



**CONTRIBUTION TO THE KNOWLEDGE OF THE CADDISFLY
(INSECTA: TRICHOPTERA) FAUNA OF THE DRENICA RIVER
IN KOSOVO**

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Abstract – Adult caddisflies were collected with ultraviolet light trap at five sampling stations belonging to the Drenica River basin in Kosovo from June to October 2017. During this investigation 22 species belonging to 9 families were sampled. The highest number of species belongs to the Rhyacophilidae, Hydropsychidae and Leptoceridae families. The species of the Limnephilidae family, *Limnephilus fuscicornis* is reported for the first time from Kosovo and was found only at station S5 Grabovc. This study is a contribution to the knowledge of the caddisfly fauna of the central part of Kosovo which is relatively poorly investigated.

KEY WORDS: Freshwater diversity, Black Sea Basin, Balkan, *Limnephilus fuscicornis*.

Izvleček – PRISPEVEK K POZNAVANJU FAVNE MLADOLETNIC (INSECTA: TRICHOPTERA) REKE DRENICE NA KOSOVU

Odrasle mladoletnice smo zbirali s pastmi z ultravijolično svetlobo na petih vzorčnih mestih v porečju reke Drenice na Kosovu od junija do oktobra leta 2017. Med raziskavo smo našli 22 vrst, ki pripadajo 9 družinam. Največ vrst pripada družinam Rhyacophilidae, Hydropsychidae in Leptoceridae. Vrsta iz družine Limnephilidae, *Limnephilus fuscicornis*, je prvič zabeležena na Kosovu in je bila naj-

dena le na postaji S5 Grabovc. Raziskava je prispevek k poznavanju favne mladoletnic osrednjega dela Kosova, ki je razmeroma slabo raziskana.

KLJUČNE BESEDE: sladkovodna raznovrstnost, Črnomoško porečje, Balkan, *Limnephilus fuscicornis*.

Introduction

Until recently Kosovo has been one of the least investigated areas in the Balkan Peninsula in terms of caddisfly fauna with only few historical records. During the last decade several large scale investigations have been carried out, increasing thus significantly the number of recorded species (e.g. Gashi *et al.* 2015, Gashi and Ibrahimimi 2008, Ibrahimimi *et al.* 2012, 2013, 2014, 2015a, 2015b, 2015c, 2015d, 2016a, 2016b, 2017, Ibrahimimi and Gashi 2008, Olah *et al.* 2014, 2015). However, there are still poorly investigated areas inside Kosovo, mostly high altitude mountains and central part of the country.

Freshwater ecosystems in Kosovo belong to the drainage basins of three seas: the Black Sea, the Adriatic Sea and the Aegean Sea. This investigation is concentrated in one of the areas of the central part of Kosovo, namely Drenica River and its tributaries, from where only few caddisfly records were previously known. Beside Drenica River, other important rivers belonging to the Black Sea drainage basin are Ibër, Sitnica, Llapi and Morava e Binçës. Except Llap and Sitnica rivers, the rest of the rivers of this basin, including the Drenica River are poorly investigated for aquatic insects.

The goal of this paper was to contribute to the inventory of the caddisfly fauna of the Republic of Kosovo and to expand the knowledge about the composition of the caddisfly fauna of the Drenica River and its tributaries.

Material and methods

Specimens of adult caddisflies were collected with ultraviolet light trap during the period June – October 2017. Ultraviolet light was placed above the white pan of 60 cm in diameter filled with 10 cm of water with a few drops of detergent. The ultraviolet light trap was placed on stream bank and operated for approximately six hours starting from the dusk. Collected samples were preserved in 80 % ethanol. The specimens were identified under a stereomicroscope with determination keys from Malicky (2004) and Kumanski (1985, 1988). The collection is deposited at the Laboratory of Zoology of the Faculty of Natural and Mathematical Sciences, University of Prishtina, Kosovo.

Caddisfly specimens were collected at five selected sampling stations of the Drenica River and its tributaries (Table 1). Four sampling stations are located in tributaries of this river and one in the main flow of the river. Drenica River is a left tributary of the Sitnica River with approximately 50 km length. The spring area of the river is in the Carraleva Mountain. The territory of the Drenas Munic-

ipality where this river is located is surrounded by the mountains Berisha, Qyqavica, Kosmaq, Golesh and Blinajë. Data about sampling stations are presented in Table 1.

Table 1. Details about the five sampling stations in the Drenica River and tributaries

Sampling stations		Longitude N	Latitude E	Altitude
S1	Kishnarekë 1	42°32'28.35"	20°52'9.28"	778m
S2	Kishnarekë 2	42°32'54.74"	20°52'25.45"	720m
S3	Nekove	42°31'52.76"	20°53'4.36"	714m
S4	Baicë	42°32'16.73"	20°54'25.74"	627m
S5	Grabove	42°40'27.03"	20°57'40.40"	564m

Results and Discussion

During this investigation twenty-two taxa were found in total (Table 2), belonging to the following families: Rhyacophilidae, Philopotamidae, Hydropsychidae, Psychomyiidae, Polycentropodidae, Limnephilidae, Leptoceridae, Odontoceridae and Goeridae. The highest number of the found species is registered within the families Rhyacophilidae, Hydropsychidae and Leptoceridae (four species each). Families Psychomyiidae, Odontoceridae and Goeridae are represented with only one species each. The highest number of the sampled specimens belongs to the females of the genus *Hydropsyche* and species *Rhyacophila fasciata* Hagen, 1859. Five species during this investigation were sampled as singletons: *Tinodes pallidulus* McLachlan, 1878, *Glyphotaulius pellucidus* Curtis, 1834, *Athripsodes bilineatus* Linnaeus, 1758, *A. cinereus* Retzius, 1783 and *Silo graellsii* Pictet, 1865.

Three species of the Rhyacophilidae found during this investigation are widespread in Kosovo and the Balkan Peninsula while the fourth species, *Rhyacophila fischeri* Hagen, 1859 is considerably rare in Kosovo and in the region and mostly associated with upstream areas of mountainous streams and rivers. *Rhyacophila fasciata* was found in three out of the five sampling stations during this investigation, while the other three species of this family were found only in sampling station S1. *Philopotamus montanus* Donovan, 1813 and *Wormaldia occipitalis* Pictet, 1834 of the Philopotamidae family which were found in one sampling station each belong to the group of the most widespread species in Kosovo and Balkans, associated with almost all upstream courses of rivers and streams, while the third species of this family *Wormaldia subnigra* McLachlan, 1865 is found in Kosovo only in limited number of areas (Ibrahim et al., 2012). Until now in Kosovo it was only known from Mirushë and Llap rivers. All species of the Hydropsychidae, Psychomyiidae and Polycentropodidae found during this investigation were also previously found in Kosovo in numerous rivers and streams. Amongst three species of the Limnephilidae found during this investigation the most interesting find is of *Limnephilus fuscicornis* Rambur, 1842. This species is registered for the first time for Kosovo. During this investigation it

Table 2. The species and associated number of specimens in the five sampling stations

Species	Sampling stations					
	S1	S2	S3	S4	S5	Total
Rhyacophilidae						
<i>Rhyacophila fasciata</i> Hagen, 1859	7	5	31			43
<i>Rhyacophila fischeri</i> Botosaneanu, 1957	3					3
<i>Rhyacophila polonica</i> McLachlan, 1879	3					3
<i>Rhyacophila tristis</i> Pictet, 1834	2		11			13
Philopotamidae						
<i>Philopotamus montanus</i> Donovan, 1813			2			2
<i>Wormaldia occipitalis</i> Pictet, 1834		2				2
<i>Wormaldia subnigra</i> McLachlan, 1865		2				2
Hydropsychidae						
<i>Hydropsyche angustipennis</i> Curtis, 1834				8	2	10
<i>Hydropsyche instabilis</i> Curtis, 1834			5			5
<i>Hydropsyche peristerica</i> Botosaneanu & Marinkovic- Gospodnetic, 1968	8	2				10
<i>Hydropsyche saxonica</i> McLachlan, 1884	4					4
<i>Hydropsyche</i> spp. females	29	6	19	15	12	81
Polycentropodidae						
<i>Cyrnus trimaculatus</i> Curtis, 1834					4	4
<i>Plectrocnemia conspersa</i> (Curtis, 1834)	3					3
Psychomyiidae						
<i>Tinodes pallidulus</i> McLachlan, 1878				1		1
Limnephilidae						
<i>Limnephilus fuscicornis</i> Rambur, 1842					11	11
<i>Micropterna sequax</i> McLachlan, 1875	7					7
<i>Glyphotaulius pellucidus</i> Retzius, 1783					1	1
Leptoceridae						
<i>Athripsodes bilineatus</i> Linnaeus, 1758		1				1
<i>Athripsodes cinereus</i> Curtis, 1834					1	1
<i>Mystacides azureus</i> Linnaeus, 1761					3	3
<i>Mystacides niger</i> Linnaeus, 1758					4	4
Odontoceridae						
<i>Odontocerum albicorne</i> Scopoli, 1763	2					2
Goeridae						
<i>Silo graellsii</i> Pictet, 1865			1			1

was found only in one sampling station which is located at the main course of the Drenica River (S5). *L. fuscicornis* is present in most of the European continent but not very widespread in the Balkan Peninsula (Graf *et al.* 2008). Our finding is apparently the first finding for ecoregion 6. Larvae of this species are mostly associated

with macrophytes, mosses, Characeae, living parts of terrestrial plants, coarse and fine particulate matter (Graf *et al.* 2008). They feed mostly as shredders, grazers and predators. The adults belong to the group with long flying period although during our investigation it has been found only during one month.

Previously the following species were registered from the Drenica River: *Rhyacophila fasciata*, *Synagapetus iridipennis* McLachlan, 1879, *Philopotamus montanus*, *Wormaldia occipitalis*, *Hydropsyche emarginata* Navas, 1923, *Hydropsyche bulbifera* McLachlan, 1878, *Lype reducta* (Hagen, 1868), *Cyrnus trimaculatus* (Curtis, 1834), *Psychomyia pusilla* (Fabricius, 1781), *Anabolia furcata* Brauer, 1857, *Glyphotaulius pellucidus*, *Goera pilosa* (Fabricius, 1775), *Silo piceus* (Brauer, 1857), *Adicella syriaca* Ulmer, 1907, *Athripsodes bilineatus*, *Ceraclea albimacula* (Rambur, 1842), *Ceraclea dissimilis* (Stephens, 1836), *Leptocerus interruptus* (Fabricius, 1775), *Mystacides azureus* (Linnaeus, 1761), *Mystacides niger* (Linnaeus, 1758) and *Oecismus monedula* (Hagen, 1859) (Ibrahim *et al.* 2012).

This study is a further contribution to the knowledge of the composition of the caddisfly fauna of the Drenica River. New records for this river and its tributaries and also one first record for the caddisfly fauna of Kosovo shows that freshwater ecosystems in this area are still not fully investigated.

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