CHIRONOMID FAUNA OF THE RIVER ANGARA

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Introduction

The Angara is the main river of Eastern Siberia. It flows out of the oligotrophic Lake Baikal and after 1779 km joins the river Yenisey. The water of the Angara remains baikalian for a significant distance. Even at the mouth of the river 45% of the total water is baikalian. According to R. A. Golyshkina (1970) the substratum is composed mainly of stones, due to relief and geological structure. The Angara previously was a mountain river with a high current velocity of 7 km h−1 in depositing areas and 12 - 15 km h−1 in eroding areas.

Different authors have studied the chironomid fauna of the Angara. 144 species and forms of Chironomids (Tanypodinae - 10, Diamesinae - 10, Prodiamesinae - 2, Orthocladiinae - 63, Chironominae - 59) have been found in it. 5 species (Diamesa baicalensis Chern., "Orthocladius compactus Linevich", O. gregarius Linevich, O. setosus Linevich, Neozavrelia minuta Linevich) are endemics of Baikal; Cricotopus angarensis Linevich is an endemic of the Angara.

Chironomid fauna before the dams

A. A. Linevich (1953, 1957, 1981) studied the chironomid fauna over the region from its outflow to Irkutsk, 2) from Irkutsk to the inflow of the river Kitoy, 3) from the mouth of Kitoy to Bratsk.


The second part was dominated by the following species: D. baicalensis, O. trigonolabis, O. frigidus, O. compactus, Polypedilum convictum (Walk.), Pagastia lanceolata, Potthastia gaedii (Meig), Pseudodiamesa nivosa, E. coerulescens, O. consobrinus (Holmg.), C. angarensis, Eukiefferiella sp., Pagastia orientalis (Chern.). So, over the second part most of the species of the genus Eukiefferiella are absent, but lithorheophilic species (subfamilies Diamesinae and Orthocladiinae) continue to dominate.

Over the third part the following species are mentioned: Pagastia lanceolata, Potthastia gaedii, Eukiefferiella coerulescens, O. trigonolabis, O. compactus, O. frigidus, Polypedilum convictum, Pseudodiamesa nivosa, Monodiamesa bathyphila (Kieff.), Stictochironomus psammophilus, Polypedilum bicrenatum Kieff., O. consobrinus, Cryptochironomus gr. defectus (Kieff.) Harnischia curtilamellata (Malloch), Paracladopelma campotalabis (Kieff.), Paratendipes "connectens" N 3 Lipina, Tanytarsus exiguis Jo N., Parorthocladius nudipennis (Kieff.), D. baicalensis and Brillia bifida (Kieff.) In terms of numbers P. lanceolata and P. gaedii are first; in terms of the number of species, the subfamily Chironominae dominates.

Unfortunately, I.I. Greze (1953) does not give a full list of the species of the lower part of the river, but only the dominant ones. The dominant species inhabiting vegetation are the larvae of Tanytarsus exiguis, Polypedilum nubeculosum Meig., and O. thienemanni Kieff. Vegetation on pebbles is inhabited by T. exiguis, Micropendipes pedellus, Polypedilum scalaenum (Schrank) and Glyptotendipes gripenkoveni Kieff.. Sand is dominated by Chernovskia orbicus Townes (Chernovskia ra Ulomsky), Robackia demejerei (Krus.) and Beckidia zabolotzkyi (Goetgh.), species not found in the upper parts of the river. There are pelorheophilic and psammorheophilic forms dwelling in silted...
sand: the most common among them are *Polypedilum bicornatum* KIEFF., *P. scalarum* (SCHRANK), *Cladotanytarsus* gr. *mancus* (WALK.), *Chironomus* gr. *thummi* (KIEFF.), and *Ch. pr. plumosus-reductus* LIPINA. Silt is inhabited by *Chironomus* gr. *thummi*. General features of the chironomid fauna of the lower part seem to be quite different from those of the upper parts. A rheophilic complex, including baikalian species and mainly composed of species belonging to the Diamesinae and Orthocladiinae, inhabits the typical stony biotopes of the upper parts of the river; this is replaced in the lower parts by a common complex of river forms belonging mainly to the Chironominae. In sandy biotopes the psammorheophils *C. ra, R. demejerei,* and *Bekidia zabolotzkyi* are found.

**Present state of the chironomid fauna after erecting the complex of dams**

The river Angara is unaffected initially (about 7 km), from Irkutsk to settlement Telma (about 80 km) and below the dam of the Ust-Ilim hydropower station to its mouth (962 km). Close to its outflow from Lake Baikal the same species that dwelled here before the regulation remain; the 5 baikalian endemic species mentioned above are still to be found. Lithorheophilic forms found in the 40-s dominate. After the regulation in the middle 70-s we have investigated the river near Angarsk (at 10 km). Comparison of the chironomids before and after the regulation has shown some changes in composition (TOMILOV & al. 1977). *O. frigidus, P. lanceolata, P. gaedi, O. consobrinus* and *S. psammophilus* which were here before regulation are no longer to be found. *O. gr. olivaceus* and *P. tridentifer* dominate and *D. baicalensis* occurs in stony substrata. In the bottom vegetation *O. saxicola* and *C. angarensis* prevail. *Polypedilum* sp. (Chironominae sp. N3 LIPINA) and *Monodiamesa bathyphila* (KIEFF.) dominate in silted sand. During 1973-1975 the chironomid fauna near the future Ust-Ilim reservoir over the 302 km from Bratsk to Ust-Ilimsk was investigated. 91 species were found, 42 species belonging to the subfamily Chironominae: *D. baikalensis* and *O. olivaceus* dominate in stony sediments; *Prodiamesa olivacea* and *Chironomus obtusidentis* on small pebbles and silted sand; *Cricotopus sylvestris,* *C. biformis,* *O. frigidus* and *Diplocladus cultriger* on stones covered with algae; *Chironomus cingulatus* MEIG., *Paratendipes albimanus* (MEIG.), "Paratrichocladius inaequalis KIEFF." and *Tanytarsus* gr. *gregarius* KIEFF. in silted sediments.

At the end of the 80-s to the beginning of the 90-s we studied the chironomids of the Angara below the dam of the Ust-Ilim power station (KOZHOVA & al. 1993) from the city of Ust-Ilimsk to the mouth of the river Kata (about 90 km). Here there are lot of eroding currents with high velocity: 51 species of Chironomidae were found, about 50 % representatives of the subfamily Orthocladiinae. *D. baikalensis,* *P. lanceolata* and *Pagastia orientalis* dominate on stony sediments; *Cricotopus sylvestris,* *C. biformis* and *O. saxicola* dominate on stones covered with *Ulothrix; P. nivosa,* *P. olivacea,* *O. olivaceus,* *Diamesa insignipes* KIEFF., *Eukiefferiella coerulescens,* *P. inaequalis* and *Micropsectra junce* (MEIG.) in silted sand and pebbles; *Paratendipes albimanus* in silt. *O. frigidus, O. consobrinus, O. compactus,* *O. gregarius, C. angarensis, P. inaequalis, Cr. gr. defectus,* *Cladopelma viridula* (L.), *Parachironomus pararostratus,* *Polypedilum bicornatum,* *E. albipennis,* *Microtendipes pedellus* (DE GEER) and *Cladotanytarsus* gr. *mancus* (WALK.) found in upper parts are not found here.

**Conclusion**

In the river Angara from its outflow from Lake Baikal to its junction with the River Yenissey hydrologic conditions change: decrease of current velocity, increase of water temperature, decrease of transparency, and increase in deposition of sand and silt, i.e. the transformation of a mountain river into the usual Siberian river, and consequent changes in the chironomid fauna take place. In the upper parts of the river lithorheophilic of the subfamilies Diamesinae and Orthocladiinae prevail, whereas in the lower part, pelorheophilic of the subfamily Chironominae dominate. The main characteristic feature of the river Angara - the influence of Lake Baikal on the fauna (the presence of baikalian endemics) - occurs mainly in the upper part of the river.

**References:**


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