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**Papers on Trichoptera presented at the 2<sup>nd</sup> Russian Symposium on the Amphibiotic and Aquatic Insects (Voronezh, September 15-17, 2003)\***

Vladimir D. IVANOV

Барышев И.А. Амфибиотические насекомые выростных участков молоди атлантического лосося в бассейне реки Варзуга//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 7–13.

[BARYSHEV, I.A. Amphibiotic insects in the Atlantic salmon breeding sites in the Varzuga River Basin. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 7–13.]

The River Varzuga belongs to the White Sea basin (mouth: 66°15'N, 36°57'E; Kola Peninsula) and has an abundant salmon population. Benthos samples reveal the presence of 39 amphibiotic insect species, among them 20 species of Trichoptera (listed). Insects are more abundant at rapids in the shorter Varzuga tributaries than in the river. Total data on the insect abundance and biomass are given. The effects of winter freezing on the amphibiotic insects are discussed.

Данькова Н.В., Иванов В.Д. Фауна ручейников (Insecta: Trichoptera) озер Кольского полуострова (Мурманская область)//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 28–34.

[DANKOVA, N.V., IVANOV, V.D. Fauna of caddisflies (Insecta: Trichoptera) in the lakes of Kola Peninsula (Murmansk Region). In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 28–34.]

A short history of Trichoptera studies in the Kola peninsula is outlined. Recent samples in different continental and sea island lakes show 84 Trichoptera species to be present in the study area. The family Limnephilidae has the largest diversity (44 species, 16 genera). The largest number of species emerge in the beginning of summer (July). Differences in the faunas of continental and island lakes are noted. The stagnant lakes have a relatively poor fauna.

Еськов К.Ю., Иванов В.Д., Сукачева И.Д., А. Уэллс. Географическая история ручейников семейства Hydroptilidae (Trichoptera)// В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 40–48.

[ES'KOV, K.Yu., IVANOV, V.D., SUKATCHEVA, I.D., WELLS, A. Geographic history of the caddisflies family Hydroptilidae (Trichoptera). In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 40–48.]

Findings of the fossil Hydroptilidae (Mesozoic and Cenozoic ambers) show the family to appear in the warmest regions of Laurasia (the Mesozoic continent including Europe, Asia, and North America), and widely dispersed across the tropical belt of this continent in the Late Cretaceous. The Gondwana land masses became populated from the North in the Cenozoic. The recent faunas of South America, Africa, and Australia consist of advanced taxa showing no "Gondwana links". The history of the Hydroptilidae in space and time is reconstructed.

Засыпкина И.А. Таксономическое разнообразие фауны амфибиотических насекомых (Insecta: Ephemeroptera, Plecoptera, Trichoptera) отдельных районов Охотско-Кольского нагорья//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 65–73.

[ZASYPKINA, I.A. Taxonomic diversity of the fauna of amphibiotic insects (Insecta: Ephemeroptera, Plecoptera, Trichoptera) in some regions of the Okhotsk-Kolyma highland. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 65–73.]

The Okhotsk-Kolyma highland is situated in the ultimate north-east of Asia and covered by tundra and forest tundra. This cold land is crossed by the Kolyma River and its tributaries. The history of studies in the area is summarized. The faunistic list for the territory includes 42 species of Trichoptera (49% of the regional fauna); Limnephilidae species prevail.

Иванов В.Д. Механизмы спаривания и взаимодействие генитальных структур ручейников (Trichoptera)//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 74–80.

[IVANOV, V.D. Mating mechanisms and interactions of the genital structures of caddisflies (Trichoptera). In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 74–80.]

This is a short Russian version of the paper presented at the Osaka/Sakai Trichoptera Symposium. The homologies of male genital skeletal components and musculature are discussed. The functional background enables an understanding the directions of evolution and structural patterns. The principal transitions in the male-female genital interactions and specialized locking mechanisms are outlined.

Извекова Э.И., Гончаров А.В. О фауне зарослей и бентосе прудов Братеевской поймы г. Москвы// В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 81–84.

[IZEKOVA, E.I., GONCHAROV, A.V. On the fauna of dense vegetation and benthos of ponds in the Brateevo flood-land in Moscow City. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 81–84.]

The aquatic insects in the city ponds were studied in June 2002 at the southern areas of Moscow (Brateevo-Zyablikovo). *Leptocerus tineiformis* and undetermined Limnephilidae are listed.

\* (see the photograph in BRAUERIA 31:32)

Корноухова И.И. Ручейники (Trichoptera) горных рек Большого Кавказа с подземным питанием//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 95–99.  
[KORNOUKHOVA, I.I. Caddisflies (Trichoptera) of the subterranean-fed mountain rivers of Caucasus. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 95–99.]

Rivers having subterranean water feeding are historically ancient in the Main Caucasus Mountain Range. They have rather small water discharges (1–5 m<sup>3</sup>/s), temperatures 6–14°C and winter mean water. The taxonomic list includes 46 species of 12 families. No Leptoceridae, Phryganeidae, Molannidae, and Hydroptilidae were found. Rhyacophilidae are most abundant and widespread. Most of the collected species are endemic for the region.

Лоскутова О.А. Амфибиотические насекомые в бентосе рек западного склона Полярного и Приполярного Урала// В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 103–110.  
[LOSKUTOVA, O.A. Amphibiotic insects in the river benthos at the western slope of Polar and Subpolar Urals. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 103–110.]

The benthos of large rivers (Usa River Basin) was investigated in July–August, 1993–95 and 2002 (Subpolar Urals); samples in Kara River, Polar Urals, were made in 1999. Amphibiotic insects are abundant (78–99% of total specimens number and 63–99.7% of biomass). *Apatania crymophila* was the most common species; *Rhyacophila nubila*, "*Mystrophora* sp.", *Arctopsyche ladogensis*, *Hydropsyche nevae*, *Brachycentrus subnubilus*, *Potamophylax latipennis*, and *P. cingulatus* were frequent. Data on total Trichoptera abundance, biomass, and the species list are provided.

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Мельницкий С. И. Сравнительный анализ морфологии IV и V стернитов брюшка Amphiesmenoptera//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 111–118.  
[MELNITSKY S.I. Comparative analysis of the structures of IV and V abdominal sternites of Amphiesmenoptera. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 111–118.]

Original and literature data on the structures of the IV and V abdominal sternites of the Trichoptera and the lowest Lepidoptera are summarized. Examples of the sternal pheromone glands are described and their presence in Trichoptera and Lepidoptera is reviewed. Evolution of these glands seems to have begun in the Paleozoic; the Paleozoic Protomeropina, lowest Lepidoptera, and archaic Trichoptera (Philopotamidae, Psychomyiidae) have the primitive 4th type glands. Evolution of the glands is discussed.

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Потиха Е.В. Амфибиотические насекомые двух водотоков Сихотэ-Алинского заповедника//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 132–138.

[ПОТІХА, Е.В., Amphibiotic insects in two streams of Sikhote-Alin reserve. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 132–138.]

The streams of the Serebryanka River Basin (eastern slopes of Central Sikhote-Alin, Primorie, Far East of Russia) were investigated. The total biomass and abundance of insects are variable. No taxa within the Trichoptera are mentioned, the data concern only the total figures for the orders of amphibiotic insects.

Силина А.Е., Иванов В.Д., Григоренко В.Н. Список ручейников (Trichoptera) Центрального Черноземья России и сопредельных территорий//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 165–196.  
[SILINA, A.E., IVANOV, V.D., GRIGORENKO, V.N. List of caddisflies (Trichoptera) of the black earth zone of Russia and the adjacent regions. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 165–196.]

The first list of the Trichoptera found in the central part of black earth zone (Voronezh, Kursk, Tambov, Lipetsk, and Belgorod Regions of Russia) comprises 113 species of 13 families; 40 species are new for the region, 19 are new for the European part of Russia; *Leptocerus interruptus* is a new species for Russia. Limnephilidae and Leptoceridae are most abundant in the area; Hydroptilidae and Polycentropodidae are less abundant. Some previously reported species are excluded from the local fauna list. An annotated species list is given, new complete sampling data are included.

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Чебанова В.В. Состав и структура сообществ амфибиотических насекомых малых горных рек Камчатки и Корякии//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 233–243.

[CHEBANOVA, V.V. Composition and structure of amphibiotic insect communities of the small mountain rivers in Kamchatka and Koryakia. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 233–243.]

A short review of the previous studies in this territory situated in the remote NE corner of Asia is followed by characteristics of benthos communities. The list includes 6 Trichoptera species found in small mountain streams of Kamchatka. *Apatania zonella* (up to 6650 spec/m<sup>2</sup>), *Brachycentrus americanus* (up to 1600 spec/m<sup>2</sup>), and *Glossosoma intermedium* (up to 4000 spec/m<sup>2</sup>) are locally dominant in some streams.

Черчесова С.К., Давидянц Э.Г. Влияние антропогенных факторов на состав и плотность бентоса реки Майрамадаг//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 250–252.  
[CHERCHESOVA, S.K., DAVIDYANTS, E.G. Influence of anthropogenic factors to the benthos composition and density in Mairamadag River. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 250–252.]

Influence of anthropogenic factors to the benthos composition and density in Mairamadag River. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 250–252.]

The Mairamadag River is a short (10 km) and shallow stream flowing along the Northern slope of the Lesisty Range (Central Caucasus). Trichoptera comprises 21% of total specimens collected in 1998-2000. The river is affected by pollution and construction works in the village of Mairamadag. The benthos in the river near Mairamadag was completely eliminated in 1999; the effects of pollution are discussed.

**Черчесова С. К., Шиолашвили М.Г. Бентос реки Кауридон (бассейн Терека)//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 253–257.**

[CHERCHESOVA, S.K., SHIOLASHVILI, M.G. Benthos of the Kauridon River (Terek Basin). In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 253–257.]

The Kauridon River belongs to the Terek River Basin (Central Caucasus). The Trichoptera are represented by 9 species, all of them except for 1 species of *Potamophylax* which does not occur in the local pond connected to the river.

**Шишлова Ю.В. Водные и амфибиотические насекомые в составе гидробиоценозов Воронежского водохранилища//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 262–272.**

[SHISHLOVA, Yu.V. Aquatic and amphibiotic insects in the composition of Voronezh storage pool biocenoses. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 262–272.]

The Voronezh storage pool, filled in 1972, is situated within the Voronezh city limits. It has an almost constant water level. Chironomidae are dominant. Trichoptera are represented by 25 species; *Leptocerus tineiformis*, *Cyrtus flavidus*, *Ecnomus tenellus*, and *Orthotrichia costalis* are the most abundant. A species list is provided.

**Шубина В.Н. Ручейники (Trichoptera) в бентосе водоемов северо-востока Европы//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 273–278.**

[SHUBINA, V.N. Caddisflies (Trichoptera) in the benthos of waters in the north-east of Europe. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 273–278.]

The diversity of rivers in the NE territories of European Russia supports many Trichoptera species. Differences in local faunas of Subpolar Urals, Polar Urals, Timan Range, Pai-Hoi mountains, and tundra plains are discussed. The total number of species is as high as 103 (29 Annulipalpia, 74 Integripalpia), but the list is not provided. Dominant species are mentioned for different parts of the territory. Trichoptera of the research area are represented mostly by the typical European species, although the northernmost mountains and tundra have some Siberian species. The lake faunas are relatively poor.

**Шуйский В.Ф., Занцинская Т.П., Петров Д.С., Максимова Т.В., Иванова О.С., Петрова Т.А. Антропогенная сукцессия макрозообентоса рек южной части бассейна Ладожского озера//В кн.: Фана, вопросы экологии, морфологии и эволюции амфибиотических и водных насекомых России: Материалы II Всероссийского симпозиума по амфибиотическим и водным насекомым. — Воронеж: Воронежский государственный университет, 2004. 284 с.: 279–284.**

[SHUISKY, V.F., ZANTSINSKAYA, T.P., PETROV, D.S., MAKSIMOVA, T.V., IVANOVA, O.S., PETROVA, T.A. Anthropogenic succession of macrozoobenthos in the rivers of southern part of Ladoga Lake Basin. In: Fauna, problems of ecology, morphology, and evolution of the amphibiotic and aquatic insects of Russia: Materials of II All-Russian symposium on the amphibiotic and aquatic insects. — Voronezh, Voronezh State University, 2004. 284 pp.: 279–284.]

The impact of the anthropogenous factors on the bottom communities was estimated for 2 rivers (Kapscha and Pasha) in the Leningrad Region (SE tributaries of the Ladoga Lake). These rivers have been affected by drift timber floating for decades until 1987. The bottom is covered by logs up to 100% in some places. Trichoptera were shown to be less stressed by the drift floating and pollution in the rivers; no Trichoptera taxa are mentioned.



## Atlas of European Trichoptera / Atlas der Europäischen Köcherfliegen / Atlas des Trichoptères d'Europe

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Caddisflies are important indicators of environmental quality in aquatic biotopes. This Atlas is the first book which enables the identification of the entire European caddisfly fauna since McLachlan's Revision and Synopsis of 1874-1880.

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