The hoverfly fauna of the Altai mountains

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Mountains about which I shall speak now, are located in Siberia to the south of Western - Siberian lowland (fig. 1.). Most of them are on territory of Russia in the Republic Altai. The southwest part comes on territory of Kazakhstan, and southeast - into China. The Altay mountains are the highest mountains in Siberia which include the maximum point of Siberia - mountain Belukha, its height is 4506 m above sea level. By virtue of that the territory of Altai mountains is located in the center of Eurasia and as well the relief of this territory is rather various, it is possible to meet there rather various biocenosis - from semideserts in a south-east (fig. 2), up to a taiga with meadows in which the grass almost completely hides a horse (fig. 3). There are also alpine meadows in high mountain tundra (fig. 4). The big variety of biotopes adds their dependence on a solar exposition. So, practically on all Altai mountains southern slopes are occupied with steppe landscapes while northern part of mountains is covered with taiga (fig. 5). The big landscapes variety, plus boundary in zoogeographical understanding position of the territory have led to occurrence very rich fauna there.

The fauna of mountains of Altai includes 354 species that makes approximately 47 % of the common number of the hover-flies species of Russia. The fauna develops of 5 basic zoogeografical elements. They are:

1) Widely spread on Palaearctic species from the genera *Syrphus, Sphaerophoria, Cheilosia, Eristalis, Helophilus, Syritta, Epistrophe*, etc.

2) The species having the most part of an area in Middle Asia and partly coming to the south of Siberia (*Chrysotoxum kozhevnikovi, Rhodendorfia dimorpha, Pseudoplatychirus sp., Dasysyrphus rotundiventris*).

3)The species meeting in flat parts or in midhigh mountains of Altai, Tuva and Mongolia - *Chrysotoxum hamaeleon, Chrysogaster stackelbergi, Portevinia altaica.*

4) The species, which most part of their area lays in the north Palaearctic, and on Altai they are meet only in a mountain part - *Parasyrphus tarsatus, Chrysosyrphus nigra, Platycheirus hirtipes, Pl. subordinatus, Pl. varipes, Cheilosia balu.*

5)The greatest interest for us represent endemic species. Earlier Dr. N.A. Violovitsh has described some endemic species from lowlands of Altai, that is from steppe and a taiga belts - *Parasyrphus levinae, Sphegina hodosa, Eristalis pigaliza, Blera velox* and some others. Unfortunately, now all of them are shown in synonyms.

Nowadays it is possible to speak with confidence, that endemism on Altai is presented only on high-mountainous forest-tundras and tundras. *Ch. aratica, Ch. kolomietsi, Ch. galinae, Ch. balu balu, Ch. lithophila, Parasyrphus altimontanus, Dasysyrphus lapidosus and* 3 undescribed species of the genus *Platycheirus* plus one *Dasysyrphus* are concerned to such group.

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On presence endemics in different parts the Altai mountains are rather various. So, in its northeast part (fig. 6) covered with a taiga with Pinus sibiricus, Abies sibirica, Betula pendula and laying on 700-900 m above sea level the Syrphidae's fauna is the most numerous. From here it is known 213 species. But the level of their originality is rather low, and the fauna strongly reminds those in any other site of Siberian taiga. There are many xylophagous and phytophagous species. So on the coast of Teletskoe lake 10 species of the genus *Xylota* and 4 species of the genus *Chalcosyrphus* are marked. In spite of there are 3 species from the genus *Temnostoma* and *Shpecomyia vespiformis*, 2 species from the genus *Criorhina* and 35 species of *Cheilosia*.

Other well investigated site of Altai is its southwest (fig. 7). Here it is marked 69 species, 3 of them are endemics for the investigated territory. Only here are known *Ch. litophila*, *Dasysirphus lapidosus*, *Parasyrphus altimontanus*. Except for that, there was found *Chrysotoxum kozhevnicovi*, which earlier was known only from Middle Asia.

The interesting material has been got by us this year from high-mountainous plateau Ukok (fig. 8). This plateau is located in a southeast of Altai at height about 2200-2500 m above sea level. Earlier this territory has not been studied by syrphidologits. In spite of the fact that plateau is located for Siberia rather far in the south (approximately 49-50 degrees of northern latitude), the basic landscape is tundra-steppe there (fig. 9), only southern slopes are covered with meadow vegetation of northern type (fig. 10). The climate there is very rigorous and at the end of June sometimes snow drops out (fig. 11). At the same time, when a good weather is established, the temperature of air on the sun can rise up to +30 degrees. At this time comes mass fly time of all insects. Thousand insects fly in air, but hover-flies among them make the minority. On flowers of various Ranunculaceae Muscidae basically dominate . It is unique a mass species of Syrphidae there - *Rhodendorfia dimorpha*, which in other territories is the extremely rare. Even on plants frequently visited in others territories - *Dryas octopetala* and on 2 species of Umbelliferae Syrphidae were very rare. The most interesting species have been collected on the top of mountain at height of 2900-3000 m (fig. 12). Syrphidae were collected on stones without any vegetation. It didn't depend of a strong wind and rather low temperature when the sun was closed with clouds, I have caught some specimens of such rare species as *Cheilosia balu*, *Pseudoplatychirus sp.* and *Platycheirus sp*. from group *ambiguus*. The list of the species collected on plateau Ukok contains 23 taxa (fig. 12):

1. Dasysyrphus rotundiventris Peck
2. D. sp. close to D. rotundiventris
3. Pyrhophaena platygastra Lw.
4. Pseudoplatychirus sp.
5. Platycheirus nigrofemoratus Kan.
6. Pl. sp. ambiguus group
7. Pl. sp. clypeatus group
8. Pl. sp. latimanus group

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9. Metasyrphus lundbecki O.-S.
10. Metasyrphus sp. close to M. abiskoensis Duš., Las.
11. Syrphus ribesii L.
12. Cheilosia alpina (Zett.)
13. Ch. balu Viol.
14. Ch. galinae Bark.
15. Eristalis hirta Lw.
16. Helophilus groenlandicus (Fabr.)
17. H. borealis Staeg.
18. H. parallelus (Harr.)
19. Volucella plumatoides H.-B.
20. Spaerophoria philanthus (Mg.)
21. Rohdendorfia dimorpha Smir.
22. Paragus gulangensis Li&Li
23. P. balachonovae Sorokina (in litt.)

Thus, you see, that the hover-flies fauna on Altai is rather various, interesting and demands the further studying.

Thank you for attention.

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