; Ortaköy-Başköy way, 6 males, 50 females, 29.07.2001.

Distribution in Turkey: Adapazarı, Adatepe (a geographical unit covering the following provinces: Çanakkale, Sakarya, Samsun, Sivas, Zonguldak), Aksaray, Baba Dağı (Denizli, Muğla or Zonguldak), Bolkar Dağları (Mersin, Karaman), Bozburun Dağı (Antalya), Bursa, Efes (İzmir), Erzurum, Karaköy (Bilecik), Keşiş Dağları (Esence Dağları, Erzincan), Manastır (a geographical unit covering the following provinces: Konya, Denizli, Bayburt, Gümüşhane, Giresun, İzmir, Mersin, Giresun), Manisa, Ordu, Sadagh (most probability Sadak, Gümüşhane), Trabzon, Ulukışla (Niğde) (Guéorguiev, 1981; Erman, 2000; Darılmaz and Kiyak, 2006).

Distribution in world: E: AB AL AU BE BH BU CR CZ DE EN FA FI FR GB GE GG GR IR IT LA LU MC NL NR PL PT RU (CT NT ST) SK SL SP SV SZ TR UK YU **N:** AG LB MO TU **A:** CY IN IS JO LE SY TR.

Hydroporus thracicus Guéorguiev, 1966

Hydroporus thracicus Guéorguiev, 1966, Fauna Trakija 3: 71.

Examined material: Artvin: Şavşat: Ciritdüzü-Karagöl way, 1 female, 03.07.2001; Kirazlı village, 1 female, 24.07.2001; Meşeli village, 1 male, 03.07.2001. Rize: İkizdere: Ortaköy-Başköy way, 3 males, 1 female, 29.07.2001.

Distribution in Turkey: Ankara, Artvin, Erzurum, Kars, Kastamonu, Rize (Shaverdo, 2004; Erman, 2000).

Note: This species was recorded as *H. nivalis* on Erman (2000).

Distribution in world: E: GR BU AR GG RU **A:** TR (Shaverdo, 2004).

Genus *Nebrioporus* Régimbart, 1906

Nebrioporus airumulus (Kolenati, 1845)

Hydroporus airumulus Kolenati, 1845, Melet. Entom. 1: 85.

Examined material: Artvin: Şavşat: Meşeliköy; 5 females, 03.07.2001.

Distribution in Turkey: Bergr (?), Erzurum, Kala (?), Kelkit (Gümüşhane), Sadagh (most probability Sadak, Gümüşhane), Sarıkamış (Kars), Van Gölü (Van) (Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AB AR GG PL RU (ST) UK A: AF CH (BEI GAN GUI HEB HEI HEN JIA LIA NMO SCH SHA SHN SHX XIN YUN) HP IN IS KA KI KZ MG PA RU (ES) TD TM TR UZ.

Nebrioporus turca (Seidlitz, 1887)

Deronectes turca Seidlitz, 1887, Verhandl. Naturforsch. Ver. Brünn 25: 55.

Examined material: Artvin: Hopa: Çamlıköy, 1 female, 26.07.2001; Şavşat: Ciritdüzü village-Karagöl way, 3 males, 11 females, 03.07.2001; Meşeli village, 25 males, 15 females, 03.07.2001.

Distribution in Turkey: Antalya, Baba Dağı (Denizli, Muğla or Zonguldak), Bolkar Dağları (Mersin or Karaman), Cilicia (most probability Mersin), Elazığ, Erzurum, Isparta, İzmir, Konya, Trabzon (Guéorguiev, 1981; Erman, 2000; Kiyak et al., 2007).

Distribution in world: E: AR N: EG A: IN IS LE SY TR.

Genus *Oreodytes* Seidlitz, 1887

Oreodytes davisii davisii (Curtis, 1831)

Hydroporus davisii Curtis, 1831, Brit. Ent. 8: 343.

Examined material: Artvin: Borçka: Karagöl, 14 males, 8 females, 02.07.2001; Şavşat: Ciritdüzü village-Karagöl way, 1 male, 1 female, 03.07.2001. Rize: İkizdere: Anzer village plateau, 1 female, 29.07.2001; 3 males, 4 females, 30.06.2001; Ortaköy-Başköy way, 3 males, 2 females, 29.07.2001.

Distribution in Turkey: Antalya, Erzurum (Erman & Erman, 2002; Kiyak et al., 2007).

Distribution in world: E: AL AR AU BH BU CR CZ FR GB GE GG GR IR IT PL SK SL SP SZ UK A: TR (Erman & Erman, 2002; Nilsson, 2005).

Genus *Scarodytes* Gozis, 1914

Scarodytes halensis halensis (Fabricius, 1787)

Dytiscus halensis Fabricius, 1787, Mantissa Ins. 1: 192.

Examined material: Artvin: Şavşat: Aşağı Koyunlu village, 1 male, 04.07.2001; Ciritdüzü village-Karagöl way, 5 males, 16 females, 03.07.2001.

Distribution in Turkey: Akdağmadeni (Yozgat), Aksaray, Antalya, Bala (Ankara), Başköy (There are twenty seven provinces including the name of this locality), Çağiran [may be Çağırğan (Denizli), Çağırkan (Çanakkale) or Çağırkan Kaya (Rize)], Eğirdir (Isparta), Erciyes Dağı (Kayseri), Erzurum, İnegöl (Bursa), İzmir, Kesalar (Erzurum ?), Köse (Gümüşhane), Mersin, Sivrihisar (Eskişehir), Van Gölü (Van) (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000; Darılmaz and Kiyak, 2006; Kiyak et al., 2007).

Distribution in world: E: AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IT LA LT LU MC MD NL NR PL PT RO RU (CT NT ST) SK SL SP SV SZ UK YU N: AG EG MO TU A: IN IS LE SI SY TR.

Genus *Stictotarsus* Zimmermann, 1919

Stictotarsus griseostriatus (De Geer, 1774)

Dytiscus griseostriatus De Geer, 1774, Mém. Hist. Ins. 4: 403.

Examined material: Rize: İkizdere: Anzer village, 1 female, 29.06.2001

Distribution in Turkey: Erzurum, Van Gölü (Van) (Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AR AU BH BU EN FI FR GE GG GR IT NR PT RU (NT) SL SP SV SZ YU N: MO A: KA MG PA TR NAR.

Genus *Hygrotus* Stephens, 1828

Hygrotus armeniacus (Zaitzev, 1927)

Coelambus armeniacus Zaitzev, 1927, Trav. Stat. Biol. Cauc. Nord 2: 5.

Examined material: Artvin: Şavşat: Karagöl, 1 male, 1 female, 03.07.2001.

Distribution in Turkey: Erzurum, Karasu (a geographical unit covering the following provinces: Sakarya, Ağrı, Bartın, Bursa, Rize, Şanlıurfa, Sinop, Bitlis, Hatay, Kilis, Gaziantep, Kahramanmaraş, Erzincan, Erzurum, Muş), Sarıkamış (Kars), Tashashla (Erzurum ?) (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AR GG A: TR.

Hygrotus inaequalis (Fabricius, 1777)

Dytiscus inaequalis Fabricius, 1777, Gen. Ins. 239.

Examined material: Artvin: Şavşat: Yukarı Koyunlu village, 1 female, 04.07.2001.

Distribution in Turkey: Abant Gölü (Bolu), Acı Göl (Afyon, Denizli or Nevşehir), Beyşehir Gölü (Konya), Eğirdir (Isparta), Erzurum, Gerede (Bolu), Manisa Dağı-Marmara Gölü (Manisa) (Guéorguiev, 1981; Erman, 2000).

Distribution in world: E: AB AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LT LU MC MD NL NR PL PT RU (CT NT ST) SK SL SP SV SZ UK YU N: AG MO A: CH (HEI JIL LIA NMO SHA) IN IS JA KZ MG RU (ES FE WS) SY TR.

Subfamily Laccophilinae Gistel, 1856

Genus *Laccophilus* Leach, 1815

Laccophilus hyalinus (De Geer, 1774)

Dytiscus hyalinus De Geer, 1774, Mém. Hist. Ins. 4: 406.

Examined material: Artvin: Şavşat: Yukarı Koyunlu village, 14 males, 22 females, 04.07.2001.

Distribution in Turkey: Abant Gölü (Bolu), Adana, Antalya, Aydın, Başköy (There are twenty seven provinces including the name of this locality), Burdur, Bolkar Dağları (Mersin or Karaman), Boz Dağ-Gölçuk (Boz Dağ, a geographical unit covering the following provinces: Ağrı, Bilecik, Eskişehir, Konya, Manisa, Muğla, Van. Gölçuk may be Gölçük. There are twenty four provinces including the name of this locality), Eğirdir (Isparta), Erzurum, İzmir, Karasu (a geographical unit covering the following provinces: Sakarya, Ağrı, Bartın, Bursa, Rize, Şanlıurfa, Sinop, Bitlis, Hatay, Kilis, Gaziantep, Kahramanmaraş, Erzincan, Erzurum, Muş), Kırşehir, Kilis, Konya, Kozik (Erzurum ?), Manisa Dağı-Marmara Gölü (Manisa), Sarıkamış (Kars), Suluhan-Toros Dağları (Adana), Tashashla (Erzurum ?) (Zaitzev, 1927; Guéorguiev, 1981; Erman, 2000; Darılmaz and Kiyak, 2006; Kiyak et al., 2007).

Distribution in world: E: AB AR AU BE BH BU BY CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU MC MD NL NR PL RU (NT) SK SL SV SZ UK YU A: CY IN IQ IS LE RU (ES WS) SY TM TR UZ.

Laccophilus minutus (Linnaeus, 1758)

Dytiscus minutus Linnaeus, 1758, Syst. Nat. (10) 1: 412.

Examined material: Artvin: Borçka: Karagöl, 2 males, 2 females, 02.07.2001; Şavşat: Karagöl, 3 males, 3 females, 03.07.2001. Rize: Çayeli-Pazar way, 3 females, 01.07.2001; Pazar-Ayder crossroads, 1 male, 6 females, 01.07.2001.

Distribution in Turkey: Abant Gölü (Bolu), Akçaabat (Trabzon), Aksaray, Antalya, Aydın, Ayvalık (Balıkesir), Burdur, Boz Dağ-Gölçuk (Boz Dağ, a geographical unit covering the following provinces: Ağrı, Bilecik, Eskişehir, Konya, Manisa, Muğla, Van. Gölçuk may be Gölçük. There are twenty four provinces including the name of this locality), Derbent (a geographical unit covering the following provinces: Afyon, Amasya, Bartın, Çorum, Denizli, Kahramanmaraş, Kocaeli, Konya, Kütahya, Manisa, Mardin, Rize, Sivas, Tokat, Uşak, Yozgat), Denizli, Eğirdir (Isparta), Erzurum, Gerede (Bolu), İnegöl (Bursa), İsaklı (Afyon, Denizli or Tekirdağ), Kızılıvran (a geographical unit covering the following provinces: Afyon, Ankara, Çorum, Erzurum, Kars, Kayseri, Konya, Niğde), Konya, Manastır (a geographical unit covering the following provinces: Konya, Denizli, Bayburt, Gümüşhane, Giresun, İzmir, Mersin, Giresun), Manisa Dağı-Marmara Gölü (Manisa), Menemen (İzmir), Mogan Gölü (Ankara), Sadagh (most probability Sadak, Gümüşhane), Sinop Burun (Sinop), Sivas, Toros Dağları, Trabzon (Guéorguiev, 1981; Erman, 2000; Darılmaz and Kiyak, 2006; Kiyak et al., 2007).

Distribution in world: E: AB AL AR AU BE BH BU BY CR CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU MA MC MD NL NR PL PT RU (NT ST) SK SL SP SV SZ UK YU N: AG MO TU A: AF CH (XIN YUN) IN IQ IS JO KA KI KZ MG PA RU (ES WS) SY TM TR UZ
ORR.

***Laccophilus poecilus* Klug, 1834**

Laccophilus poecilus Klug, 1834, Symb. Phys. 3: pl. xxxiii/8.

Examined material: Rize: Pazar-Ayder crossroads, 1 female, 01.07.2001.

Distribution in Turkey: Acı Göl (Afyon, Denizli or Nevşehir), Antalya, Adana, Aydın, Ceyhan (Adana), Eğirdir (Isparta), Erzurum, Finike (Antalya), Gerede (Bolu), Isparta, İzmir, Konya, Manisa Dağı-Marmara Gölü (Manisa), Menemen (İzmir), Toros Dağları - Pamuk (Mersin) (Guéorguiev, 1981, Uygur & Önder, 1988; Erman, 2000).

Distribution in world: E: AB AL AR AU BE BH BU CR CZ EN FR GB GE GG GR HU IT LA LS LT LU MC NL NR PL RU (ST) SK SL SP SV SZ UK YU N: AG EG MO A: AF CH (XIN) IN IQ IS KI KU KZ SA SI SY TD TM TR UZ.

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