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**FIRST DATA ON CADDISFLIES (TRICHOPTERA) FROM
THE MOUNTAINOUS SHORIA IN WESTERN SIBERIA**

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Summary. An annotated list of 29 species from 18 genera and 10 families of Trichoptera inhabiting rivers and streams of the Mountainous Shoria is given. All species are recorded from this region for the first time. Two species, *Dicosmoecus obscuripennis* Banks, 1938 and *Rhyacophila lata* Martynov, 1918, are new for Western Siberia. Moreover, Mountainous Shoria is the westernmost locality for *Rhyacophila narvae* Navas, 1926, *Neophylax ussuriensis* (Martynov, 1914), and *Stenopsyche griseipennis* (McLachlan, 1866) distribution.

Key words: Trichoptera, fauna, new records, Kemerovskaya oblast, Siberia, Russia.

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Резюме. Приводится аннотированный список 29 видов из 18 родов и 10 семейств ручейников (Trichoptera), населяющих водотоки Горной Шории. Все виды впервые упоминаются для этого региона. *Dicosmoecus obscuripennis* Banks, 1938 и *Rhyacophila lata* Martynov, 1918 впервые приводятся для Западной Сибири. Горная Шория является самой западной границей распространения трех видов ручейников: *Rhyacophila narvae* Navas, 1926, *Neophylax ussuriensis* (Martynov, 1914) и *Stenopsyche griseipennis* (McLachlan, 1866).

INTRODUCTION

The first step of the trichopteran fauna investigation at the south of Western Siberia was taken at the beginning of the XX century (Martynov, 1909, 1910) and research was focused on the biodiversity of caddisfly of Altai Mountains. The next step was taken in the middle of the XX century, new data were obtained from Altai and the upper course of the Ob' River (Lepneva, 1949). During the last ten years, publications summarized the data of the geographical distribution of caddisflies at practically all south regions of Western Siberia: Novosibirsk region (Beketov & Ivanov, 2004; Beketov, 2006; Bezmaternyh, 2007; Chertoprud & Palatov, 2014; Baturina, 2019), Altai Krai (Bezmaternyh, 2008; Bezmaternyh *et al.*, 2014; Koveshnikov, 2014; Bezmaternyh & Krylova, 2016), Altai Republic (Beketov, 2005; Zhukova & Bezmaternyh 2008; Baturina, 2011; Yanugina, 2013; Yevseyeva *et al.*, 2016; Koveshnikov,

2016), northern Kazakhstan (Zhukova & Bezmaternyh, 2010; Pan'kov & Krasheninnikov, 2016; Smirnova *et al.*, 2016). However, some regions of the south part of Western Siberia are poorly investigated or not studied at all. One of these unstudied areas, attractive in faunistic aspects, is Mountainous Shoria – the middle-mountains territory being adjoined by ridges of North Altai on the southwest and the Sayan Mountains on the southeast, Kuznetskiy Alatau on the northeast, and Salair on the northwest. The present paper is focused on providing the preliminary data of the caddisflies fauna for the Mountainous Shoria river net (the south of Western Siberia).

MATERIAL AND METHODS

Caddisflies larvae were collected in rivers, small rivers, and brooks of the Mountainous Shoria on the territory of the Kemerovskaya oblast during the summer period in 2018. The GPS navigator Garmin eTrex 20 was used to determine geographical coordinates and altitudes. Quantitative samples of macrozoobenthos were collected, using a water net, at environmentally various stations. The material is preserved in 70% ethanol, marked, and is stored in the collections of Novosibirsk State University. Specimen identification was done using available keys (Lepneva, 1964, 1966; Ivanov *et al.*, 2001; Neu & Tobias, 2004; Zamora-Muñoz *et al.*, 1995). The taxonomy is followed the Trichoptera World Checklist (Morse, 2021). The distribution of species is checked according to literary data (Pan'kov & Krasheninnikov, 2016; Koveshnikov, 2016; Chuluunbat *et al.*, 2016; Kuranishi & Tanida, 2016; Salokannel *et al.*, 2019; Sklyarova *et al.*, 2018; Smirnova *et al.*, 2016; Yang *et al.*, 2016; Zaika, 2009, 2011; Zasypkina 2016; Loskutova & Rafikova, 2018; Baturina, 2019, 2020).

List of sampling localities, coordinates and the nearest settlement or village is presented in Table 1.

LIST OF SPECIES

Family Hydropsychidae

Hydropsyche newae Kolenati, 1858

MATERIAL EXAMINED. Larvae from locations: 1, 5, 7, 9, 10.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Altai, Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia, China, Korea, Japan.

Hydropsyche ornatula McLachlan, 1878

MATERIAL EXAMINED. Larvae from locations: 9, 10.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Western and Eastern Siberia), Europe, Turkey, Iran, Uzbekistan, Kazakhstan, China.

Hydropsyche pellucidula (Curtis, 1834)

MATERIAL EXAMINED. Larvae from locations: 1, 2, 6, 7.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Western and Eastern Siberia), Europe, Turkey, Iran, Kazakhstan, China.

Hydropsyche valvata Martynov, 1927

MATERIAL EXAMINED. Larvae from locations: 1, 2.

DISTRIBUTION. Russia (Salair, Eastern Siberia, Far East), Kazakhstan, Mongolia, China, Korea.

Table 1. Description of sampling point at watercourses of the Mountainous Shoria, Kemerovskaya oblast, Russia

No	Name of the river	The nearest settlement	Longitude / Latitude
Rivers			
1	Mrassu	Ust'-Puzas	52,8304° N / 88,42985° E
2	Mrassu	Ust'-Puzas	52,82372° N / 88,44937° E
3	Kondoma	Sheregesh	52,77788° N / 87,95116° E
Small rivers			
4	Moundybash	Moundybash	53,17595° N / 87,3086° E
5	Kabyrza	Ust'-Kabyrza	52,82815° N / 88,54381° E
6	Puzas	Ust'-Puzas	52,80631° N / 88,35863° E
7	Puzas	Ust'-Puzas	52,81808° N / 88,37824° E
8	Purla	Middle Purla	52,81816° N / 88,26018° E
9	Purla	Sredniaya Purla	52,82859° N / 88,25721° E
10	Purla	Sredniaya Purla	52,79021° N / 88,27258° E
11	Azas	Ust'-Puzas	52,80876° N / 88,37151° E
12	Azas	Ust'-Puzas	52,79893° N / 88,37344° E
13	Azas	Ust'-Puzas	52,78674° N / 88,37661° E
14	Kezes	Ust'- Kezes	52,80239° N / 88,31739° E
15	Kezes	Ust'- Kezes	52,80553° N / 88,31351° E
16	Tuzas	Ust'-Kabyrza	52,82029° N / 88,55695° E
17	Kichi	Nizhniye Kichi	52,77353° N / 88,25248° E
Brooks			
18	Taska	Ust'-Puzas	52,829° N / 88,43803° E
19	Erlen	Ust'-Puzas	52,83191° N / 88,43101° E
20	Nameless brook	Ust'-Puzas	52,83162° N / 88,43932° E

Family Limnephilidae

Anabolia furcata Brauer, 1857

MATERIAL EXAMINED. Larvae from locations: 2, 5.

DISTRIBUTION. Europe, Russia (European part, Caucasus, Ural Mountains, Western Siberia, Altai), Kazakhstan.

Anabolia servata (McLachlan, 1880)

MATERIAL EXAMINED. Larvae from locations: 9.

DISTRIBUTION. Russia (Salair, Altai, Eastern Siberia, Far East), Kazakhstan, Mongolia, Korea.

Asynarchus amurensis (Ulmer, 1905)

MATERIAL EXAMINED. Larvae from location: 5, 12.

DISTRIBUTION. Russia (European part, Ural Mountains, Western and Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia, Korea, Japan.

***Brachypsyche sibirica* (Martynov, 1924)**

MATERIAL EXAMINED. Larvae from location: 19, 20.

DISTRIBUTION. Russia (European part, Altai, Eastern Siberia, Far East), Europe, Kazakhstan, Japan.

***Dicosmoecus obscuripennis* Banks, 1938**

MATERIAL EXAMINED. Larvae from locations: 14, 15.

DISTRIBUTION. Russia (Tuva, Eastern Siberia, Far East), North America (Alaska).

REMARKS. This species is recorded for the south of Western Siberia (Kemerovskaya oblast) for the first time.

***Dicosmoecus palatus* (McLachlan, 1872)**

MATERIAL EXAMINED. Larvae from locations: 8, 10, 12, 17, 18.

DISTRIBUTION. Russia (European part, Ural Mountains, Western and Eastern Siberia), Europe, Kazakhstan, Mongolia.

***Halesus tessellatus* (Rambur, 1842)**

MATERIAL. Larvae from locations: 2, 5, 9, 10, 11, 13, 16, 17, 19, 20.

DISTRIBUTION. Russia (European part, Ural Mountains, Western and Eastern Siberia), Europe, Kazakhstan, Mongolia, Japan.

***Limnephilus stigma* Curtis, 1834**

MATERIAL EXAMINED. Larvae from locations: 5, 10.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Western and Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia, Japan, North America (Alaska).

Family Brachycentridae

***Micrasema gelidum* MacLachlan, 1876**

MATERIAL EXAMINED. Larvae from locations: 1, 2.

DISTRIBUTION. Russia (European part, Ural Mountains, Western Siberia, Yakutia, Far East), Mongolia, North America (Yukon, Alaska).

***Brachycentrus subnubilus* Curtis, 1834**

MATERIAL EXAMINED. Larvae from locations: 8, 9.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Altai, Western Siberia, south of Eastern Siberia, Far East), Mongolia, Kazakhstan.

***Brachycentrus americanus* (Banks, 1899)**

MATERIAL EXAMINED. Larvae from locations: 1, 2, 4, 5, 9, 12, 13, 14, 15, 18, 19.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Altai, Western Siberia, south of Eastern Siberia, Far East), Mongolia, Kazakhstan.

Family Leptoceridae

Ceraclea excisa (Morton, 1904)

MATERIAL EXAMINED. Larvae from locations: 6, 7.

DISTRIBUTION. Russia (European part, Ural Mountains, Altai, Western and Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia, China, Korea, Japan.

Ceraclea fulva (Rambur, 1842)

MATERIAL EXAMINED. Larvae from locations: 9, 10.

DISTRIBUTION. Russia (European part, Caucasus, Ural Mountains, Altai, Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia.

Oecetis testacea (Curtis, 1834)

MATERIAL EXAMINED. Larvae from locations: 4.

DISTRIBUTION. Russia (European part, Ural Mountains, Altai, south of Eastern Siberia, Far East), Europe, Japan.

Family Rhyacophilidae

Rhyacophila lata Martynov, 1918

MATERIAL EXAMINED. Larvae from locations: 4, 5, 8, 19, 20.

DISTRIBUTION. Russia (south of Eastern Siberia, Far East), Kazakhstan, Mongolia, China, Korea.

REMARKS. This species is recorded for the south of Western Siberia (Kemerovskaya oblast) for the first time.

Rhyacophila sibirica McLachlan, 1879

MATERIAL EXAMINED. Larvae from locations: 1, 2, 3, 4, 5, 11, 15.

DISTRIBUTION. Russia (Western Siberia, Eastern Siberia, Far East), Kazakhstan, Mongolia.

Rhyacophila angulata (Martynov, 1910)

MATERIAL EXAMINED. Larvae from locations: 5, 6, 7, 10, 11, 13, 15, 19.

DISTRIBUTION. Russia (Western and Eastern Siberia, Far East), Kazakhstan, Mongolia, China.

Rhyacophila narvae Navas, 1926

MATERIAL EXAMINED. Larvae from locations: 9, 10.

DISTRIBUTION. Russia (northeastern Altai, Eastern Siberia, Far East), Mongolia, Korea.

REMARKS. The westernmost record of distribution (Kemerovskaya oblast).

Family Lepidostomatidae

Lepidostoma hirtum (Fabricius, 1775)

MATERIAL EXAMINED. Larvae from locations: 11, 12, 13.

DISTRIBUTION. Russia (European part, Ural Mountains, Altai, Eastern Siberia, Far East), Europe, Mongolia, Korea, Kazakhstan, China, Japan.

Family Glossosomatidae

Agapetus sibiricus Martynov, 1918

MATERIAL EXAMINED. Larvae from locations: 1, 2, 5, 6, 7, 9, 10, 11, 13, 17, 19.

DISTRIBUTION. Russia (Salair, Altai, Eastern Siberia, Far East), Mongolia, Kazakhstan, Korea, Japan.

Glossosoma altaicum (Martynov, 1914)

MATERIAL EXAMINED. Larvae from locations: 6, 7.

DISTRIBUTION. Russia (Western and Eastern Siberia, Far East), Kazakhstan, Mongolia, China, Korea, Japan.

Family Uenoidae

Neophylax ussuriensis (Martynov, 1914)

MATERIAL EXAMINED. Larvae from locations: 11, 12, 13, 14, 15, 18.

DISTRIBUTION. Russia (northeastern Altai, Eastern Siberia, Far East, Sakhalin), Japan.

REMARKS. The westernmost record of distribution (Kemerovskaya oblast).

Family Stenopsychidae

Stenopsyche marmorata (Navas, 1920)

MATERIAL EXAMINED. Larvae from locations: 1, 2, 3, 5, 6, 7, 8, 9, 14, 15, 19.

DISTRIBUTION. Russia (Western Siberia and Eastern Siberia, Far East, Sakhalin), Mongolia, China, Korea, Japan.

Stenopsyche griseipennis (McLachlan, 1866)

MATERIAL EXAMINED. Larvae from locations: 4, 5, 14, 15.

DISTRIBUTION. Russia (northeastern Altai, Eastern Siberia, Far East), India, Nepal, China, Korea, Japan.

REMARKS. The westernmost record of distribution (Kemerovskaya oblast).

Family Polycentropodidae

Polycentropus flavomaculatus (Pictet, 1834)

MATERIAL EXAMINED. Larvae from locations: 4, 8, 10.

DISTRIBUTION. Russia (European part, Ural Mountains, Western Siberia, Eastern Siberia, Far East), Europe, Kazakhstan, Mongolia.

CONCLUSION

The sampled Trichoptera comprises 29 species in 18 genera and 10 families. The most common species are *Halesus tessellatus*, *Brachycentrus americanus*, *Agapetus sibiricus*, and *Stenopsyche marmorata*. The most abundant species at rivers are *Agapetus sibiricus*, *Brachycentrus americanus*, and *Hydropsyche newae*. The following 2 species are recorded for the south of Western Siberia (Kemerovskaya oblast) for the first time: *Rhyacophila lata*, *Dicosmoecus obscuripennis*, and for another 3 species, *Stenopsyche griseipennis*, *Neophylax ussuriensis*, and *Rhyacophila narvae*, the established locations are the westernmost of their

distribution. The Shoria appears to be a special transitional corridor for the East-Palaeartic aquatic insect species, in their spreading to the northwest borders of the Altai-Sayan mountains system. Species from the European fauna were not detected for the territory of Shoria, their spreading to the east is finished at the Salair Ridge rivers basins (Baturina, 2019) and North Altai rivers basins (Baturina, 2013; Koveshnikov, 2016; Yevseyeva *et al.*, 2016). According to data obtained, Mountainous Shoria seems to be a very interesting spot for studies of caddisfly faunal transformations and genesis at the south of Western Siberia.

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