

## SUPPLEMENTS TO THE FLORA OF THE SVJATOJ NOS PENINSULA, LAKE BAIKAL

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**Abstract:** The article contains supplements to the floristic data in the "Flora of the Zabajkal'skij National Park", Republic of Buryatia, East Siberia (Bojkov et al. 1991). New localities are listed of vascular plants from the mountainous part of Svjatoj Nos peninsula, from the Svjatoj Nos isthmus and from the area of the Barguzin river mouth near the SE edge of the Svjatoj Nos isthmus. The list consists of 54 species, 29 species are recorded as new for the Zabajkal'skij National Park, 17 as new for the mountainous part of Svjatoj Nos peninsula and 1 for the Svjatoj Nos isthmus. *Chenopodium opulifolium* Schrad. is reported from eastern Siberia for the first time.

**Key-words:** Floristics, vascular plants, Lake Baikal, East Siberia.

### Introduction

Svjatoj Nos peninsula is situated on the eastern coast of Lake Baikal, being a part of the territory of the Zabajkal'skij National Park. General description of the peninsula is given in numerous papers (e.g. Moložnikov 1974, Imetchenov 1990, Imetchenov and Matvejčuk 1990, Bojkov et al. 1991, Mlíkovský et al. 1992).

Until the early 1990s, knowledge of the vascular flora of the peninsula had been very sporadic, scattered mainly in Central Siberian floras covering large areas around Lake Baikal (e.g. Popov 1957-1959, Popov and Busik 1966, Malýšev and Peškova 1979 - see also Galazij and

Moločnikov 1982 for further references). In 1991, a paper by Ivanova, dealing with some findings in the flora of Transbaikalian area was published. In the same year, the "Flora of the Zabajkal'skij National Park" appeared, a work by a team headquartered in the Institute of Biology of the Academy of Sciences in Ulan-Udè (Bojkov et al. 1991). Simultaneously and more or less independently on it, a research carried out by the Czech Expedition Svjatoj Nos 1991 resulted in a compilation of a more detailed list of the flora of one part of Svjatoj Nos peninsula, the isthmus (Anenchonov et al. 1992).

The present paper tries to complete the picture of the flora of Svjatoj Nos peninsula, making use of the floristic data collected during Czech expeditions in June-September 1991, June-July 1992, and July-August 1993. Moreover, most of the specimens collected since 1991 were checked using the new Far East flora (Barkalov 1991, Charkevič 1992) and the Flora of Siberia published recently (Krasnoborov 1988, Krasnoborov and Malyšev 1992, Malyšev and Peškova 1987, 1990 and 1993, Peškova and Malyšev 1990 and Položij and Malyšev 1988). In addition, the flora of the USSR (Komarov et al. 1930-1964) and the grass monograph by Cvelev (1976) were consulted.

On the basis of comparison with the data in Bojkov et al. (1991), mainly localities of species new for this territory are included, and the localities of interesting plants, distribution of which is larger than indicated in the maps in the above paper. Moreover, some localities from the vicinity of the Barguzin river mouth of plants reported neither for the whole territory of the National Park in the flora of Bojkov et al. (1991) nor in the paper by Anenchonov et al. (1992) are included. Localities of plants from the territory, given by Ivanova (1991), were also taken over.

Larger part of the data presented here are documented by herbarium specimens, stored in the Herbarium of Moravian Museum in Brno (BRNM), the Herbarium of the Institute of Biology in Ulan-Udè and the herbaria of Pavel Pešout in Vlašim and of Zdeněk Kaplan in Merklovice.

The nomenclature of plant species follows the 7 already published volumes of the Flora of Siberia (Krasnoborov 1988 etc.) and Malyšev and Peškova (1979) for the families not treated yet.

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## Results

In the following list, species are alphabetically ordered. Species new for the mountainous part of Svjatoj Nos peninsula or for the isthmus are marked by an asterisk ([\*a] and [\*b] respectively), those new for the Zabaikal'skij National Park by two asterisks [\*\*].

*Achillea* cf. *millefolium* L.: in the settlement of Monachovo along the road, 470 m. [\*\*].

*Acorus calamus* L.: wetlands on the right side of the Barguzin river near its mouth, 457 m. [\*\*].

*Anthriscus aemula* (Woronow) Schischkin: creek valley 8.5 km SSE of the Markova Cape, 1150 m; along a forest creek 1.5 km NW of the settlement of Katun', 500 m; along a forest creek 2.5 km NNE of the settlement of Glinka, 640 m. [\*a].

*Artemisia integrifolia* L.: along the road near the settlement of Monachovo, 470 m. [\*\*].

*A. tanacetifolia* L.: creek valley 8.5 km SSE of the Markova Cape, 1150 m. [\*a].

*Astragalus danicus* Retz.: pastures in the settlement of Kulinoe, 480 m. [\*\*].

*Batrachium trichophyllum* (Chaix) van den Bosch: Čivyrkujskij Bay margin near Golaja Gora, 455 m. [\*\*].

*Camelina microcarpa* Andrz.: Rocky slopes above the Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 480 m. [\*\*].

*Cardamine macrophylla* Willd.: creek valley 8.5 km SSE of the Markova Cape, 1150 m; creek valley 6 km SE of Markova Cape, 1050 m; along a forest creek NW of Makarova Cape; along a forest creek 2.5 km NNE of the settlement of Glinka, 640 m. [\*\*].

*Carex aterrima* Hoppe: plateau on the summit of the mountain range 5.5 km NW of the settlement of Glinka, 1750 m. [\*\*].

*C. falcata* Turcz.: wet forest near the settlement of Kordon, 455 m.

*C. heleonastes* Ehrh.: Burtu creek (Peškova and Malyšev 1990). [\*\*].

*C. pseudocuraica* F. Schmidt: wetlands 5 km ESE of the settlement of Glinka, 455 m; wetlands 8 km SE of the settlement of Glinka, 455 m; Čivyrkujskij Bay coast near the east margin of the settlement of Monachovo, 455 m; peatbog 1.5 km N of the settlement of Katun', 455 m. [\*\*].

Note: Checking the herbarium specimens from 1991 it was found out that this species was mistaken for *C. chordorrhiza* Ehrh.

*C. reptabunda* (Trautv.) V. Krecz.: on damp sands near the Barguzin river mouth, 455 m. [\*\*].

*Cerastium arvense* L.: rocky slopes above the Čivyrkujskij Bay coast near the E margin of Monachovo, 480 m. [\*a].

*Chenopodium opulifolium* Schrader: Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 455 m. [\*\*].

Note: In Siberia, this adventive species is only reported from its southwestern part (Krasnoborov and Malyšev 1992). This is the first finding in East Siberia.

*C. striatifforme* J. Murr: Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 455 m. [\*\*].

Note: This taxon of *C. album* group, taxonomical status of which is not quite clear, is not mentioned in the Flora of Siberia (Krasnoborov and Malyšev 1992) at all.

*Cotoneaster neopopovii* Czer.: open place in krummholz 3.5 km NNW of the Makarova Cape, 1300 m.

*C. tjuliniae* Pojark.: forest 0.8 km NE of the settlement of Glinka, 500 m.

Note: *Cotoneaster uniflorus* Bunge is mentioned by Anenchonov et al. (1992) as having been found on the Kovrižka hill, nevertheless, the herbarium specimen was checked and identified as *C. tjuliniae* Pojark.

*Cyperus fuscus* L.: Zmeinaja Bay (Ivanova 1991). [\*\*].

*Deschampsia turezaninowii* Litv.: at the N coast of Svjatoj Nos peninsula in the vicinity of Orlovj Cape, 455 m. [\*a].

*Elodea canadensis* Michaux: Čivyrkujskij Bay margin near the Golaja Gora, 455 m. [\*\*].

*Elymus transbaicalensis* (Nevski) Tzvelev: creek valley 8.5 km SSE of Markova Cape, 1150 m. [\*a].

*Empetrum subholarcticum* V. Vassil.: summit of the range ca. 5.5 km NE of the settlement of Glinka, 1750 m; forest near the settlement of Glinka, 460 m. [\*\*].

Note: The herbarium specimens from the above mentioned localities were mistakenly determined as *E. sibiricum* V. Vassil. No herbarium specimen of *E. sibiricum* which is given by the other authors (e.g. Bojkov et al. 1991, Anenchonov et al. 1992) from the territory of the National Park has been seen by the senior author of the present paper.

*Epilobium ciliatum* Rafin.: along the road ca 3 km ESE of the settlement of Glinka, 455 m. [\*\*].

Note: This adventive species is not mentioned in Malyšev and Peškova (1979) for the Baikal region at all. Despite of this, there must have been some data on the occurrence of this species in this region in the seventies (see Barkalov 1991).

*Epipactis helleborine* (L.) Crantz: forest NE of Makarova Cape, 700 m; forest 2.1 km NW of the settlement of Glinka, 850 m.

*Gypsophila altissima* L.: along the road near the settlement of Monachovo, 470 m. [\*\*].

- Halorpestes salsuginosa* (Pallas ex Georgi) Greene [syn. *H. ruthenica* (Jacq.) Ovcz.]: on damp sands in the vicinity of the Barguzin river mouth, 455 m; mires between the settlement of Kulinoe and Čivyrkuj-skij Bay, 455 m. [\*\*].
- Heteropappus altaicus* (Willd.) Novopokr.: slopes of Golaja Gora 3 km NNE of the settlement of Kulinoe, 480 m. [\*a].
- Hieracium robustum* Fries: Kovrižka hill, 480 m. [\*b].
- Impatiens noli-tangere* L.: along a forest creek 1.5 km NW of the settlement of Katun', 500 m. [\*\*].
- Lycopodium annotinum* L.: forest along a stream 2 km NW of Makarova Cape, 455 m. [\*a].
- Nuphar pumila* (Timm) DC.: wetlands on the right side of the Barguzin river near its mouth, 455 m.
- Nymphaea tetragona* Georgi: in a small lake on the shores of Lake Baikal near the settlement of Monachovo, 455 m. [\*a].
- Origanum vulgare* L.: creek valley 3 km NW of Makarova Cape, 950 m.
- Orobanche krylovii* G. Beck: Zmeinaja Bay (Ivanova 1991). [\*\*].
- Oxytropis adamsiana* (Trautv.) Jurtz.: in the alpine tundra near the settlement of Glinka (Ivanova 1991). [\*\*].
- Pedicularis uncinata* Stephan: creek valley 8.5 km SSE of the Markova Cape, 1150 m. [\*\*].
- Persicaria hydropiper* (L.) Spach: wetlands and wet ruderal sites near the settlements of Monachovo, Katun' and Kurbulik, 455 m. [\*a].
- Poa* cf. *stepposa* (Krylov) Roshev.: steppe slopes of the Kovrižka hill 1.5 km ENE of the settlement of Kulinoe, 480 m; steppe slopes near the settlement of Monachovo, 480 m; steppe slopes near the settlement of Katun', 490 m. [\*\*].
- Potamogeton berchtoldii* Fieber: loose sedge stands in mires along the road between Ust'-Barguzin and the settlement of Glinka near the Kedrovka beach, 455 m (Kaplan 1994). [\*\*].
- P. friesii* Rupr.: Samovo Lake in the NW part of the isthmus, 455 m (Kaplan 1994). [\*\*].
- Potentilla acaulis* L.: cliffs above the Čivyrkujskij Bay coast near the N margin of the settlement of Katun', 490 m; rocky slopes above the Baikal coast 1 km E of the settlement of Monachovo, 500 m; rocky slopes above the Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 480 m; open place in a pine forest 2.7 km NW of the settlement of Glinka, 1150 m; slopes of Golaja Gora 3 km NNE of the settlement of Kulinoe 480 m. [\*a].
- Pulsatilla tureczanowii* Krylov et Serg.: open place in krummholz 3.5 km NNW of the Makarova Cape, 1300 m; summit of a lateral range 4.4 km NW of the settlement of Glinka, 1600 m; krummholz 4 km NW of the settlement of Glinka, 1550 m; open place in a pine forest 2.7 km NW of

settlement of Glinka, 1150 m; cliffs above the Čivyrkujskij Bay coast near the N margin of the settlement of Katun', 490 m; rocky slopes above the Baikal coast 1 km E of the settlement of Monachovo, 500 m; rocky slopes above the Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 480 m. [\*\*].

*Pyrola asarifolia* Michaux: forest 5 km S from the Orlovjy Cape, 550 m; forest on slopes above a creek valley 6 km SE of Markova Cape, 1050 m; forest 1 km NNW of the settlement of Katun', 500 m; forest 0.8 km NE of the settlement of Glinka, 500 m; forest 3 km WSW of the settlement of Glinka, 480 m; forest 1 km W of the settlement of Kulinoe, 470 m; forest 1 km NE of the settlement of Monachovo, 470 m; forest 2.5 km SW of the Kurbulik Cape, 465 m. [\*a].

*Raphanus raphanistrum* L.: along the road near the Barmašovye Lakes 5.5 km NNE of Ust'-Barguzin, 455 m. [\*\*].

*Rubus chamaemorus* L.: plateau on the summits of the mountain range 5.5 km NW of the settlement of Glinka, 1770 m. [\*a].

*Sambucus sibirica* Nakai: forest 5 km S from Orlovjy Cape, 550 m; block field 8 km SSE of Markova Cape, 1200 m; forest NE of Makarova Cape, 800 m. [\*a].

*Sedum maximum* s.l.: rocky slopes of Čivyrkujskij Bay 1 km NE of the settlement of Monachovo, 500 m; slopes of Golaja Gora' 3 km NNE of the settlement of Kulinoe, 480 m; forest 2.2 km NW of the settlement of Glinka, 900 m. [\*a].

Note: Plants from Svjatoj Nos peninsula have yellow flowers and resemble European diploid species *Sedum maximum* L. which does not occur in Central Siberia according to e.g. Malyšev and Peškova (1979). Bojkov et al. (1991) probably used for these plants the name *Sedum telephium* L. However, these plants are identical neither with *Sedum maximum* s.s. nor with any other known species (Grulich 1994).

*Selaginella rupestris* (L.) Spring: slopes 8 km SE of Markova Cape, 1600 m; open place in krummholz 3.5 km NNW of the Makarova Cape, 1300 m; open place in a pine forest 2.7 km NW of the settlement of Glinka, 1150 m. [\*a].

*Sisymbrium heteromallum* C. A. Meyer: cliffs above the Čivyrkujskij Bay coast near the N margin of the settlement of Katun', 490 m; rocky slopes above the Čivyrkujskij Bay coast 1 km NE of the settlement of Monachovo, 500 m; rocky slopes above the Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 480 m. [\*\*].

*Thalictrum minus* L.: slopes 8 km SE of Markova Cape, 1600 m; creek valley 8.5 km SSE of the Markova Cape, 1150 m; creek valley 3 km NW of Makarova Cape, 950 m; along a forest creek 1.5 km NW of the settlement of Katun', 500 m; rocky slopes above the Čivyrkujskij Bay

coast 1 km NE of the settlement of Monachovo, 500 m; along a forest creek 2.5 km NNE of the settlement of Glinka, 640 m. [\*a].

*Trollius kytmanovii* Reverd.: slopes 8 km SE of Markova Cape, 1600 m; creek valley 8.5 km SSE of Markova Cape, 1200 m; creek valley 8.5 km SSE of Markova Cape, 1150 m; creek valley 6 km SE of Markova Cape, 1050 m.

*Turritis glabra* L.: rocky slopes above the Čivyrkujskij Bay coast near the E margin of the settlement of Monachovo, 480 m. [\*\*].

*Utricularia minor* L.: loose sedge stands in mires between Barguzinskij Bay coast and Arangatuj Lake, 455 m. [\*\*].

### Summary

This supplement to the flora of Svjatoj Nos peninsula contains localities of 55 species, of which 32 are reported as new for the territory of the Zabajkal'skij National Park. *Chenopodium opulifolium* and *C. striatiforme* were found in eastern Siberia for the first time. Three of the taxa, *Cotoneaster neo-popovii*, *C. tjulinae* and *Deschampsia turczaninowii*, are considered to be endemic for the Baikal region. The species listed in the Red Data Book of Buryatia are the following: *Deschampsia turczaninowii*, *Epipactis helleborine* and *Nymphaea tetragona*.

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