


FIRST RECORD OF *HYDROPTILA KALONICHTIS* MALICKY, 1972 (TRICHOPTERA, HYDROPTILIDAE) FROM THE WESTERN BALKANS

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Musliu, M., Bilalli, A., Geci, D. & Ibrahim, H.: First record of *Hydroptila kalonichtis* Malicky, 1972 (Trichoptera, Hydroptilidae) from the Western Balkans. *Nat. Croat.*, Vol. 33, No. 2, 279-286, Zagreb, 2024.

Adult caddisflies were collected from the Bistrica River and Dërmjak Stream in Kosovo, during June 2020 and June 2023. Thirteen species were found, belonging to the following families: Rhyacophilidae, Glossosomatidae, Hydroptilidae, Philopotamidae, Polycentropodidae, Psychomyiidae, Limnephilidae and Goeridae. *Hydroptila kalonichtis* Malicky, 1972, a rare species described from Greece, is reported for the first time from the Western Balkans. In addition to this, this study contributes to the expansion of the known distribution area of two other rare species endemic to the Balkan Peninsula; *Polycentropus slovenica* (Malicky, 1998) and *Tinodes janssensi* Jacquemart, 1957.

Key words: caddisflies, aquatic insects, Kosovo, rare species, distribution

Musliu, M., Bilalli, A., Geci, D. & Ibrahim, H.: Prvi nalaz vrste *Hydroptila kalonichtis* Malicky, 1972 (Trichoptera, Hydroptilidae) sa zapadnog Balkana. *Nat. Croat.*, Vol. 33, No. 2, 279-286, Zagreb, 2024.

Tijekom lipnja 2020. i lipnja 2023. iz rijeke Bistrice i potoka Dërmjak na Kosovu prikupljene su odrasle jedinke tulara. Pronađeno je 13 vrsta iz sljedećih porodica: Rhyacophilidae, Glossosomatidae, Hydroptilidae, Philopotamidae, Polycentropodidae, Psychomyiidae, Limnephilidae i Goeridae. Prvi puta je za zapadni Balkan zabilježena rijetka vrsta opisana iz Grčke *Hydroptila kalonichtis* Malicky, 1972. Osim toga rad donosi nove spoznaje o rasprostranjenosti još dvije rijetke vrste endemične za Balkanski poluotok – *Polycentropus slovenica* (Malicky, 1998) i *Tinodes janssensi* Jacquemart, 1957.

Ključne riječi: tulari, vodeni kukci, Kosovo, rijetke vrste, rasprostranjenost

INTRODUCTION

The level of knowledge on the distribution, ecology and endemism patterns of caddisflies in the Balkan Peninsula and Southeastern Europe has considerably increased during recent years (e.g. BILALLI *et al.*, 2018, 2019, 2024; CERJANEC *et al.*, 2020; HINIĆ *et al.*, 2020; IBRAHIMI & BILALLI, 2021; IBRAHIMI & KUČINIĆ, 2018; IBRAHIMI *et al.*, 2015, 2017,

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2019a, 2021, 2022, 2023; MUSLIU *et al.*, 2020; PREVISIĆ *et al.*, 2014; SLAVEVSKA-STAMENKOVIĆ *et al.*, 2020, 2021). A considerable effort has been made in these studies to understand the characteristics of caddisfly communities in the spring areas, and upstream sections of freshwater ecosystems. On the other hand, less information is available from the midstream and, especially, the downstream sections of rivers in this part of Europe. Species of the Hydroptilidae family, known as micro-caddisflies, are otherwise noted for their presence in midstream and downstream sections of streams and rivers, although they inhabit, if to a lesser degree, upstream and spring areas as well. As a result of this, data on the presence of species of this family, the level of distribution and ecological patterns in the Balkan Peninsula and Southeastern Europe are still sparse. Species of this family are an important part of freshwater ecosystems, serving as prey for a variety of other aquatic organisms, and also playing an important role in the cycling of organic matter and nutrients. In addition, the presence or absence of Hydroptilidae and other aquatic macroinvertebrates can be used to assess the health of freshwater ecosystems and the quality of their water (MORSE, 2009).

In this paper, we report several species collected recently in Kosovo, which represent rare and previously unrecorded species from this part of Europe and we discuss the occurrence of the Hydroptilidae family in the area.

MATERIAL AND METHODS

Sampling was carried out at two sampling stations: Bistrica e Shalës Mountain (part of the Kopaonik Mountains) and Dërmjak (part of the Karadak Mountain)(Fig. 1). The Kopaonik Mountain is a massif stretching approximately 75 kilometers from northwest to southeast, crossing the territories of Serbia and northern Kosovo. Its highest peak, Pancic Peak, stands at an altitude of 2017 meters, and marks the northernmost point of Kosovo's territory. The Karadak Mountains where the samples were collected (second sampling station) are located in the Hani i Elezit Municipality (near the border with North Macedonia), between the villages Dimcë and Dërmjak at altitudes up to 600 - 1000 meters a.s.l. Sampling station (A) is located on the main stream in the village Bistrica e Shalës, Leposaviq municipality in northern Kosovo (N° 43.008903; E° 20.867273; 566 m a.s.l), while sampling station (B) is located on the main stream above the villages of Dimcë and Dërmjak (N° 42.173038; E° 21.316659; 620 m a.s.l). Adult caddisfly specimens were collected using UV light traps, entomological nets, and hand picking. The sampling was carried out during June 2020 and June 2023. Collected samples were preserved in 80% ethanol. The specimens were identified under a stereomicroscope with determination keys from MALICKY (2004) and KUMANSKI (1985, 1988). Systematic nomenclature follows MORSE (2024).

The collection is deposited in the Laboratory of Zoology of the Faculty of Natural and Mathematical Sciences, University of Prishtina, Kosovo.

RESULTS

During this investigation, we found thirteen species belonging to eight families: Rhyacophilidae, Glossosomatidae, Hydroptilidae, Philopotamidae, Polycentropodidae, Psychomyiidae, Limnephilidae, and Goeridae. Families exclusive to Bistrica e Shalës were: Glossosomatidae, Hydropsychidae, Limnephilidae, and Goeridae, whereas only Rhyacophilidae, Polycentropodidae and Psychomyiidae were found in Dërmjak. Each family

was represented by a single species, except for Hydroptilidae, Hydropsychidae, and Psychomyiidae, each with two species. Dërmjak, yielded four species found only at this station: *Rhyacophila fasciata*, *Polycentropus slovenica*, *Psychomyia pusilla*, and *Tinodes janssensi*. In Bistrica e Shalës, there were seven species found only there: *Agapetus laniger*, *Ithytrichia lamellaris*, *Hydropsyche incognita*, *H. tabacarui*, *Cheumatopsyche lepida*, *Potamophylax pallidus*, and *Silo piceus*. Additionally, *Philopotamus montanus* and *Hydroptila kalonichtis* were found in both sampling stations. The most abundant species was *Psychomyia pusilla*, with 50 specimens, while *Tinodes janssensi* was found with a single male specimen.

Tab. 1. Systematic list of caddisflies collected at two stations: Bistrica e Shalës and Dërmjak, Kosovo during June 2020 and June 2023.

Family: RHYACOPHILIDAE Stephens, 1836

Genus: *Rhyacophila* Pictet, 1834

1. *Rhyacophila fasciata* Hagen, 1859.

Material examined: Dërmjak, KS: (UV) 28.VI.2020. 3 ♂♂

Family: GLOSSOSOMATIDAE Wallengren, 1891

Genus: *Agapetus* Curtis, 1834

2. *Agapetus laniger* Pictet, 1834

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 1 ♂, 1 ♀

Family: HYDROPTILIDAE Stephens, 1836

Genus: *Hydroptila* Dalman, 1819

3. *Hydroptila kalonichtis* Malicky, 1972 *

Dërmjak, KS: (UV) 28.06.2020. 5 ♂♂; Bistrica e Shalës, KS: (UV) 29.VI.2023. 2 ♂♂, 1 ♀.

Genus: *Ithytrichia* Eaton, 1873

4. *Ithytrichia lamellaris* Eaton, 1873

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 1 ♂, 3 ♀♀

Family: PHILOPOTAMIDAE Stephens, 1829

Genus: *Philopotamus* Stephens, 1829

5. *Philopotamus montanus* (Donovan, 1813)

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 5 ♂♂, 3 ♀♀; Dërmjak, KS: (UV) 28.VI.2020. 3 ♂♂, 2 ♀♀.

Family: POLYCENTROPODIDAE Ulmer, 1903

Genus: *Polycentropus* Curtis, 1835

6. *Polycentropus slovenica* (Malicky, 1998)

Material examined: Dërmjak, KS: (UV) 28.VI.2020. 2 ♂♂, 2 ♀♀.

Family: HYDROPSYCHIDAE Curtis, 1835

Genus: *Hydropsyche* Pictet, 1834

7. *Hydropsyche incognita* Pitsch, 1993

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 4 ♂♂, 2 ♀♀

8. *Hydropsyche tabacarui* Botosaneanu, 1960

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 2 ♂♂, 1 ♀

Genus: *Cheumatopsyche* Wallengren, 1891

9. *Cheumatopsyche lepida* (Pictet, 1834)

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 5 ♂♂, 3 ♀♀

Family: PSYCHOMYIIDAE Walter, 1852**Genus: *Psychomyia* Latreille, 1829**10. *Psychomyia pusilla* (Fabricius, 1781)

Material examined: Dërmjak, KS: (UV) 28.VI.2020. 4 ♂♂, 10 ♀♀

Genus: *Tinodes* Curtis, 183411. *Tinodes janssensi* Jacquemart, 1957

Material examined: Dërmjak, KS: (UV) 28.VI.2020. 1 ♂

Family: LIMNEPHILIDAE Kolenati, 1848**Genus: *Potamophylax* Wallengren, 1891**12. *Potamophylax pallidus* (Klapálek 1899)

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 4 ♂♂, 3 ♀♀

Family: GOERIDAE Ulmer, 1903**Genus: *Silo* Curtis, 1830**13. *Silo piceus* (Brauer, 1857)

Material examined: Bistrica e Shalës, KS: (UV) 29.VI.2023. 8 ♂♂, 5 ♀♀

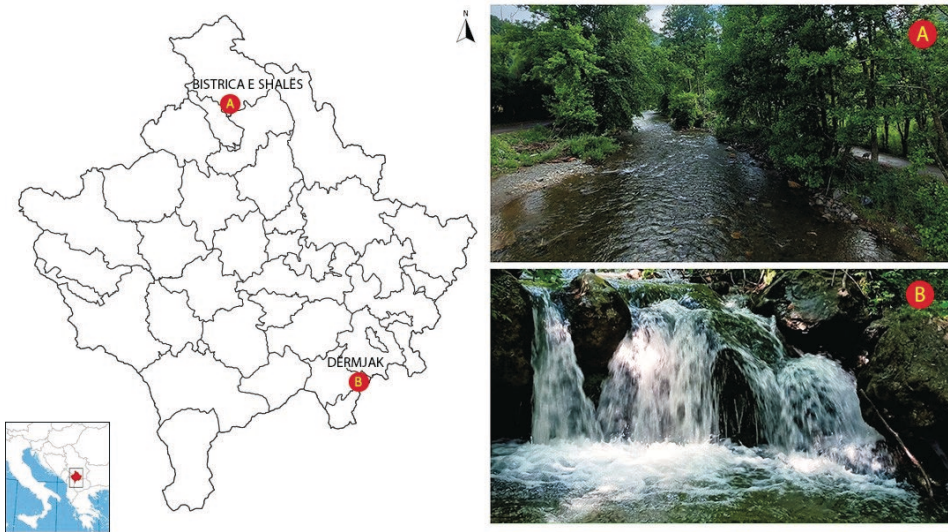


Fig. 1. Sampling sites: A. Bistrica e Shalës and B. Dërmjak

DISCUSSION

Hydroptila kalonichtis (Fig. 2) was until now reported from Bulgaria, Greece, and Turkey (THOMSON, 2023). It was described from Crete in Greece, where it was reported from several localities. In the same year, the species was described as *Hydroptila bureschi* Kumanski, 1972 from Trigradska River which is in the Bulgarian part of the Rhodopes (KUMANSKI, 1972). *H. bureschi* was later synonymized with *H. kalonichtis* by BOTOSANEANU & MALICKY (1978). In Turkey, the species is known from a single locality in Isparta, Antalya (DARILMAZ & SALUR, 2015). The closest locality to the area where we found *H. kalonichtis* is more than 300 km away and thus our investigation contributes greatly to the

expansion of the known distribution area of this species. According to the present knowledge, *H. kalonichtis* seems to have disjunct distribution in the Balkan Peninsula and Asia Minor; however, this may be a result of the species' low populations and of localities in between not having been recorded. In recent years, this species was found from several other localities from Greece (KARAOUZAS & MALICKY, 2015) located in the central part of the country and in Lefkada. From other localities, *H. kalonichtis* was reported during spring and summer, which corresponds well with the time (June) when we found it in Kosovo.

Rhyacophila fasciata, found during this investigation is a rather widespread species in Europe and adjacent areas. Recently however, different populations of this species throughout Europe have been reevaluated and some new species have been described. One of the newly described species is *Rhyacophila macedonica*, which occurs generally in the Western Balkans (VALLADOLID *et al.*, 2022). One of the sampling stations was in the Dër-majk (Karadak Mountains). Surprisingly the species at that time was found in sympatry

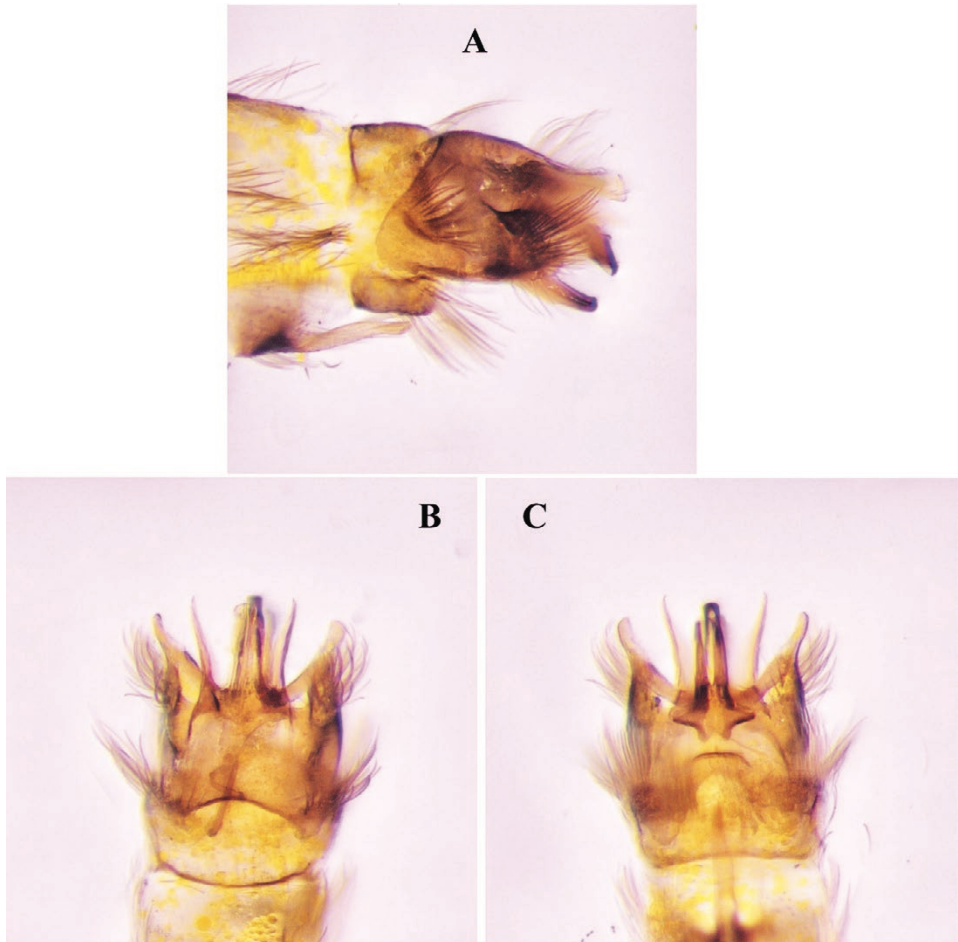


Fig. 2. Male genitalia of *Hydroptila kalonichtis*: A – lateral view; B = dorsal view and C – ventral view

with the closely related *Rhyacophila fasciata* in one of the localities in the Karadak Mountain. The presence of both species in this area is supported by our current study where we found three male specimens of *R. fasciata* at the Dërmjak stream.

Tinodes janssensii is a rare caddisfly species endemic to the Balkan Peninsula. It was described from Greece (MALICKY, 2005) and outside of Greece, it has only been recorded from a single locality in Albania (CHVOJKA, 1997), and from a few localities from Kosovo (IBRAHIMI et al., 2016) and Bulgaria (KUMANSKI, 1985). Although in Greece and Bulgaria it has been documented as being active from April to November, in Kosovo, it has been observed solely during May, June, July, and September (IBRAHIMI et al., 2016). During our investigation, we found it in Dërmjak during June 2020. In Kosovo, this species inhabits the upstream areas of small streams, primarily within or in close proximity to forested regions and away from human disturbance (IBRAHIMI et al., 2016).

Polycentropus slovenica, a rare species, was described from Slovenia (MALICKY, 1998). Its presence in Kosovo was first documented in 2014 (IBRAHIMI et al., 2014), with subsequent recordings in the Bjeshkët e Nemuna and Karadak Mountain regions in later years (IBRAHIMI et al., 2019b).

This study contributes to the knowledge of the Trichoptera distribution and diversity, particularly the Hydroptilidae family, across the Balkan Peninsula, and offers valuable insights into the ecological roles and interactions of hydroptilids in freshwater ecosystems.

ACKNOWLEDGMENTS

This study was realized within the grant “Refuge areas of aquatic insect endemism in Kosovo and the Balkans in function of environmental protection” financed by University of Prishtina, grant holder Halil Ibrahim.

Received March 19, 2024

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