

**Data to the Hungarian distribution of some
aquatic beetles, with notes on an extralimital species
(Coleoptera: Gyrinidae, Haliplidae, Elmidae, Dryopidae)**

T. KOVÁCS¹ & O. MERKL^{2*}

¹*Mátra Museum, H-3200 Gyöngyös, Kossuth Lajos u. 40, Hungary. E-mail: koati@axelero.hu*

²*Department of Zoology, Hungarian Natural History Museum*

H-1088 Budapest, Baross u. 13, Hungary. E-mail: merkl@zoo.zoo.nhmus.hu

Abstract – Locality data of 11 aquatic beetle species from Hungary and one from Ukraine are given. *Limnius intermedius* FAIRMAIRE, 1881, *Limnius muelleri* (ERICHSON, 1847) and *Oulimnius tuberculatus tuberculatus* (P. W. J. MÜLLER, 1806) are new to Hungary. *Stenelmis puberula* REITTER, 1887 is new to Ukraine. First confirmed records of *Esolus angustatus* (P. W. J. MÜLLER, 1821) and *Esolus parallelepipedus* (P. W. J. MÜLLER, 1806) are given. *Brychius elevatus* (PANZER, 1794) was found in Hungary for the second time. New records of *Macronychus quadrituberculatus* P. W. J. MÜLLER, 1806, *Orectochilus villosus* (O. F. MÜLLER, 1776), *Pomatinus substriatus* (P. W. J. MÜLLER, 1806) and *Potamophilus acuminatus* (FABRICIUS, 1792) are listed. A checklist of Elmidae and Dryopidae of Hungary is presented. With 4 figures.

Key words – Coleoptera, Gyrinidae, Haliplidae, Elmidae, Dryopidae, Hungary, Ukraine, faunistics, distribution.

INTRODUCTION

This paper is devoted to publish records of some aquatic beetle species which are (or were) considered rare in Hungary. Two of them, the riffle beetles *Potamophilus acuminatus* and *Macronychus quadrituberculatus* were once seen as threatened with extinction all over Europe, but in the recent years they were found in many Hungarian rivers and streams, sometimes in great numbers. One reason for they are recorded from so many localities might be an increased interest and collecting activity. However, it should be taken into account that after 1990 in Hun-

* Corresponding author.

gary much of the water-polluting industrial activity was given up, the use of pesticides in the agriculture was reduced, and sewage treatment is among the top preferences of environmental measures. As a consequence, we are witnessing a revival of the aquatic fauna of several watercourses of our country.

An interesting record of *Stenelmis puberula* REITTER, 1887 from the Ukrainian Carpathians is added, because the species was collected near the Hungarian border, and its occurrence in the northern mountain regions of Hungary cannot be excluded.

Majority of the data listed hereunder is the results of faunistic research carried out between 17th May, 1995 and 7th October, 2004. The voucher specimens have been deposited in the Kazinczy Ferenc Museum (Sátoraljaújhely) and the Mátra Museum (Gyöngyös). A number of other data come from the unpublished material of the Hungarian Natural History Museum (Budapest).

The data are presented in the following sequence: settlement: closer locality, *watercourse*, date of collecting, name of collector, number of specimens (depository, if the specimens are preserved). The settlements are listed in alphabetical order and grouped according to the counties. In the case of some old specimens some data are not always stated on the labels of specimens. If the river or stream is not indicated on the labels the most likely water body is in square brackets.

Abbreviations – Collectors: AA = ANDRÁS AMBRUS, CsB = BÉLA CSÁNYI, GW = WOLFRAM GRAF, HG = GÁBOR HEGYESSY, JP = PÉTER JUHÁSZ, KB = BÉLA KISS, KD = DÓRA KOVÁCS, KK = KATA KOVÁCS, sKT = TIBOR KOVÁCS, senior, KT = TIBOR KOVÁCS, KV = VIKTÓRIA KAVRÁN, MZ = ZOLTÁN MÜLLER, OP = PÉTER OLAJOS, PP = PÉTER PAULOVICS, RR = RAINER RUPPRECHT, SI = IGNAC SIVEC, TI = ISTVÁN TURCSÁNYI, VA = ANDRÁS VARGA, VI = ILDIKÓ VARGA. Depositories: HNHM = Hungarian Natural History Museum, KFM = Kazinczy Ferenc Museum, MM = Mátra Museum. Other: rkm = river kilometer.

GYRINIDAE

Orectochilus villosus (O. F. MÜLLER, 1776) – The 50 records listed hereunder are from 32 localities of 19 running waters. The smallest watercourse is the Szentgyörgyvölgyi-patak (stream) at Magyarszombatfa, while the largest is the Tisza River at Tiszapalkonya. The species was considered rare by ÁDÁM (1992), but since that time KOVÁCS *et al.* (2000) and other authors (the last are CSABAI *et al.* 2004 and ÁDÁM & HEGYESSY 2004) published a number of localities. The new records also indicate that it is widely distributed and not uncommon in the streams and rivers of Hungary.

Records – Borsod-Abaúj-Zemplén county: Berzék: Szemere-legelő, *Hernád*, 30.08.2000, KT & VA, 1 larva (MM); 12.09.2000, KT & VA, 1 larva (MM); 25.09.2003, KT & VA, 1 adult (MM); Edelény: Markovicstanya, *Bódva*, 24.06.2004, JP & KT, 1 adult (MM); Gesztely: 37-es út, *Hernád*, 12.09.2000, KT & VA, 2 larvae (MM); Kazincbarcika: Szénosztályozó, *Sajó*, 03.08.2001, KT, Nagy Dezső & VA, 2 adults (MM); Tiszapalkonya: water-gauge, *Tisza*, 16.07.2001, KT & VA, 5 adults (MM); Tiszaszederkény: *Sajó*, at the junction with the Tisza, 16.07.2001, KT & VA, 16 adults (MM).

– Győr-Moson-Sopron county: Himod: kiskaludi út, *Répcse*, 29.07.2004, AA, JP & KT, 1 adult; Répcevis: zsirai út, *Répcse*, 29.07.2004, JP & KT, 1 adult (MM); Sopron: drivers' lay-by, *Rák-patak*, 26.03.2001, AA, 1 larva (MM); 30.07.2002, AA, 1 adult (MM); Sopron: Vörös-híd, *Rák-patak*, 26.03.2001, AA, 1 larva (MM). – Heves county: Gyöngyössolymos: Cserkő-bánya, *Nagy-patak*, 14.01.2001, KD & KT, 2 larvae (MM); 11.03.2001, KT, 1 larva (MM); Recsk: Ércbánya, *Parádi-Tarna*, 29.10.2000, KT, 4 larvae (MM). – Nógrád county: Nógrádszakál: gorge of Párizs-patak, *Ipoly*, 13.10.2000, sKT & KT, 2 larvae (MM); Szécsény: Pösténypuszta, *Ipoly*, 13.10.2000, sKT & KT, 1 larva (MM). – Pest county: Kemence: Királyháza, *Kemence-patak*, 28.06.2001, JP, KT & KV, 1 adult (MM); 21.06.2002, JP, KD & KT, 1 adult (MM); Szokolya: Caciny, *Török-patak*, 21.03.2001, JP & KT, 1 larva (MM); Vámosmikola: Ipolyon innen dűlő, *Ipoly*, 21.06.2002, JP, KD & KT, 1 adult (MM); 14.08.2003, AA, JP, KT & VI, 1 adult. – Somogy county: Nagykorpád: *Szabási-Rinya*, 27.07.2004, JP & KT, 1 adult. – Szabolcs-Szatmár-Bereg county: Tiszabecs: *Batár*, 27.06.2004, JP, KB, KT & MZ, 1 adult; beach, *Tisza*, 19.06.2001, AA, JP, KT & KV, 1 adult (MM); 12.07.2003, sKT & KT, 1 adult (MM). – Vas county: Bajánsenye: kercaszomori út, *Kerka*, 15.11.2000, AA & KT, 1 larva (MM); 02.08.2001, AA, 1 adult (MM); 15.06.2002, AA, 1 adult (MM); 17.07.2003, AA, 1 adult (MM); Gencsapáti: perenyei út, *Gyöngyös*, 14.07.2004, AA, 1 adult (MM); Kőrmend: Horvátnádajla, *Pinka*, 24.05.2001, AA, 2 larvae (MM); 86-os út, *Rába*, 11.07.2001, AA & KT, 15 adults; 14.07.2004, AA, 1 adult (MM); Kőszeg: Kálvária-hegy, *Gyöngyös*, 04.05.2001, AA, 1 larva (MM); 15.06.2001, AA, 1 adult (MM); 31.07.2001, AA, 2 adults (MM); 14.06.2002, AA, 2 adults (MM); Magyarlak: beach, *Rába*, 15.06.2002, AA, 1 adult (MM); 24.08.2002, AA, 1 adult (MM); 14.07.2004, AA, 1 adult (MM); Magyarszombatfa: *Szentgyörgyvölgyi-patak*, 23.08.2001, AA & KT, 3 adults (MM); 16.07.2003, AA, 1 adult; Rábahídvég: 8-as út, *Rába*, 08.06.2001, AA, JP & KT, 1 adult (MM); 11.07.2001, AA & KT, 1 adult (MM); Szentgotthárd: rábafüzesi út, *Rába*, 07.06.2001, AA, JP & KT, 1 adult (MM). – Zala county: Andrásida: 76-os út, *Zala*, 07.07.2004, JP & KT, 1 adult (MM); Csöde: *Zala*, 10.08.2001, AA, 1 adult (MM); Zalalövő: 86-os út, *Zala*, 07.07.2004, JP & KT, 1 adult (MM).

HALIPLIDAE

Brychius elevatus (PANZER, 1794) – Until now only two specimens were known from Hungary, i.e. from the Tisza river at Tiszabecs in northeastern Hungary (KOVÁCS *et al.* 2000). The new record is from the Zala river in Transdanubia, in the opposite side of the country. The river at the site of the catch is 3 to 4 m wide and has coarse gravel substrate. The specimen was found among riparian vegetation hanging into the slowly flowing water.

Record – Zala county: Zalalövő: 86-os út, *Zala*, 07.07.2004, JP & KT, 1 adult (MM).

ELMIDAE

Esolus angustatus (P. W. J. MÜLLER, 1821) (Fig. 1) – First confirmed record from Hungary. HORION (1955) & STEFFAN (1961) mentioned it from Hungary, without closer locality. These are probably based on KUTHY (1897), but KUTHY's localities are in Slovakia, Ukraine and Romania. Widely distributed in Europe (including the Caucasus), and known also from Turkey. Three specimens represent old collectings from 1955 and 1960. A larva and an adult were collected more recently from the Gyöngyös in the Kőszeg Mts (a small pedemontane river with coarse gravel substrate, 270 m a.s.l.) and from the Somor-patak in the Mátra Mts (a typical mountain stream with boulder substrate, 640 m a.s.l.), respectively.

Records – Borsod-Abaúj-Zemplén county: Nagybózsva: Genyő-völgy, 14.07.1960, S. ENDRÓDY-YOUNGA, 1 adult (HNHM); Pálháza, *Kemence-patak*, 6–11.06.1955, Z. KASZAB & V. SZÉKESSY, 1 adult (HNHM); Pálháza: Istvánkút, 28.09–05.10.1955, Z. KASZAB & V. SZÉKESSY, 1 adult (HNHM). – Heves county: Mátraháza: Állami Szanatórium, *Somor-patak*, 27.02.1999, KT, 1 adult (MM). – Vas county: Kőszeg: Kálvária-hegy; *Gyöngyös*, 31.07.2001, AA, 1 larva (MM).

Esolus parallelepipedus (P. W. J. MÜLLER, 1806) – First confirmed record from Hungary. KUTHY (1897) mentioned it from Pécs, under the synonymous name *Esolus kuenowi* KUWERT, 1889, and HORION (1955) also listed Pécs (“Fünfkirchen”), based probably on KUTHY. However, the whereabouts of the voucher specimens are unknown. Widely distributed in Europe (including the Caucasus), known also from Iran, Lebanon and Turkey (M. JÄCH, personal communication). All the Hungarian specimens were collected before 1960.

Records – Borsod-Abaúj-Zemplén county: Pálháza, *Kemence-patak*, 6–11.06.1955, Z. KASZAB & V. SZÉKESSY, 1 adult (HNHM); Pálháza: Istvánkút, 28.09–05.10.1955, Z. KASZAB & V. SZÉKESSY, 1 adult (HNHM). – Pest county: Zebegegy, 24.05.1934, Z. KASZAB, 1 adult (HNHM); 15.06.1934, Z. KASZAB, 1 adult (HNHM); 17.06.1934, Z. KASZAB, 1 adult (HNHM).

Limnius intermedius FAIRMAIRE, 1881 – New to Hungary. Widely distributed in Europe (including the Caucasus), known also from Israel, Lebanon and Turkey and North Africa (M. JÄCH, personal communication). All specimens are from the 1930s.

Records – Győr-Moson-Sopron county: Győr, E. BOKOR, 1 adult (HNHM). – Komárom-Esztergom county: Dömös, 02.08.1937, V. SZÉKESSY, 1 adult (HNHM); Dömös, E. DUDICH. – Pest county: Pilisszentkereszt: Dobogókő, 07.08.1937, V. SZÉKESSY, 1 adult (HNHM); Pest county: Zebegegy, 17.06.1934, Z. KASZAB, 1 adult (HNHM).

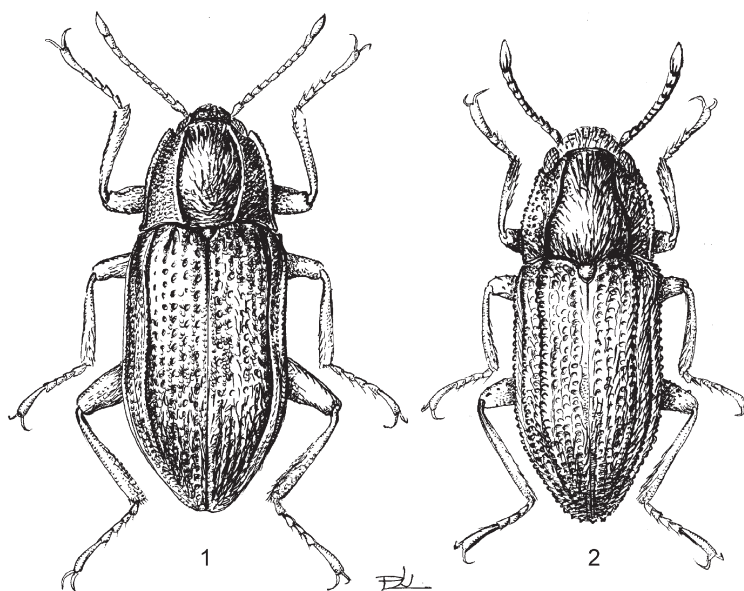
Limnius muelleri (ERICHSON, 1847) – New to Hungary. It is recorded from France, Austria, Czech Republic, Germany and Switzerland, but very probably extinct in the latter four countries (M. JÄCH, personal communication). For the moment only one old specimen indicates its occurrence in Hungary.

Record – Veszprém county: Zirc, E. CSIKI, 1 adult (HNHM).

Macronychus quadrituberculatus P. W. J. MÜLLER, 1806 – Hungarian data of this species were summarised by KOVÁCS *et al.* (1999). Further records were published by KOVÁCS & AMBRUS (2001), KOVÁCS *et al.* (2002) and CSABAI & MÓRA (2003). A total of 17 watercourses are listed hereunder, and the species is recorded for the first time from five rivers (Bodrog, Hernád, Répce, Zagyva, Sajó). From the Danube it was collected before 1955, but now its presence is confirmed. The species got protected status in Hungary in 2001.

Records – Baranya county: Cún: *Dráva*, 20.07.1999, AA & BÁNKUTI KÁROLY, 2 adults (MM). – Borsod-Abaúj-Zemplén county: Bócs: Üdülőttelep 100 m SW, *Hernád*, 25.09.2003, KT & VA, 1 larva; Cigánd: Ledmecő, Tisza-part, 11.07.1997, LÁSZLÓ NÁDAI & HG, 1 adult (KFM); Edelény: Markovicstanya, *Bódva*, 13.10.1999, KT & VA, 1 larva (MM); 15.05.2000, KT & VA, 1 adult (MM); 19.05.2003, KT & VA, 1 larva; 07.08.2003, KT & VA, 16 adults; 16.09.2003, KT, 38 larvae, 10 adults; 29.04.2004, KT & VA, 2 adults; 24.06.2004, JP & KT, 2 adults; 30.09.2004, JP & KT, 10 adults; Felsőberek: ferry, *Bodrog*, 12.08.2001, JP & KV, 1 adult (MM); 24.08.2001, HG, 1 adult (KFM); Sajókaza: sajióivánkai út, *Sajó*, 30.09.2004, JP & KT, 13 larvae; Sajószentpéter: Alsó-berek, *Sajó*, 03.08.2001, KT & VA, 1 larva, 1 adult; Sajószentpéter: borsodsziráki út, *Bódva*, 19.05.2003, KT & VA, 6 adults; 16.09.2003, KT, 1 adult; 29.04.2004, KT & VA, 2 larvae; 24.06.2004, JP & KT, 22 adults; Sárospatak: Vízikapu, *Bodrog*, 10.07.2002, HG, 1 adult (KFM);

Sátoraljaújhely: Long-erdő, *Bodrog*, 24.09.1999, HG, 2 adults (KFM); ferry, *Bodrog*, 25.08.1999, HG, 5 adults (KFM); Szendrő: büdöskútpusztai út, *Bódva*, 18.05.2000, KT, 1 adult; 19.05.2003, KT & VA, 1 larva, 2 adults; 07.08.2003, KT & VA, 1 adult; 16.09.2003, KT, 1 adult; 29.04.2004, KT & VA, 3 larvae, 1 adult; 24.06.2004, JP & KT, 2 larvae, 21 adults; Szirmabesenyő: sajóvámosi út, *Sajó*, 29.04.2004, KT & VA, 2 adults; 24.06.2004, JP & KT, 17 larvae; 30.09.2004, JP & KT, 1 adult; Tiszaszederkény: *Sajó*, 04.10.2001, CsB & JP, 1 adult (MM). – Csongrád county: Apátfalva, *Maros*, 30 rkm, 20.09.2003, PP, 1 adult; Apátfalva, *Maros*, 36 rkm, 8.08.2004, PP, 1 adult; Kiszombor, *Maros*, 22 rkm, 19.09.2003, PP, 8 adults; Klárafalva, *Maros*, 9 rkm, 6.09.2003, PP, 1 adult. – Győr-Moson-Sopron county: Árpás: mórchidai út, *Rába*, 24.09.2004, AA, 8 adults (MM); Bodonhely: kisbabóti út, *Rába*, 25.06.2001, AA, 1 adult (MM); Csáfordjánosfa: *Leucojum*-forest, *Répcse*, 17.05.2002, AA, 1 adult (MM); 26.09.2002, AA, 18 adults; 12.03.2003, AA & KT, 1 adult; Dunaszeg: beach, *Mosoni-Duna*, 26.08.1999, AA, JP & KT, 1 adult (MM); 19.07.2000, AA, KD & KT, 1 adult (MM); 20.06.2002, AA & KT, 1 larva (MM); 29.07.2002, AA, 1 adult (MM); 16.06.2003, AA & KT 1 adult; Himod: kisfaludi út, *Répcse*, 29.07.2004, AA, JP & KT, 3 larvae, 2 adults; Mosonmagyaróvár: 86-os út, *Lajta*, 19.07.2000, AA, KD & KT, 1 adult (MM); Rábapatoná: koroncói út, *Rába*, 20.06.2002, AA & KT, 8 larvae, 2 adults; Vág: kemenesszentpéteri út, *Rába*, 17.07.2003, AA, 2 larvae. – Jász-Nagykun-Szolnok county: Tiszafüred: 33-as út, *Tisza*, 15.06.2000, AA, 1 adult (MM). – Pest county: Ipolydamásd: former frontier crossing, *Ipoly*, 07.08.2002, JP & KT, 5 adults; 05.09.2002, JP & KT, 1 adult; 14.08.2003, AA, JP, KT & VI, 1 adult; Ipolytölgyes: Malom-szög, *Ipoly*, 05.09.2002, JP & KT, 23 adults; 29.05.2003, KT & VA, 8 adults; 14.08.2003, AA, JP, KT & VI, 7 larvae; Vámosmikola: Ipolyon innen dűlő, *Ipoly*, 21.06.2002, JP, KD & KT, 2 adults; 07.08.2002, JP & KT, 3 adults; 05.09.2002, JP & KT, 48 adults; 29.05.2003, KT & VA, 5 adults; 14.08.2003, AA, JP, KT & VI, 5 adults; 15.09.2003, KT, 1 larva (MM); Zebegény: Hajóállomás, *Duna*, 29.05.2003, KT & VA, 1 adult (MM). – Szabolcs-Szatmár-Bereg county:



Figs 1–2. 1 = *Esolus angustatus* (P. W. J. MÜLLER, 1821), 2 = *Oulimnius tuberculatus* (P. W. J. MÜLLER, 1806). Not to scale

Dombrád: Üdülőterület, *Tisza*, 24.08.2000, AA, JP, KT & KV, 1 adult (MM); Döge: Gátórház, *Tisza*, 11.05.2000, JP & KT, 1 larva (MM); Ibrány: Gátórház, *Tisza*, 09.09.2000, KT, 1 adult (MM); Jánd: Jándi-sziget, *Tisza*, 23.03.2000, AA, CsB, JP, KT & KV, 1 larva (MM); Nagyhódos: Velika Paladi út, *Túr*, 24.05.2002, JP & KT, 2 adults; Tarpa: *Tisza*, 710 rkm, 08.09.1999, JP & KT, 1 adult (MM); 23.08.2000, AA, JP & KT, 1 adult (MM); Tiszaszentmárton: *Tisza*, 639–640 rkm, 03.06.2000, KT, 1 larva (MM); Tivadar: beach, *Tisza*, 07.09.1999, JP & KT, 1 larva, 1 adult (MM); 24.08.2000, AA, JP, KT & KV, 1 larva (MM); 24.05.2002, JP & KT, 1 larva; 22.07.2004, KT, 4 adults; Vásárosnamény: Gergelyugornya, beach, *Tisza*, 08.10.2001, CsB, JP & KV, 1 larva; Gergelyugornya, water-gauge, *Tisza*, 05.09.2000, JP & KV, 2 adults (MM); 12.08.2001, JP & KV, 1 adult (MM). – Szolnok county: Jásztelek: 32-es út, *Zagyva*, 27.08.2004, AA & KK, 1 adult (MM). – Vas county: Csákánydoroszló: ivánci út, *Rába*, 11.07.2001, AA & KT, 3 larvae, 2 adults; 14.06.2002, AA, 1 adult (MM); 23.04.2003 AA, JP & KT, 4 adults; Csörötnek: rönöki út, *Rába*, 11.07.2001, AA & KT, 2 larvae, 1 adult (2, -, MM); Ikervár: dam, downstream, *Rába*, 28.07.2004, JP & KT, 1 adult; Körmend: Horvátnádalja, *Pinka*, 15.06.2002, AA, 1 adult (MM); 86-os út, *Rába*, 11.07.2001, AA & KT, 3 larvae, 5 adults; 23.08.2001, AA & KT, 81 adults; 30.09.2001, AA & KT, 3 larvae, 15 adults; 16.04.2002, AA, GW & KT, 1 larva (MM); 14.06.2002, AA, 2 larvae, 1 adult (-, 1, MM); 19.09.2002, AA, JP, KT & VI, 2 larvae, 8 adults; 24.04.2003, AA, JP & KT, 33 adults; 19.04.2004, 13 adults, AA, JP, KT & RR; Magyarlak: beach, *Rába*, 15.06.2002, AA, 1 adult (MM); 24.08.2002, AA, 1 adult (MM); 19.09.2002, 8 adults, AA, JP, KT & VI; 17.07.2003, AA, 1 larva; Nick: dam, downstream, *Rába*, 30.07.2004, AA, JP & KT, 13 adults; Rábahídvég: 8-as út, *Rába*, 08.06.2001, AA, JP & KT, 3 larvae, 2 adults; 23.08.2001, AA, KT, 24 adults; 17.05.2002, AA, 9 adults; 19.09.2002, AA, JP, KT & VI, 15 adults; 23.04.2003, AA, JP & KT, 5 adults; 01.10.2003, AA, JP & KT, 1 larva, 1 adult; 19.04.2004, AA, JP, KT & RR, 3 adults; Rábapatty: *Rába*, 80 rkm, 30.07.2004, AA, JP & KT, 3 larvae, 15 adults; Rum: 87-es út, *Rába*, 04.05.2001, AA, 2 adults, (2, MM); Sárvár: 84-es út, *Rába*, 11.07.2001, AA & KT, 8 larvae, 15 adults; 01.08.2001, AA, 1 larva; 23.08.2001, AA & KT, 15 adults; 17.05.2002, AA, 1 larva, 24.05.2003, AA, 1 adult; Szentgotthárd: *Lapincs*, 11.07.2001, AA & KT, 1 adult; 29.09.2001, AA, GW, KT & SI, 2 adults (1, MM); 11.03.2003, AA, JP & KT, 1 larva; rábafüzesi út, *Rába*, 11.07.2001, AA & KT, 1 adult; 23.08.2001, AA & KT, 3 adults; Tompaládony: 84-es út, *Répece*, 15.07.1999, AA & KT, 1 adult (MM). – Zala county: Andrásida: 76-os út, *Zala*, 06.04.2004, JP, KT & TI, 1 larva (MM); Kehidakustány: kustányi út, *Zala*, 22.06.2002, AA, 2 adults; Zalacsány: 76-os út, *Zala*, 07.07.2004, JP & KT, 29 adults; 07.10.2004, JP, KT, OP & TI, 2 adults; Zalaszentgyörgy: kávási út, *Zala*, 15.03.2000, AA & KT, 1 adult (MM).

Oulimnius tuberculatus tuberculatus (P. W. J. MÜLLER, 1806) (Fig. 2) – New to Hungary. It is known from the majority of the European countries, and quite common in the streams of Burgenland (M. JÄCH, personal communication), so its occurrence in Hungary is not surprising. The four localities lie in Western Transdanubia adjacent to Slovenia. The specimens were collected from three small rivers (Kerca, Kerka, Zala) with pebble substrate in low hilly regions.

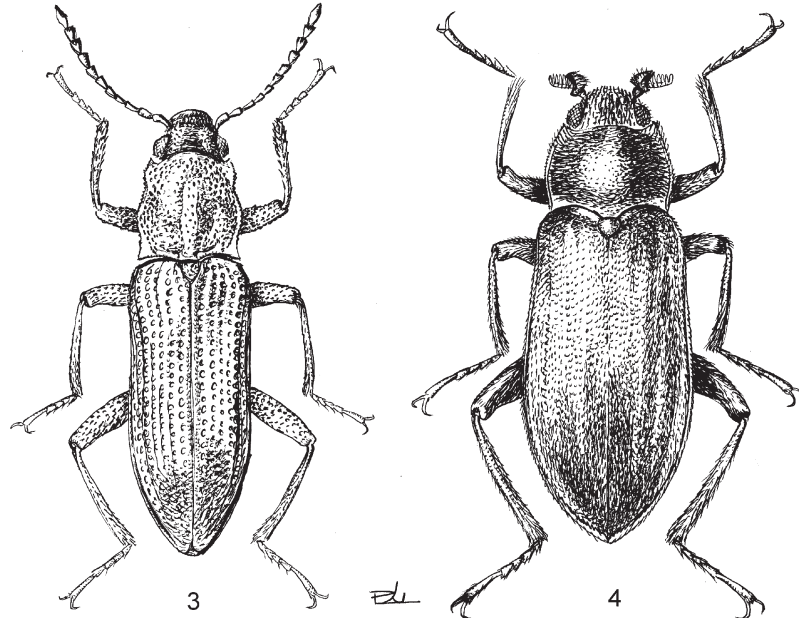
Records – Vas county: Kercaszomor: *Kerca*, 15.11.2000, AA & KT, 1 larva (MM). – Zala county: Zala county: Andrásida: 76-os út, *Zala*, 07.10.2004, JP, KT, OP & TI, 1 adult (MM); Csöde: *Zala*, 10.08.2001, AA, 1 adult (MM); Szécsisziget: *Kerka*, 11.03.1999, AA, JP & KT, 1 adult (MM).

Potamophilus acuminatus (FABRICIUS, 1792) – Hungarian data of this species were summarised by KOVÁCS *et al.* (1999). Further records were published by KOVÁCS & AMBRUS (2001), KOVÁCS *et al.* (2002), MÓRA *et al.* (2005) & PAULOVICS (2003). A total of 13 rivers are listed hereunder. Presence of the species in the Répece and the Zala is recorded for the first time. Its presence in the Bodrog is now confirmed – from this river a single specimen collected before 1955 was known. The species got protected status in Hungary in 2001.

Records – Borsod-Abaúj-Zemplén county: Berzék: Szemere-legelő, *Hernád*, 13.10.1999, KT & VA, 1 larva (MM); 15.05.2000, KT & VA, 2 larvae, 1 adult (MM); 30.08.2000, KT & VA, 1 larva (MM); 25.09.2003, KT & VA, 13 larvae; Bócs: Hernádvíz Kft, downstream, *Hernád*, 15.05.2000, KT & VA, 1 larva (MM); Hernádvíz Kft, upstream, *Hernád*, 27.08.1999, KT & VA, 1 larva (MM); sajlóádi út, *Bársonyos*, 27.08.1999, KT & VA, 1 larva (MM); 13.10.1999, KT & VA, 1 larva (MM); sajlóádi út, *Hernád*, 30.08.2000, KT & VA, 1 larva (MM); Üdülőtelep, 100 m SW, *Hernád*, 13.10.1999, KT & VA, 1 larva (MM); Edelény: Markovicstanya, *Bódva*, 30.09.2004, JP & KT 1 larva; Felsőberecki: ferry, *Bodrog*, 12.08.2001, JP & KV, 1 larva (MM); Gesztely: 37-es út, *Hernád*, 27.08.1999, KT & VA, 1 larva (MM); 13.10.1999, KT & VA, 1 larva (MM); 15.05.2000, KT & VA, 1 larva, 2 adults (MM); 30.08.2000, KT & VA, 1 larva (MM); 12.09.2000, KT & VA, 1 larva (MM); 25.09.2003, KT & VA, 5 larvae; Révleányvár: Zöldes-szög, *Tisza*, 11.05.2000, JP & KT, 1 larva (MM); Sajókaza: sajióivánkai út, *Sajó*, 30.09.2004, JP & KT, 8 larvae; Sajószentpéter: Alsó-berek, *Sajó*, 03.08.2001, KT & VA, 1 larva, 1 adult (MM); Sajószentpéter: borsodsziráki út, *Bódva*, 16.09.2003, KT, 1 larva; 25.08.2004, AA, JP & KK, 1 larva; Sátoraljaújhely: ferry, *Bodrog*, 03.06.2000, HG & KT, 4 adults (KFM); Szendrő: büdöskútpusztai út, *Bódva*, 29.04.2004, KT & VA, 1 larva; Szirmabesenyő: sajióvámosi út, *Sajó*, 24.06.2004, JP & KT, 1 larva, 1 adult. – Csongrád county: Algyő: 47-es út, *Tisza*, 25.05.2000, AA, JP, KT & KV, 1 adult (MM); Apátfalva: nagycsanádi (Cenad) út, *Maros*, 14.10.2000, AA & OP, 1 larva (MM); Apátfalva, *Maros*, 34 rkm, 20.09.2003, PP, many larvae; Apátfalva, *Maros*, 36 rkm, 13.08.2004, PP, 1 larva; Apátfalva, *Maros*, 31 rkm, 6.06.2003, PP, many adults; Apátfalva, *Maros*, 30 rkm, 6.06.2003, PP, many adults; Deszk, *Maros*, 9 rkm, 6.09.2003, PP, many larvae; Klárafalva, *Maros*, 13 rkm, 27.05.2000, PP, many adults; Klárafalva, *Maros*, 11 rkm, 25.06.2000, PP, many adults; Klárafalva, *Maros*, 13.5 rkm, 7.08.2004, PP, many adults; Kiszombor: 43-as út, *Maros*, 25.05.2000, AA, JP, KT & KV, 1 larva (MM); Magyarcsanád, *Maros*, 48 rkm, 6.06.2003, PP, many adults; Magyarcsanád, *Maros*, 43 rkm, 21.09.2003, PP, many larvae; Magyarcsanád, *Maros*, 39 rkm, 10.08.2004, PP, 1 adult; Makó: beach, *Maros*, 14.10.2000, AA & OP, 1 larva (MM); 23.08.2001, JP & KV, 1 larva (MM); Makó, *Maros*, 28 rkm, 6.06.2003, PP, many adults; Makó, *Maros*, 25 rkm, 6.06.2003, PP, many adults; Makó, *Maros*, 23 rkm, 6.06.2003, PP, many adults; Makó, *Maros*, 20 rkm, 6.06.2003, PP, many adults; Makó, *Maros*, 16 rkm, 6.06.2003, PP, many adults; Nagylak: *Maros*, 25.05.2000, AA, JP, KT & KV, 1 larva, 4 adults (MM); Szeged: Belvárosi híd, *Tisza*, 22.05.1998, CsB & JP, 1 larva (MM); 04.09.1998, CsB & JP, 29 larvae (MM); 06.09.2000, JP & KV, 1 larva (MM); 01.10.2001, CsB & JP, 1 larva (MM); Szeged-Tápé, *Maros*, 9 rkm, 6.06.2003, PP, many adults; Szeged-Tápé, *Maros*, 7 rkm, 10.06.2001, PP, 1 adult. – Győr-Moson-Sopron county: Árpás: móríchidai út, *Rába*, 15.08.2002, AA, 1 larva; 24.09.2004, AA, 10 larvae; Bodonhely: kisbabóti út, *Rába*, 25.06.2001, AA, 1 larva; Dunaszeg: beach, *Mosoni-Duna*, 20.06.2002, AA & KT, 1 larva (MM); Himod: kislelői út, *Répcse*, 29.07.2004, AA, JP & KT, 1 larva; Rábapatona: koroncói út, *Rába*, 20.06.2002, AA & KT, 35 larvae, 5 adults (MM). – Jász-Nagykun-Szolnok county: Tiszafüred: 33-as út, *Tisza*, 28.08.2002, IVÁN JUDIT, JP, KT & PERTTI SEVOLA, 1 larva. – Pest county: Ipolydamásd: former frontier crossing, *Ipoly*, 21.06.2002, JP, KD & KT, 1 larva; 07.08.2002, JP & KT, 35 larvae; 25.03.2003, KT, 4 larvae; 29.05.2003, KT & VA, 8 larvae; 14.08.2003, AA, JP, KT & VI, 1 larva; Ipolytölgyes: Malom-szög, *Ipoly*, 07.08.2002, JP & KT, 1 larva; 05.09.2002, JP & KT, 70 larvae; 29.05.2003, KT & VA, 19 larvae; 14.08.2003, AA, JP, KT & VI, 5 larvae; Szob: Hideg-rét, *Duna*, 20.02.2003, JP & KT, 1 larva (MM); 25.03.2003, KT, 18 larvae; Vámosmikola: Ipolyon innen dűlő, *Ipoly*, 21.06.2002, JP, KD & KT, 3 larvae, 18 adults; 07.08.2002, JP & KT, 1 larva; 05.09.2002, JP & KT, 19 larvae; 29.05.2003, KT & VA, 1 larva, 37 adults; 14.08.2003, AA, JP, KT & VI, 1 larva; 15.09.2003, KT, 2 larvae; Zebegény, *Duna*, 29.05.2003, KT & VA, 1 larva (MM). – Szabolcs-Szatmár-Bereg county: Dombrád: Üdülőtérület, *Tisza*, 09.09.2000, KT, 1 larva (MM); Jánd: Jándi-sziget, *Tisza*, 23.03.2000, AA, CsB, JP, KT & KV, 3 larvae (MM); Rakamaz: 38-as út, *Tisza*, 18.05.2000, AA & KV, 1 larva

(MM); Tiszabecs: beach, *Tisza*, 11.05.2000, JP & KT, 1 larva (MM); Tivadar: beach, *Tisza*, 07.09.1999, JP & KT, 1 larva (MM); 22.03.2000, AA, 1 larva (MM); 24.08.2000, AA, JP, KT & KV, 1 larva (MM); 21.09.2000, AA, JP, KT & KV, 3 larvae; 22.07.2004, KT, 1 larva; Vásárosnamény: Gergelyugornya, beach, *Tisza*, 24.04.1996, TI, 2 larvae (MM); 27.06.2000, AA, KT & KV, 1 larva (MM); 08.10.2001, CsB, JP & KV, 2 larvae (MM); Gergelyugornya, water-gauge, *Tisza*, 20.09.2000, AA, JP, KT & KV, 1 larva (MM). – Vas county: Csákánydoroszló: ivánci út, *Rába*, 11.07.2001, AA & KT, 1 larva, 28 adults; 12.03.2003, AA & KT, 30 larvae; 23.04.2003, AA, JP & KT, 1 larva; Csörötnek: rönöki út, *Rába*, 11.07.2001, AA & KT, 5 adults (MM); Ikervár: dam, downstream, *Rába*, 28.07.2004, JP & KT, 3 larvae, 5 adults; Körmend: 86-os út, *Rába*, 11.07.2001, AA & KT, 2 adults; 23.08.2001, AA & KT, 8 larvae; 30.09.2001, AA & KT, 5 larvae; 19.09.2002, AA, JP, KT & VI, 6 larvae; 11.03.2003, AA, JP & KT, 4 larvae; 24.04.2003, AA, JP & KT, 15 larvae; 19.04.2004, AA, JP, KT & RR, 5 larvae; Magyarlak: beach, *Rába*, 06.04.2004, AA, JP, KT & TI, 3 larvae; Rábahídvég: 8-as út, *Rába*, 08.06.2001, 2 larvae, AA, JP & KT; 11.07.2001, AA & KT, 1 larva; 23.08.2001, AA & KT, 6 larvae; 19.09.2002, AA, JP, KT & VI, 54 larvae; 23.04.2003, AA, JP & KT, 8 larvae; 01.10.2003, AA, JP & KT, 18 larvae; 19.04.2004, AA, JP, KT & RR, 10 larvae; Rábapatty: *Rába*, 80 rkm, 30.07.2004, AA, JP & KT, 20 larvae; Rum: 87-es út, *Rába*, 04.05.2001, AA, 1 larva (MM); Sárvár: 84-es út, *Rába*, 11.07.2001, AA & KT, 11 larvae, 30 adults; 23.08.2001, AA & KT 9 larvae (MM). – Veszprém county: Várkesző: szanyi út, *Rába*, 30.07.2004, AA, JP & KT, 1 larva. – Zala county: Zalacsány: 76-os út, *Zala*, 07.07.2004, JP & KT, 2 larvae (1, MM).

Stenelmis puberula REITTER, 1887 (Fig. 3) – New to Ukraine. According to KODADA *et al.* (2004) it is known so far from Afghanistan, Bosnia, the Caucasus, Iran, Slovakia, Turkmenistan and Turkey. In Ukraine it was found in two streams, from cobble substrate in strong current, in 20–50 cm depth.



Figs 3–4. 3 = *Stenelmis puberula* REITTER, 1887, 4 = *Pomatinus substriatus* (P. W. J. MÜLLER, 1806). Not to scale

Records – UKRAINE (Zakarpate): Bustino: *Tereblja* [= Bustyaháza: *Talabor*], 30.06.2004, JP, KB, KT & MZ, 1 adult (MM); Iza: *Rika* [= Iza: *Nagy-ág*], 07.05.2004, JP, KB, KT & MZ, 1 adult (MM); 30.06.2004, JP, KB, KT & MZ, 1 adult (MM).

DRYOPIDAE

Pomatinus substriatus (P. W. J. MÜLLER, 1806) (Fig. 4) – The 56 records belong to 19 running waters, although a few specimens were collected at light or by using a net attached to the roof of a car. The smallest watercourse is the Szentgyörgyvölgyi-patak (stream) at Magyarszombatfa, while the largest is the Tisza River at Tivadar. This species is usually mentioned in the Hungarian literature (e. g. ÁDÁM, 1986, ENDRÓDI 1983) in the combination of *Helichus substriatus*. NELSON (1990) transferred it to *Pomatinus* STURM, 1853 and regarded *Helichus* s. str. as being confined to the New World. However, based on the examinations of Southeast Asian and Chinese species of *Helichus* by KODADA & JÄCH (1995), distribution of the genus includes the Old World as well, although this species is retained for the moment in the genus *Pomatinus*.

Records – Bács-Kiskun county: Kunfehértó, 18.08.1964, light trap, 1 adult (HNHM). – Baranya county: Pécs, 7 adults (HNHM); Pécs, E. KAUFMANN, 1 adult (HNHM); Pécs, L. BÍRÓ, 2 adults (HNHM); Umgb. Pécs, H. DIENER, 5 adults (HNHM); Szentlőrinc, V. STILLER, 8 adults (HNHM). – Borsod-Abaúj-Zemplén county: Böcs: sajlóadi út, *Bársonyos*, 03.06.1999, KT & VA, 1 adult (MM); Hídvégardó: road to frontier, *Bódva*, 07.08.2003, KT & VA, 1 adult (MM); Szikszó: 1000 m SW, *Vadász-patak*, 25.08.2004, AA & JP, 1 adult; Szin: Szelcepuszta, at light, 10.08.1992, O. MERKL, 1 adult (HNHM). – Fejér county: Bodajk, 12.06.1938, Z. KASZAB, 60 adults (HNHM). – Hajdú-Bihar county: Debrecen, 1 adult (HNHM). – Heves county: Gyöngyössolymos: Lajosháza, *Nagy-patak*, 26.09.2004, KT, 1 adult (MM); Szarvaskő: *Eger-patak*, from beneath stones, 9–12.09.1950, J. STILLER, 18 adults (HNHM). – Nógrád county: Bátortereny: Kistereny, waterworks, *Zagyva*, 17.05.1995, sKT & KT, 1 adult (MM); Ipolytarnóc: Borókás-árok, [*Borókás-patak*,] netting with car, 29.07.2001, O. MERKL, 1 adult (HNHM); 19.09.2002, O. MERKL, 1 adult (HNHM). – Pest county: Budapest: B. BOKOR, 1 adult (HNHM); Budapest: Kurucles, 10.10.1939, J. FODOR, 6 adults (HNHM); Budapest: Rákospalota, 12.06.1973, L. TÓTH, 1 adult (HNHM); Ipolytölgyes: Malom-szög, *Ipoly*, 05.09.2002, 1 adult, JP & KT; 29.05.2003, KT & VA, 3 adults; 14.08.2003, AA, JP, KT & VI, 5 adults; Kismaros, 9.09.1951, S. ENDRÓDI, 1 adult (HNHM); Nógrádverőce, [*Keskeny-bükki-patak*,] 1.06.1959, S. ENDRÓDI, 1 adult (HNHM); 28.07.1935, S. ENDRÓDI, 1 adult (HNHM); Nógrádverőce: Magyarokút, [*Keskeny-bükki-patak*,] singled, 5.05.1951, S. ENDRÓDI, 1 adult (HNHM); Perőcsény: Bagóles, *Ipoly*, 05.08.1999, KT, 2 adults (MM); Pócsmegyer, 3.09.1967, A. PODLUSSÁNY, 1 adult (HNHM); Vámosmikola: Ipolyon innen dűlő, *Ipoly*, 05.08.1999, KT, 2 adults (MM); 05.09.2002, JP & KT, 5 adults (MM); 29.05.2003, KT & VA, 8 adults (MM); 15.09.2003, KT, 1 adult; Zebegény, [*Malomvölgyi-patak*,] 17.06.1934, Z. KASZAB, 7 adults (HNHM); 10.08.1934, Z. KASZAB, 4 adults (HNHM); 24.05.1935, Z. KASZAB, 5 adults (HNHM). – Somogy county: Gyékényes: Lankóci-erdő, hunters' house N 2000 m, *Dombó-csatorna*, 23.07.1997, AA, KT & VA, 18 adults (MM). – Szabolcs-Szatmár-Bereg county: Milota: Kis-Szena, *Tisza*, 12.03.1996, JP, SZABOLCS LENGYEL & TI, 1 adult (MM); Tivadar: beach, *Tisza*, 21.09.2000, AA, JP, KT & KV, 1 adult (MM). – Vas county: Bajánsenye: kercaszomori út, *Kerca*, 15.11.2000, AA & KT, 1 adult (MM); Csepreg: waterworks, *Répcse*, 20.07.2000, AA, KD & KT, 2 adults (MM); Felsőcsatár: niederbergi út, *Pinka*, 11.03.2003, AA & KT, 1 adult (MM); Körmend: Horvátnádálja, *Pinka*, 18.08.1998, AA & KT, 1 adult (MM); 86-os út, *Rába*, 30.09.2001, AA & KT, 1 adult (MM); Kőszeg Mts, [no closer locality,] 23. 06. 1965,

L. TÓTH, 1 adult (HNHM); Magyarszombatfa: *Szentgyörgyvölgyi-patak*, 24.08.2002, AA, 1 adult (MM); 16.07.2003, AA, 1 adult (MM); Rábahídvég: 8-as út, *Rába*, 23.08.2001, AA & KT, 1 adult (MM); 19.04.2004, AA, JP, KT & RR, 1 adult; Sárvár: 84-es út, *Rába*, 11.07.2001, AA & KT, 1 adult (MM); Szentgotthárd: rábafüzesi út, *Rába*, 29.09.2001, AA, GW, KT & SI, 1 adult (MM); Szentpéterfa: *Pinka*, 17.05.1997, AA, 1 adult (MM). – Veszprém county: Ábrahámhegy, 23.07.1932, E. DUDICH, 1 adult (HNHM); Bakony, [no closer locality,] E. BOKOR, 1 adult (HNHM); Felsőörs: Királykúti-völgy, 17.05.1989, L. TÓTH & S. TÓTH, 1 adult (HNHM); Pápa, WACHSMANN, 11 adults (HNHM); Zirc: Cuha-völgy, [*Cuha*,] 17.08.1964. L. TÓTH, 3 adults (HNHM); Zirc: Cuha-vögy, [*Cuha*,] F. LICHTNECKERT, 2 adults (HNHM); Zirc, [*Cuha*,] F. LICHTNECKERT, 1 adult (HNHM) – Zala county: Andrásida: 76-os út, *Zala*, 07.07.2004, JP & KT, 1 adult (MM); Vállus, 09.1956, R. LENCI, 6 adults (HNHM); Zalaszentiván, 22.09.1932, E. DUDICH, 4 adults (HNHM).

CHECKLIST OF HUNGARIAN ELMIDAE AND DRYOPIDAE

Localities of the majority of species of the families Elmidae and Dryopidae from the present-day Hungary were published in KUTHY's (1897) comprehensive list of the Hungarian beetles. However, due to the difficulties of identification most of these data should be taken with reserve. In the subsequent checklist, all species names are followed by a reference, which is based on Hungarian specimens with dissected genitalia and identified and/or checked by reliable experts. Hungarian names are proposed for each species. Synonymy is restricted to names mentioned in the Hungarian literature.

Normandia nitens (P. W. J. MÜLLER, 1817) was mentioned from Pécs by KUTHY (1897), but no voucher specimen is available. Although occurrence of this widely distributed species in other parts of Hungary cannot be excluded, in the lack of correctly identified specimens it should be deleted from the Hungarian fauna. Specimens labelled as *Normandia nitens* from the stream at Aszófő (Veszprém county, Balaton Uplands) proved to be *Riolus subviolaceus* (P. W. J. MÜLLER, 1817) (checked by M. JÄCH).

Esolus pygmaeus (P. W. J. MÜLLER, 1806) was mentioned from Hungary by HORION (1955) and STEFFAN (1961), without closer locality. References or voucher specimens, on which these records are based, are unknown. It should be taken into consideration that many species, which are mentioned from Hungary by a number of literature sources, are in fact from the present-day Romania, Slovakia and Croatia, because parts of these countries were belonging to Hungary before 1918. This is especially true for mountain species. For the moment, *Esolus pygmaeus* should be deleted from the fauna of Hungary.

Elmidae CURTIS, 1830 – Riffle beetles – Karmosbogárfélék

Larainae LECONTE, 1861

Potamophilus GERMAR, 1811

Potamophilus acuminatus (FABRICIUS, 1792): KOVÁCS *et al.* (1999) – nagy karmosbogár

Elminae CURTIS, 1830

Elmis LATREILLE, 1798

= *Helmis* BEDEL, 1878

= *Lareynia* JACQUELIN DU VAL, 1859

Elmis aenea (P. W. J. MÜLLER, 1806): KODADA & MERKL (1996) – fémes karmosbogár

Elmis latreillei BEDEL, 1878: KASZAB (1937), checked by W. WIĘŻLAK – vastagbordás karmosbogár

Elmis maugetii LATREILLE, 1802: KODADA & MERKL (1996) – bronzos karmosbogár

= *megerlei* DUFTSCHMID, 1805

Elmis rioloides (KUWERT, 1890): KODADA & MERKL (1996) – kis karmosbogár

Elmis obscura (P. W. J. MÜLLER, 1806): JÄCH *et al.* (2001) – sötét karmosbogár

= *croatica* KUWERT, 1890

Esolus MULSANT et REY, 1872

Esolus angustatus (P. W. J. MÜLLER, 1821): present paper – keskeny karmosbogár

Esolus parallelepipedus (P. W. J. MÜLLER, 1806): present paper – párhuzamos karmosbogár

= *kuenowi* KUWERT, 1889

Limnius ILLIGER, 1802

= *Latelmis* REITTER, 1888

= *Lathelmis* ZAITZEV, 1908

Limnius intermedius FAIRMAIRE, 1881: present paper – pataki karmosbogár

= *rufiventris* KUWERT, 1890

Limnius muelleri (ERICHSON, 1847): present paper – Müller-karmosbogár

Limnius perrisi (DUFOUR, 1843): KASZAB (1937), KODADA & MERKL (1996)
– Perris-karmosbogár

Limnius volckmari (PANZER, 1793): KODADA & MERKL (1996) – sebesvízi
karmosbogár

Macronychus P. W. J. MÜLLER, 1806

Macronychus quadrituberculatus P. W. J. MÜLLER, 1806: KOVÁCS *et al.*
(1999) – négyűpű karmosbogár

Oulimnius DES GOZIS, 1886

Oulimnius tuberculatus (P. W. J. MÜLLER, 1806): present paper – keretes
karmosbogár

Riolus MULSANT et REY, 1872

Riolus cupreus (P. W. J. MÜLLER, 1806): KODADA & MERKL (1996) – rezes
karmosbogár

Riolus subviolaceus (P. W. J. MÜLLER, 1817): KODADA & MERKL (1996) –
kékes karmosbogár

Dryopidae BILLBERG, 1820 (= Parnidae) – Long-toed water beetles –
Fülescsápúbogár-félék

Dryops OLIVIER, 1791

= *Parnus* FABRICIUS, 1792

Dryops anglicanus EDWARDS, 1909: MERKL (1991) – angol fülescsápúbogár

Dryops auriculatus (GEOFFROY, 1785): KODADA & MERKL (1996) – közön-
séges fülescsápúbogár

= *prolifericornis* FABRICIUS, 1792

Dryops ernesti GOZIS, 1886: KODADA & MERKL (1996) – zömök fülescsá-
púbogár

= *auriculatus* PANZER, 1797, not GEOFFROY, 1785

Dryops griseus (ERICHSON, 1847): MERKL (1991) – szürke fülescsápúbogár
= *kaszabi* OLMÍ, 1976

Dryops lutulentus (ERICHSON, 1847): KUTHY (1897), checked by. M. OLMÍ
& W. WIEŻŁAK – bundás fülescsápúbogár

Dryops nitidulus (HEER, 1841): MERKL (1991) – fényes fülescsápúbogár

Dryops rufipes (KRYNICKI, 1832): ÁDÁM (1986) – kis fülescsápúbogár
= *pilosellus* ERICHSON, 1847

Dryops similaris BOLLOW, 1936: KODADA & MERKL (1996) – mocsári
fülescsápúbogár

Dryops viennensis (CASTELNAU, 1840): MERKL (1991) – bécsi fülescsápú-bogár

Pomatinus STURM, 1853

Pomatinus substriatus (P. W. J. MÜLLER, 1806): KODADA & MERKL (1996)
– parti fülescsápúbogár

*

Acknowledgements – The authors thank MANFRED JÄCH (Naturhistorisches Museum, Wien) for identifying some doubtful specimens and for information on the distribution of some species, PÉTER PAULOVIČS (CSEMETE Egyesület, Szeged) for the data of Elmidae from the Maros river, and all other colleagues (listed in the Introduction) for collecting valuable materials. JÁNOS PÁI (HNHM, Budapest) produced the drawings. ARANKA GRABANT (HNHM, Budapest) helped in data input. Studies of OTTÓ MERKL were supported by the Hungarian Scientific Research Fund (OTKA grant No. T-034207) and by the National R&D Programme, title: The origin and genesis of the fauna of the Carpathian Basin: diversity, biogeographical hotspots and nature conservation significance; contract no: 3B023-04.

REFERENCES

- ÁDÁM, L. (1986): The species of the Elateroidea, Dryopoidea, Dermestoidea and Bostrichoidea of the Kiskunság (Coleoptera). – In: MAHUNKA, S. (ed.): *The Fauna of the Kiskunság National Park, I.* Akadémiai Kiadó, Budapest, pp. 157–166.
- ÁDÁM, L. (1992): Faunaterületünk ritkább vízibogarai (Coleoptera: Haliplidae, Gyrinidae, Dytiscidae, Hydroporidae). (Rare water beetles of the Carpathian Basin (Coleoptera: Haliplidae, Gyrinidae, Dytiscidae, Hydroporidae).) – *Folia entomologica hungarica* **52** [1991]: 189–236.
- ÁDÁM, L. & HEGYESSY, G. (2004): *Abauj és Zemplén tájainak ragadozó vízibogarai (Coleoptera). [Predaceous aquatic beetles of Abauj and Zemplén (Coleoptera).]* – Abauj-Zemplén Értékeiért Közhasznú Egyesület, Sátoraljaújhely, 97 pp.
- CSABAI, Z. & MÓRA, A. (2003): Adatok a Dél-Alföld vízibogár-faunájának ismeretéhez (Coleoptera: Halipidae, Dytiscidae, Noteridae, Gyrinidae, Spercheidae, Hydrochidae, Hydrophilidae, Elmidae). (Contribution to the aquatic beetle fauna of the south part of the Great Hungarian Plain (Coleoptera: Halipidae, Dytiscidae, Noteridae, Gyrinidae, Spercheidae, Hydrochidae, Hydrophilidae, Elmidae).) – *Folia Historico-Naturalia Musei Matraensis* **27**: 145–159.
- CSABAI, Z., BODA, P. & MÓRA, A. (2004): Contribution to the aquatic beetle, aquatic and semi-aquatic bug fauna of Szuha stream and its environment, NE Hungary (Coleoptera: Hydrade-phaga, Hydrophiloidea; Heteroptera: Nepomorpha, Gerromorpha). – *Folia Historico-Naturalia Musei Matraensis* **28**: 157–164.
- ENDRÓDI, S. (1983): A Börzsöny-hegység bogárfaunája, XI. Diversicornia II. (The beetle fauna of the Mts. Börzsöny, XI. Diversicornia II.) – *Folia Historico-Naturalia Musei Matraensis* **8**: 107–119.
- JÄCH, M. A., KOMAREK, A., SCHILLHAMMER, H., SCHUH, R. & RÖSSLER, G. (2001): Bemerkenswerte Käferfunde aus Österreich (X) (Coleoptera). – *Koleopterologische Rundschau* **71**: 217–223.

- HORION, A. (1955): Faunistik der Mitteleuropäischer Käfer. Band IV: Sternoxia (Buprestidae), Fossipedes, Macroductylia, Brachymera. – *Entomologische Arbeiten aus dem Museum G. Frey Sonderband*: I–XIV + 1–280.
- KASZAB, Z. (1937): A kőszegi hegység bogárfaunájának alapvetése. – *Vasi Szemle* **4** (3): 159–185. (A Kőszegi Múzeum Közleményei [Publicationes Musei Ginsiensis] **1** (2): 1–27.
- KODADA, J. & JÄCH, M. A. (1995): Dryopidae: 2. Taxonomic review of the Chinese species of the genus *Helichus* Erichson (Coleoptera). – In: JÄCH, M. A. & JI, L. (eds): *Water Beetles of China. Volume I*. Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein, Wien, pp. 329–339.
- KODADA, J. & MERKL, O. (1996): Dryopoidea (Coleoptera) from the Bükk National Park. – In: MAHUNKA, S. (ed.): *The Fauna of the Bükk National Park, II*. Hungarian Natural History Museum, Budapest, pp. 281–283.
- KODADA, J., ZAŤOVIČOVÁ, Z. & ČIAMPOR JR., F. (2004): *Stenelmis puberula*: new distributional records from Slovakia. – *Entomological Problems* **34**(1–2): 143–144.
- KOVÁCS, T. & AMBRUS, A. (2001): Ephemeroptera, Odonata and Plecoptera larvae from the River Rába and River Lapincs. – *Folia Historico-Naturalia Musei Matraensis* **25**: 145–162.
- KOVÁCS, T., AMBRUS, A. & JUHÁSZ, P. (2002): Ephemeroptera and Odonata larvae from the River Ipoly (Hungary). – *Folia Historico-Naturalia Musei Matraensis* **26**: 163–167.
- KOVÁCS, T., AMBRUS, A. & MERKL, O. (1999): *Potamophilus acuminatus* (Fabricius, 1792) and *Macronychus quadrituberculatus* P. W. J. Müller, 1806: new records from Hungary (Coleoptera: Elmidae). – *Folia entomologica hungarica* **60**: 187–194.
- KOVÁCS, T., HEGYESSY, G. & MERKL, O. (2000): Új és ritka bogarak (Coleoptera) Magyarországról II. (New and rare beetles (Coleoptera) from Hungary II.) – *Folia Historico-Naturalia Musei Matraensis* **24**: 197–203.
- KUTHY, D. (1897): Ordo. Coleoptera. – In: *A Magyar Birodalom Állatvilága (Fauna Regni Hungariae). III. Arthropoda. (Insecta. Coleoptera.)*. Királyi Magyar Természettudományi Társulat, Budapest, 213 pp.
- MERKL, O. (1991): Reassessment of the beetle fauna of Bátorliget, NE Hungary (Coleoptera). – In: MAHUNKA, S. (ed.): *The Bátorliget Nature Reserves – after forty years*. Hungarian Natural History Museum, Budapest, pp. 381–498.
- MÓRA, A., BODA, P., CSABAI, Z., DEÁK, CS., MÁLNÁS, K. & CSÉPES, E. (2005): Contribution to the mayfly, aquatic and semiaquatic bug, aquatic beetle, caddisfly and chironomid fauna of the River Tisza and its main inflows (Ephemeroptera, Heteroptera: Nepomorpha and Gerromorpha, Coleoptera: Hydradephaga and Hydrophiloidea, Trichoptera, Diptera: Chironomidae). – *Folia Historico-Naturalia Musei Matraensis* **29**: in print.
- NELSON, H. G. (1990): *Pomatinus*, a name reclaimed for *Helichus substriatus* (Ph. Muller) (Coleoptera: Dryopidae). – *The Coleopterist's Bulletin* **44** (2): 233–234.
- PAULOVICS, P. (2003): Érdekes faunisztikai adatok a Marosról és hullámteréből. [Interesting faunistic data from the Maros river and its inundation area.] – *A Puszta* **18** [2001]: 87–109.
- STEFFAN, A. W. (1961): Vergleichend-mikromorphologische Genitaluntersuchungen zur Klärung der phylogenetischen Verwandtschaftsverhältnisse der mitteleuropäischen Dryopoidea (Coleoptera). – *Zoologische Jahrbücher, Abteilung für Systematik, Ökologie und Geographie der Tiere* **88**(3): 255–354.