

New country data of some mayflies (Ephemeroptera) from Europe

TIBOR KOVÁCS & DÁVID MURÁNYI

ABSTRACT: Twelve species: *Siphonurus lacustris* Eaton, 1870, *Baetis alpinus* (Pictet, 1843), *B. digitatus* Bengtsson, 1912, *B. kozufensis* Ikononov, 1962, *B. liebenauae* Keffermüller, 1974, *B. lutheri* Müller-Liebenau, 1967, *B. melanonyx* (Pictet, 1843), *B. muticus* (Linnaeus, 1758), *Centroptilum luteolum* (Müller, 1776), *Habrophlebia lauta* Eaton, 1884, *Ephemera lineata* Eaton, 1870, and *Caenis strugaensis* Ikononov, 1961 are new to the fauna of Albania. Five species: *Baetis liebenauae*, *B. lutheri*, *Cloeon simile* Eaton, 1870, *Serratella ikononovi* Puthz, 1971 and *Caenis strugaensis* are new to the fauna of Montenegro. *Ecdyonurus insignis* (Eaton, 1870), and *Brachycercus harrisellus* Curtis, 1834 are new to the Croatian, while *Serratella albai* (González del Tánago & García de Jalón, 1983) to the Portuguese, and *Baetis beskidensis* Sowa, 1972 to the Romanian fauna. In addition, occurrence of *Serratella ikononovi* is confirmed for Albania.

Introduction

In the present paper we publish new country records from our Ephemeroptera material collected during the past 14 years. The work is based on the new European monography by BAUERNEFIND & SOLDÁN (2012), that summarises mayfly distribution by countries. We refer to this book in our distributional data and nomenclature, with additions and corrections in some cases.

Material and methods

For collecting methods see KOVÁCS et al. (1998). The material has been preserved in 70% ethanol, and housed in the Hungarian Natural History Museum (Budapest) and the HNHM Mátra Museum (Gyöngyös).

Abbreviations: FZ = Zoltán Fehér, JP = Péter Juhász, KaT = Tomislav Karanovic, KT = Tibor Kovács, MD = Dávid Murányi, MG = Gábor Magos, PG = Gellért Puskás, PV = Vladimir M. Pešić, UL = László Urbán; Hungarian Natural History Museum, Budapest = (HNHM), Mátra Museum of the Hungarian Natural History Museum, Gyöngyös = (MM).

Results

SIPHONURIDAE Ulmer, 1920

Siphonurus lacustris Eaton, 1870 – **Albania**, Malësi e Madhe district, Bajzë, Syri i Hurdan spring lakes near Shkodër Lake, N42°16.299', E19°23.941', 10 m, 17.06.2012, 2 larvae, FZ-KT-MD (MM: 2012-95) – Shkodër district, Prokletije Mts, Mollë, Shallë River at its influence to Koman Lake, N42°11.982', E19°49.121', 180 m, 18.06.2012, 2 larvae, FZ-KT-MD (MM: 2012-99). – New to Albania.

Baetis alpinus (Pictet, 1843) – **Albania**, Tropojë district, Lekbibaj, Lekbibaj River at its influence to Koman Lake, N42°16.532', E19°56.235', 180 m, 18.06.2012, 1 larva, FZ-KT-MD (HNHM: 2012/36). – New to Albania.

Baetis beskidensis Sowa, 1972 – **Romania**, Oncești: Iza River, N47°50'41.9", E23°59'19.7", 290 m, 18.10.2004, 9 larvae, JP-Béla Kiss-Zoltán Müller (MM: A2004-68). – New to Romania.

Baetis digitatus Bengtsson, 1912 – **Albania**, Sarandë district, Shkallë, Pavillë River NW of the village, N39°41.607' E20°06.992', 20 m, 12.10.2013, 1 larva, JP-KT-MD-PG (MM: 2013-108). – New to Albania.

Baetis kozufensis Ikononov, 1962 – **Albania**, Shkodër district, Prokletije Mts, Mollë, Shallë River at its influence to Koman Lake, N42°11.982', E19°49.121', 180 m, 18.06.2012, 14 larvae, FZ-KT-MD (MM: 2012-99). – New to Albania. BAUERNFEIND & SOLDÁN (2012) treated this species as *species inquirenda*, because not all stages are known, and they noted some minor contradictions between the original description and the original figures. However, the rather distinct habitus of our specimens fits well to IKONOMOV's (1962) plate 16 and morphological details (pls 17–19), leaving no doubt about their conspecificity.

Baetis liebenauae Keffermüller, 1974 – **Albania**, Delvinë district, Gjerë Mts, Muzinë, Syri i Kaltër, karst springs SW of the village, 155 m, N39°55.286' E20°11.330', 13.10.2013, 6 larvae, JP-KT-MD-PG (MM: 2013-110) – Shkodër district, Omarë, spring fed lake and its outlet W of the village, N42°09.226', E19°27.827', 10 m, 17.06.2012, 8 larvae, FZ-KT-MD (MM: 2012-96). – **Montenegro**, Danilovgrad municipality, Daljam, Mareza Channel beneath the village, N42°28.461', E19°10.799', 30 m, 16.06.2012, 6 larvae, FZ-KaT-KT-MD-PV (MM: 2012-91). – New to Albania and Montenegro.

Baetis lutheri Müller-Liebenau, 1967 – **Albania**, Tiranë district, Gropë Mts, Shëngjergj, Erzen River below the village, N41°19.580', E20°04.736', 580 m, 21.06.2012, 1 larva, FZ-KT-MD (HNHM: 2012/63). – **Montenegro**, Podgorica municipality, Dinoša, Cijevna River at the village, N42°24.382', E19°20.990', 80 m, 15.06.2012, 1 larva, FZ-KT-MD (MM: 2012-89). – New to Albania and Montenegro. BAUERNFEIND & SOLDÁN (2012) enumerated it from "(YU)", the former Yugoslavia, because it was reported from Serbia with question mark (PUTHZ 1980: p. 345).

Baetis melanonyx (Pictet, 1843) – **Albania**, Bulqizë district, Çermenikë Mts, Ballenjë, open stream SW of the settlement, N41°21.621', E20°14.472', 1365 m, 20.06.2012, 2 larvae, FZ-KT-MD (HNHM: 2012/56) – Tiranë district, Gropë Mts, Bizë, open stream W of the settlement, N41°20.096', E20°10.003', 1265 m, 20.06.2012, 1 larva, FZ-KT-MD (HNHM: 2012/54). – New to Albania.

Baetis muticus (Linnaeus, 1758) – **Albania**, Bulqizë district, Çermenikë Mts, brooks in open forest beneath Mt. Kaptinë, N41°23.199', E20°17.338', 1600 m, 21.06.2012, 1 larva, FZ-KT-MD (MM: 2012-114); 27.05.2013, 1 larva, JP-KT-MG-PG (MM: 2013-19) – Librazhd district, Mirakë, Shkumbin River at Kamarë Bridge, N41°09.806', E20°13.803', 190 m, 22.06.2012, 1 larva, FZ-KT-MD (MM: 2012-117). – New to Albania.

Centroptilum luteolum (Müller, 1776) – **Albania**, Tiranë district, Gropë Mts, Bizë, open stream W of the settlement, N41°20.096', E20°10.003', 1265 m, 20.06.2012, 1 larva, FZ-KT-MD (MM: 2012-111). – New to Albania.

Cloeon simile Eaton, 1870 – **Montenegro**, Bar municipality, Rumija Mts, Bes, Skadar Lake, N42°08'57.8", E19°13'57.9", 7 m, 29.05.2009, 8 larvae, KT-MG-UL (MM: 2009-63). – New to Montenegro.

HEPTAGENIIDAE Needham, 1901

Ecdyonurus insignis (Eaton, 1870) – **Croatia**, Split-Dalmácia county, between Podgrade and Slime, Cetina River, N43°25'55.5", E16°52'15.1", 57 m, 18.08.2011, 1 larva, Iván Jákó-KT (MM: 2011-110). – New to Croatia.

LEPTOPHLEBIIDAE Banks, 1900

Habrophlebia lauta Eaton, 1884 – **Albania**, Bulqizë district, Çermenikë Mts, brooks in open forest beneath Mt. Kaptinë, N41°23.199', E20°17.338', 1600 m, 21.06.2012, 1 larva, FZ-KT-MD (HNHM: 2012/58). – New to Albania.

EPHEMERIDAE Latreille, 1810

Ephemera lineata Eaton, 1870 – **Albania**, Sarandë district, Shkallë, Pavillë River NW of the village, N39°41.607' E20°06.992', 20 m, 12.10.2013, 1 larva, JP-KT-MD-PG (MM: 2013-108). – New to Albania.

EPHEMERELLIDAE Klapálek, 1909

Serratella albai González del Tánago & García de Jalón, 1983 – **Portugal**, Guarda district, Sandomil, Rio Alvo W of the village, N40°21.087', E7°48.004', 275 m, 17.07.2000, 3 larvae, MD (MM: A2000-1). – New to Portugal. BAUERNFEIND & SOLDÁN (2012) cite this species from Portugal, referring to GONZÁLEZ DEL TÁNAGO & GARCÍA DE JALÓN (1983). However, that paper reports only data from the Spanish part of the Duero basin.

Serratella ikonovski Puthz, 1971 – **Albania**, Tiranë district, Gropë Mts, Shëngjergj, Erzen River below the village, N41°19.580', E20°04.736', 580 m, 21.06.2012, 8 larvae, FZ-KT-MD (5 HNHM: 2012/63, 3 MM: 2012-116). – **Montenegro**, Kolasin municipality, Komovi Mts, Dobri Lug, Sjevernica River, N42°42'26.2", E19°23'03.5", 205 m, 07.05.2003, 1 larva, JP-KT-Pertti Sevola-PV (MM: 2003-57) – Podgorica municipality, Dinoša, Cijevna River at the village, N42°24.382', E19°20.990', 80 m, 29.05.2009, 2 larvae, KT-MG-UL (MM: 2009-66); 15.06.2012, 3 larvae, FZ-KT-MD (MM: 2012-89). – New to Montenegro. BAUERNFEIND & SOLDÁN (2012) enumerate it "(AL)" from Albania, because it was reported from the country with question mark (PUTHZ 1980: pp. 346, 352). The present data confirms its Albanian occurrence.

CAENIDAE Newman, 1853

Brachycercus harrisellus Curtis, 1834 – **Croatia**, Virovitica-Podravina county, Vojlovica, Vojlovica River at the bridge of road No. 2, N45°36.056', E17°50.051', 120 m, 24.05.2012, 1 larva, KT-PG (MM: 2012-57). – New to Croatia.

Caenis strugaensis Ikononov, 1961 – **Albania**, Shkodër district, Omarë, spring fed lake and its outlet W of the village, N42°09.226', E19°27.827', 10 m, 17.06.2012, 1 larva, FZ-KT-MD (HNHM: 2012/27). – **Montenegro**, Bar municipality, Rumija Mts, Bes, Skadar Lake, N42°08'57.8", E19°13'57.9", 7 m, 29.05.2009, 8 larvae, KT-MG-UL (MM: 2009-63) – Virpazar, Tanki Rt, reedy shore of Skadar Lake, N42°15.875', E19°06.469', 10 m, 15.06.2012, 5 larva, FZ-KaT-KT-MD-PV (HNHM: 2012/13) – Cetinje municipality, Karuč, Karuč Spring by the Skadar Lake, N42°21.521', E19°06.375', 10 m, 15.06.2012, 1 larva, FZ-KaT-KT-MD-PV (HNHM: 2012/10) – Ulcinj municipality, Šas, reedy shore of Šasko Lake at a restaurant, N41°58.607', E19°20.321', 5 m, 16.06.2012, 1 larva, FZ-KT-MD (MM: 2012-93). – New to Albania and Montenegro. Fig. 1 shows the pattern and size differences between mesonotum of *Caenis robusta* and *C. strugaensis* female larvae. It is worth to mention that specimens from Montenegro are small as figured, while the ones from Albania are of same size like *C. robusta*.

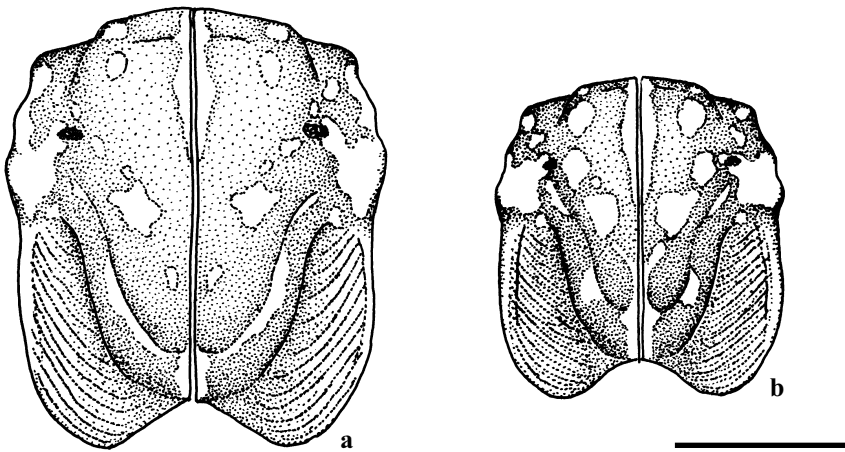


Fig. 1. Mesonotum of female larvae:

a = *Caenis robusta* (Hungary), b = *Caenis strugaensis* (Montenegro); scale: 1 mm

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References

- BAUERNFEIND, E. & SOLDÁN, T. (2012): The Mayflies of Europe (Ephemeroptera). – Apollo Books, Ollerup, Denmark, 781 pp.
- GONZÁLEZ DEL TÁNAGO, M. & GARCÍA DE JALÓN, D. (1983): New Ephemerellidae from Spain (Ephemeroptera). – Aquatic Insects, 5(3): 147–156.

- KOVÁCS, T., AMBRUS, A., BÁNKUTI, K. & JUHÁSZ, P. (1998): New Hungarian mayfly (Ephemeroptera) species arising from collectings of larvae. – *Miscellanea zoologica hungarica*, 12: 55–60.
- PUTHZ, V. (1980): Ergebnisse der Albanien-Expedition 1961 des Deutschen Entomologischen Institutes. 94. Beitrag: Ephemeroptera. – *Beiträge zur Entomologie*, 30(2): 343–355.

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

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

