

The caddisfly fauna (Insecta, Trichoptera) of the rivers of the Black Sea basin in Kosovo with distributional data for some rare species

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Abstract

Adult caddisflies were collected from 12 stations in the Black Sea basin in Kosovo using UV light traps. Sixty-five of the seventy-six species reported in this paper are first records for the Kosovo caddisfly fauna. The unexpected discovery of several species during this investigation: *Agapetus delicatulus* McLachlan, 1884, *Psychomyia klapaleki* Malicky, 1995, *Tinodes janssensii* Jacquemart, 1957, *Hydropsyche emarginata* Navas, 1923, *Drusus botosaneanui* Kumanski, 1968, *Potamophylax rotundipennis* (Brauer, 1857), *Potamophylax schmidi* Marinković-Gospodnetić, 1970, *Cenaclea albimacula* (Rambur, 1842), *Helicopsyche bacescui* Orghidan & Botosaneanu, 1953, *Adicella filicornis* (Pictet, 1834), *Beraea maurus* (Curtis, 1834) and *Beraeamyia hrabei* Mayer, 1937 illustrates that collections from poorly investigated areas in Europe will almost certainly revise the existing knowledge on the distribution of these and other species.

Keywords

Trichoptera, aquatic insects, Kosovo, Balkan Peninsula, Europe

Introduction

To our knowledge, Europe (in the zoogeographical sense) currently holds more than 1100 caddisfly species (e.g. Malicky 2004; Oláh 2010; Wiberg-Larsen 2008). Within Europe, the Balkan Peninsula is a unique region that is known for its plant and animal

species richness, due in part to its biogeographical and ecological features such as the presence of different regions with a variety of condition, complex geological history and interaction between populations, species and ecosystems (Savić 2008). Historic faunistic data for several groups of aquatic insects, including caddisflies, in the Balkan Peninsula date back over a century (e.g. Klapálek 1899, 1902; Radovanović 1931, 1935, 1953). Only recently, however, have distributions and zoogeographic characteristics, descriptions of new taxa, and larval-adult associations been examined more thoroughly in the Balkans (e.g. Chvojka 1997; Ćuk and Vučković 2009; Graf *et al.* 2008; Kučinić *et al.* 2011a, 2011b; Kučinić and Malicky 2002; Malicky 2009; Oláh 2010; Previšić *et al.* 2007; Vučković *et al.* 2011; Waringer *et al.* 2009; Živić *et al.* 2009).

Poorly investigated areas in Europe still remain: until recently Albania and Kosovo were among the least studied areas in the Balkan Peninsula and Europe in general. Recent caddisfly investigations in Albania have documented many rare or unexpected species (e.g. Oláh 2010; Oláh *et al.* 2011). This suggests that caddisfly zoogeographic studies in poorly investigated areas of the Balkan Peninsula will continuously revise the present knowledge of the distributions of many European species. Kosovo still remains a poorly investigated area in Europe in regard to caddisfly fauna. Until recently, only 37 Trichoptera species were known from Kosovo (Ibrahim *et al.* in press; Malicky 1986, 1999; Marinković-Gospodnetić 1975, 1980; Oláh 2010; Pongrácz 1923). This study is part of the first large-scale investigation of caddisfly fauna distribution in this part of the Balkan Peninsula based on adult specimen collections.

All rivers in Kosovo belong to the drainage basins of three seas: the Black Sea, the Adriatic Sea and the Aegean Sea. This study examined the caddisfly fauna of the Black Sea drainage basin, which is the largest in the area and covers about 50% of the Kosovo's territory of 10,908 km². Rivers that belong to the Black Sea drainage basin are the Ibri, Sitnica, Llapi, Drenica, and Morava e Binçës, as well as other smaller streams and tributaries.

Material and methods

Adult caddisflies were collected using UV light traps at 12 stations in the Black Sea drainage basin of Kosovo (Figure 1 and Table 1). The sampling was carried out between March 2009 and November 2010. Light traps were placed on stream banks and operated for approximately one hour and fifteen minutes after dusk. All samples were preserved in 80 % ethanol. The specimens were identified under a stereomicroscope with determination keys from Malicky (2004) and Kumanski (1985, 1988). Specimens were collected by Halil Ibrahim and were determined by Halil Ibrahim and Mladen Kučinić unless otherwise noted. The collection is deposited at the Laboratory of Zoology of the Faculty of Natural and Mathematical Sciences, University of Prishtina, Kosovo.

Systematics and nomenclature follows Malicky (2004) and Marinković – Gospodnetić (1970). Within the families the genera and taxa are given in alphabetical order. Biogeographic analysis and distributional data follow Botosaneanu and Malicky (1978),

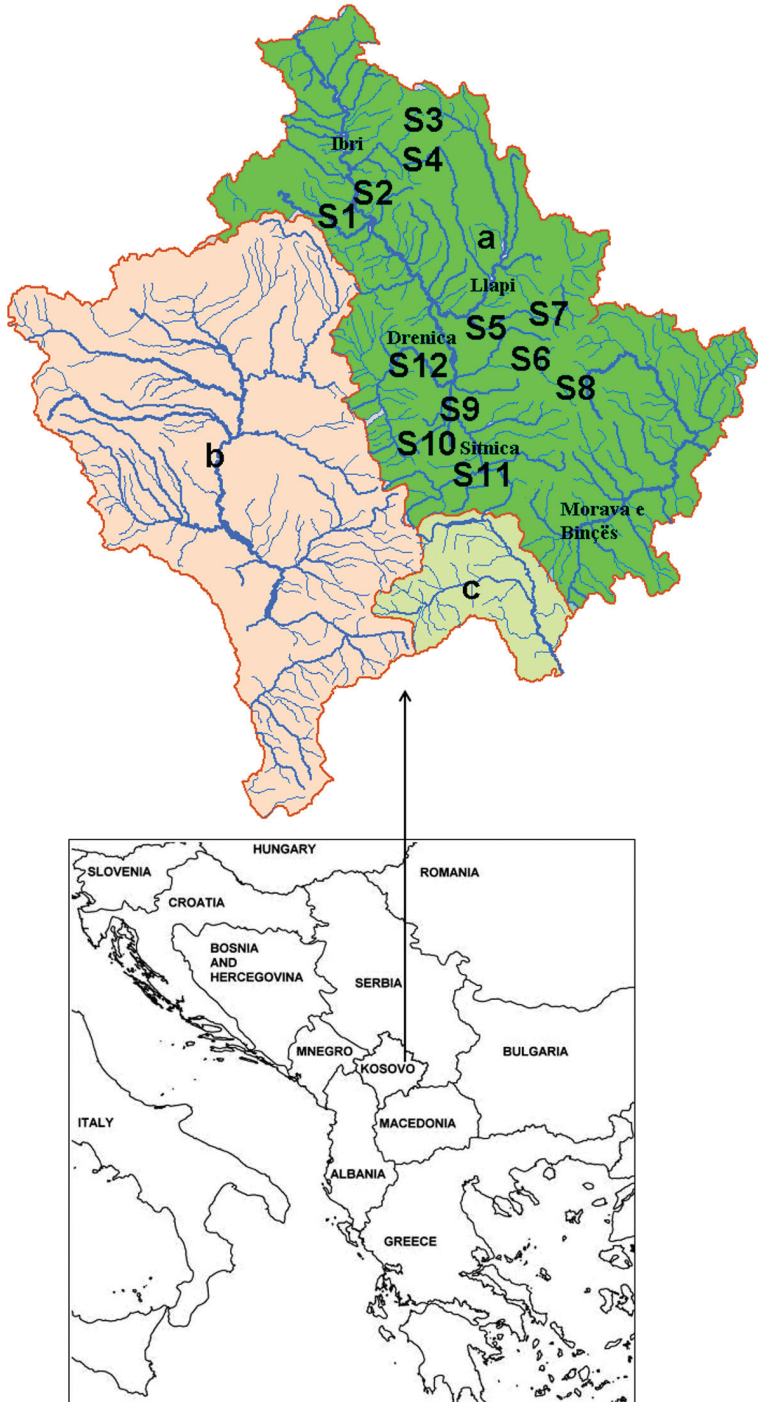


Figure 1. Sampling sites: S1 Koshtovë, S2 Mazhiq, S3 Murgull, S4 Kaqandoll, S5 Siqevë, S6 Orllan, S7 Llukar, S8 Marefc, S9 Blinajë, S10 Mollopolc, S11 Caralevë and S12 Grabofc. Drainage basins: a) Black Sea basin, b) Adriatic Sea basin and c) Aegean Sea basin.

Cianficoni (2002), Graf et al. (2008), Krušnik (1987), Kumanski (1985, 1988), Kučinić (2002), Kučinić et al. (2008, 2011a), Malicky (2011), Marinković-Gospodnetić (1979), Oláh (2010), Previšić et al. (2007), Stanić-Koštrovan (2009), Waringer et al. (2009) and Živić et al. (2006, 2009). Female specimens belonging to the genera where identification until species level is impossible according to Malicky (2004) were not counted in taxa list except the female specimen of *Potamophylax* sp., which is morphologically different from *Potamophylax luctuosus* (Piller & Mitterpacher, 1783), *P. pallidus* (Klapalek, 1899), *P. rotundipennis* (Brauer, 1857) and *P. schmidi* Marinković – Gospodetić, 1970, and consequently was counted as a twelfth taxa of Limnephilidae family.

Table 1. Locality data for the 12 sampling stations.

Code	Sampling Stations	River/Stream	Latitude °N	Longitude °E	Altitude m
S1	Koshtovë	Ibër River	42.8688	20.8271	859
S2	Mazhiq	Mazhiq Stream	42.9401	20.9331	853
S3	Murgull	Murgull River	43.0743	21.066	882
S4	Kaqandoll	Kaqandoll River	42.9666	21.0702	1069
S5	Siqevë	Siqevë Stream	42.7369	21.2343	798
S6	Orllan	Stream	42.7709	21.3262	844
S7	Llukar	Prishtina River	42.6987	21.2367	728
S8	Marefc	Marefc Stream	42.6321	21.4257	691
S9	Blinajë	The first lake	42.5185	20.9788	721
S10	Mollopolc	Mollopolc Stream	42.4056	21.0408	655
S11	Caralevë	Caralevë Stream	42.4477	20.9482	756
S12	Grabofc	Drenica River	42.6749	20.9664	600

Results

A total of 8,869 specimens belonging to seventy-six species are reported. The distribution of species per family is as follows: Rhyacophilidae (8) Glossosomatidae (5), Hydroptilidae (1), Philopotamidae (5), Hydropsychidae (11), Polycentropodidae (4), Psychomyiidae (6), Phryganeidae (1), Brachycentridae (2), Limnephilidae (12), Goeridae (5), Lepidostomatidae (1), Leptoceridae (9), Sericostomatidae (2), Helicopsychidae (1) and Beraeidae (3) (Table 2).

Sixty-five out of the seventy-six total species reported here are new records for the Kosovo caddisfly fauna (Table 2). A single female specimen of *Potamophylax* sp. (Limnephilidae) that does not match the descriptions for any described females in this genus was found in station S9. The female specimen is similar to *P. rotundipennis* in appearance, but the genital morphology clearly distinct (Malicky, per. com.). This specimen could potentially be new to science, but we refrain from a description until associated males are available. Eight species in the genus *Rhyacophila* presented in this paper were previously reported and discussed (Ibrahimimi et al., in press; Marinković-Gospodnetić, 1975), but we provided detailed collection data together with data for specimens collected at new localities in 2009 and 2010.

Table 2. Systematic list of described caddisflies collected in the Black Sea Basin from 2009–2010. Species new to the fauna of Kosovo are indicated by an asterisk *.

Family Rhyacophilidae

Rhyacophila armeniaca Guerin - Meneville, 1834

S3 Murgull: 20.VII.2009. 1 ♀, 4 ♂♂; S4 Kaqandoll: 20.VII.2009. 2 ♂♂; S5 Siqevë: 21.VI.2009. 1 ♂.

Rhyacophila fasciata Hagen, 1859

S1 Koshtovë: 15.III.2010. 10 ♂♂, 16.IV.2010. 5 ♀♀, 13 ♂♂, 13.V.2010. 6 ♀♀, 15 ♂♂, 18.VI.2010. 7 ♀♀, 11 ♂♂, 20.VII.2010. 1 ♀, 7 ♂♂, 16.VIII.2010. 3 ♀♀, 7 ♂♂, 17.IX.2010. 4 ♀♀, 16 ♂♂, 18.X.2010. 4 ♀♀, 4 ♂♂; S2 Mazhiq: 18.VI.2009. 6 ♀♀, 7 ♂♂, 20.VII.2009. 8 ♀♀, 3 ♂♂, 16.VIII.2009. 13 ♀♀, 21 ♂♂, 17.IX.2009. 14 ♀♀, 32 ♂♂; S3 Murgull: 20.VII.2009. 4 ♀♀, 8 ♂♂, 17.VIII.2009. 3 ♀♀, 9 ♂♂, 18.IX.2009. 2 ♀♀, 6 ♂♂, 19.X.2009. 8 ♀♀, 10 ♂♂, 19.XI.2009. 2 ♂♂; S4 Kaqandoll: 19.VI.2009. 1 ♀, 5 ♂♂, 20.VII.2009. 6 ♀♀, 9 ♂♂, 18.IX.2009. 21 ♀♀, 33 ♂♂; S5 Siqevë: 15.VIII.2009. 11 ♀♀, 23 ♂♂, 16.IX.2009. 13 ♀♀, 7 ♂♂, 17.X.2009. 5 ♀♀, 7 ♂♂; S6 Orllan: 21.VI.2009. 3 ♀♀, 6 ♂♂, 17.VII.2009. 2 ♀♀, 7 ♂♂, 15.VIII.2009. 13 ♀♀, 24 ♂♂, 16.IX.2009. 12 ♀♀, 23 ♂♂; S7 Llukar: 15.VIII.2009. 5 ♀♀, 9 ♂♂, 16.IX.2009. 11 ♀♀, 4 ♂♂; S8 Marefc: 09.IV.2010. 3 ♂♂, 09.V.2010. 6 ♂♂, 12.VI.2010. 3 ♂♂, 11.VII.2010. 1 ♀, 9 ♂♂, 10.VIII.2010. 12 ♂♂, 09.IX.2010. 29 ♀♀, 28 ♂♂; S10 Mollopolc: 13.IV.2010. 5 ♂♂, 16.V.2010. 4 ♀♀, 31 ♂♂, 11.VI.2010. 7 ♂♂, 14.VII.2010. 4 ♂♂, 15.VIII.2010. 3 ♂♂, 14.IX.2010. 4 ♀♀, 5 ♂♂; S11 Caralevë: 16.V.2010. 7 ♀♀, 9 ♂♂, 11.VI.2010. 5 ♀♀, 9 ♂♂, 14.VII.2010. 13 ♀♀, 8 ♂♂, 15.VIII.2010. 4 ♂♂, 14.IX.2010. 8 ♀♀, 4 ♂♂; S12 Grabofc: 06.VI.2009. 3 ♀♀, 6 ♂♂, 03.VIII.2009. 13 ♀♀, 9 ♂♂.

Rhyacophila fischeri Botosaneanu, 1957

S2 Mazhiq: 13.V.2009. 2 ♀♀, 16 ♂♂; S3 Murgull: 14.V.2009. 3 ♀♀, 20 ♂♂, 19.V.2009. 2 ♀♀, 34 ♂♂; S4 Kaqandoll: 14.V.2009. 4 ♀♀, 9 ♂♂; S5 Siqevë: 13.V.2009. 2 ♀♀, 7 ♂♂; S7 Llukar: 17.07.2009. 14 ♀♀, 26 ♂♂.

Rhyacophila laevis Pictet, 1834

S5 Siqevë: 13.V.2009. 4 ♀♀, 6 ♂♂; S8 Marefc: 09.V.2010. 8 ♀♀, 9 ♂♂.

Rhyacophila loxias Schmid, 1970

S2 Mazhiq: 18.VI.2009. 4 ♂♂; S3 Murgull: 19.VI.2009. 1 ♂.

Rhyacophila nubila Zetterstedt, 1840

S1 Koshtovë: 16.IV.2010. 2 ♀♀, 6 ♂♂, 13.V.2010. 11 ♀♀, 32 ♂♂, 18.VI.2010. 8 ♀♀, 16 ♂♂, 20.VII.2010. 6 ♀♀, 21 ♂♂; S3 Murgull: 18.IX.2009. 5 ♀♀, 12 ♂♂.

Rhyacophila polonica McLachlan 1879

S2 Mazhiq: 18.VI.2009. 5 ♀♀, 14 ♂♂, 20.VII.2009. 4 ♀♀, 22 ♂♂, 16.VIII.2009. 13 ♀♀, 4 ♂♂; S6 Orllan: 21.VI.2009. 12 ♀♀, 23 ♂♂, 17.VII.2009. 11 ♀♀, 30 ♂♂, 15.VIII.2009. 14 ♀♀, 2 ♂♂; S8 Marefc: 12.VI.2010. 4 ♂♂; S10 Mollopolc: 21.VI.2010. 1 ♀, 5 ♂♂.

Rhyacophila tristis Pictet, 1834

S2 Mazhiq: 15.V.2009. 3 ♀♀, 9 ♂♂; S3 Murgull: 14.V.2009. 12 ♀♀, 22 ♂♂, 19.VI.2009. 3 ♂♂, 20.VII.2009. 2 ♂♂; S4 Kaqandoll: 14.V.2009. 14 ♀♀, 23 ♂♂, 19.VI.2009. 5 ♀♀, 19 ♂♂; S5 Siqevë: 13.VI.2009. 9 ♀♀, 21 ♂♂, 21.VI.2009. 21 ♀♀, 42 ♂♂, 17.VII.2009. 3 ♀♀, 7 ♂♂; S7 Llukar: 13.V.2009. 5 ♀♀, 24 ♂♂; S10 Mollopolc: 18 ♀♀, 39 ♂♂, 11.VI.2009. 48 ♀♀, 53 ♂♂, 14.VII.2009. 15 ♀♀, 6 ♂♂, 15.VIII.2009. 2 ♂♂; S11 Caralevë: 14.V.2010. 5 ♀♀, 42 ♂♂.

Family Glossosomatidae

Agapetus delicatulus McLachlan, 1884 *

S5 Siqevë: 21.VI.2009. 5 ♀♀ (2 ♀♀ det. H. Malicky), 12.VII.2009. 1 ♂.

Agapetus ochripes Curtis, 1834 *

S4 Kaqandoll: 19.VI.2009. 2 ♂♂.

Glossosoma conformis Neboiss, 1963 *

S4 Kaqandoll: 19.VI.2009. 2 ♂♂.

Synagapetus iridipennis McLachlan, 1879 *

S2 Mazhiq: 18.VI.2009. 5 ♀♀, 13 ♂♂; S5 Siqevë: 21.VI.2009. 3 ♀♀, 18 ♂♂, 17.VII.2009. 2 ♀♀, 18 ♂♂; S6 Orllan: 21.VI.2009. 4 ♀♀, 14 ♂♂, 17.VII.2009. 5 ♂♂; S7 Llukar: 21.VI.2009. 32 ♀♀, 28 ♂♂; S10 Mollopolc: 11.VI.2010. 5 ♂♂ (2 ♂♂ det. H. Malicky); S12 Grabofc: 05.IV.2009. 7 ♀♀, 3 ♂♂, 06.V.2009. 4 ♀♀, 7 ♂♂, 06.VI.2009. 6 ♀♀, 13 ♂♂, 08.VII.2009. 5 ♀♀, 7 ♂♂.

Synagapetus slavorum Botosaneanu, 1960 *

S10 Mollopolc: 11.VI.2010. 2 ♂♂, 15.VIII.2010. 4 ♂♂.

Family Hydroptilidae

Hydroptila forcipata (Eaton, 1873) *

S1 Koshtovë: 18.VI.2010. 55 ♀♀, 20.VII.2010. 49 ♀♀, 2 ♂♂, 16.VIII.2010. 76 ♀♀, 1 ♂, 17.IX.2010. 87 ♀♀, 2 ♂♂.

Family Philopotamidae

Philopotamus montanus (Donovan, 1813) *

S2 Mazhiq: 15.III.2009. 6 ♂♂, 16.IV.2009. 6 ♂♂, 13.V.2009. 16 ♀♀, 11 ♂♂, 18.VI.2009. 13 ♀♀, 12 ♂♂, 20.VII.2009. 5 ♀♀, 4 ♂♂, 16.VIII.2009. 21 ♀♀, 22 ♂♂; S3 Murgull: 16.III.2009. 3 ♂♂, 17.IV.2009. 1 ♀, 9 ♂♂, 14.V.2009. 8 ♀♀, 31 ♂♂, 19.VI.2009. 1 ♀, 14 ♂♂, 20.VII.2009. 7 ♀♀, 3 ♂♂; S4 Kaqandoll: 16.III.2009. 5 ♂♂, 17.IV.2009. 20 ♂♂, 14.V.2009. 6 ♀♀, 18 ♂♂, 19.VI.2009. 11 ♀♀, 13 ♂♂; S5 Siqevë: 14.III.2009. 4 ♂♂, 16.IV.2009. 2 ♀♀, 18 ♂♂, 13.V.2009. 21 ♀♀, 13 ♂♂, 21.VI.2009. 13 ♀♀, 7 ♂♂, 17.VII.2009. 8 ♀♀, 11 ♂♂; S6 Orllan: 13.V.2009. 12 ♂♂, 21.VI.2009. 13 ♀♀, 6 ♂♂, 17.VII.2009. 2 ♀♀, 5 ♂♂; S7 Llukar: 16.IV.2009. 21 ♂♂, 13.V.2009. 32 ♀♀, 14 ♂♂; S10 Mollopolc: 12.III.2010. 6 ♂♂, 13.IV.2010. 5 ♂♂, 16.V.2010. 24 ♀♀, 19 ♂♂, 11.VI.2010. 9 ♀♀, 8 ♂♂, 14.VII.2010. 3 ♂♂, 15.VIII.2010. 2 ♀♀, 8 ♂♂, 14.IX.2010. 4 ♂♂; S12 Grabofc: 06.06.2009. 4 ♀♀, 3 ♂♂, 08.VII.2009. 6 ♀♀, 4 ♂♂.

Philopotamus variegatus (Scopoli, 1763) *

S8 Marefc: 09.V.2010. 2 ♂♂.

Wormaldia occipitalis (Pictet, 1834) *

S3 Murgull: 19.VI.2009. 11 ♂♂, 20.VII.2009. 15 ♀♀, 3 ♂♂; S5 Siqevë: 17.VII.2009. 5 ♂♂, 17.X.2009. 6 ♀♀, 7 ♂♂; S6 Orllan: 16.IX.2009. 5 ♀♀, 16 ♂♂; S7 Llukar: 17.VII.2009. 15 ♀♀, 21 ♂♂, 15.VIII.2009. 6 ♀♀, 9 ♂♂; S8 Marefc: 11.VII.2010. 4 ♂♂, S9 Blinajë: 10.V.2010. 12 ♀♀, 18 ♂♂, 13.VI.2010. 21 ♀♀, 34 ♂♂, 11.VIII.2010. 4 ♀♀, 14 ♂♂, 10.IX.2010. 21 ♀♀, 34 ♂♂, S10 Mollopolc: 14.VII.2010. 7 ♂♂, 15.VIII.2010. 21 ♀♀, 14 ♂♂, 14.IX.2010. 32 ♀♀, 6 ♂♂; S11 Caralevë: 11.VI.2010. 7 ♂♂; S12 Grabofc: 08.VII.2009. 4 ♀♀, 2 ♂♂.

Wormaldia pulla (McLachlan, 1878) *

S4 Kaqandoll: 19.VI.2009. 1 ♂.

Wormaldia subnigra McLachlan, 1865 *

S6 Orllan: 17.VII.2009. 5 ♂♂.

Family Hydropsychidae

Cheumatopsyche lepida (Pictet, 1834) *

S6 Orllan: 21.VI.2009. 12 ♀♀, 5 ♂♂, 17.VII.2009. 5 ♀♀, 13 ♂♂, 15.VIII.2009. 9 ♀♀; S7 Llukar: 13.V.2009. 4 ♀♀, 7 ♂♂, 21.VI.2009. 21 ♀♀, 32 ♂♂; S8 Marefc: 09.V.2010. 170 ♀♀, 38 ♂♂, 12.VI.2010. 98 ♀♀, 23 ♂♂, 11.VII.2010. 43 ♀♀, 21 ♂♂, 10.VIII.2010. 56 ♀♀, 12 ♂♂, 09.IX.2010. 32 ♀♀, 6 ♂♂.

Dipletrona atra McLachlan, 1878 *

S3 Murgull: 19.VI.2009. 14 ♀♀, 11 ♂♂, 20.VII.2009. 1 ♀, 4 ♂♂, 17.VIII.2009. 14 ♀♀; S8 Marefc: 09.V.2010. 23 ♀♀, 8 ♂♂, 12.VI.2010. 12 ♀♀, 2 ♂♂, 11.VII.2010. 16 ♀♀, 2 ♂♂.

Hydropsyche angustipennis (Curtis, 1834) *

S9 Blinajë: 13.VII.2010. 18 ♂♂ (1 ♂ det. H. Malicky), 11.VIII.2010. 12 ♂♂.

Hydropsyche bulbifera McLachlan, 1878 *

S5 Siqevë: 16.IX.2009. 6 ♂♂; S6 Orllan: 21.VI.2009. 1 ♂, 15.VIII.2009. 5 ♂♂; S12 Grabofc: 05.IV.2009. 6 ♂♂, 03.VIII.2009. 4 ♂♂.

Hydropsyche emarginata Navas, 1923 *

S7 Llukar: 21.VI.2009. 3 ♂♂; S8 Marefc: 09.V.2010. 11 ♂♂, 12.VI.2010. 23 ♂♂, 11.VII.2010. 12 ♂♂, 10.VIII.2010. 5 ♂♂, 09.IX.2010. 5 ♂♂; S12 Grabofc: 06.VI.2009. 9 ♂♂.

Hydropsyche fulvipes Curtis, 1834 *

S7 Llukar: 21.VI.2009. 1 ♂ (det. H. Malicky).

Hydropsyche incognita Pitsch, 1993 *

S8 Marefc: 12.VI.2010. 4 ♂♂.

Hydropsyche instabilis (Curtis, 1834)

S4 Kaqandoll: 17.VIII.2009. 5 ♂♂.

Hydropsyche peristerica Botosaneanu & Marinković-Gospodnetić, 1968 *

S3 Murgull: 14.V.2009. 1 ♂, 20.VII.2009. 3 ♂♂; S5 Siqevë: 13.V.2009. 1 ♂ (det. H. Malicky).

Hydropsyche saxonica McLachlan, 1884 *

S4 Kaqandoll: 17.VIII.2009. 3 ♂♂, S6 Orllan: 21.VI.2009. 5 ♂♂, 15.VIII.2009. 5 ♂♂; S9 Blinajë: 13.VII.2010. 14 ♂♂ (1 ♂ det. H. Malicky).

Hydropsyche tabacarui Botosaneanu, 1960 *

S3 Murgull: 14.V.2009. 6 ♂♂; S10 Mollopolc: 11.VI.2010. 7 ♂♂.

Hydropsyche sp. ♀

S1 Koshtovë: 13.V.2010. 3 ♀♀; S2 Mazhiq: 18.VI.2009. 10 ♀♀, 20.VII.2009. 21 ♀♀, 16.VIII.2009. 12 ♀♀; S3 Murgull: 19.VI.2009. 8 ♀♀, 20.VII.2009. 8 ♀♀, 17.VIII.2009. 12 ♀♀; S4 Kaqandoll: 19.VI.2009. 17 ♀♀, 17.VIII.2009. 32 ♀♀; S5 Siqevë: 16.IX.2009. 13 ♀♀; S6 Orllan: 17.VII.2009. 13 ♀♀, 15.08.2009. 24 ♀♀; S7 Llukar: 21.VI.2009.32 ♀♀, 17.VII.2009. 14 ♀♀; S8 Marefc: 09.V.2010. 12 ♀♀, 12.VI.2010. 5 ♀♀, 11.VII.2010. 22 ♀♀, 10.VIII.2010. 5 ♀♀, 09.IX.2010. 8 ♀♀; S9 Blinajë: 13.VI.2010. 11 ♀♀, 12.VII.2010. 14 ♀♀, 11.VIII.2010. 21 ♀♀; S10 Mollopolc: 16.V.2010. 3 ♀♀, 11.VI.2010. 5 ♀♀, 14.VII.2010. 8 ♀♀; S11 Caralevë: 16.V.2010. 12 ♀♀, 11.VI.2010. 23 ♀♀, 14.VII.2010. 43 ♀♀, S12 Grabofc: 06.V.2009. 21 ♀♀, 06.VI.2009, 23 ♀♀, 08.VII.2009. 32 ♀♀, 03.VIII.3009. 13 ♀♀.

Family Polycentropodidae*Cyrnus trimaculatus* (Curtis, 1834) *

S9 Blinajë: 10.V.2010. 12 ♀♀, 19 ♂♂, 13.VI.2010. 21 ♀♀, 13 ♂♂. 12.VII.2010. 14 ♀♀, 18 ♂♂, 11.VIII.2010. 12 ♀♀, 5 ♂♂, 10.IX.2010. 7 ♀♀, 21 ♂♂; S12 Grabofc: 05.IV.2009. 3 ♀♀, 5 ♂♂, 06.V.2009. 4 ♀♀, 7 ♂♂, 06.VI.2009. 2 ♀♀, 4 ♂♂, 08.VII.2009. 21 ♀♀, 26 ♂♂, 03.VIII.3009. 5 ♀♀, 9 ♂♂.

Polycentropus excisus Klapalek, 1894 *

S10 Mollopolc: 13.X.2010. 1 ♂ (det. H. Malicky).

Polycentropus flavomaculatus (Pictet, 1834) *

S9 Blinajë: 12.VII.2010. 7 ♀♀, 10 ♂♂.

Plectrocnemia conspersa (Curtis, 1834) *

S2 Mazhiq: 20.VII.2009. 8 ♂♂, S8 Marefc: 11.VII.2010. 3 ♂♂.

Family Psychomyiidae*Lype reducta* (Hagen, 1868) *

S2 Mazhiq: 18.VI.2009. 12 ♀♀, 17 ♂♂, 20.VII.2009. 5 ♀♀, 11 ♂♂; S3 Murgull: 19.VI.2009. 1 ♂; S7 Llukar: 17.VII.2009. 5 ♂♂ (1 ♂ det. H. Malicky); S9 Blinajë: 11.VIII.2010. 18 ♀♀, 13 ♂♂; S12 Grabofc: 08.VII.2009. 4 ♀♀, 7 ♂♂.

Psychomyia klapaleki Malicky, 1995 *

S1 Koshtovë: 20.VI.2010. 21 ♀♀, 2 ♂♂ (2 ♂♂ + 4 ♀♀ det. H. Malicky), 16.VIII.2010. 44 ♀♀, 2 ♂♂, 17.IX.2010. 54 ♀♀, 2 ♂♂.

Psychomyia pusilla (Fabricius, 1781) *

S6 Orllan: 21.VI.2009. 31 ♀♀, 5 ♂♂, 15.VIII.2009. 24 ♀♀, 2 ♂♂, 16.IX.2009. 44 ♀♀; 17.X.2009. 23 ♀♀; S7 Llukar: 21.VI.2009. 12 ♀♀, 17.VII.2009. 21 ♀♀, 1 ♂, 15.VIII.2009. 23 ♀♀, 1 ♂; S8 Marefc: 09.V.2010. 154 ♀♀, 3 ♂♂, 12.VI.2010. 342 ♀♀, 6 ♂♂, 11.VII.2010. 238 ♀♀, 8 ♂♂, 10.VIII.2010. 213 ♀♀, 5 ♂♂, 09.IX.2010. 459 ♀♀, 6 ♂♂; S12 Grabofc: 08.VII.2009. 32 ♀♀, 5 ♂♂, 03.VIII.3009. 76 ♀♀, 4 ♂♂.

Tinodes janssensi Jacquemart, 1957 *

S9 Blinajë: 10.V.2010. 5 ♀♀, 2 ♂♂, 13.VI.2010. 2 ♀♀.

Tinodes rostocki McLachlan, 1878 *

S2 Mazhiq: 13.V.2009. 3 ♀♀, 13 ♂♂; S3 Murgull: 14.V.2009. 9 ♀♀, 6 ♂♂, 20.VII.2009. 5 ♀♀, 3 ♂♂; S4 Kaqandoll: 14.V.2009. 14 ♀♀, 7 ♂♂; S5 Siqevë: 13.V.2009. 3 ♀♀, 8 ♂♂, 21.VI.2009. 12 ♀♀, 31 ♂♂, 17.VII.2009. 3 ♀♀, 4 ♂♂; S6 Orllan: 21.VI.2009. 2 ♂♂, 17.VII.2009. 4 ♂♂; S10 Mollopolc: 4 ♂♂, 14.IX.2009. 5 ♀♀.

Tinodes unicolor (Pictet, 1834) *

S10 Mollopolc: 13.X.2010. 6 ♀♀, 7 ♂♂.

Tinodes sp. ♀

P11 Caralevë: 12.VI.2010. 8 ♀♀, 12.VII.2010. 7 ♀♀, 14.VIII.2010. 8 ♀♀.

Family Phryganeidae*Agrypnia varia* (Fabricius, 1793) *

S1 Koshtovë: 16.VIII.2010. 8 ♀♀, 12 ♂♂.

Family Brachycentridae*Micrasema minimum* McLachlan, 1876 *

S7 Llukar: 21.VI.2009. 13 ♀♀, 27 ♂♂, 17.VII.2009. 4 ♀♀, 7 ♂♂.

Micrasema sericeum Klapalek, 1902 *

S1 Koshtovë: 18.VI.2009. 13 ♀♀, 33 ♂♂, 20.VII.2010. 12 ♀♀, 23 ♂♂, 13 ♀♀, 33 ♂♂, 20.VII.2010. 12 ♀♀, 23 ♂♂.

Family Limnephilidae

Anabolia furcata Brauer, 1857 *

S12 Grabofc: 06.VI.2010. 6 ♀♀, 03.VIII.2009. 5 ♀♀, 9 ♂♂, 06.IX.2009. 13 ♀♀, 18 ♂♂.

Chaetopteryx bosniaca Marinković, 1955 *

S3 Murgull: 19.X.2009. 1 ♀, 11.X.2010. 11 ♀♀, 12 ♂♂; S9 Blinajë: 11.X.2010. 11 ♀♀, 12 ♂♂.

Drusus botosaneanui Kumanski, 1968 *

S2 Mazhiq: 16.VIII.2009. 12 ♀♀, 4 ♂♂, 17.IX.2009. 23 ♀♀, 18 ♂♂; S3 Murgull: 17.VIII.2009. 5 ♂♂, 18.IX.2009. 2 ♀♀, 9 ♂♂, 19.IX.2009. 14 ♀♀, 7 ♂♂; S4 Kaqandoll: 18.IX.2009. 14 ♀♀, 8 ♂♂, 19.X.2009. 2 ♂♂, 20.XI.2009. 4 ♀♀; S5 Siqevë: 15.VIII.2009. 13 ♀♀, 7 ♂♂, 16.IX.2009. 20 ♀♀, 15 ♂♂, 18.XI.2009. 1 ♀; S6 Orllan: 15.VIII.2009. 12 ♀♀, 5 ♂♂, 16.IX.2009. 23 ♀♀, 18 ♂♂; S7 Llukar: 15.VIII.2009. 16 ♀♀, 3 ♂♂, 16.IX.2009. 12 ♀♀, 7 ♂♂; S10 Mollopolc: 14.IX.2010. 13 ♀♀, 7 ♂.

Glyphotaenius pellucidus (Retzius, 1783) *

S12 Grabofc: 06.VI.2009. 4 ♀♀, 3 ♂♂.

Grammotaulius nigropunctatus (Retzius, 1873) *

S10 Mollopolc: 13.X.2010. 1 ♀; 06.V.2009. 3 ♂♂.

Halesus digitatus (Schrank, 1781) *

S2 Mazhiq: 17.IX.2009. 1 ♀; S5 Siqevë: 17.X.2009. 1 ♀; S7 Llukar: 17.X.2009. 4 ♀♀, 18.XI.2009. 4 ♀♀.

Limnephilus vittatus (Fabricius, 1798) *

S9 Blinajë: 10.V.2010. 3 ♂♂.

Potamophylax luctuosus (Piller & Mitterpacher, 1783) *

S10 Mollopolc: 13.VI.2010. 1 ♂ (det. H. Malicky).

Potamophylax pallidus (Klapalek, 1899)

S11 Caralevë: 14.XI.2010. 1 ♀.

Potamophylax rotundipennis (Brauer, 1857) *

S5 Siqevë: 15.IX.2009. 2 ♀♀ (det. H. Malicky); S8 Marefc: 08.X.2010. 1 ♂.

Potamophylax schmidi Marinković-Gospodnetić, 1970 *

S5 Siqevë: 13.VI.2009. 1 ♀ (det. H. Malicky).

Potamophylax sp. *

S9 Blinajë: 12.XI.2010. 1 ♀ (det. H. Malicky).

Family Goeridae

Goera pilosa (Fabricius, 1775) *

S6 Orllan: 21.VI.2009. 5 ♀♀, 7 ♂♂; S7 Llukar: 21.VI.2009. 2 ♀♀, 7 ♂♂; S12 Grabofc: 08.VII.2009. 12 ♀♀, 21 ♂♂, 03.VIII.2009. 13 ♀♀, 7 ♂♂.

Lithax obscurus (Hagen, 1859) *

S6 Orllan: 21.VI.2009. 3 ♂♂; S7 Llukar: 13.V.2009. 37 ♀♀, 36 ♂♂.

Silo graellsii Pictet, 1865 *

S2 Mazhiq: 18.VI.2009. 8 ♀♀, 14 ♂♂; S4 Kaqandoll: 14.V.2009. 1 ♂; S5 Siqevë: 21.VI.2009. 6 ♀♀, 7 ♂♂.

Silo pallipes (Fabricius, 1781) *

S3 Murgull: 14.V.2009. 2 ♀♀, 6 ♂♂.

Silo piceus (Brauer, 1857) *

S1 Koshtovë: 16.IV.2010. 6 ♀♀, 2 ♂♂, 13.V.2010. 18 ♀♀, 11 ♂♂, 18.VI.2010. 4 ♀♀, 1 ♂; S4 Kaqandoll: 19.VI.2009. 44 ♀♀, 21 ♂♂; S6 Orllan: 19.VI.2009: 4 ♀♀, 23 ♂♂; S7 Llukar: 1 ♀, 14 ♂♂, 21.VI.2009. 4 ♀♀, 7 ♂♂, 17.VII.2009. 12 ♀♀, 24 ♂♂, 15.VIII.2009. 3 ♀♀, 5 ♂♂; S12 Grabofc: 03.VIII.2009. 31 ♀♀, 19 ♂♂.

Family Lepidostomatidae*Lepidostoma basale* (Kolenati, 1848)

S3 Murgull: 20.VII.2009. 8 ♀♀, 18.IX.2009. 1 ♂; S4 Kaqandoll: 14.V.2009. 24 ♀♀, 29 ♂♂, 19.VI.2009. 6 ♀♀, 1 ♂, 17.VIII.2009. 3 ♀♀, 4 ♂♂.

Family Leptoceridae*Adicella filicornis* (Pictet, 1834) *

S10 Mollopolc: 13.X.2010. 2 ♂♂ (det. H. Malicky).

Adicella syriaca Ulmer, 1907 *

S12 Grabofc: 06.VI.2009. 6 ♀♀, 4 ♂♂.

Athripsodes bilineatus (Linnaeus, 1758) *

S6 Orllan: 21.VI.2009. 9 ♀♀, 26 ♂♂ (6 ♂♂, 1 ♀ det. H. Malicky); 17.07.2009. 13 ♀♀, 19 ♂♂; S7 Llukar: 21.VI.2009. 5 ♀♀, 2 ♂♂, 17.VII.2009. 14 ♀♀, 8 ♂♂; S9 Blinajë: 13.VI.2010. 3 ♀♀, 13 ♂♂; S10 Mollopolc: 14.VII.2010. 8 ♀♀, 21 ♂♂, 15.VIII.2010. 6 ♀♀, 9 ♂♂, 13.X.2010. 3 ♀♀, 1 ♂, 13.XI.2010. 4 ♂♂; S12 Grabofc: 06.VI.2009. 13 ♀♀, 17 ♂♂; 08.VII.2009. 6 ♂♂.

Athripsodes cinereus (Curtis, 1834) *

S8 Marefc: 09.V.2010. 5 ♂♂, 12.VI.2010. 4 ♀♀, 8 ♂♂, 11.VII.2010. 2 ♀♀, 8 ♂♂, 10.VIII.2010. 12 ♀♀, 24 ♂♂.

Ceraclea albimacula (Rambur, 1842) *

S12 Grabofc: 06.VI.2009. 2 ♀♀, 7 ♂♂, 08.VII.2009. 4 ♀♀, 3 ♂♂, 03.VIII.2009. 1 ♂.

Ceraclea dissimilis (Stephens, 1836) *

S12 Grabofc: 03.VIII.3009. 1 ♂.

Leptocerus interruptus (Fabricius, 1775) *

S3 Murgull: 20.VII.2009. 2 ♂♂; S8 Marefc: 11.VII.2010. 7 ♂♂; S12 Grabofc: 06.VI.2009. 13 ♀♀, 21 ♂♂, 08.VII.2009. 13 ♀♀, 27 ♂♂.

Mystacides azurea (Linnaeus, 1761) *

S6 Orllan: 17.VII.2009. 6 ♀♀, 29 ♂♂; S8 Marefc: 09.V.2010. 2 ♀♀, 5 ♂♂, 12.VI.2010. 5 ♀♀, 3 ♂♂, 11.VII.2010. 7 ♀♀, 3 ♂♂, 10.VIII.2010. 4 ♀♀, 9 ♂♂; S9 Blinajë: 10.V.2010. 21 ♀♀, 43 ♂♂, 13.VI.2010. 13 ♀♀, 29 ♂♂, 12.VII.2010. 6 ♀♀, 8 ♂♂, 11.VIII.2010. 12 ♀♀, 23 ♂♂, 10.IX.2010. 4 ♀♀, 9 ♂♂; S12 Grabofc: 03.VIII.2009. 5 ♀♀, 8 ♂♂, 06.IX.2009. 5 ♀♀, 8 ♂♂.

Mystacides nigra (Linnaeus, 1758) *

S9 Blinajë: 10.V.2010. 11 ♀♀, 32 ♂♂, 12.VII.2010. 3 ♀♀, 9 ♂♂; S12 Grabofc: 06.V.2009. 6 ♀♀, 06.VI.2009. 4 ♀♀, 3 ♂♂, 08.VII.2009. 5 ♀♀, 9 ♂♂.

Family Sericostomatidae*Oecismus monedula* (Hagen, 1859) *

S2 Mazhiq: 18.VI.2009. 3 ♂♂; S8 Marefc: 6 ♀♀, 9 ♂♂; S12 Grabofc: 05.IV.2009. 3 ♀♀, 6 ♂♂.

Sericostoma flavicorne Schneider, 1845 *

S1 Koshtovë: 13.V.2010. 3 ♀♀, 1 ♂, 18.VI.2010. 5 ♀♀, 6 ♂♂; S3 Murgull: 20.VII.2009. 3 ♀♀, 7 ♂♂; S4 Kaqandoll: 14.V.2009. 2 ♂♂, 19.VI.2009. 7 ♀♀, 12 ♂♂.

Family Helicopsychidae

Helicopsyche bacescui Orghidan & Botosaneanu, 1953 *

S9 Blinajë: 10.V.2010. 4 ♂♂.

Family Beraeidae

Beraea maurus (Curtis, 1834) *

S6 Orllan: 17.VII.2009. 2 ♂♂.

Beraemyia hrabei Mayer, 1937 *

S7 Llukar: 17.VII.2009. 2 ♂♂ (1 ♂ det. H. Malicky); S10 Mollopolc: 11.VI.2010. 2 ♂♂, 14.VII.2010. 9 ♀♀, 6 ♂♂.

Ernodes articularis (Pictet, 1834) *

S5 Siqevë: 21.VI.2009. 2 ♂♂, 17.VII.2009. 1 ♂; S10 Mollopolc: 11.VI.2010. 5 ♂♂.

Discussion

Most of the species collected during this investigation belong to the European fauna (27) followed by the Euro-Asian group with 23 species, the Balkanic group with 9 species, the Western-Palearctic group with 8 species, the Carpathian-Balkanic group with 5 species and the Palearctic group with 4 species.

Besides the common and widespread species that are also known from the surrounding countries in the region, we found several species that were previously considered endemics for certain regions on the Balkan Peninsula and/or South-Eastern Europe: *Tinodes janssensi*, *Psychomyia klapaleki*, *Potamophylax schmidi*, *Hydropsyche emarginata* and *Drusus botosaneanui*. We also found species whose occurrences were unexpected in this part of Europe: *Agapetus delicatulus*, *Potamophylax rotundipennis*, *Ceraclea albimacula*, *Helicopsyche bacescui*, *Adicella filicornis*, *Beraea maurus* and *Beraemyia hrabei*.

For example, *Agapetus delicatulus* is a widespread species in Europe and its range extends to the Western Asia Minor. According to present knowledge it is, however, absent from most part of the Balkan Peninsula. The closest areas to Kosovo from which it is reported are Albania and Bulgaria (Chvojka 1997; Kumanski 1985). The limited number of localities and our finding this species in Kosovo suggests that its distribution is greater than previously thought and extends farther south on the Balkan Peninsula. The species *Psychomyia klapaleki* was described from Slovenia (Malicky 1995) but is also known from Croatia, Bosnia and Hercegovina and Serbia (Stanić-Koštroman 2009; Vučković 2011; Živić et al. 2006). The finding in Kosovo suggests that the distribution area of this species is wider than previously thought. Currently, Kosovo presents the southernmost point of its known distribution. *Tinodes janssensi* is a very rare Balkanic endemic species present in several localities in Greece (Malicky 2005), from where it was originally described, and is also reported from single localities in Albania (Chvojka 1997) and Bulgaria (Kumanski 1985). The finding in Kosovo represents the northernmost point of its known distribution. The species *Potamophylax schmidi* was described from Bosnia and Hercegovina (Marinković-Gospodnetić 1970). Besides this, *P. schmidi* is only

known from a single locality in Croatia (Malicky, per. com.) not far away from the type locality. There are several local endemic species of the genus *Potamophylax* in the Balkan Peninsula that were thought to be strictly limited to the mountains or other areas where they were found previously (Kumanski and Malicky 1999). Because of this and because of the large intervening distance, this species was not expected in Kosovo. As a result of our finding, the distributional area of *P. schmidi* is considerably enlarged. This suggests that other endemic species of the genus *Potamophylax* in the Balkan Peninsula may have wider area of distribution than currently known. The species *Potamophylax rotundipennis* was also not expected in Kosovo. This species is widespread in North-Western Europe stretching towards the East as well. Despite very detailed studies in many parts of South-Eastern Europe, the species was previously not found beyond Croatia or Romania. The finding of *P. rotundipennis* in Kosovo is a first record for ecoregion 6 and represents the southernmost locality of its distribution, remarkably enlarging its distribution range. A single specimen of this species collected in Serbia also was found in a museum collection (Živić et al. 2006), suggesting that the distribution of *P. rotundipennis* is wider than previously thought.

The species *Drusus botosaneanui* was known previously from Greece, Bulgaria, Serbia and the Sultan Mountains in Turkey (Kumanski 1988; Malicky 2005; Sipahiler 2003), and seems to be widely distributed in the Balkan Peninsula. During this investigation it was found at seven stations, making it one of the most widely distributed species in Kosovo. Recently this species was found in Albania (Oláh 2010) and Macedonia (Halil Ibrahimović unpublished results). *Ceraclea albimacula* in Europe is present only in the north-western part of the continent. The only record for this species in South-Eastern Europe is from Bosnia and Hercegovina (Stanić-Košťroman 2009). The find in Kosovo suggests that there are isolated populations of this species towards the south-eastern part of the continent, well beyond its previously known distribution area. Two species of Beraeidae: *Beraea maurus* and *Beraeamyia hrabei* according to present knowledge are almost completely lacking from most of the Balkan Peninsula, and finding these species in Kosovo enlarges remarkably their distribution. The species *Helicopsyche bacescui* in Europe has a disjunct distribution, and recent investigations in neighboring Serbia documented its wide distribution (Živić et al. 2009). Discovering this species in Kosovo considerably enlarges its distribution towards the south-west. The presence of *Hydropsyche emarginata* and *Adicella filicornis* in Kosovo also enlarges their known distributions in South-Eastern Europe.

This study, along with other investigations (e.g. Krušnik 1987; Krušnik and Urbanič 2002; Kumanski 1985, 1988; Kumanski and Malicky 1999; Malicky 2005; Marinković-Gospodnetić 1966, 1975, 1980; Obr 1969; Oláh 2010; Oláh et al. 2011; Stanić-Košťroman 2009; Živić et al. 2002, 2006, 2009) have greatly expanded the biogeographical knowledge of Trichoptera in the Balkan Peninsula. The collection data of caddisflies presented in this paper enhance our knowledge of distributional patterns for several species in South-Eastern Europe and Europe as a whole. Further investigations in Kosovo and other parts of Europe where caddisfly distributional data are scarce or lacking will enable better practical approaches in conservation plans and protection efforts for this group of aquatic insects.

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References

- Botosaneanu L, Malicky H (1978) Trichoptera. In: Illies J (Ed) Limnofauna Europaea. Gustav Fischer Verlag, Stuttgart, 333–359.
- Chvojka P (1997) Contribution to the knowledge of the caddisfly fauna (Trichoptera, Insecta) of Albania. Časopis Národního Muzea Řada Přírodovědná 166 (1–4): 27–38.
- Cianficoni F (2002) The third list of Italian Trichoptera (1900–2000). In: Wolfram M (Ed) Proceedings of the 10th International Symposium on Trichoptera. Nova Supplementa Entomologica, 15: 349–358.
- Ćuk R, Vučković I (2009) First record of caddisfly *Rhyacophila laevis* Pictet, 1834 (Insecta: Trichoptera) in Croatia. Natura Croatica 18: 449–453.
- Graf W, Kučinić M, Previšić A, Vučković I, Waringer J (2008) The larva, ecology and distribution of *Tinodes braueri* McLachlan, 1878 (Trichoptera: Psychomyiidae). Aquatic insects 30: 295–299. doi: 10.1080/01650420802331158
- Ibrahimi H, Kučinić M, Gashi A, Grapci-Kotori L, Vučković I, Cerjanec D (in press) The genus *Rhyacophila* Pictet, 1873 (Insecta: Trichoptera) in Kosovo. Aquatic Insects 34 (1): 25–33.
- Klapálek F (1899) Prilozi k poznavanju faune Trichoptera i Neuroptera Bosne i Hercegovine. Glasnik zemaljskog muzeja u Sarajevu 11: 323–337.
- Klapálek F (1902) Zur Kenntnis der Neuropteroiden von Ungarn, Bosnien und der Hercegovina. Termesztudományi Füzetek 25: 161–180.
- Krušnik C (1987) Trichoptera (Insecta). In: Fauna Durmitora, Titograd, 2: 201–224.
- Krušnik C, Urbanič G (2002) Preliminary list of Slovenian Trichoptera. In: Wolfram M (Ed.) Proceedings of the 10th International Symposium on Trichoptera. Nova Supplementa Entomologica 15: 359–364.
- Kučinić M. (2002) Raznolikost i raspodjela tulara (Trichoptera, Insecta) Plitvičkih jezera. PhD Thesis, Zagreb, Croatia: University of Zagreb.
- Kučinić M, Malicky H (2002) *Rhyacophila dorsalis plitvicensis* new subspecies from Croatia. In: Wolfram M (Ed) Proceedings of the 10th International Symposium on Trichoptera. Nova Supplementa Entomologica, 15: 145–147.
- Kučinić M, Previšić A, Gottstein A, Hrašovec B, Stanić-Koštroman S, Pernek M, Delić A (2008) Description of the larvae of *Drusus radovanovici septentrionis* Marinković-Gospodnetić, 1976 and *Drusus croaticus* Marinković-Gospodnetić, 1971 (Trichoptera: Limnephilidae) from Bosnia and Herzegovina and Croatia. Zootaxa 1783: 1–17.
- Kučinić M, Previšić, Graf W, Šerić Jelaska L, Stanić Koštroman S, Waringer J (2011a) Larval description, genetic and ecological features of *Drusus radovanovici radovanovici* Marinković-

- Gospodnetić, 1971 (Trichoptera, Limnephilidae) with some phylogenetic and taxonomic data on the *bosnicus* group in the Balkan Peninsula. Deutsche Entomologische Zeitschrift 58 (1): 135–153. doi: 10.1002/mmnd.201100010
- Kučinić M, Vučković I, Kutnjak H, Šerić Jelaska L, Marguš D (2011b) Diversity, distribution, ecology and biogeography of caddisflies (Insecta: Trichoptera) in the Krka River (National Park “Krka”, Croatia). Zoosymposia 5:255–268.
- Kumanski K (1985) Trichoptera, Annulipalpia. Fauna Bulgarica 15, Bulgarska Akademi na Naukite, Sofia, 243 pp.
- Kumanski K (1988) Trichoptera, Integripalpia. Fauna Bulgarica 19, Bulgarska Akademi na Naukite, Sofia, 354 pp.
- Kumanski K, Malicky H (1999) A survey of the genus *Potamophylax* Wallengren 1891 in the Balkan Peninsula, with description of two new species (Trichoptera: Limnephilidae). Braueria 26: 27–30.
- Malicky H (1986) Beschreibung von vier neuen Köcherfliegen-Arten aus der Türkei und aus Jugoslawien (Trichoptera). Opusc. zool. Fluminensia (Flums, Schweiz) 4: 1–7.
- Malicky H (1995) Eine neue *Psychomyia* aus dem südöstlichen Mitteleuropa, mit Bemerkungen über die Gattung *Metalype* (Trichoptera, Psychomyiidae). Ent. Z. (Essen) 105: 441–446.
- Malicky H (1999) Bemerkungen über die Verwandtschaft von *Hydropsyche pellucidula* CURTIS (Trichoptera, Hydropsychidae). Linzer biol. Beitr. 31 (2): 803–821.
- Malicky H (2004) Atlas of European Trichoptera. 2nd Edition, Springer, Netherlands, 359 pp.
- Malicky H (2005) Die Köcherfliegen Griechenlands. Denisia 17:1–240.
- Malicky H (2009) Die Köcherfliegen (Insecta, Trichoptera) der Sammlung von Franjo Koščec im Museum Varaždin, Kroatien. Natura Croatica 18: 129–134.
- Malicky H (2011) Fauna Europea: Trichoptera. Fauna Europaea version 2.4, <http://www.fauna-eur.org>
- Marinković-Gospodnetić M (1966) Nove vrste Trichoptera iz Jugoslavije. Bilten prirodnih nauka, Sec. A, Tome 11 No. 4–6.
- Marinković-Gospodnetić M (1970) Descriptions of some species of Trichoptera from Yugoslavia. Godišnjak Biološkog Instituta Univerziteta u Sarajevu XXIII: 77–84.
- Marinković-Gospodnetić M (1975) Fauna Trichoptera SR Srbija. Zbornik radova o entomofauni Srbije 1: 219–236.
- Marinković-Gospodnetić M (1979) Trichoptera (Insecta) velikih karstnih izvora u Dinaridima. In: Rauš Đ (Ed) Drugi kongres Ekologa Jugoslavije. Savez društava ekologa Jugoslavije, Zagreb, 1837–1849.
- Marinković-Gospodnetić M (1980) Fauna Trichoptera SR Srbija. Zbornik radova o fauni Srbije, SANU 1: 71–84.
- Obr S (1969) Ergebnisse der Albanien-Expedition 1961 des Deutschen Entomologischen Institutes, 80. Beitrag. Trichoptera. Beitr. Ent. 19: 937–960.
- Oláh J (2010) New species and new records of Palearctic Trichoptera in the material of the Hungary Natural History Museum. Annales Historico-Naturales Musei Nationalis Hungarici, Budapest 102: 65–117.
- Oláh J, Lodovici O, Valle M (2011) A new species of *Potamophylax* (Trichoptera, Limnephilidae) from Albania. Braueria 38: 13–14.

- Pongrácz S (1923) Recésszárnyúak. Neuropteroiden. In: Csiki Erno Állattani Kutatásai Albániában. Exploraciones zoologicae ab E. Csiki in Albania peractae. IX. A. Magyar Tudományos Akadémia Balkán-Kutatásainak Tudományos Erdményei. Vol. 1. Budapest, 160–166.
- Previšić A, Kerovec M, Kučinić M (2007) Emergence and composition of Trichoptera from karst habitans, Plitvice Lakes Region, Croatia. *International Review of Hydrobiology* 92: 61–83. doi: 10.1002/iroh.200510921
- Radovanović M (1931) Rezultati ispitivanja balkanskih Trichoptera. *Glasnik Jugoslovenskog entomološkog društva* 1–2: 159–192.
- Radovanović M (1935) Trichoptera Jugoslavije. *Glasnik Zemaljskog muzeja u Bosni i Hercegovini u Sarajevu* XLVII: 73–84.
- Radovanović M (1953) Prilog poznavanju Trichoptera Balkanskog poluostrva, prvenstveno u pećinama i planinskim jezerima. *Glas SAN CCX* 7: 11–38.
- Savić I (2008) Diversification of the Balkan fauna: its origine, historical development and present status. *Advances in Arachnology and Developmental Biology* 12: 57–78.
- Sipahiler F (2003) Trichoptera fauna of Lakes District in Turkey with the description of a new species. *Braueria* 30: 31–34.
- Stanić-Koštroman S (2009) Faunističke, ekološke i biogeografske značajke tulara (Insecta: Trichoptera) Bosne i Hercegovine. PhD Thesis, Zagreb, Croatia: University of Zagreb.
- Vučković I (2011) Faunističke, taksonomske i ekološke značajke tulara (Insecta: Trichoptera) sliva rijeke Cetine. PhD Thesis, Zagreb, Croatia: University of Zagreb.
- Vučković I, Previšić A, Graf W, Kučinić M (2011) Description of the female and new data on the distribution of *Annitella apfelbecki* Klapálek, 1899 (Insecta: Trichoptera). *Aquatic Insects* 33 (4): 381–389.
- Waringer J, Graf W, Kučinić M, Previšić A, Vučković I (2009) The larva and life cycle of *Annitella apfelbecki* Klapalek, 1899, including a re-description of *Melampophylax nepos* McLachlan, 1880 (Trichoptera: Limnephilidae). *Aquatic insects* 31: 71–80. doi: 10.1080/01650420802616327
- Wiberg-Larsen P (2008) Overall distributional patterns of European Trichoptera. *Ferrantia* 55: 143–155.
- Živić I, Marković Z, Brajković M (2002) First check list of Serbian Trichoptera. *Folia Historico-Naturalia Musei Matraensis* 26: 269–277.
- Živić I, Marković Z, Brajković M (2006) Contribution to the faunistical list of Trichoptera (Insecta) of Serbia. *Acta Entomologica Slovenica* 14 (1): 55–88.
- Živić I, Marković Z, Simić V, Kučinić M (2009) New records of *Helicopsyche bacescui* (Trichoptera, Helicopsychidae) from the Balkan Peninsula with notes on its habitat. *Acta Zoologica Academiae Scientiarum Hungaricae* 55 (1): 77–87.