FOLIA HISTORICO NATURALIA MUSEI MATRAENSIS
2008 32: 103–113

Taeniopterygidae Klapálek, 1905 species in Hungary (Plecoptera)

TIBOR KOVÁCS & DÁVID MURÁNYI

ABSTRACT: Summary and comments on new and literature data of the 11 Taeniopterygidae species known from Hungary. Their Hungarian distribution are depicted on maps.

In this paper we publish UTM codes of literature data on each Taeniopterygidae species known from Hungary, and new data based on unpublished material held in the collections of the Hungarian Natural History Museum, Budapest, and the Mátra Museum. This material consists of both old and newly collected specimens in the case of the Hungarian Natural History Museum, while newly collected alone in the case of the Mátra Museum. Informations on each species summarized and commented in the Remarks paragraphs. We ignore the data of STEINMANN (1968) in the case of the following species: *Taeniopteryx nebulosa*, *Brachyptera monilicornis*, *B. seticornis*, *B. trifasciata*, *Rhabdiopteryx neglecta*. The reasons of their omission are: 1 – the data completelly contradict to the ecological demands of these species (e.g. Mátra Mts in case of *T. nebulosa*; these mountains having only mountain-submountain stream and brook habitats); 2 – the cited specimens are lacking in most of the cases, while they should be deposited in the Hungarian Natural History Museum; 3 – if the specimens are exist, their identification are false even in the most conspicouos species (see *T. nebulosa* sub nomen *B. seticornis*, *B. braueri* sub nomen *B. trifasciata*).

Abbreviations: AJ = Jacques Aubert, JW = Wolfgang Joost, HK = Harmos Krisztián, sKT = senior Kovács Tibor, KT = Kovács Tibor, MD = Murányi Dávid, PS = Pongrácz Sándor, SH = Steinmann Henrik, TL = Tóth László, TS = Tóth Sándor, ÚS = Újhelyi Sándor; L=larva, E=exuviae, mI=male imago, fI=female imago; Hungarian Natural History Museum, Budapest = HNHM, Mátra Museum, Gyöngyös = MM.

Taeniopteryx araneoides Klapálek, 1902 (Figure 1)

Literature data: AUBERT 1966, KLAPÁLEK 1902, 1906, PONGRÁCZ 1913, 1914, UNGER 1917: CT56.

Remarks: It has only data older than 90 years from the Danube shore (Budapest), thus, it can be regarded as extinct in the Hungarian section of the river (Figure 2).

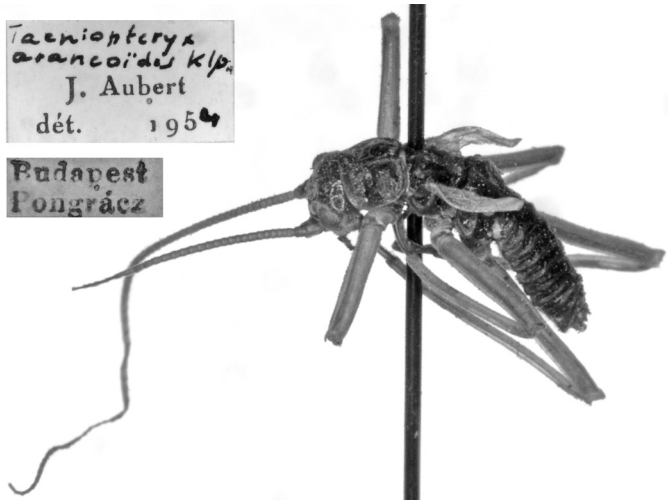

Figure 1. *Taeniopteryx araneoides* male specimen from the beginning of the XX century (HNHM).

Taeniopteryx nebulosa (Linnaeus, 1758)

Literature data: Aubert 1966: CS18, CT56; Klapálek 1902: CT56; Kovács 2006a: XN10, XN31; Kovács & Ambrus 2001: WN90, XN10, XN20, XN31, XN43, XN55, XN65, XN75, XN87; Kovács & Ambrus 2002: XM16; Mocsáry 1900: CT49, CT56; Pillich 1914: CS18; Pongrácz 1914: CS18, CT49, CT56; Újhelyi 1969: CU30; Unger 1917: CT56.

New records HNHM: Budapest, CT56, 23.03.1928, 1 I (without terminalia), Fekete, det. SH; Svábhegy, CT56, 18.03.1937, 1 fl, Uhrik, det. SH – Kiskunhalas, CS84, 1940, 1 I (without terminalia), Kuthy, det. SH, sub nomen *Brachyptera seticornis* Klap., revid. MD, 2008 – Sajópüspöki: Sajó, 145m, DU54, 16.03.2007, 1 fl, MD. **MM**: Gesztely: road number 37, Hernád, DU92, 11.11.2008, 4 L, KT-Varga András – Sajókaza: road to Sajóivánka, Sajó, DU64, 17.04.2008, 1 E, KT-Magos Gábor – Szatmárcseke: Irtványos, Tisza, FU22, 27.02.2008, 4 E, 3 mI, 1 fl, KT – Szentgotthárd: Május 1. út, Lapincs, WN90, 15.11.2006, 1 L, Juhász Péter-KT – Tiszabecs: mouth of Batár, Tisza, FU32, 27.02.2008, 1 E, KT – Tivadar: lido, Tisza, FU12, 27.02.2008, 2 L, 3 E, 2 mI, 2 fl, KT.

Remarks: It can be regarded as extinct from the rivers Danube (Budapest, Pilismarót) and Sió (Simontornya) as data from these waters are older than 90 years. The present data from Kiskunhalas is questionable as there are no suitable habitat in that area. Recently it was found in Transdanubian watercourses – rivers Kerka, Lapincs and Rába (Kovács 2006a, Kovács & Ambrus 2001, 2002), as well as East Hungarian rivers Hernád, Sajó and Tisza during the last and the present years (Figure 3).

Taeniopteryx schoenemundi Mertens, 1923

Literature data: Juhász *et al.* 1998: FU22, FU33; Kovács 2006a: FU12, FU23, FU32, Kovács 2006b: FU12, FU32; Kovács *et al.* 2001: FU33; Kovács *et al.* 2002a: FU12; Kovács *et al.* 2002b: FU32, FU33; Weinzierl *et al.* 2001: FU22, FU32.

New records MM: Tiszabecs: mouth of Batár, Tisza, FU32, 15.10.2007, 1 L, Jákó Iván-KT; 27.02.2008, 4 L, 1 E, KT – Tivadar: lido, Tisza, FU12, 27.02.2008, 2 L, KT.

Remarks: In Hungary it was first found in 1997, in the upper section of the Tisza (Tiszabecs-Tivadar) which is permanently inhabited by the species, based on the previous (Juhász *et al.*

1998: KOVÁCS 2006a, 2006b, KOVÁCS *et al.* 2001, 2002ab, WEINZIERL *et al.* 2001) and the present data (Figure 4). In Ukraine as well, it is known only from the Tisza (Tysa) river (Tekovo-Luh) and some of its tributaries (Rika, Teresva, Shopurka) (KOVÁCS *et al.* 2008).

Brachyptera braueri (Klapálek, 1900)

Literature data: KOVÁCS & AMBRUS 2004: WN90, XN00; KOVÁCS *et al.* 2002b: XN15.

New records HNHM: Budapest, CT56, 19.03.1937, 1 mI, Uhrik, det. SH, sub nomen *Brachyptera trifasciata* Pict., revid. MD, 2008.

Remarks: On the basis of the present data, it was present but extinct from the Danube (Budapest), and, based on KOVÁCS *et al.* (2002b), also extinct from the stream Malomárok=Gyöngyös (Kőszeg). Recently it was found in the Western Transdanubian rivers Lapincs and Rába (KOVÁCS & AMBRUS 2004) (Figure 4). In Austria as well, it was found only in the Lapincs (Lafnitz) during the last decades (GRAF 1997, KOVÁCS & AMBRUS 2004).

Brachyptera monilicornis (Pictet, 1841)

Literature data: SÁTORI 1939 (*Taeniopteryx kempnyi*): BS80.

Remarks: SÁTORI (1939) reported the species from Pécs: Farkas-forrás (spring). As the specimen is lacking, Hungarian occurrence of the species is questionable (Figure 4).

Brachyptera risi (Morton, 1896)

Literature data: ANDRIKOVICS 1991: –; ANDRIKOVICS & KISS 1999: DU41; AUBERT 1966: –, CU40; ERŐS *et al.* 2005: CU42; KISS & ANDRIKOVICS 2000: DU41; KISS *et al.* 2001: DU10; KOVÁCS 2006a: CU40, CU41, DT19, DT29, DU00, DU10, DU11, DU20, DU30, WN90, XN00, XN02, XN15, XN18, XN25; KOVÁCS 2006b: BT74, CT49, CU31, CU40, CU41, CU42, CU50, DT19, DU00, DU11, DU20, DU30, EU15, EU26, EU34, EU35, EU36, WN90, XN02,XN15 XN18, YN15; KOVÁCS & AMBRUS 2001: WN90; XN00; MURÁNYI 2001: EU27, EU36, EU37; TÓTH 1992: –; ÚJHELYI 1969: CT48, CU40, CU41, DT29, DU20; ÚJHELYI 1975: CU40; ÚJHELYI 1979: YN03; WEINZIERL *et al.* 2001: DU20; XN18.

New records HNHM: Börzsöny: Kemence-patak, CU41, 17.07.1957, 1 fI, ÚS, det. AJ, 1956; 05.05.1965, 7 fI, ÚS, det. ÚS; 31.05.1967, 1 fI, ÚS, det. ÚS; 10.05.1992, 1 fI, Merkl Ottó; Kemence-patak upper section, CU41, 09.05.1969, 1 mI, 2 fI, ÚS, det. ÚS; Kemence-völgy, CU41, 24.05.1960, 1 fI, Bájári, det. JW, 1974; Magas Tax, Nagyvasfazék-patak, CU40, 07.04.1988, 1 mI, TL; Nagyvasfazék-patak, CU40, 21.04.1968, 7 mI, 7 fI, ÚS, det. ÚS; 05.04.1974, 2 mI, 1 fI, ÚS, det. ÚS; 18.04.1981, 1 fI, ÚS, det. ÚS; 22.05.1983, ÚS, det. ÚS; Nagyvasfazék-patak, Szén-patak, CU40, 12.05.1968, 9 fI, ÚS, det. ÚS; Rózsa-patak, CU41, 14.05.1983, 1 fI, ÚS, det. ÚS – Diósjenő, CU51, 12.05.1957, 3 fI, ÚS, det. ÚS; 01.05.1958, 8 mI, 16 fI, ÚS, det. ÚS; Kemence-patak, CU51, 08.06.1987, 9 mI, 10 fI, TL, det. TL, 1987; 12.06.1991, 4 mI, 1 fI, TL, det. TL; 20.06.1991, 2 mI, 11 fI, TL, det. TL; 03.05.2006, 1 L, MD – Dorogháza: Lengyendi-patak, 570m, DU11, 07.05.2006, 1 mI, 2 fI, HK-MD – Dömös: Szőkeforrás-völgy, CT48, 19.05.1986, 1 fI, TL, det. TL; 16.06.1988, 10 fI, TL, det. TL – Ecseg: Cserkúti-patak, CU90, 25.03.2003, 17 L, HK – Eger: Berva-patak, 300m, DU51, 07.05.2003, 4 mI, 4 fI, 2 L, 2 E, MD; Szarvaskő, Eger-patak, DU51, 12.05.1996, 1 mI, MD – Felsőtárkány: Mellér-völgy-folyása, 380m, DU51, 14.05.2003, 1 E, MD – Gönc: Potácsház, Nagy-patak, EU27, 29.03.2003, 1 L, MD – Gyöngyössolymos: Cserkő-bánya, Monostor-patak, 260m, DT19, 07.05.2008, 1 mI, 6 fI, 1 L, 4 E, KT-MD; Lajosháza, Nagy-patak, 360m, DU20, 07.05.2008, 2 mI, 1 fI, 1 L, KT-MD – Kemence: Kemence-patak, CU41, 14.06.2005, 16 fI, MD – Királyháza: Rózsa-patak, CU41, 20.06.1990, 1 fI, TL, det. TL – Korlát: Boldogkőváraljai-patak, 270m, EU15, 04.05.2003, 4 mI, 7 fI, 4 L, 2 E, MD – Mátra, 19.05.1969, 1 fI, ÚS, det. ÚS – Mátrafüred-Mátraháza: Csatorna-patak, DU20, 1 fI, ÚS, det. ÚS – Nagyvisnyó, DU53, 31.05.1957, 1 fI, Móczár László, det. JW, 1974 – Pásztó: Hasznos-patak, DU00, 03.06.1965, 1 fI, SH; 27.07.1967, 1 fI, SH; Mátrakeresztes, Tó-réti-patak, DU10, 06.05.2000, 1 fI, MD – Pécs: Éger-völgy, 250m, BS80, 29.02.2004, 1 L, MD – Pilismarót, CT49, 14.04.1968, 1 mI, ÚS – Szentendre, CT58, 22.04.1957, 1 fI, ÚS, det. ÚS; Ókúti-völgy, CT58, 02.05.1955, 1 fI, ÚS – Szokolya: Királyrét, CU40, 24.04.1966, 1 mI, 2 fI, ÚS,

det. ÚS; Királyrét, Deszkás-patak, CU40, 14.04.1968, 1 mI, ÚS, det. ÚS; Királyrét, Nagyvasfazék-patak, CU40, 08.05.1966, 1 fI, ÚS, det. ÚS; 27.04.1968, 9 fI, ÚS, det. ÚS; 18.05.1987, 1 fI, TL; 04.06.1991, 1 fI, TL, det. TL; Királyrét, Szén-patak, CU40, 30.04.1987, 1 mI det. TL, 1987, 1 fI, det. TL, 1987, sub nomen *B. monilicornis* (Pictet), revid. KT, 2002; 26.05.1987, 1 fI, TL, det. TL, 1987; 09.06.1988, 3 fI, TL, det. TL; 29.04.2005, 1 mI, 1 fI, MD – Telkibánya: Cserenkő-patak, 280m, EU26, 29.03.2003, 2 L, MD – Ugod: Vörös János-séd, YN03, 22.04.1988, 1 fI, TS, det. TL, 1988; 22.04.1988, 1 fI, TS, det. TL, 1988 – Visegrád, CT49, 10.06.1935, 2 fI, det. SH. **MM**: Gyöngyössolymos: Cserkő-bánya, Monostor-patak, DT19, 15.03.2007, 1 mI, KT; 01.04.2008, 6 L, KT; Cserkő-bánya, Nagy-patak, DT29, 01.04.2008, 1 L, KT; 11.05.2008, 1 mI, sKT-KT; Görgőbikki út, Hidas-patak, DU20, 07.05.2008, 1 mI, KT-MD – Letkés: Lelédhídmajor, Ipoly, CU30, 19.03.2007, 1 L, sKT-KT – Tiszabecs: mouth of Batár, Tisza, FU32, 17.04.2007, 1 fI, KT.

Remarks: This is our most common Taeniopterygidae species, widely distributed in streams of the hilly and montane regions of Hungary, and the upper section of some rivers (Gyöngyös (Kőszeg), Lapincs, Pinka, Rába, Répce), respectively. It is new for the stonefly fauna of rivers Ipoly and Tisza (*cf.* KOVÁCS & sr. KOVÁCS 2006, KRNO 1999 or rather JUHÁSZ *et al.* 1998, KOVÁCS *et al.* 2001, 2002a) (Figure 5).

Brachyptera seticornis (Klapálek, 1902)

Literature data: AUBERT 1966: –; KISS *et al.* 2001: DU10; KOVÁCS 2006a: CU40, CU41**,** DT29, DU10, DU11, DU20, FU32, XN31; KOVÁCS 2006b: DT19, DU00, DU20, DU30, WN90; KOVÁCS & AMBRUS 2001: WN90; MURÁNYI 2001: EU36, EU37; ÚJHELYI 1969: CU40, DT29, DU20, EU26; ÚJHELYI 1975: CU40; WEINZIERL *et al.* 2001: DU10.

New records HNHM: Börzsöny, 20.06.1983, 2 fI, ÚS, det. ÚS; Nagyvasfazék-patak, CU40, 22.05.1969, 4 fI, ÚS, det. ÚS; 05.04.1974, 2 mI, ÚS, det. ÚS; 18.04.1981, 1 mI, ÚS, det. ÚS; 21.05.1987, 1 mI, ÚS, det. ÚS; Börzsöny, Szén-patak, CU40, 04.04.1974, 1 mI, ÚS, det. ÚS; 25.06.1978, 1 fI, ÚS, det. ÚS – Diósjenő: Kemence-patak, CU51, 08.06.1987, 1 mI, TL, det. TL; 29.04.2005, 3 E, MD – Dorogháza: Lengyendi-patak, 570m, DU11, 07.05.2006, 1 mI, 3 fI, 1 L, 4 E, HK-MD – Gyöngyössolymos: Nagy-Hidas-patak, 500m, DU20, 07.05.2008, 1 mI, 1 fI, 4 E, KT-MD – Mátra, 20.04.1966, 3 mI, 3 fI, ÚS, det. ÚS – Mátraalmás: Martalóc-völgyi-patak, 700m, DU10, 05.05.2005, 1 mI, 3 E, MD – Mátraháza: Hidas-patak, 600m, DU20, 29.04.2003, 4 E, MD; 07.05.2008, 1 fI, KT-MD – Mátraszentimre, DU10, 13.06.1977, 10 fI, ÚS, det. ÚS; Csörgő-patak, DU10, 16.06.1977, 1 mI, 14 fI, ÚS, det. ÚS; 16.06.1978, 1 mI, 6 fI, ÚS; 17.06.1978, 3 mI, 7 fI, ÚS, det. ÚS – Oroszlány, BT96, 09.06.1966, 2 fI, SH – Pásztó: Hasznos, DU00, 16.06.1964, 2 fI, SH; Mátrakeresztes, Tó-réti-patak, DU10, 06.05.2000, 9 fI, MD – Szokolya, Királyrét, Nagyvasfazék-patak, CU40, 12.05.1968, 6 mI, 13 fI, ÚS, det. ÚS; Királyrét, Szén-patak, CU40, 03.04.1967, 5 mI, 2 fI, ÚS, det. ÚS; 26.05.1986, 1 fI, TL, det. TL, 1987; 29.04.2005, 4 mI, 4 fI, 10 E, MD. **MM**: Gyöngyössolymos: Cserkő-bánya, Nagy-patak, DT29, 01.04.2008, 1 L, KT; Görgőbikki út, Hidas-patak, DU20, 07.05.2008, 1 L, 1 fI, KT-MD – Mátraháza: Honvédüdülő, Hidas-patak, DU20, 07.05.2008, 1 fI, KT-MD.

Remarks: In Hungary, it is widespread in montane streams and upper reaches of some rivers (Lapincs, Rába, Tisza). Inhabits also the higher courses than the previous species, but less common (Figure 6).

Brachyptera trifasciata (Pictet, 1832)

Literature data: MOCSÁRY 1900, PONGRÁCZ 1914: CT56.

Remarks: It has only data older than 90 years from the Danube shore (Budapest), thus, it can be regarded as extinct in the hungarian section of the river (Figure 2).

Oemopteryx loewii (Albarda, 1889)

Literature data: KLAPÁLEK 1902, 1906, MOCSÁRY 1900: CT56; PONGRÁCZ 1914: CT49, CT56.

New records HNHM: Budapest, 03.03.1910, 1fI, Schmidt, det. JW 1974 – Isaszeg, CT76, 1 fI (without terminalia), Schmidt, det. JW, 1974.

Remarks: It has only data older than 90 years from the Danube shore (Budapest), thus, it can be regarded as extinct in the Hungarian section of the river. The two present specimens were collected by the same person, but validity of the locality Isaszeg is questionable as there are no suitable habitat in that area (Figure 2).

Rhabdiopteryx acuminata Klapálek, 1905

Literature data: Kovács 2006a: XM08, XM17; Kovács 2006b: XM08; Kovács & sr. Kovács 2006: CU93; Kovács *et al.* 2002b: XM08, XM16, XM17.

New records MM: Nógrádszakál: canyon of Párizs-patak, Ipoly, 06.03.2008, 4 L, s KT-KT; 06.03.2008, 2 L reared, 2 fl emerged 07-08.03.2008, sKT-KT.

Remarks: In Hungary it was first found only during the last years, from three watercourses of the Kerka-vidék (Hetés) (Kerca, Kerka, Szentgyörgyvölgyi-patak) and the river Ipoly (Kovács 2006ab, Kovács *et al.* 2002b or rather Kovács & sr. Kovács 2006) (Figure 4).

Rhabdiopteryx hamulata (Klapálek, 1902)

Literature data: Klapálek 1902, 1906, Pongrácz 1913, 1914: CT56; Kovács 2006a: DT19, DT29, CU40; Kovács 2006b: CU40; Kovács & Weinzierl 2003: DU11; DT19, DT29; Újhelyi 1969, Újhelyi 1975: CU40.

New records HNHM: Gyöngyössolymos: Cserkő-bánya, Monostor-patak, 260m, DT19, 07.05.2008, 1 fl, KT-MD. **MM**: Gyöngyössolymos: Cserkő-bánya, Monostor-patak, DT19, 14.01.2007, 2 L, sKT-KT-Kovács Rita; 01.04.2008, 1 L, 1 E, KT; Cserkő-bánya, Nagy-patak, DT29, 01.04.2008, 1 L, KT.

Remarks: Újhelyi (1975) revealed that the species lives in mountain streams, not in the Danube at Budapest. Possibly it lived in the streams of Buda. During the last 15 years it was found at the locality mentioned by Újhelyi (1969, 1975) in the streams Bagoly-bükki-patak and Török-patak (lower reaches of the Nagy-Vasfazék-patak), and three watercourses of Mátra Mts: Lengyendi-patak, Monostor-patak, Nagy-patak (Kovács 2006ab, Kovács & Weinzierl 2003) (Figure 7).

As seen from the data above and the tables below (Tables 1-2), there are three Taeniopterygidae species that were known from the Danube and are already extinct from Hungary during the last century: *Taeniopteryx araneoides*, *Brachyptera trifasciata*, *Oemopteryx loewii*. Among them, *T. araneoides* and *O. loewii* vanished not only from the Danube (*cf.* Graf & Hutter 2003) but globally extinct in most probability (Zwick 1992, 2004). *B. trifasciata* is recently known only from Germany (Weinzierl 1999: River Inn) and Austria (Graf & Hutter 2003: River Alpenrhein).

Similarly to the previous species, *Brachyptera braueri* vanished in the Danube and the Gyöngyös near Kőszeg, but exists in the rivers Lapincs and Rába.

Taeniopteryx nebulosa also disappeared from the Danube and the Sió, but recently found in several watercourses that possibly prove its recent colonisation or recolonisation of some Hungarian rivers.

Taeniopteryx schoenemundi and *Rhabdiopteryx acuminata* were found in Hungary during the last 15 years only, the presence of both are depend on the good quality of a few rivers – river Tisza in the case of the first, river Ipoly and streams Kerca, Kerka and Szentgyörgyvölgyi-patak in the case of the second species.

Rhabdiopteryx hamulata lives in some streams of the Börzsöny and Mátra Mts. It has a disjunct area, known only from Bulgaria (BRAASCH & JOOST 1975) and Macedonia (IKONOMOV 1986) besides Hungary.

Hungarian data of *Brachyptera monilicollis* needs confirmation. Recolonisation in Austria was discussed by MALICKY-RUZICKA & MALICKY (2003).

Only in the cases of the widespread stream dweller *Brachyptera risi* and *B. seticornis* can not detect any several changes in the distribution during the last years.

Tables 1-2. Common occurrences of Taeniopterygidae larvae in Hungary.

	Duna	Hernád	Ipoly	Kerca	Kerka	Lapincs	Rába	Sajó	Sió	Szv-p.	Tisza
Taeniopteryx araneoides	O	-	-	-	-	-	-	-	-	-	-
Taeniopteryx nebulosa	O	+	O?	-	+	+	+	+	O	-	+
Taeniopteryx schoenemundi	-	-	-	-	-	-	-	-	-	-	+
Brachyptera braueri	O	-	-	-	-	+	+	-	-	-	-
Brachyptera risi	-	-	+	-	-	+	+	-	-	-	+
Brachyptera seticornis	-	-	-	-	-	+	+	-	-	-	+
Brachyptera trifasciata	O	-	-	-	-	-	-	-	-	-	-
Oemopteryx loewii	O	-	-	-	-	-	-	-	-	-	-
Rhabdiopteryx acuminata	-	-	+	+	+	-	-	-	-	+	-

	Bagoly-bükki-p.	Török-p. (Nagy-vasfazék-p.)	Lengyendi-p.	Monostor-p.	Nagy-p.
Rhabdiopteryx hamulata	+	+	+	+	+
Brachyptera risi	+	+	+	+	+
Brachyptera seticornis	-	+	+	-	+

O = data older than 50 years, O?= data older than 30 but not older than 50 years, + = data not older than 30 years; Szv = Szentgyörgyvölgyi, p. = patak (stream).

In the followings we present those Hungarian collecting sites ("hot spots") along each watercourses where more Taeniopterygidae larvae exist together (with the exception of the *Brachyptera risi* and *B. seticornis* common occurrences): Bagoly-bükki-patak – Szokolya: *B. risi*, *R. hamulata*. Kerka – Lenti: *T. nebulosa*, *R. acuminata*. Lapincs – Szentgotthárd: *T. nebulosa*, *B. braueri*, *B. risi*, *B. seticornis*. Lengyendi-patak – Dorogháza: *B. risi*, *B. seticornis, R. hamulata.* Monostor-patak – Gyöngyössolymos: *B. risi*, *R. hamulata*. Nagy-patak – Gyöngyössolymos: *B. risi*, *B. seticornis*, *R. hamulata*. Rába – Szentgotthárd: *T. nebulosa*, *B. braueri*, *B. risi*, *B. seticornis*; Magyarlak: *B. braueri*, *B. risi*; Rábahídvég: *T. nebulosa*, *B. seticornis*. Tisza – Tiszabecs: *T. nebulosa*, *T. schoenemundi*, *B. risi*, *B. seticornis*; Szatmárcseke, Tivadar: *T. nebulosa*, *T. schoenemundi.* Török-patak – Szokolya: *B. risi*, *R. hamulata*.

Besides *Brachyptera risi* and *B. seticornis*, all of the Taeniopterigidae species in question should be regarded as rare and rather important in the point of view of nature protection, in all over Central Europe (*cf*. GRAF 1997, GRAF & HUTTER 2003, KOVÁCS & WEINZIERL 2003, KRNO 2000, REUSCH & WEINZIERL 1998, SOLDÁN *et al.* 1998, ZWICK 1992, 2004). Thus, all of the watercourses included in Tables 1-2 need special attention and protection!

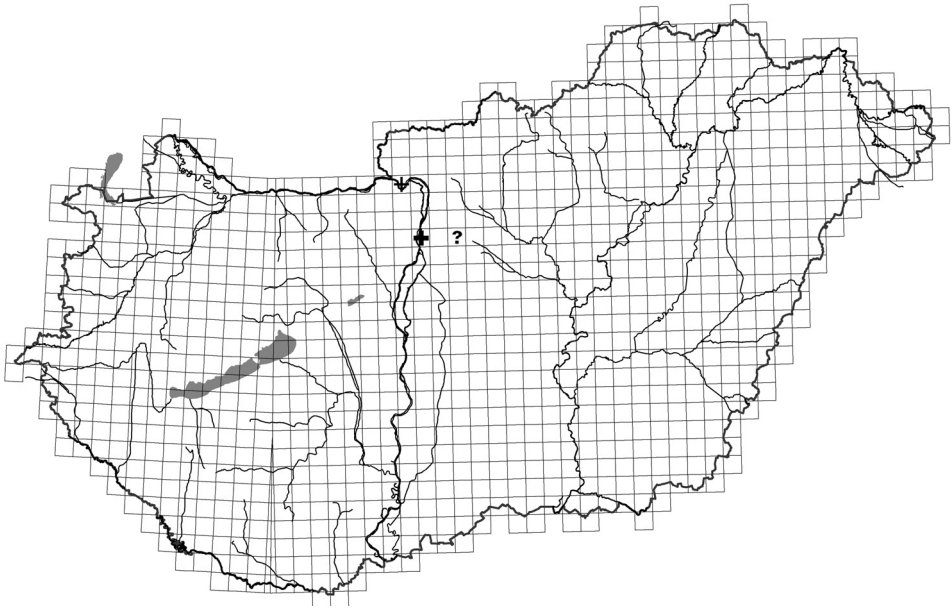

Figure 2. *Taeniopteryx araneoides* – +: data older than 50 years; *Brachyptera trifasciata* – +: data older than 50 years; *Oemopteryx loewii* – +: data older than 50 years, +: data older than 50 years, **?**: questionable data.

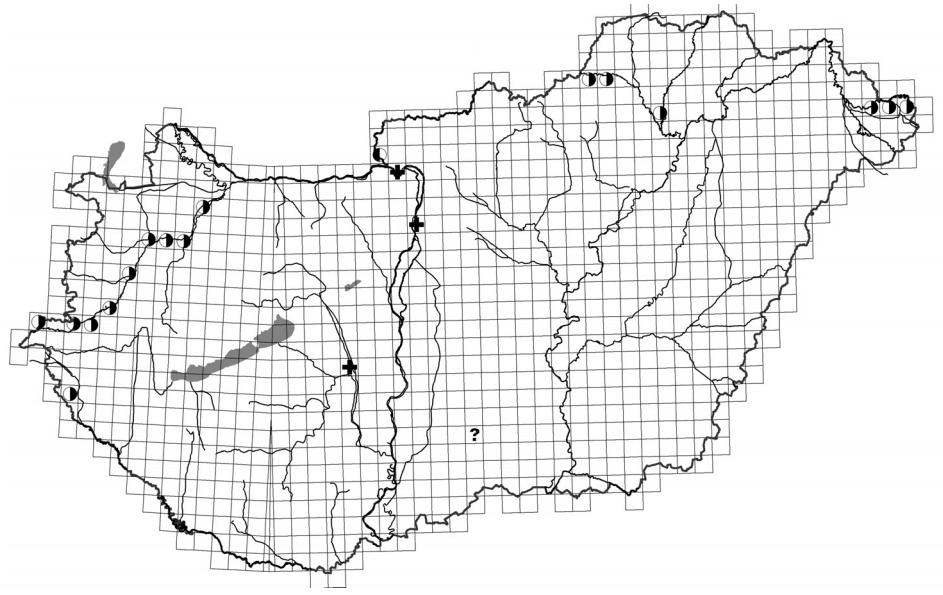

Figure 3. *Taeniopteryx nebulosa* – +: data older than 50 years, ◐: data older than 30 but not older than 50 years, ◑: data not older than 30 years, **?**: questionable data.

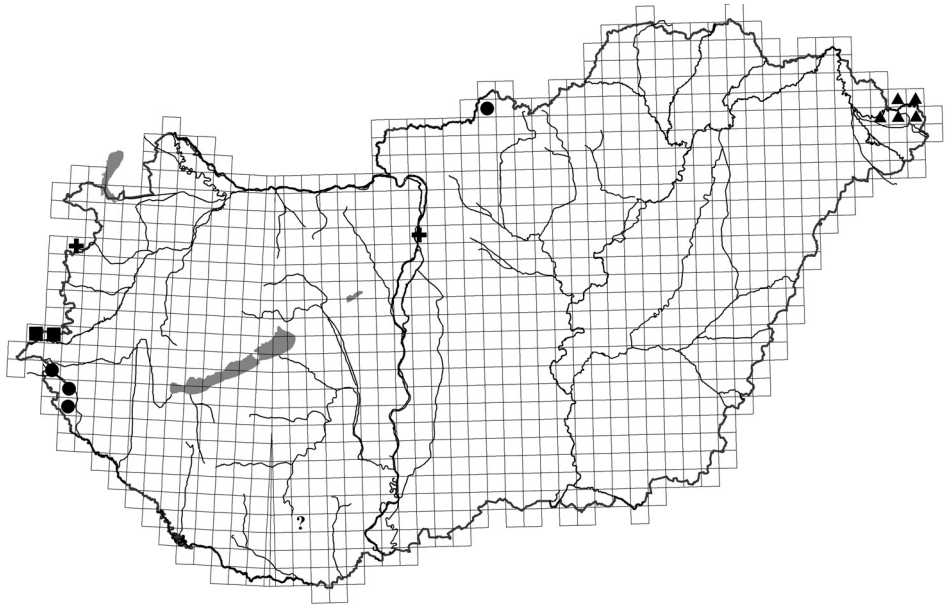

Figure 4. *Taeniopteryx schoenemundi* – ▲: data not older than 30 years; *Brachyptera braueri* – +: data older than 50 years, ■: data not older than 30 years; *Brachyptera monilicornis* – **?**: questionable data; *Rhabdiopteryx acuminata* – ●: data not older than 30 years.

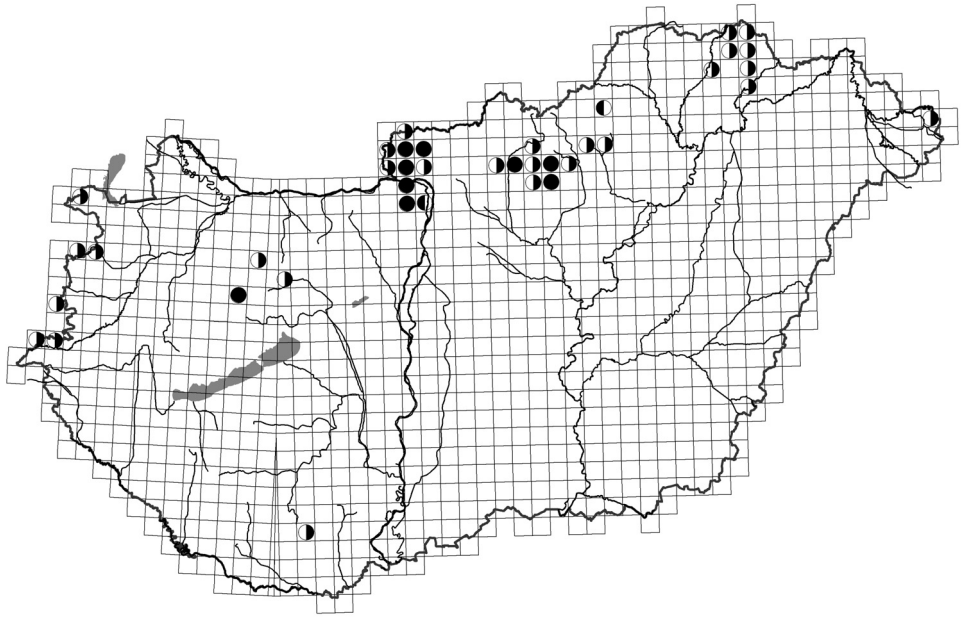

Figure 5. *Brachyptera risi* – ◐: data older than 30 years, ◑: data not older than 30 years.

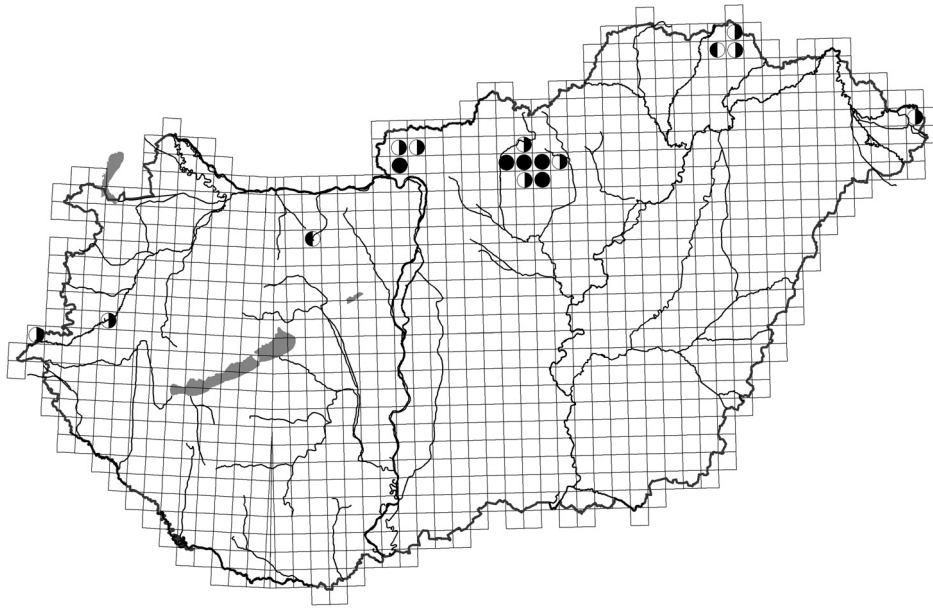

Figure 6. *Brachyptera seticornis* – ◐: data older than 30 years, ◑: data not older than 30 years.

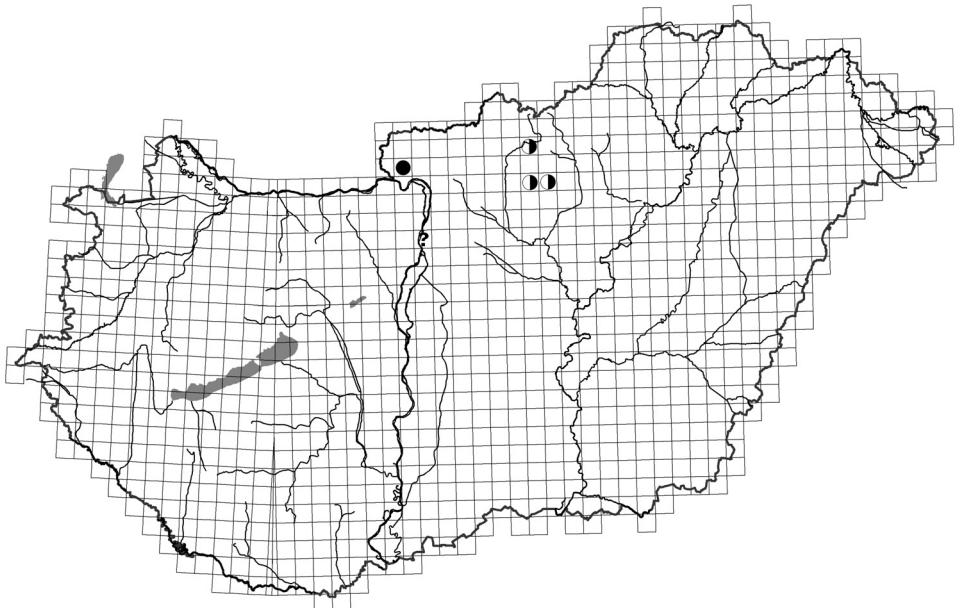

Figure 7. *Rhabdiopteryx hamulata* – ◐: data older than 30 but not older than 50 years, ◑: data not older than 30 years, **?**: questionable data.

Acknowledgements: We are grateful for the generous help of Peter Zwick (Schlitz), György Csóka (Forest Research Institute, Mátrafüred) and Gábor Szilágyi (Hortobágy National Park Directorate, Debrecen).

References

Andrikovics, S. (1991): On the long-term changes of the invertebrate macrofauna in the creeks of the Pilis-Visegrádi mountains (Hungary). – Verh. Internat. Verein. Limnol. 24: 1969–1972.

Andrikovics S. & Kiss O. (1999): A gerinctelen makrofauna funkcionális táplálkozásbiológiai csoportjai az Eger-patak mentén. (Invertebrate macrofauna and taxonomical feeding groups along the Eger stream.) – Hidrológiai Közlöny 79 (6): 300–302.

Aubert, J. (1966): Notes sur quelques Plécoptères du Muséum d'Histoire Naturelle de Budapest. – Annls hist.-nat. Mus. natn. hung. 58: 285–288.

Braasch, D. & Joost, W. (1975): Ein weiterer Beitrag zur Kenntnis der Steinfliegen (Plecoptera) Bulgariens. – Entomologische Nachrichten 19(11): 165–171.

Erős T., Schmera D., Cser B., Csabai Z. & Murányi D. (2005): Makrogerinctelen együttesek összetétele két középhegységi patakban - A patak rendűség és a gázló-medence szerkezet szerepe. (Composition of macroinvertebrate assemblages in two submontane streams – The influence of stream order and riffle-pool structure.) – Acta Biologica Debrecina Oecologica Hungarica 13: 85–94.

Graf, W. (1997): A new record of the perlid stonefly Agnetina elegantula (Klapálek, 1905) in Europe. – In: Landolt, P. & Sartori, M. (eds.) Ephemeroptera & Plecoptera: Biology-Ecology-Systematics. Maron+Tinguely & Lachat SA, CH-Fribourg pp. 205–208.

Graf, W. & Hutter, G. (2003): Recent findings of the endangered stonefly Brachyptera trifasciata (Pictet, 1832) in Austria with a description of its habitat. – In: Gaino, E. (ed.): Research Update on Ephemeroptera & Plecoptera, Perugia: 305–307.

Ikonomov, P. (1986): Plécoptères de Macédoine (Insecta, Plecoptera). – Acta Musei Macedonici Scientiarum Naturalium, 18(4/150): 81–124.

Juhász, P., Turcsányi, I., Kovács, T., Olajos, P., Turcsányi, B. & Kiss, B. (1998): Vízi makroszkópikus gerinctelen élőlényegyüttesek vizsgálata a Felső-Tiszán. (Study on the macroscopic water invertebrate communities of the Upper Tisza.) – Hidrológiai Közlöny 78(5-6): 346–347.

Klapálek, F. (1902): Zur Kenntniss der Neuropteroiden von Ungarn, Bosnien und Herzegovina. – Természetrajzi Füzetek 25: 161–180.

Klapálek, F. (1906): Klíč evropský druhù čeledi Taeniopterygidae. – Časopis Česk. Společ. Entomol. 3: 91-96.

Kiss, O. & Andrikovics, S. (2000): Functional feeding groups along a lowland stream (Eger Stream, Hungary) – Verh. Internat. Verein. Limnol. 27: 1489–1493.

Kiss, O., Andrikovics, S., Murányi, D. & Lippóczy, Á. (2001): A Mátra hegységi Csörgő-patak vízirovar (Trichoptera, Plecoptera, Ephemeroptera) faunája. (The aquatic insect fauna (Trichoptera, Plecoptera, Ephemeroptera) in the Csörgő Stream of the Mátra Mountains (Hungary).) – Hidrológiai Közlöny 81(5-6): 392–393.

Kovács, T. (2006a): Data to the Hungarian distribution of Plecoptera. – Folia Historico-Naturalia Musei Matraensis 30: 181–188.

Kovács, T. (2006b): Faunistical results of the Plecoptera investigations carried out in the frames of the ecological survey of the surface waters of Hungary (ECOSURV) in 2005. – Folia Historico-Naturalia Musei Matraensis 30: 339–341.

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. (2002): Lárva adatok az Őrség és a Kerka-vidék (Hetés) kérész, szitakötő és álkérész faunájához (Ephemeroptera, Odonata, Plecoptera). (Data of larvae to the mayfly, dragonfly and stonefly fauna of the Őrség and Kerka-vidék (Hetés) (Ephemeroptera, Odonata, Plecoptera).) – Praenorica, Folia hisoricо-naturalia 6: 23–40.

Kovács, T. & Ambrus, A. (2004): New data of Brachyptera braueri (Klapálek, 1900) from Hungary (Plecoptera: Taeniopterygidae). – Folia entomologica hungarica 65: 238–240.

Kovács, T. & sr. Kovács, T. (2006): Records of larval Ephemeroptera, Odonata and Plecoptera from the upper part of the Hungarian section of Ipoly River, with notes on aquatic Heteroptera and Coleoptera. – Folia Historico-Naturalia Musei Matraensis 30: 159–165.

Kovács, T. & Weinzierl, A. (2003): The larva and life history of Rhabdiopteryx hamulata Klapálek, 1902 (Plecoptera: Taeniopterygidae). – Folia entomologica hungarica 64: 63–68.

Kovács, T., Ambrus, A. & Juhász, P. (2002a): Ephemeroptera, Odonata and Plecoptera larvae from the River Tisza in the year of cyanid pollution (2000). – Folia Historico-Naturalia Musei Matraensis 26: 169–178.

KOVÁCS, T., GODUNKO, R. J., JUHÁSZ, P., KISS, B. & MÜLLER, Z. (2008): Quantitative records of larvae of Ephemeroptera, Odonata and Plecoptera from the Zakarpats'ka Region, Ukraine (2004, 2006). – Folia Historico-Naturalia Musei Matraensis 32 : in press.
KOVÁCS, T., JUHÁSZ, P. & TURCSÁNYI I. (2001): Ephemeroptera, Odonata and Plecoptera larvae from the River Tisza (1997–1999). – Folia Historico-Naturalia Musei Matraensis 25: 135-143.
KOVÁCS, T., WEINZIERL, A. & AMBRUS, A. (2002b): New and rare stoneflies (Plecoptera) from Hungary. – Folia entomologica hungarica 63: 43–48.
KRNO, I. (1999): Pošvatky (Plecoptera) povodia Ipľa a Hrona. – Folia faunistica Slovaca 4: 33-40.
KRNO, I. (2000): Distribution of stoneflies (Plecoptera) in Slovakia. – Správy Slovenkej zoologickej spoločnosti 18: 39-54. Bratislava.
MALICKY-RUZICKA, H. M. & MALICKY M. (2003): Return of a threatened stonefly species or collecting artifact. Attempt of an interpretation by the exaple Brachyptera monilicornis (Insecta: Plecoptera, Taeniopterygidae). Lauterbornia 47: 27-32. (in German with English summary)
MOCSÁRY, S. (1900): Ordo. Pseudo-neuroptera. – In: A Magyar Birodalom Állatvilága (Fauna Regni Hungariae) III. K. M. Természettudományi Társulat, Budapest: 23–32.
MURÁNYI D. (2001): Adatok a Zempléni-hegység álkérész (Plecoptera) faunájához. (Data to the stonefly (Plecoptera) fauna of the Mts Zemplén, NE Hungary.) – II. Kárpát-medencei Biológiai Szimpózium, Magyar Biológiai Társaság & Magyar Természettudományi Múzeum, Budapest: 211–214.
PILLICH, F. (1914): Aus der Arthropodenwelt Simontornya's. – Ein monographischer Beitrag. Simontornya, 172 pp.
PONGRÁCZ, S. (1913): Újabb adatok Magyarország Neuroptera-faunájához. (New data to the Neuroptera fauna of Hungary.) – Rovartani Lapok 20: 175–186.
PONGRÁCZ, S. (1914): Magyarország Neuropteroidái. (Enumeratio Neuropteroidum Regni Hungariae.) – Rovartani Lapok 21: 109–155.
REUSCH, H. & WEINZIERL, A. (1998): Rote Liste der Steinfliegen (Plecoptera). – In: Bundesamt für Naturschutz (ed.): Rote Liste gefährdeter Tiere Deutschlands. Schriftenreihe für Landschaftspflege und Naturschutz 55: 255–259. Bonn-Bad Godesberg.
SÁTORI, J. (1939): Insekten-faunistische Notizen aus dem Transdanubium im Maj und Juni 1938. – Fragm. Faun. Hung. 2(2): 31–32.
SOLDÁN, T., ZAHRÁDKOVÁ, S., HELEŠIC, J., DUŠEK, L. & LANDA, V. (1998): Distributional and Quantitative Patterns of Ephemeroptera and Plecoptera in the Czech Republic: A Possibility of Detection of Long-term Changes of Aquatic Biotopes. – Folia Facultatis Scientiarium Naturalium Universitatis Masarykianae Brunensis, Biologia 98: 305 pp. Brno.
STEINMANN, H. (1968): Álkérészek-Plecoptera. – In: Magyarország Állatvilága (Fauna Hungariae) 92: 1–185.
TÓTH, L. (1992): Kevésbé ismert rovarcsoportok (kérészek, álkérészek) kutatása a Bakony hegységben (Ephemeroptera, Plecoptera) (Exploration of little known insect groups (Ephemeroptera and Plecoptera) in the Bakony Mountains.) – Folia Musei Historico-naturalis Bakonyiensis 11: 145–150.
UNGER E. (1917): Tavaszi séta a budapesti Dunakorzón. II. A korai álkérészek. [Spring walk on the Danube promenade of Budapest. II. The early stoneflies] – Halászat 18: 81–83.
ÚJHELYI, S. (1969): Data to the Knowledge of the Distribution of Stone Flies (Plecoptera) in Hungary. – Opuscula zoologica 9 (1): 171–182.
ÚJHELYI, S. (1975): Über Rhabdiopteryx hamulata KLAP. (Plecoptera, Taeniopterygidae). – Folia Historico-Naturalia Musei Matraensis 3: 63–67.
ÚJHELYI, S. (1979): Adatok néhány rovarrend bakonyi elterjedéséhez. (Data of some orders of Insecta occuring in Bakony Mountains.) – Veszprém Megy. Múz. Közl. 14: 85–93.
WEINZIERL, A. (1999): Records of Isoperla albanica, Brachyptera starmachi and Brachyptera trifasciata (Plecoptera) from Bavaria Inferior. – Lauterbornia 37: 19–23.
WEINZIERL, A., KOVÁCS, T. & AMBRUS, A. (2001): Collection of adult stoneflies (Plecoptera) of the Mátra Museum, Hungary. – Folia entomologica hungarica 62: 37–42.
ZWICK, P. (1992): Stream habitat fragmentation - a threat to biodiversity. – Biodiversity and Conservation 1: 80-97.
ZWICK, P. (2004): Key to the West Palaearctic genera of stoneflies (Plecoptera) in the larval stage. – Limnologica 34: 315–348.

Tibor KOVÁCS
Mátra Museum
H-3200
Kossuth Lajos u. 40
E-mail: koati@t-online.hu

Dávid MURÁNYI
Hungarian Natural History Museum
GYÖNGYÖSH-1088 BUDAPEST
Baross u. 13
E-mail: muranyi@zool.nhmus.hu