**FIRST RECORD OF *BERAEA PULLATA* (CURTIS, 1834) (INSECTA, TRICHOPTERA) FOR ALBANIA**Halil IBRAHIMI^{1*} and Mladen KUČINIĆ²

¹Department of Biology, Faculty of Mathematical and Natural Sciences,
University of Prishtina “Hasan Prishtina”,
“Mother Teresa” p.n., 10 000 Prishtina, Republic of Kosovo

²Department of Biology (Laboratory of Entomology),
Faculty of Science, University of Zagreb,
Rooseveltov trg 6, 10000 Zagreb, Croatia

* Corresponding author halil.ibrahimi@uni-pr.edu

Abstract - *Beraea pullata*, a species of the family Beraeidae, is present all over European continent but with only few records from the Balkan Peninsula. We report this species for the first time from Albania, more precisely from Bjeshkët e Nemuna Mountains. Other sympatric species with *Beraea pullata* in investigated locality are: *Rhyacophila fasciata*, *Philopotamus montanus* and *Hydropsyche* spp. *Beraea pullata* is the fifth species of the family Beraeidae currently known for Albania.

KEY WORDS: *Beraeidae*; rare species; aquatic insects; Balkan Peninsula

Izvešček – PRVA NAJDBA VRSTE *BERAEA PULLATA* (CURTIS, 1834) (INSECTA, TRICHOPTERA) V ALBANIJI

Beraea pullata, vrsta iz družine Beraeidae, je prisotna vsepovsod po evropski celini, a le z malo podatki z balkanskega polotoka. Prvič poročamo o tej vrsti v Albaniji, natančneje v gorovju Bjeshkët e Nemuna. Druge z vrsto *Beraea pullata* simpatrične vrste na preiskanem najdišču so *Rhyacophila fasciata*, *Philopotamus montanus* in *Hydropsyche* spp. *Beraea pullata* je peta vrsta družine Beraeidae, znana za Albanijo doslej.

KLJUČNE BESEDE: *Beraeidae*; redke vrste; vodne žuželke; Balkanski polotok

Introduction

The family Beraeidae is a small family composed of 7 genera and more than 50 species. It reaches its highest diversity in the western Palearctic region (Holzenthal *et al.* 2007). In European continent are present more than 30 species belonging to five genera: *Beraea* Stephens 1836, *Beraeamyia* Mosely 1936, *Beraeodes* Eaton 1867, *Beraeodina* Mosely 1931 and *Ernodes* Wallengren 1891 (Malicky 2004). Larvae of this family are cold stenoterm most commonly found in small streamlets, but also spring areas where they live amongst fallen leaves, roots of vegetation and also nearby shore vegetation. Larval cases of species of this family are usually around or less than 1 cm in length, narrowing at the end and made by small sand grains. Adults emerge from spring to autumn (Graf *et al.* 2008).

The genus *Beraea* is represented by more than 20 species in the European fauna. *Beraea pullata* is present across the whole European continent (Malicky 2013).

The goal of this paper is to contribute to the knowledge of the distribution of caddisflies in Albania which still remains incomplete and also to give an overview about distribution patterns of *Beraea pullata* in Southeastern Europe.

Material and methods

Data sampling and processing

Adult caddisfly specimens were collected with entomological net during June 2013. Collected samples were preserved in 80 % ethanol. The specimens were identified under a stereomicroscope with determination keys by 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.

Study area

The sampling site is located nearby Sylbicë village in Bjeshkët e Nemuna Mountains in Albania close to the state border with the Republic of Kosovo. The sampling site (Figure 1) is located in a stream originating from this range of mountains (42.512371°N, 20.059276°E, and 1451 m above sea level). The streambed is moderately shaded by nearby vegetation and is consisted by gravel, sand and stones of different sizes.

Results and Discussion

Material examined:

Family Beraeidae

Beraea Stephens 1836

***Beraea pullata* (Curtis, 1834)**

One adult male specimen was caught with entomological net on 21.06.2013.

Other species sympatric with *Beraea pullata* in this sample are: *Rhyacophila fasciata* Hagen, 1859 (3♂♂), *Philopotamus montanus* (Donovan, 1813) (3♂♂) and *Hydropsyche* spp. (5♀♀).

During this investigation we found *Beraea pullata* for the first time in the Republic of Albania. We found adult of this species close to the hypocrenal zone of a streamlet in Bjeshkët e Nemuna. In some countries (Fig. 2) such as Slovenia, *Beraea pullata* is widespread (Urbanič 2003) while in most of the countries surrounding Albania it belongs to the group of rare species. In Macedonia it was only found for the first time recently (Oláh and Kovacs 2014) and Kozuf Mountains still represents the only locality in this country where it is found. In Kosovo it is currently known from two localities only (Ibrahimi *et al.* 2014, Ibrahimi and Thaqi 2016), both of them in Bjeshkët e Nemuna Mountains and one of them in Lloqan, nearby the locality where we found it for the first time in Albania during this investigation. *Beraea pullata* is registered in the Polish Red list of Trichoptera (Buczynska 2008), in France it is assessed as a rare species (Santoul *et al.* 2005) and in second category of endangerment of the Red List of Caddisflies of Berlin (Mey 2005).

Larvae of *Beraea pullata* usually prefer eucrenal and hypocrenal zone but are found at lesser degree in epirhithral zone as well. Although reported from madicol microhabitats (Graf *et al.* 2008), some investigations reveal that larvae of *B. pullata* show no strong preferences for tested microhabitats (Urbanič *et al.* 2005). Adults are reported to emerge during the spring and summer (Graf *et al.* 2008) and were usually found to be active during the day and also during the night (Ibrahimi and Thaqi 2016; Ibrahimi *et al.* 2014). However, during our investigation and other investigations in neighboring countries of Albania, adults of this species were found during June-July period only. Regarding altitude preferences, this species is reported from wide variety of altitudes ranging from colline to subalpine areas (Graf *et al.* 2008). During this investigation and other records (Oláh and Kovacs 2014, Ibrahimi and Thaqi 2016; Ibrahimi *et al.* 2014) from neighboring countries of Albania, *Beraea pullata* was found in an altitude range between 1450 and 2000 m.

Beraea pullata is the fifth species of the Beraeidae family currently known from Albania. Previously these species were recorded: *Beraea zawadil* Malicky, 1977, *Beraeamyia schmidi* Botosaneanu, 1960, *Ernodes articularis* (Pictet, 1834) and *Ernodes skipetarum* Malicky, 1986.

The caddisfly fauna of Albania is still insufficiently known with several more detailed investigations carried out during the last decade. This investigation contributes to the inventory of the caddisfly fauna of Albania and also gives further ecological and geographical notes on the *Beraea pullata*.

Acknowledgements

This paper is an outcome of the project “The Drusinae (Insecta: Trichoptera) in a world of global change” (project number P23687-B17, PI: J. Waringer) funded by the Austrian Science Fund FWF). The authors would like to thank Gorazd Urbanič whose comments significantly improved this manuscript.



Fig. 1: Sampling site in Sylbicë village in Bjeshtë e Nemuna in Albania.

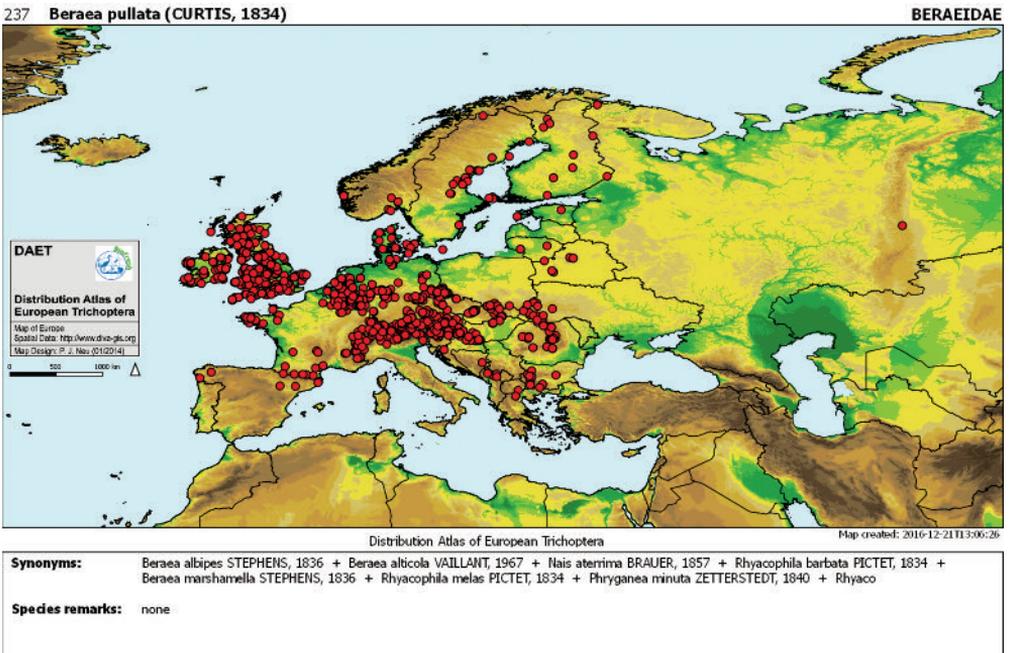


Fig. 2: Distribution of *Beraea pullata* in Europe prior to the current investigation, according to the Distribution Atlas of European Trichoptera (DAET 2017).

References

- Buczynska E.**, 2008: The caddisflies (Trichoptera) of springs in the Roztocze region (south-eastern Poland). *Annales Universitatis Mariae Curie-Sklodowska Lublin - Polonia*, LXIII(2): 13-22.
- DAET**, 2017: Distributional Atlas of European Trichoptera. <<http://project.freshwaterbiodiversity.eu>, accessed at: 2017.05.15>.
- Graf W., Murphy J., Dahl J., Zamora-Muñoz C., López-Rodríguez M.J.**, 2008: Distribution & ecological preferences of European freshwater organisms. Vol. 1. Trichoptera. Pensoft Publishers, Sofia, Bulgaria, 389 pp.
- Holzenthal R.W., Blahnik R.J., Prather A.L., Kjer, K.M.**, 2007: Order Trichoptera Kirby, 1813 (Insecta), Caddisflies, p. 639- 698. In: Zhang, Z.-Q. & Shear, W.A. (Eds.), Linnaeus Tercentenary: Progress in Invertebrate Taxonomy. *Zootaxa*, 1668: 1-766.
- Ibrahimi H., Kućinić M., Gashi A., Grapci-Kotori L.**, 2014: Trichoptera Biodiversity of the Aegean and Adriatic Sea Basins in the Republic of Kosovo. *Journal of Insect Science*, 14(1):1-8.
- Ibrahimi H., Thaqi A.**, 2016: First record of *Limnephilus centralis* Curtis, 1834 (Insecta: Trichoptera) from the Republic of Kosovo. *Acta Entomologica Slovenica*, 24(2): 209-214.
- 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.
- Malicky H.**, 2004: Atlas of European Trichoptera. 2nd Edition, Springer, Netherlands, 359 pp.
- Malicky, H.**, 2013: Trichoptera. Fauna Europaea version 2.6.2. <http://www.faunaeur.org> (27.07.2016).
- Mey W.**, 2005: Rote Liste und Gesamtartenliste der Köcherfliegen (Trichoptera) von Berlin. In: Der Landesbeauftragte Für Naturschutz und Landschaftspflege / Senatsverwaltung Für Stadtentwicklung (Hrsg.): Rote Listen der gefährdeten Pflanzen und Tiere von Berlin. CD-ROM
- Oláh J., Kovacs T.**, 2014: New species and records of Balkan Trichoptera III. *Folia Historico-Naturalia Musei Matraensis*, 38:97-131.
- Santoul F., Figuerola J., Mastrotillo S., Cereghino R.**, 2005: Patterns of rare fish and aquatic insects in a southwestern French river catchment in relation to simple physical variables. *Ecography*, 28: 307-314.
- Urbanič G.**, 2003: New records to the caddisfly (Trichoptera) fauna of Slovenia, II. *Acta Entomologica Slovenica*, 11(1): 79-83.
- Urbanič G., Toman M. J., Krušnik C.**, 2005: Microhabitat type selection of caddisfly larvae (Insecta: Trichoptera) in a shallow lowland stream. *Hydrobiologia*, 541: 1-12.

Received / Prejeto: 6. 6. 2017

