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Caddisflies of the Beshtau Mountains (Russia, Stavropol Krai)

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Introduction

The recent list of caddisfly species in the fauna of Russia includes 28 families and 651 species (IVANOV 2011, IVANOV & MELNITSKY 2012, MELNITSKY & IVANOV 2017, SALOKANNEL & IVANOV 2020). According to the recent data, 155 species of caddisflies were recorded in the Caucasus (IVANOV & MELNITSKY 2012). Various parts of the Caucasus region have dissimilar faunas of Trichoptera, although the zonation of this region is far from completion. For example, the West Caucasus region has very different borders in various publications (KORNOUKHOVA 1986, GRIGORENKO & al. 2007). Despite many decades of investigations, the local faunas of the Caucasus are still known inadequately: For example, the North Ossetia – Alania Republic provided much more complete material than the adjacent areas (KORNOUKHOVA 1986) and its comparison to the neighbouring Republic of Ingushetia (NÓGRÁDI & UHERKOVICH 1992) reveals apparent differences.

The study area of our researches belongs to the Stavropol Krai located in the North Caucasus region in Southern Russia. The Caucasian Mineral Waters region consists of Kislovodsk, Pyatigorsk, Yessentuki and Zheleznovodsk municipal areas. These small towns are unique resorts in the oldest resort region of Russia in the southern part of the Stavropol Region. The towns are located in the northern slopes of the Greater Caucasus Mountain Range, only 90 km from Mt Elbrus, and almost equidistant between the Black and Caspian Seas. This territory of 2000 square kilometres has more than 120 mineral springs of various types.

There are 17 laccolith (unformed volvano) mountains in the Caucasian Mineral Waters region. Mount Beshtau is the highest peak in the region. Beshtau has five peaks; the height of its main peak above sea level is 1401m. The diameter of Beshtau is about eight kilometers. Its flora and fauna of Beshtau is characterised by species diversity. There are relict forests with oaks (Quercus), beeches (Fagus), hornbeams (Carpinus) and ash (Fraxinus) trees on the slopes of the mountains with subalpine meadows at the summits. Several streams, springs and the rivers Dzhemukha and Kuchuk are located on the slopes. The length of the river Dzhemukha is 24 km, the drainage basin is 187 km^3. The length of the river Kuchuk is 24 km, the drainage basin is 110 km^3. These rivers flow into the river Kuma. The river Kuma flows northeast into the Caspian Sea, it is 802 km long and has a drainage basin of 33500 km^3.

This publication presents data on small collections from the vicinity of Zheleznovodsk and Mt Beshtau taken during 1993 – 2020. As a result, 17 species from 10 families of caddisflies were found on Mt Beshtau. All materials are deposited in the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia. The authors are grateful to Eugene Tsvetkov, who kindly provided the material from locality 5 for study.

Sampling localities:

Locality 1: Russia, Stavropol Krai, Zheleznovodsk, Mt Beshtau; river Dzhemuha, 44°07'47"N, 43°01'53"E, 609m, UV light traps, 4.8.2020, leg. S.I.Melnitsky & A.V.Melnitskaya.

Locality 2: do., river Kuchuk, 44°07'48"N, 43°01'28"E, 609m, UV light traps, 6.8.2020, leg. S.I.Melnitsky & A.V.Melnitskaya.

Locality 3: do., 3 km S of Zheleznovodsk, spring at 44°06'38"N, 43°01'39"E, 839m, 21.-29.7.1993, leg. S.I.Melnitsky.

Locality 4: do., 2 km SW Zheleznovodsk, small spring at 44°07'22"N, 43°00'27"E, 708m, by day, 1.-10.9.1994, leg. S.I.Melnitsky.

Locality 5: do., Mt Beshtau at 650-700m, light traps, 8.8.2006, leg. E.V. Tsvetkov.

Locality 6: do., river Dzhemuha, 600m, by day, 21.-25.7.1993, leg. S.I.Melnitsky.

Locality 7: do., 2 km SW Zheleznovodsk, spring at 830m, by day, 1.-10.8.1999, leg. S.I.Melnitsky & A.V.Melnitskaya.

List of the distribution areas with abbreviations

E – European Russia: KL – Kola Peninsula, KA – Karelia, LE – Leningrad and St. Petersburg regions, KO – Komi Republic, CV – Central Volga region, BS – Central Black Soil Region, RO – Rostov and Volgograd regions, AS – Astrakhan region, UR – Ural Mountaions. S – Siberia, WS – Western Siberian Lowland, CS – Central and Northern regions of the Krasnoyarsk Province, YA – Yakutia, AL – Altai, SN - Sayan Mountains including Tuva, PB – Pribaikalie (Irkutsk Region and South Buryatia). FE – Far East Russia: CU – Chukotka Peninsula, MG – Magadan Region, KM – Kamchatka Peninsula, KH – Khabarovsk Province, Jewish Autonomous Region and Amur Region, SP – South Primorye, KU – Kuril Islands. K – The Caucasus: PC – Predcaucasia, namely the northern piedmonts of Caucasus, WT – Western Caucasus, including the Novorossiysk faunistic region to the NW of the Mikhailovsky Pass, NC – Central Caucasus: the northern mountainside of the Caucasus Main Ridge with rivers flowing to the north, to Predcaucasia and Caspian Sea and the northern mountain ranges from the borders of the Novorossiysk faunistic region to the Ingush Republic, EC – mountains of Chechnya and Dagestan, SC – the southern mountainside of the Caucasus Main Ridge with rivers flowing to south, south-west from the vicinities of Tuapse to Sochi, and also the ultimate south-west of Dagestan.

List of the sampled species

Philopotamidae STEPHENS, 1829

Wormaldia khourmai SCHMID, 1959: L3 1♂, 4♀; L4 4♂, L7 1♂. – Distribution: Russia (K: WT, NC, EC, SC), Bulgaria, Turkey, Iran.

Hydropsychidae CURTIS, 1835

Hydropsyche acuta MARTYNOV, 1909: L1 1♂, 4♀, L2 6♂, 1♀. – Distribution: Russia (K: PC, NC, EC, SC), Bulgaria, Turkey, Iran.

Hydropsyche contubernalis MCLACHLAN, 1865: L1 1♂, 1♀. – Distribution: Russia (E: KA, LE, KO, CV, BS, RO, AS, UR; K: PC; S: WS, CS, YA, AL, PB; FE: SP), Europe, Turkey, Kazakhstan, Uzbekistan.

Polycentropodidae ULMER, 1903

Neureclipsis bimaculata (LINNAEUS, 1758): L3 1♂. – Distribution: Russia (E: KL, KA; LE, KO, CV, BS, RO, AS, UR. K: PC, SC. S: WS, AL, PB. FE: CU, MG, KM, KH, SP), Europe, USA.

Plectrocnemia latissima MARTYNOV, 1913: L1 5♂, 4♀, L3 1♀, 1 pupa, 2 larvae. – Distribution: Russia (K: PC, WT, NC, EC, SC), Abkhazia, Georgia, Iran, Turkey.

Polycentropus auriculatus MARTYNOV, 1926: L2 1♀, L3 1♂. – Distribution: Russia (K: WT, NC, SC), Georgia.

Psychomyiidae WALKER, 1852

Psychomyia pusilla (FABRICIUS, 1781): L3 4♂. – Distribution: Russia (E:KA, LE, BS. K: PC, WT, NC, EC, SC), Europe, Turkey, Iran, Northern Africa.

Rhyacophilidae STEPHENS, 1836

Rhyacophila nubila ZETTERSTEDT, 1840: L3 1♂. – Distribution: Russia (E: KL, KA, LE, KO, UR, CV. K: PC, NC, EC, SC. S: WS), Europe, Turkey, Iraq.

Glossosomatidae WALLENGREN, 1891

Agapetus oblongatus MARTYNOV, 1913: L3 3♂, 12♀, L5 1♂, L7: larvae. – Distribution: Russia (K: NC, EC, SC), Georgia.

Agapetus caucasicus MARTYNOV, 1913: 1♂ pupa. – Distribution: Georgia, Greece, Cyprus, Turkey, Iran. New species for Russia.

Lepidostomatidae ULMER, 1903

Lepidostoma sp.: L1 1♀.

Apataniidae WALLENGREN, 1886

Apatania stigmatella (ZETTERSTEDT, 1840): L3 1♂, 1♀. – Distribution: Russia (E: KL, KA, UR; K: NC; S: AL, PB; FE: CU, KM, MG, KH, KU), Northern Europe, Mongolia, Kazakhstan. The species is known in the Caucasus only from one locality.

Limnephilidae KOLENATI, 1848

Limnephilus affinis CURTIS, 1834: L6 1♂. – Distribution: Russia (E: KL, KA, LE, BS, RO, AS; K: PC, WT, NC, EC, SC; S: AL), Europe, Turkey.

Limnephilus flavicornis (FABRICIUS, 1787): L5 1♂. – Distribution: Russia (E: KL, KA, KO, BS, CV, RO, UR; K: NC; S: WS, AL, PB), Europe, Kazakhstan, Turkey.

Potamophylax latipennis (CURTIS, 1834): L3 numerous pupae and larvae. – Distribution: Russia (E: KL, KA, LE, KO, BS; K: NC, SC; S: SN,CS; FE: SP), Europe, Turkey.

Potamophylax luctuosus (PILLER & MITTERPACHER, 1783): L3 larvae. – Distribution: Russia (K: NC, SC), Europe.

Sericostomatidae STEPHENS, 1836

Schizopelex cachetica MARTYNOV, 1913: L2 1♂, 1♀; L6 2♂, 1♀. – Distribution: Russia (K: WT, NC, SC), Georgia, Turkey.

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