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A Floristic Study of the Vascular Plants of Kharimkotan, Kuril Islands

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Abstract The flora of Kharimkotan, the middle Kuril Islands, had not been known prior to field work performed under the auspices of the International Kuril Island Project (IKIP) in 1996 and 2000. A first checklist of the vascular plants including the old specimens collected by Tatewaki in 1930, is provided here. The list represents 46 families, 121 genera, 182 species, and 4 subspecies for the island. Dominant families are; Asteraceae (17 spp.), Poaceae (17 spp.), Cyperaceae (17 spp.), Brassicaceae (10 spp.), Rosaceae (10 spp.) and Ericaceae (10 spp.). The outline of the vegetation of Kharimkotan is also given.

Key words: flora, Kharimkotan, Kuril Islands, vegetation

Introduction

The island of Kharimkotan (area 68 km^2) lies between Onekotan and Shiashkotan (about 15 km southwest of the former and about 30 km northeast of the latter), in the northern part of the middle Kurils (Fig. 1; geographical delimitation follows Takahashi 1996). The island is somewhat elongate (8×12 km) in a north-south direction and is composed of a single volcano with a height of 1157 m above sea level (Gorshkov 1970). Several eruptions have been known during the historic period and a strong eruption took place in 1933 (Gorshkov 1970). Around 1933, huts of Japanese winter quarters were situated on the shore of Severgina Bay, where we landed in 1996. After 1945 at the end of World War II, Kharimkotan has been the uninhabited island for over half a century. Oceanic climate is predominant on the island.

The flora of the entire Kuril Island chain has been roughly clarified by Miyabe (1890), Vorobiev (1956), Tatewaki (1957), Vorobiev et al. (1974), and Barkalov (2000); however, the flora of each individual island has not been fully explored (Takahashi 1996). This paper presents the first list of the vascular plants for this island following our previous lists of Chirpoi (Takahashi et al. 1997), Chirinkotan (Takahashi et al. 1999), and Raikoke (Takahashi et al. 2002), and Kharimkotan's vegetation and phytogeographical significances are discussed briefly.

Materials and Methods

Botanists from Japan, Russia and the USA landed on the northwestern part of the island on August 8, 1996 (49°10.51' N latitude, 154°27.59' E longitude; Severgina Bay) and July 28, 2000 (49°08.662' N latitude, 154°27.365' E longitude; 1.5 km SW of Severgina Bay). We collected plants independently, and later exchanged information to compile a plant list for the island. Herbarium specimens collected by Tatewaki in 1930 May and June, and preserved at SAPS are also cited here as far as possible. Tatewaki landed on both the northwestern and southeastern parts of the island, thus our total study sites cover most accessible places on the island. Except for these two parts, people can not land on the island due to its steep marine cliffs (Fig. 1).

The circumscription and order of families in the floristic list follows Melchior (1964) to make it easier to compare our list with earlier floristic works. We cited the important synonyms only in the plant list (see Appendix). The specimens are deposited in the following herbaria: SAPS, Herbarium, The Hokkaido University Museum, Sapporo; VLA, Herbarium, Institute of Biology and Soil Sciences, Russian Academy of Sciences, Far Eastern Branch, Vladivostok; WTU, Herbarium, Department of Botany, University of Washington, Seattle. For comparison of the plant list of Kharimkotan with those of the neighboring islands, and to clarify distribution

patterns in the Kurils, we used Hultén (1930, 1968), Tatewaki (1957), Egorova (1964), Chernyaeva (1976), Hultén and Fries (1986), and our recent investigations on the Kurils in 1995 to 2000.

Results and Discussion

1) Vegetation

On the island several plant communities are recognized, we describe these communities following the recognition by Tatewaki (1957). Some interesting species from the phytogeographical point of view were also noticed.

1-1) Forest communities

Forest-thickets of *Pinus pumila* poorly developed on the northern mountain slope, but we (VB) could climb and recognize that the thickets of *P. pumila* well developed on the south-western slope of Mt. Severgina. As *Pinus pumila* has not been reported from Kharimkotan until now (Takahashi 2003), the present study is the first report of *P. pumila* for this island. In the central and northern Kurils, the thickets of *Pinus pumila* do not exist on Atlasova, Matua (Tatewaki 1957, Barkalov 2002), and Raikoke (Takahashi et al. 2002), all which have the volcanic mountains with recent eruptions. Probably the northern and south-eastern slopes of Mt. Severgina were effected by recent volcanic actions, and the succession of the vegetation has been stopped at the early stage.

Thus, pure community of *Alnus maximowiczii,* is well developed from marine terrace to mountain slopes on the north and south-eastern parts of the island. The thickets of *Alnus maximowiczii* are sometimes mixed with *Sorbus sambucifolia.* We could not find *Betula ermanii*, which is distributed from Kunashir to Rasshua but not from Matua to Shumshu (Tatewaki 1957) in the Kurils. The lacking of *Betula ermanii* may suggest that the forest vegetation of Kharimkotan is more similar to that of the northern Kurils. *Betula ermanii* appears again in Kamchatka (Nedoluzhuko and Skvortsov 1996).

1-2) Coastal vegetation

The plant communities on the sandy beaches are not very well developed but composed of *Honkenya*

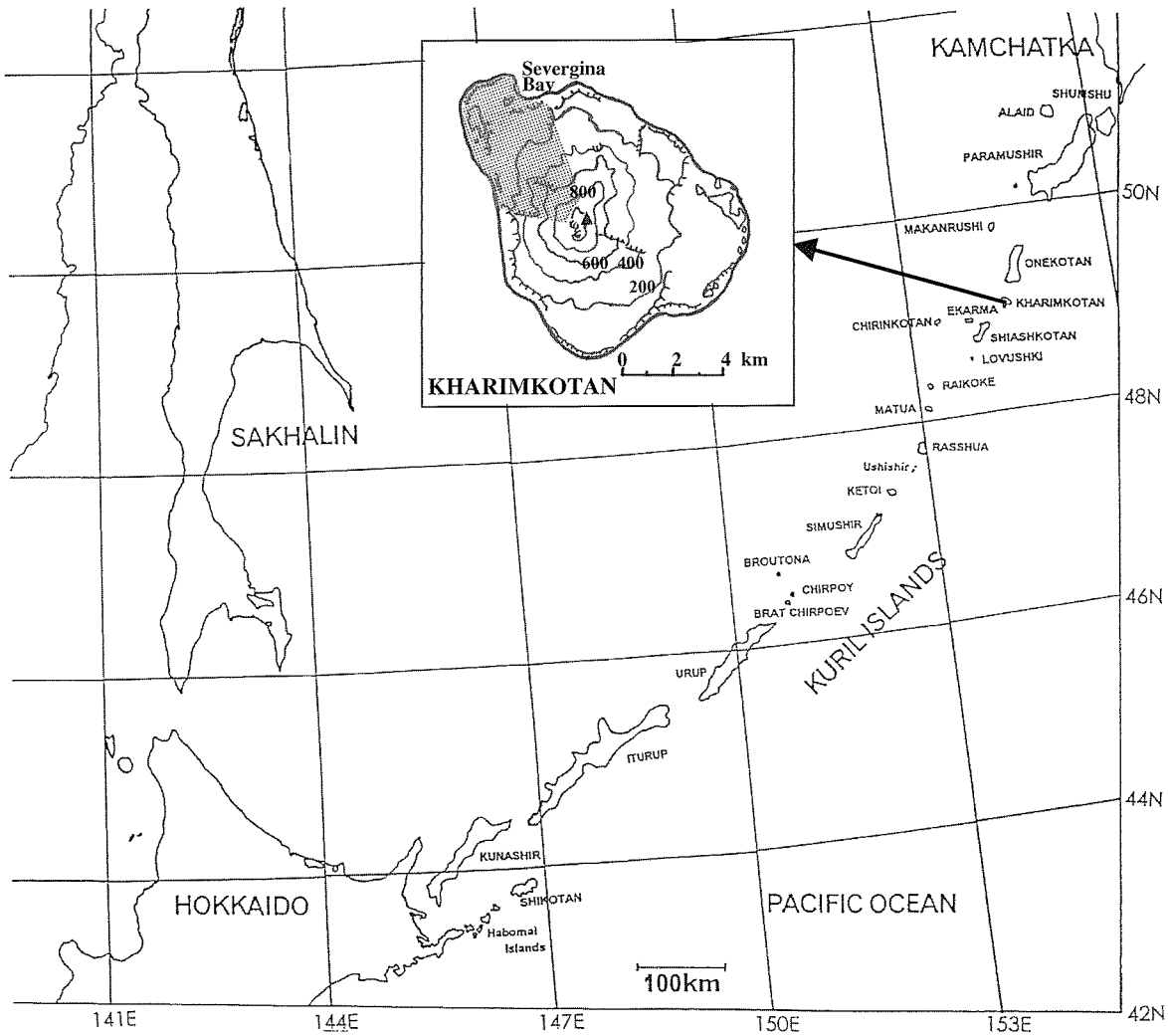
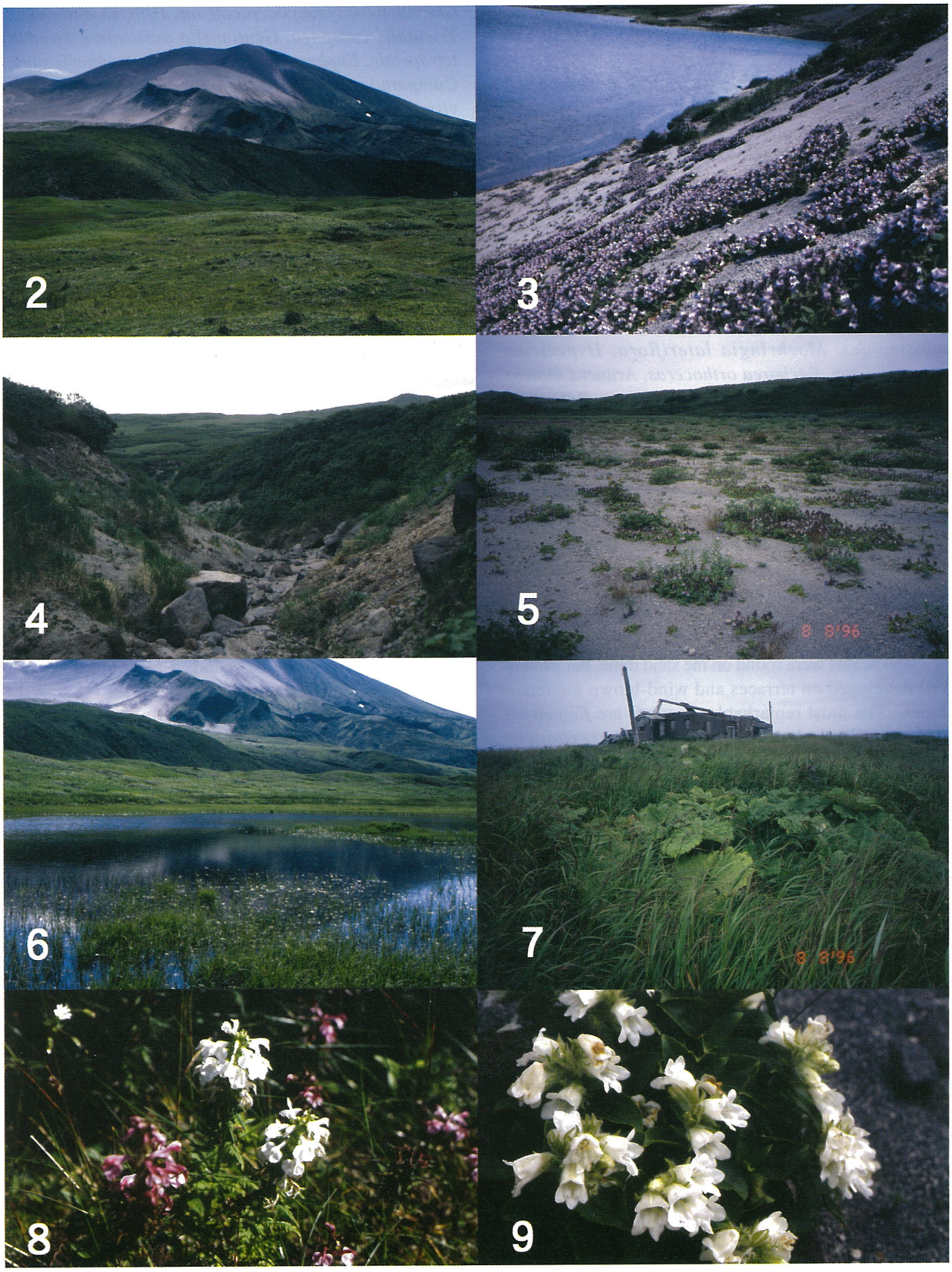


Figure 1. Map showing the explored area (shaded) on Kharimkotan Island in the Kuril Islands.



Figures 2 – 9. 2: Meadows on marine terrace and Mt. Severgina seen from the nothwest; 3: *Pennellianthus frutescens* on volcanic ash (pumice) slope; 4: Dry creek in the *Alnus maximowiczii* thicket belt; 5: Patches of *Pennellianthus frutescens*, *Anaphalis margaritacea*, *Alnus maximowiczii*, etc. growing on volcanic ash in low river valleys; 6: Emergent plants in the lake on marine terrace; 7: *Petasites japonicus* subsp. *giganteus* around the ruins on the seacoast; 8: White flowered form of *Pedicularis chamissonis*; 9: White flowered form of *Pennellianthus frutescens*.

oblongifolia, *Lathyrus japonicus*, *Mertensia maritima* subsp. *asiatica*, *Leymus mollis*, *Poa macrocalyx*, and so on.

Boulder beaches to rocky sea cliffs are dominated by *Sagina maxima* var. *crassicaulis*, *Cochlearia officinalis*, *Saxifraga bracteata*, *Ligustichum scoticum*, *Arctanthemum arcticum*, *Senecio pseudoarnica*, and *Leymus mollis*. *Draba grandis*, a maritime species of north Pacific coastal regions (Takahashi et al. 2000), was once collected by Tatewaki on the rocky sea cliffs at the eastern side of Kharimkotan. But we could not find this species on the northwestern side of the island.

Coastal meadows on sand dunes are characterized by the presence of *Cerastium fischerianum*, *Cerastium holosteoides*, *Moehringia lateriflora*, *Hypericum kamtschaticum*, *Barbarea orthoceras*, *Aruncus dioicus* var. *kamtschaticus*, *Fragaria nipponica*, *Potentilla megalantha*, *Rubus arcticus*, *Geranium erianthum*, *Viola langsdorfii*, *Epilobium hornemannii*, *Pedicularis chamissonis*, *Lonicera caerulea*, *Achillea alpina* subsp. *camtschatica*, *Picris hieracioides* subsp. *kamtschatica*, *Iris setosa*, *Luzula kjellmanniana*, *Calamagrostis langsdorffii*, *Carex gmelinii*, and so on. We could not find the salt-marshes on Kharimkotan, but *Potentilla anserina* was rarely found around a lake.

1-3) Heaths

The heaths were found on the sand dune, but usually well developed on terraces and wind-blown mountain slopes. The most remarkable elements are *Empetrum nigrum*, *Rhododendron aureum*, *Therorhodion camtschaticum*, *Vaccinium uliginosum*, *V. vitis-idaea*, and so on. The follwoing species; *Lycopodium selago*, *Chamaepericlymenum suecicum*, *Tilingia ajanensis*, *Gentianella auriculata*, *Maianthemum dilatatum*, *Deschampsia flexuosa*, *Orchis aristata*, are in company with them. Besides, *Salix nakamurana* and *Alnus maximowiczii* occur scatteringly.

1-4) Grassy land

Grassy lands are found on terrace slopes, on terraces, and on slopes of the mountains (Fig. 2). Most widely distributed species is *Calamagrostis langsdorffii*, and *Festuca rubra* is locally abundant. A rich assortment of plants is found close to coastal meadows and subalpine meadows. Grassy land communities may develop into tall herbaceous meadows and wetter communities.

1-5) Herbaceous communities

Tatewaki (1957) recognized two types; the tall herbaceous meadow and the subalpine meadow. The tall herbaceous meadows are developed in the lowland, especially on rich wet soil, e.g., at the base of terrace. *Urtica platyphylla*, *Aconitum maximum*, *Artemisia unalaskensis*, *Cirsium kamtschaticum*, and *Senecio cannabifolius* are the main components.

The subalpine meadows are mainly developed on the marine terrace. The meadows are composed of *Bistorta vivipara*, *Moehringia lateriflora*, *Geum calthifolium* var. *nipponicum*, *Oxytropis retusa*, *Chamaepericlymenum suecicum*, *Tilingia ajanensis*, *Trientalis europaea*, *Gentianella auriculata*, *Swertia tetrapetala*, *Euphrasia mollis*, *Pedicularis chamissonis*, *Campanula lasiocarpa*, *Saussurea riederi*, *Solidago virgaurea* subsp. *leiocarpa*, *Maianthemum dilatatum*, *Luzula kjellmanniana*, *Deschampsia flexuosa*, *Festuca rubra*, *Orchis aristata*, and so on.

1-6) Volcanic barrens

Since Kharimkotan is a volcanic island, higher mountain slopes and river valleys in low elevation are covered by volcanic ash and pumice (Figs. 3-5). *Oxyria digyna*, *Saxifraga merkii*, *Arcterica nana*, *Pennellianthus frutescens* (Fig. 3), *Luzula arcuata* subsp. *unalaschkensis*, and *Carex stenantha* var. *taisetsuensis* occur and form small patches on these habitats. *Salix nakamurana* characteristically occur on the volcanic slope. *Honkenya oblongifolia*, a pioneer in the shorelines, and *Pennellianthus frutescens* occurs side by side on the volcanic ash in low river valleys (Fig. 5) which may be a result of the past pyroclastic flow.

1-7) Lakes and ponds

Some ponds and lakes are located only on the northwestern and southeastern parts of Kharimkotan (Fig. 1). But aquatic plants; submerged, floating-leaved, and free-floating plants; like as *Sparganium*, *Potamogeton*, *Utriculaira*, could not be found. Emergent plants are noted in the next vegetation.

1-8) Swamps and bogs

The swamp vegetation is limited in area but found on lake margins (Fgi. 6). The following emergent plants are found as the swamp vegetation; *Hippuris vulgaris* and *Eleocharis palustris*. The *Sphagnum* bogs are scatteringly found behind the sand dunes and around the lakes and ponds, the following plants are enumerated; *Selaginella selaginoides*, *Equisetum arvense*, *Rubus arcticus*, *Rubus chamaemorus*, *Viola hultenii*, *Juncus filiformis*, *Carex hakkodensis*, *Carex rariflora*, *Eriophorum angustifolium* subsp. *subarcticum*, and so on.

2) Flora

2-1) Floral composition

We list 46 families, 121 genera, 182 species, and four subspecies for the island. We added 19 species to the species number of the vascular plants in Kharimkotan reported by Pietsch et al. (2003). The vascular plant similarity between Kharimkotan and Matua shown by Pietsch et al. (2003) may be due to the similar island size and the similar past history and scale of volcanic activities. On average each family includes 2.6 genera and 4.0 species in the Kharimkotan flora. The average number of genera and species per family is larger than those from Chirinkotan (2 and 2.3, respectively) and Raikoke (2 and 2.5, respectively) in the previous studies (Takahashi et al. 1999, 2002). Thus the vascular flora of Kharimkotan is comparatively rich in the middle Kurils,

due to it's comparatively large island size and various habitats.

The dominant families are; Asteraceae (17 spp.), Poaceae (17 spp.), Cyperaceae (17 spp.), Brassicaceae (10 spp.), Rosaceae (10 spp.) and Ericaceae (10 spp.). Three most dominant families; Asteraceae, Poaceae and Cyperaceae are commonly found in the temperate to subarctic regions in the Northern Hemisphere; i.e., Scandinavia, Yakutia, Alaska and Japan (Takahashi 1994). The floristic composition of Kharimkotan is not biased like those of Chirinkotan or Raikoke (Takahashi et al. 1999, 2002). The high position of the family Brassicaceae characterizes the more norhtern regions in the Northern Hemisphere (Takahashi 1994) and the high position of Ericaceae may indicate a floral connection with the Japanese alpine flora (cf., Volotovskyi et al. 1996). The following genera include more than two species; *Lycopodium* (6), *Stellaria* (3), *Arabis* (3), *Saxifraga* (3), *Viola* (5), *Epilobium* (3), *Taraxacum* (4), *Luzula* (5), *Agrostis* (3), *Calamagrosits* (3), *Deschampsia* (3, adding two infraspecific taxa), *Poa* (3), and *Carex* (16, adding one ifraspecific taxon). Especially a high number of *Carex* species is a distinct character which may also indicate the rich and various habitats on Kharimkotan.

Since the small islands in the volcanically active Kuril archipelago are characterized by the rarity of true ferns (Takahashi et al. 2002), the presence of five species of the ferns including Ophioglossaceae (see Appendix) indicates that the island of Kharimkotan has the proper size and includes comparatively rich and many stable habitats.

2-2) Some noticeable species from a phytogeographical viewpoint

Ranunculus reptans regarded as one of the species with a bilateral distribution pattern in the Kurils (Tatewaki 1947, 1957), was clarified as one of the continuously distributed species in the Kuril Archipelago (Hultén and Fries 1986). The present occurrence on Kharimkotan connects more closely the southern and northern populations of this species in the Kurils. Long distance seed dispersal by the sea birds for this species growing by the lake may be presumed like the case of *Ruppia occidentalis* in Atlasova, the northern Kurils (Takahashi and Kuwahara 1998).

The nucleotide sequences of non-coding regions of chloroplast DNA of *Primula cuneifolia* from Kharimkotan were analyzed by Fujii et al. (1999). The cpDNA haplotype in *P. cuneifolia* of Kharimkotan was designated as Type A together with those of Ushishir, Onekotan of the middle Kurils. Thus Type A unites the islands of the middle Kurils well, but curiously Type A is shared with Unalaska, the Aleutians. A common cpDNA haplotype found between far distant two regions can be explained by the long distance seed dispersal or ancient relicts left in the two regions. Further study is necessary in order to clarify the past migration history of the vascular plants in the northern Pacific Oceans including the Kuril Archipelago.

Several patches of *Petasites japonicus* subsp. *giganteus* were found around the ruins on the seacoast (Fig. 7). This species has been used as one of the common wild vegetables in Japan, we (HT) expect that this was possibly introduced by Japanese residents before World War II. Presence of *Fragaria nipponica* producing edible berries on the coastal meadows might be explained in the similar reason, because the natural distribution of this species was not noticed in the middle and northern Kurils by Tatewaki (1957).

Acknowledgements

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Appendix

List of the vascular plants on Kharimkotan Island, the Kuril Islands. The names of authors of plant names follow Brummitt and Powell (1992) maily, but "Worosch." is adopted except for "Vorosch.". Because he himself has used "Woroschilov" in Roman letters consistently, we obey Recommendation 46B.1 in Saint Louis Code (Greuter et al. 2000). In the species collected only by Tatewaki, the locality is noted in parenthesis under the Habitat. Recent and/or important taxonomic references and synonymy are cited in this list. Russian or Japanese names were not noted when appropriate names could not be traced. "Heaths" in the text is included in "tundra" or "subalpine meadow" in the Habitat of this list.

LYCOPODIACEAE

1) **Lycopodium alpinum** L., Sp. Pl.: 1104 (1753); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 9 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 21 (2002) —*Diphasiastrum alpinum* (L.) Holub in Preslia **47**: 107 (1975); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 48, fig. 8A (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 312 (1995).

Russian name: Plaun al'pijskij (for *Lycopodium aplinum*), Difasiastrum al'pijskij (for *Diphasiastrum alpinum*).

Japanese name: Chishima-hikage-no-kazura.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Zhuravlev and Ilushko 400, Barkalov 20173, 20174 (VLA).

2) **Lycopodium annotinum** L., Sp. Pl.: 1103 (1753); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 45, fig. 6A (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 313 (1995); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 9 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997).

Russian name: Plaun godichnyj.

Japanese name: Sugi-kazura.

Habitat: ("Nishiura", western inlet).

Specimen: Tatewaki 17212 (SAPS).

3) **Lycopodium clavatum** L., Sp. Pl.: 1101 (1753); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 43, fig. 5A (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 313 (1995); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 8 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 22 (2002).

Russian name: Plaun bulavovidnyj.

Japanese name: Hikage-no-kazura.

Habitat: Meadows in low elevation and on marine terrace.

Specimens: Takahashi 21527 (SAPS); Zhuravlev and Ilushko 410, Barkalov 20167 (VLA); Gage 2068 (WTU).

4) **Lycopodium complanatum** L., Sp. Pl.: 1104 (1753); Iwatsuki in Iwatsuki et al., Fl. Jap. 1: 9 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 22 (2002) —*Diphasiastrum complanatum* (L.) Holub in Preslia 47: 108 (1975); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 47, fig. 7A (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 312 (1995).

Russian name: Plaun uploshchjonnyi (for *Lycopodium complanatum*), Difasiastrum uploshchjonnyi (for *Diphasiastrum complanatum*).

Japanese name: Asuhi-kazura.

Habitat: Meadows around the lake.

Specimen: Takahashi 28160 (SAPS).

5) **Lycopodium obscurum** L., Sp. Pl.: 1102 (1753); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 8 (1995) — *L. juniperoideum* Sw., Syn. fil.: 178 (1806); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 42, fig. 3A, tab. 1V (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 313 (1995).

Russian name: Plaun temnyj.

Japanese name: Man'nen-sugi.

Habitat: Subalpine meadows along seasonal streams on volcanic slopes.

Specimen. Barkalov 20180 (VLA).

6) **Lycopodium selago** L., Sp. Pl.: 1102 (1753); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 5 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 22 (2002) —*Huperzia selago* (L.) Bernh. ex Schrank et Mart. in Hort. Monac.: 3 (1829); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 38, fig. 2B (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 275 (1995).

Russian name: Plaun-baranets obyknovennyj or Baranets obyknovennyj (for *Huperzia selago*).

Japanese name: Chishima-sugiran.

Habitat: On subalpine meadows.

Specimens: Tatewaki 17217, 17218 (SAPS); Zhuravlev and Ilushko 405, Barkalov 20181 (VLA).

SELAGINELLACEAE

1) **Selaginella selaginoides** (L.) Link, Fil. Spec.: 158 (1841); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 51, fig. 9B (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 486 (1995), the authors as "(L.) C.Mart."; Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 12 (1995).

Russian name: Plaunnok plaunovidnyj.

Japanese name: Koke-sugiran.

Habitat: Coastal meadows and bog by the lake.

Specimens: Tatewaki 17216, 17288, 17294, Takahashi 21529 (SAPS); Barkalov 20119 (VLA).

EQUISETACEAE

1) **Equisetum arvense** L., Sp. Pl.: 1061 (1753); Vorobiev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 10, fig. 1A, tab. 1A & a (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 220 (1995); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 19 (1995).

Russian name: Khvoshch polevoj.

Japanese name: Sugina.

Habitat: *Sphagnum* bog in low elevation and stream side on volcanic slopes.

Specimens: Takahashi 21462, 21466 (SAPS); Zhuravlev and Ilushko 290, Barkalov 20245 (VLA); Semsrott 240 (WTU).

OPHIOGLOSSACEAE

1) **Botrychium lunaria** (L.) Sw. in Schrader, J. Bot. **1800**(2): 110 (1801); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 18, Fig. 1G (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 126 (1995); Kato in Iwatsuki et al., Fl. Jap. **1**: 25 (1995).

Russian name: Grozdovnik polulunnyj.

Japanese name: Hime-hanawarabi.

Habitat: Meadows in low elevation.

Specimen: Zhuravlev and Ilushko 152 (VLA).

2) **Botrychium robustum** (Rupr. ex Milde) Underw. in Bull. Torrey Bot. Club **30**: 51 (1903); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 20 (1991); Takahashi et al. in Acta Phytotax.Geobot. **53**: 22 (2002) —*B. multifidum* (S.G.Gmel.) Rupr. var. *robustum* (Rupr. ex Milde) C.Chr. in Kungl. Sv. Vet. Akad. Handl. **5**: 49 (1928); Kato in Iwatsuki et al., Fl. Jap. **1**: 27 (1995).

Russian name: Grozdovnik moshchnyj.

Japanese name: Ezo-fuyu-no-hanawarabi.

Habitat: Meadows on sand in low elevation.

Specimens: Takahashi 21558 (SAPS) ; Zhuravlev and Ilushko 150 (VLA).

DRYOPTERIDACEAE

1) **Dryopteris expansa** (C.Presl) Fras.-Jenk. et Jermy in Fern Gaz. **11**: 338 (1977); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 53, Fig. 17A (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 217 (1995); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 156 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 22 (2002).

Russian name: Shchitovnik rasshirennyj.

Japanese name: Shirane-warabi.

Habitat: Coastal meadow slope.

Specimens: Tatewaki 17207, Takahashi 21478, Yabe s.n. (SAPS); Zhuravlev and Ilushko 276, 278, Barkalov 20254 (VLA); Gage 2066 (SAPS, WTU).

THELYPTERIDACEAE

1) **Thelypteris quelpaertensis** (H.Christ) Ching in Bull. Fan Mem. Inst. Biol. **6**: 328 (1936); Iwatsuki in Iwatsuki et al., Fl. Jap. **1**: 185 (1995) —*Oreopteris quelpaertensis* (H.Christ) Holub in Fol. Geobot. Phytotax. **4**(1): 48 (1969); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: fig. 30A, tab. 9A (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 490 (1995).

Russian name: Gornopaporotnik chedzhudinskij (for *Oreopteris quelpaertensis*).

Japanese name: Ôba-shorima.

Habitat: Border of coastal streambed.

Specimen: Gage 2082 (SAPS, WTU).

WOODSIACEAE

1) **Athyrium filix-femina** (L.) Roth in Tent. Fl. Germ. **3**(1): 65 (1799), sensu lato.

Russian name: Kochedyzhnik zhenskij (in the broad sense).

Japanese name: Meshida (in the broad sense).

Habitat: Coastal meadows and thickets of alder on lower slopes.

Specimens: Takahashi 21533, 21534 (SAPS); Barkalov 20190 (VLA).

Note: The distinction between the related species of the *A. filix-femina* group needs further clafirication.

PINACEAE

1) **Pinus pumila** (Pall.) Regel in Bull. Soc. Nat. Moscou **32**: 211, tab.1 (1859); Koropachinskij in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 15, fig. 5A (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 337 (1995); Yamazaki in Iwatsuki et al., Fl. Jap. **1**: 275 (1995).

Russian name: Sosna nizkaya.

Japanese name: Hai-matsu.

Habitat: On slopes.

Specimen: Barkalov 20205 (VLA).

SALICACEAE

1a) **Salix nakamurana** Koidz. subsp. **kurilensis** (Koidz.) H.Ohashi in J. Jap. Bot. **75**:12 (2000) —*S. kurilensis* Koidz. in Bot. Mag. Tokyo **32**: 62 (1918); Czerepanov, Vasc. Pl. Russ. Adj. Stat. 467 (1995); Nedoluzhko in Kharkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 199 (1995).

Russian name: Iva kuril'skaya.

Japanese name: Hidaka-mine-yanagi.

Habitat: Mountain tundra on volcanic slopes.

Specimen: Barkalov 20168 (VLA).

1b) **Salix nakamurana** Koidz. in Bot. Mag. Tokyo **27**: 96 (1913); Czerepanov, Vasc. Pl. Russ. Adj. Stat. 467 (1995); Nedoluzhko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 1999 (1995). subsp. **nakamurana**; H.Ohashi in J. Jap. Bot. **75**: 11 (2000).

Russian name: Iva Nakamury.

Japanese name: Takane-iwa-yanagi, Ezo-takane-yanagi.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 28141, 28142 (SAPS); Zhuravlev and Ilushko 746a, 746, Barkalov 20118, 20206, 20207, 20221 (VLA).

BETULACEAE

1) **Alnus maximowiczii** Callier ex C.K.Schneid. in Ill. Handb. Laubholzk. **1**: 122 (1904); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997), the author name as "Callier"; Takahashi et al. in Acta Phytotax. Geobot. **53**: 23 (2002) —*Duschekia maximowiczii* (Callier ex C.K.Schneid.) Pouzar in Preslia **36**(4): 339 (1964); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 117 (1995); Nedoluzhko and Skvortsov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 27 (1996).

Russian name: Olkha Maksimovicha (for *Alnus maximowiczii*), Ol'khovnik Maksimovicha (for *Duschekia frutescens*).

Japanese name: Miyama-han'noki.

Habitat: On lower slopes and on marine terrace.

Specimens: Tatewaki 17208, Takahashi 21472, 21552, 28180 (SAPS); Zhuravlev and Ilushko 137, Barkalov 20285 (VLA); Gage 2065 (WTU).

URTICACEAE

1) **Urtica platyphylla** Wedd. in Arch. Mus. Hist. Nat. (Paris) **9**: 98 (1856); Geltman in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 106 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 494 (1995).

Russian name: Krapiva ploskolistnaya.

Japanese name: Ezo-irakusa.

Habitat: Coastal tall herb meadows.

Specimens: Takahashi 21453 (SAPS); Zhuravlev and Ilushko 819, Barkalov 20283 (VLA).

POLYGONACEAE

1) **Bistorta vivipara** (L.) Delarbre in Fl. Auvergne (Delarbre) ed. 2, **2**: 516 (1800); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 62 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 405 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997), the author names as "(L.) S.F.Gray".

Russian name: Zmeevik zhivorodyashchij.

Japanese name: Mukagô-toranoo.

Habitat: Coastal meadows.

Specimens: Takahashi 28135, Yabe s.n. (SAPS); Barkalov 20215 (VLA).

2) **Oxyria digyna** (L.) Hill, Hort. Kew: 158 (1768); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 54 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 407 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 23 (2002).

Russian name: Kislichnik dvukhstolbikovyj.

Japanese name: Jin'yô-suiba.

Habitat: By streams on volcanic slopes and pumice field.

Specimens: Takahashi 21542, 28167 (SAPS); Barkalov 20246 (VLA); Gage 2043, Semsrott 229 (WTU).

3) **Rumex acetosella** L., Sp. Pl.: 338 (1753), sensu lato.

Russian name: Shchavelek pokrytoplodnyj (for *Acetosella angiocarpa*), Shchavelek obyknovennyj (for *Acetosella vulgaris*).

Japanese name: Hime-suiba (in the broad sense).

Habitat: On seashore.

Specimens: Takahashi 21577 (SAPS); Zhuravlev and Ilushko 516 (VLA).

Note: Tzvelev (1989) recognized *Acetosella vulgaris* (Koch) Fourr. (= *Rumex acetosella* L, sensu strict) and *A. angiocarpa* (Murb.) A.Löve in the Kuril Islands.

PORTULACACEAE

1) **Montia fontata** L., Sp. Pl.: 87 (1753); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 79 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 415 (1995).

Russian name: Montsiya klyuchevaya.

Japanese name: Numa-hakobe.

Habitat: By stream or wet slope in low elevation or seashore.

Specimens: Takahashi 21496, 21497, 28200 (SAPS); Zhuravlev and Ilushko 667, Barkalov 20242 (VLA).

CARYOPHYLLACEAE

1) **Cerastium fischerianum** Ser. in DC., Prodr. **1**: 419 (1824); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 161 (1995); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 88 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997).

Russian name: Yaskolka Fishera.

Japanese name: Ôbana-miminagusa.

Habitat: Meadows in low elevation.

Specimens: Takahashi 21501, 28162 (SAPS); Zhuravlev and Ilushko 209, Barkalov 20230, 20273 (VLA); Gage 2053 (WTU).

2) **Cerastium holosteoides** Fries, Nov. Fl. Suec. **4**: 52 (1817); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 161 (1995); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 87 (1996).

Russian name: Yaskolka dernistaya.

Japanese name: Miminagusa (in the broad sense).

Habitat: Meadows in low elevation.

Specimens: Takahashi 21492, 21513 (SAPS); Zhuravlev and Ilushko 212 (VLA); Gage 2069 (WTU).

3) **Honkenya oblongifolia** Torr. et Gray, Fl. North Amer. **1**: 176 (1838); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 168 (1995), "*Honckenya*"; Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 52 (1996); Takahashi et al. in Acta Phytotax. Geobot. **53**: 23 (2002) —*H. peploides* (L.) Ehrh. var. *major* Hook.; Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997).

Russian name: Gonkeniya prodolgovatolistnaya.

Japanese name: Hama-hakobe.

Habitat: On sandy beach.

Specimens: Takahashi 21441 (SAPS); Zhuravlev and Ilushko 216 (VLA); Gage 2011 (WTU).

4) **Moehringia lateriflora** (L.) Fenzl, Vers. Darstell. Alsin. tab. ad.18, 38 (1833); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 171 (1995); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 57 (1996); Takahashi et al. in Acta Phytotax. Geobot. **53**: 23 (2002).

Russian name: Meringiya bokotsvetnaya.

Japanese name: Ôyama-husuma.

Habitat: Meadows on marine terrace and in low elevation.

Specimens: Takahashi 21445, 21559, 21567, 21568 (SAPS); Zhuravlev and Ilushko 221, Barkalov 20228 (VLA); Gage 2027 (WTU).

5) **Sagina maxima** A.Gray var. **crassicaulis** (S.Wats.) H.Hara in Rhodora **41**: 391 (1939); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999) —*S. crassicaulis* S.Wats.; Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 47 (1996) —*S. maxima* A.Gray; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 172 (1995).

Russian name: Mshanka tolstostebelnaya.

Japanese name: Ezo-hama-tsumekusa.

Habitat: On sandy and gravelly beaches.

Specimens: Takahashi 28196 (SAPS); Barkalov 20239 (VLA).

6) **Stellaria calycantha** (Ledeb.) Bong. in Mem. Acad. Sci. Petersb. Ser. 6. **2**: 127 (1832); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 177 (1995); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 72 (1996); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002).

Russian name: Zvevdchatka chashechkotsvetkovaya.

Japanese name: Kanchi-yachi-hakobe.

Habitat: Damp meadows on coastal slopes and by streams in low elevation.

Specimens: Takahashi 21458, 21499 (SAPS); Zhuravlev and Ilushko 233, Barkalov 20234 (VLA).

7) **Stellaria fenzlii** Regel in Bull. Soc. Nat. Moscou **35**: 280 (1862); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 72 (1996); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002).

Russian name: Zvezdchatka Fentslya.

Japanese name: Shiraoi-hakobe.

Habitat: Meadows in low elevation and thickets of alder on slopes.

Specimens: Takahashi 21449 (SAPS); Zhuravlev and Ilushko 228, Barkalov 20145, 20282 (VLA).

8) **Stellaria ruscifolia** Pall. ex Schltdl. in Mag. Ges. Nat. Freunde Berlin **7**: 194 (1816); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 178 (1995); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 83 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002).

Russian name: Zvezdchatka iglitselistnaya.

Japanese name: Shikotan-hakobe.

Habitat: On rocks by upper of river.

Specimen: Barkalov 20200 (VLA).

RANUNCULACEAE

1) **Aconitum maximum** Pall. ex DC., Reg. Veg. Syst. Nat. **1**: 380 (1817); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 422 (1995); Luferov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 61 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997).

Russian name: Borets bol'shoj.

Japanese name: Ôchishima-torikabuto.

Habitat: Coastal tall herbaceous meadows.

Specimens: Takahashi 21456 (SAPS); Zhuravlev and Ilushko 727 (VLA).

2) **Anemone narcissiflora** L. var. **villosissima** DC., Prodr. **1**: 22 (1824) —*Anemonastrum villosissimum* (DC.) Holub; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 424 (1995); Starodubtsev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 74 (1995), the author names as "(DC) Starodub.".

Russian name: Vetrenik mokhnateishyj (for *Anemonastrum villosissimum*).

Japanese name: Senka-sô, Chishima-ichige.

Habitat: On meadows by rocks on marine terrace slopes.

Specimen: Barkalov 20237 (VLA).

3) **Coptis trifolia** (L.) Salisb. in Trans. Linn. Soc. (London) **8**: 305 (1807); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 427 (1995); Luferov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 32 (1995).

Russian name: Koptis trekhlistnyj.

Japanese name: Mitsuba-ôren.

Habitat: (No locality).

Specimen: Tatewaki 17304 (SAPS).

4) **Ranunculus reptans** L., Sp. Pl.: 554 (1753); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 434 (1995); Luferov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 105 (1995).

Russian name: Lyutik rasprostertyj.

Japanese name: Ito-kinpôge.

Habitat: Dried up lake.

Specimens: Kuwahara s.n., Takahashi 21574 , 28156 (SAPS); Bogatov 20115 (VLA); Gage 2045 (WTU).

5) **Trollius riederianus** Fisch. et C.A.Mey. in Index Sem. Horti Bot. Petropol. **4**: 48 (1837); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 436 (1995); Luferov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 19 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997).

Russian name: Kupalnitsa Ridera.

Japanese name: Chishimano-kinbaisô.

Habitat: Meadows at river-mouth.

Specimen: Takahashi 28194 (SAPS).

CLUSIACEAE

1) **Hypericum kamtschaticum** Ledeb. in Denkschr. Bot. Ges. Regensb. **3**: 131 (1841); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 88 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 279 (1995).

Russian name: Zveroboi kamchatskij.

Japanese name: Hai-otogiri.

Habitat: Coastal meadows.

Specimens: Takahashi 21519 (SAPS); Zhuravlev and Ilushko 364; Barkalov 20269 (VLA); Gage 2062 (WTU).

DROSERACEAE

1) **Drosera rotundifolia** L., Sp. Pl.: 281 (1753); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 239 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 217 (1995).

Russian name: Rosyanka kruglolistnaya.

Japanese name: Môsen-goke.

Habitat: ("Nishiura", western inlet).

Specimen: Tatewaki 17291 (SAPS).

BRASSICACEAE

1) **Arabis lyrata** L. var. **kamtschatica** Fisch. ex DC., Syst. Nat. **2**: 231 (1821); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002) —*Cardaminopsis lyrata* (L.) Hiitonen; Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 101 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 133 (1995).

Russian name: Rezukha kamchatskaya (for *Arabis lyrata* var. *kamtschatica*), Serdechnikovidnik lirovidnyj (for *Cardaminopsis lyrata*).

Japanese name: Miyama-hatazao.

Habitat: On scree by rocks.

Specimens: Takahashi 21546 (SAPS); Barkalov 20194 (VLA).

2) **Arabis serrata** Franch. et Sav. var. **glauca** (H.Boissieu) Ohwi in Acta Phytotax. Geobot. **7**: 33 (1938) —*A. glauca* H.Boissieu in Bull. Herb. Boiss. **7**: 786 (1899); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 130 (1995).

Russian name: Rezukha sizaya.

Japanese name: Ezo-no-iwahatazao.

Habitat: Under tall grasses on stabilized scree by rocks.

Specimens: Barkalov 20197, 20256 (VLA).

3) **Arabis stelleri** DC., Syst. Nat. **2**: 242 (1821); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 99 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 130 (1995).

Russian name: Rezukha Stellera.

Japanese name: Hama-hatazao (in the broad sense).
Habitat: Stabilized sand dunes.
Specimen: Gage 2029 (WTU).

4) **Barbarea orthoceras** Ledeb. in Index Sem. Horti Dorp.: 2 (1824); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 59 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 131 (1995).
Russian name: Surepka pryamaya.
Japanese name: Yama-garashi.
Habitat: Coastal meadows in low elevation.
Specimens: Takahashi 21447, Yabe s.n. in 2000 (SAPS); Zhuravlev and Ilushko 156, Barkalov 20208 (VLA); Gage 2030, 2044, Semsrott 238 (WTU).

5) **Cardamine regeliana** Miq. in Ann. Mus. Bot. Lugd-Bat. **2**: 73 (1865-66); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 71 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 133 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999) —*C. scutata* Thunb.
Russian name: Serdechnik Regelya.
Japanese name: Ôba-tanetsukebana.
Habitat: Along streams.
Specimens: Takahashi 21488, 28197 (SAPS); Barkalov 20243 (VLA).

6) **Cardamine umbellata** Greene in Pittonia **3**: 154 (1897); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 70 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 133 (1995).
Russian name: Serdechnik zontichnyj.
Habitat: (No locality).
Specimen: Tatewaki 17300 (SAPS).

7) **Cochlearia officinalis** L., Sp. Pl.: 647 (1753); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 48 (1988); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002) —*C. oblongifolia* DC.; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 135 (1995).
Russian name: Lozhechnitsa aptechnaya.
Japanese name: Tomoshiri-sô.
Habitat: On seashore.
Specimens: Takahashi 21500 (SAPS); Zhuravlev and Ilushko 171, Barkalov 20248 (VLA); Gage 2057 (WTU).

8) **Draba borealis** DC., Reg. Veg. Syst. Nat. **2**: 342 (1821); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 93 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 137 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 37 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 24 (2002).
Russian name: Krupka severnaya.
Japanese name: Ezo-inu-nazuna.
Habitat: On rocks by upper of river.
Specimen: Barkalov 20203 (VLA).

9) **Draba grandis** Langsd. in DC., Syst. Nat. **2**: 355 (1821); Berkutenko in Linzer Biol. Beitr. **27**(2): 1121 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002) —*D. hyperborea* auct., non Desv.; Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 93 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 137.
Russian name: Krupka bol'shaya.
Japanese name: Ishino-nazuna.
Habitat: (Rocky cliffs at eastern side).
Specimen: Tatewaki 17308 (SAPS).

10) **Rorippa islandica** (Oeder) Borb·s, Balaton Fl. **2**: 392 (1900) —*R. palustris* (L.) Besser, Enum. Pl. Volhyn.: 27 (1822); Berkutenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 62 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 148 (1995).
Russian name: Zherushnik bolotnyj.
Japanese name: Sukashitagobô.
Habitat: On shore of lake.
Specimen: Barkalov 20209 (VLA).

CRASSULACEAE

1) **Rhodiola rosea** L., Sp. Pl.: 1035 (1753), sensu lato; Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Ohba in Iwatsuki et al., Fl. Jap. **2b**: 30 (2001) —*R. integrifolia* Raf. in Atl. J. **1**: 146 (1832); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 217 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 194 (1995).
Russian name: Rodiola rozovaya or Zolotoj koren' (for *R. rosea*), Rodiola tsel'nolistnaya (for *R. integrifolia*).
Japanese name: Iwa-benkei (in the broad sense).
Habitat: (No locality).
Specimen: Tatewaki 17310 (SAPS).

SAXIFRAGACEAE

1) **Chrysosplenium kamtschaticum** Fisch. ex Ser. in DC., Prodr. **4**: 48 (1830); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 183 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 470 (1995); Wakabayashi in Iwatsuki et al, Fl. Jap. **2b**: 61 (2001).
Russian name: Selezenochnik kamchatskij.
Japanese name: Chishima-nekonomesô.
Habitat: Damp places by stream.
Specimens: Tatewaki 17205, 17312, Takahashi 21487 (SAPS); Zhuravlev and Ilushko 754, Barkalov 20281 (VLA).

2) **Parnassia palustris** L., Sp. Pl.: 273 (1753); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 235 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 335 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Akiyama in Iwatsuki et al., Fl. Jap. **2b**: 38 (2001).
Russian name: Belozor bolotnyj.
Japanese name: Umebachi-sô.
Habitat: Subalpine meadows.
Specimen: Zhuravlev and Ilushko 500 (VLA).

3) **Saxifraga bracteata** D.Don in Trans. Linn. Soc. **13**(2): 367 (1822); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 160 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 471 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Wakabayashi in Iwatsuki et al., Fl. Jap. **2b**: 56 (2001); Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002).
Russian name: Kamnelomka pritsvetnikovaya.

Japanese name: Kiyoshi-sô.

Habitat: On the beach and on wet rocks along streams on volcanic slopes.

Specimens: Tatewaki 17311, Takahashi 21544 (SAPS); Zhuravlev and Ilushko 766, Barkalov 20187 (VLA).

4) **Saxifraga merkii** Fisch. ex Sternb., Revis. Saxifr. Suppl. **1**: 1 (1822); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 149 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 472 (1995); Wakabayashi in Iwatsuki et al., Fl. Jap. **2b**: 55 (2001), the author names as "Fisch. in Sternb."; Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002).

Russian name: Kamnelomka Myerka.

Japanese name: Chishima-kumomagusa.

Habitat: On volcanic ash.

Specimens: Kuwahara s.n., Takahashi 21564, Yabe s.n. (SAPS); Zhuravlev and Ilushko 761, 762, Barkalov 20188 (VLA); Gage 2042, Semsrott 230 (WTU).

5) **Saxifraga nelsoniana** D.Don in Trans. Linn. Soc. **13**: 355 (1821), sensu lato.

Russian name: Kamnelomka Nelsona (in the broad sense).

Japanese name: Chishima-iwabuki (in the broad sense).

Habitat: On wet rocks by streams.

Specimens: Takahashi 21489 (SAPS); Zhuravlev and Ilushko 757, 759, Barkalov 20202, 20279 (VLA).

Note: Charkevicz (1989) recognized the separate three species; *Saxifraga insularis* (Hultén) Sipl., *S. nelsoniana* D.Don and *S. reniformis* Ohwi within the *S. nelsoniana* complex, in the Kurils. Infraspecific variation and the specific distinction of this complex needs further clarification.

ROSACEAE

1) **Aruncus dioicus** (Walter) Fernald var. **kamtschaticus** (Maxim.) H.Hara in J. Jap. Bot. **30**: 68 (1955); Ikeda in Iwatsuki et al., Fl. Jap. **2b**: 101 (2001) —*A. dioicus* (Walter) Fernald; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 441 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 136 (1996).

Russian name: Volzhanka dvudomnaya (for *A. dioicus*).

Japanese name: Yamabuki-shôma.

Habitat: Coastal meadows.

Specimens: Takahashi 21475 (SAPS); Zhuravlev and Ilushko 679, Barkalov 20155 (VLA); Gage 2064 (WTU).

2) **Filipendula camtschatica** (Pall.) Maxim. in Trudy Imp. S.-Peterburgsk. Bot. Sada **6**: 248 (1879), "*kamtschatica*"; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 444 (1995); Shantser in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 218 (1996); Ikeda in Iwatsuki et al., Fl. Jap. **2b**: 187 (2001).

Russian name: Labaznik kamchatskij.

Japanese name: Oni-shimotsuke.

Habitat: Coastal sandy meadows.

Specimens: Takahashi 21512 (SAPS); Zhuravlev and Ilushko 683 (VLA).

Note: In many Japanese literature the spelling "*kamtschatica*" has been used for the specific epithet, but the original spelling by Pallas was "*camtschatica*" and later Maximowicz erroneously used "*kamtschatica*" (see synonimic list by Ikeda 2001).

3) **Fragaria nipponica** Makino in Bot. Mag. Tokyo **26**: 282 (1912); Naruhashi in Iwatsuki et al., Fl. Jap. **2b**: 189 (2001) — *F. yezoensis* H.Hara; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 445 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 164 (1996).

Russian name: Zemlyanika nipponskaya (for *F. nipponica*), Zemlyanika iezsskaya (for *F. yezoensis*).

Japanese name: Shirobana-no-hebi-ichigo, Ezo-kusa-ichigo.

Habitat: Coastal medows (introduced?).

Specimens: Takahashi 21470, 21481 (SAPS); Zhuravlev and Ilushko 6835 (VLA); Gage 2058 (WTU).

4) **Geum calthifolium** Sm. var. **nipponicum** (F.Bolle) Ohwi, Fl. Jap.: 636 (1953); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Ikeda in Iwatsuki et al., Fl.Jap. **2b**: 210 (2001) —*Parageum calthifolium* (Menz.) Nakai et H.Hara; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 446 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 212 (1996).

Russian name: Lzhegravilat kaluzhnetselistnyj.

Japanese name: Miyama-daikonsô.

Habitat: Coastal meadows and subalpine meadows on volcanic slopes.

Specimens: Takahashi 21579 (SAPS); Barkalov 20196, 20253 (VLA).

5) **Potentilla anserina** L., Sp. Pl.: 495 (1753); Naruhashi in Iwatsuki et al., Fl. Jap. **2b**: 195 (2001) —*P. anserina* L. subsp. *egedii* (Wormsk.) Hiit.; Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 205 (1996) in nota —*P. egedii* Wormsk. var. *grandis* (Torr. et Gray) H.Hara

Russian name: Lapchatka gusinaya (for *P. anserina*), Lapchatka Egeda (for *P. egedii*).

Japanese name: Ezo-tsuru-kinbai.

Habitat: Wet meadows around the lake.

Specimen: Takahashi 28159 (SAPS).

6) **Potentilla megalantha** Takeda in Bull. misc. Kew **6**: 255 (1911); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 449 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Naruhashi in Iwatsuki et al., Fl. Jap. **2b**: 199 (2001); Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002) —*P. fragiformis* Willd. ex Schltdl. subsp. *megalantha* (Takeda) Hultén; Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 199 (1996) in nota.

Russian name: Lapchatka krupnotsvetkovaya (for *P. megalantha*), Lapchatka zemlyanikovidnaya (for *P. fragiformis*).

Japanese name: Chishima-kinbai.

Habitat: On seashore and coastal meadows.

Specimens: Takahashi 21514 (SAPS); Zhuravlev and Ilushko 690, 691 (VLA); Gage 2007 (WTU).

7) **Rubus arcticus** L., Sp. Pl.: 708 (1753); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 455 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 157 (1996).

Russian name: Rubus arkticheskij, Knyazhenika.

Japanese name: Chishima-ichigo.

Habitat: Coastal meadows.

Specimens: Takahashi 21528 (SAPS); Zhuravlev and Ilushko

704, Barkalov 20122 (VLA); Gage 2070 (WTU).

8) **Rubus chamaemorus** L., Sp. Pl.: 494 (1753); Czerepanov, Vasc. Pl. Russ. Adji. Stat.: 455 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 156 (1996); Naruhashi in Iwatsuki et al., Fl. Jap. **2b**: 147 (2001).

Russian name: Rubus prizemistyj, Moroshka.

Japanese name: Horomui-ichigo (in the broad sense).

Habitat: Wet meadows around the lake.

Specimen: Takahashi 28161 (SAPS).

9) **Sanguisorba tenuifolia** Fisch. ex Link, Enum. Hort. Berol. Alt. **1**: 144 (1821); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 457 (1995); Yakubov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 228 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997) —*S. tenuifolia* var. *grandiflora* Maxim.; Naruhashi in Fl. Jap. **2b**: 183 (2001).

Russian name: Krovokhlebka tonkolistnaya.

Japanese name: Chishima-waremokô (for *S. tenuifolia* var. *grandiflora*), Nagabono-waremokô (in the broad sense).

Habitat: Coastal meadows.

Specimens: Takahashi 21535 (SAPS); Zhuravlev and Ilushko 716, 717, Barkalov 20124 (VLA).

10) **Sorbus sambucifolia** (Cham. et Schltdl.) M.Roem., Fam. Nat. Synops. Fasc. **3**: 139 (1847); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 458 (1995); Nedoluzhko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 143 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Iketani and Ohashi in Iwatsuki et al., Fl. Jap. **2b**: 114 (2001); Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002).

Russian name: Ryabina buzinolistnaya.

Japanese name: Takane-nanakamado.

Habitat: Shrubs on coastal meadows to subalpine thickets on volcanic slopes.

Specimens: Takahashi 21474, 21477 (SAPS); Zhuravlev and Ilushko 712, Barkalov 20175 (VLA); Semsrott 218 (WTU).

FABACEAE

1) **Hedysarum nonnae** Roskov in Kew Bull. **51**(2): 376 (1996); —*H. confertum* (N.S.Pavlova) N.S.Pavlova, non M.Bieb., nec Desf.; Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 288 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 246 (1995) —*H. hedysaroides* auct.

Russian name: Kopeechnik Nonny.

Japanese name: Chishima-genge (in the broad sense).

Habitat: Meadows on marine terrace and in low elevation.

Specimens: Takahashi 28145, Yabe s.n. (SAPS); Barkalov 20125 (VLA).

2) **Lathyrus japonicus** Willd., Sp. Pl. **3**(2): 1092 (1802); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 313 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 248 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Ohashi in Iwatsuki et al., Fl. Jap. **2b**: 231 (2001).

Russian name: China yaponskaya.

Japanese name: Hama-endô.

Habitat: On sandy beach and in dunes.

Specimens: Takahashi 21516, 28195 (SAPS); Zhuravlev and Ilushko 423 (VLA); Gage 2010 (WTU).

3) **Oxytropis retusa** Matsum. in Bot. Mag. Tokyo **15**: 116 (1901); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **4**: 261 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 256 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997).

Russian name: Ostrodochnik prituplennyj.

Japanese name: Kodama-sô.

Habitat: Coastal meadows and subalpine meadows on volcanic slopes.

Specimens: Takahashi 28146, 28204 (SAPS); Barkalov 20218 (VLA).

Note: Pavlova (1989) recognized *Oxytropis retusa* Matsum. and *O. hidakamontana* Miyabe et Tatew. as two separate species, but Ohashi (2001) regarded them as a conspecific. This needs future clarification.

OXALIDACEAE

1) **Oxalis acetosella** L., Sp. Pl.: 433 (1753); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 137 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 332 (1995); Amano in Iwatsuki et al., Fl. Jap. **2b**: 285 (2001).

Russian name: Kislitsa obyknovennaya.

Japanese name: Ko-miyama-katabami.

Habitat: Within mosses on lower slope and in *Pinus pumila* thickets.

Specimens: Takahashi 21495 (SAPS); Barkalov 20151 (VLA).

GERANIACEAE

1) **Geranium erianthum** DC., Prodr. **1**: 641 (1824); Tsyrenova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 141 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 272 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999); Akiyama in Iwatsuki et al., Fl. Jap. **2b**: 288 (2001); Takahashi et al. in Acta Phytotax. Geobot. **53**: 25 (2002).

Russian name: Geran' volosistotsvetkovaya.

Japanese name: Chishima-hûro.

Habitat: On seashore to low slopes.

Specimens: Takahashi 21570 (SAPS); Zhuravlev and Ilushko 346, 354, Barkalov 20131 (VLA); Gage 2050 (WTU).

VIOLACEAE

1) **Viola biflora** L., Sp. Pl.: 936 (1753); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 127 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 496 (1995); Akiyama, Ohba and Tabuchi in Iwatsuki et al. Fl. Jap. **2c**: 188 (1999).

Russian name: Fialka dvukhtsvetkovaya.

Japanese name: Kibana-no-komanotsume.

Habitat: Meadows on the terrace.

Specimen: Takahashi 28178 (SAPS).

2) **Viola epipsiloides** Á.Löve et D.Löve in Bot. Not. **128**(4): 516 (1975); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 105 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 496 (1995) —*V. repens* Turcz. ex Trautv. et C.A.Mey., non Schwein.; Akiyama, Ohba and Tabuchi in Iwatsuki et al., Fl. Jap. **2c**: 165 (1999)—*V. epipsila* Ledeb. subsp. *repens* (Turcz.) W.Becker

Russian name: Fialka sverkhu-golen'kaya.

Japanese name: Tanima-sumire.
Habitat: Damp place on the mountain slope.
Specimen: Takahashi 28174 (SAPS).

3) **Viola hultenii** W.Becker in Ark. Bot. **22A**(3): 4 (1928); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 106 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 496 (1995); Akiyama, Ohba and Tabuchi in Iwatsuki et al., Fl. Jap. **2c**: 164 (1999)—*V. blandiformis* Nakai var. *pilosa* H.Hara
Russian name: Fialka Khultena.
Japanese name: Chishima-usuba-sumire, Ke-usuba-sumire.
Habitat: Coastal *Sphagnum* bogs.
Specimens: Takahashi 21549, 28179 (SAPS).

4) **Viola langsdorfii** Fisch. ex Ging. in DC., Prodr. **1**: 296 (1824); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 122 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 497 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 26 (2002) [Japanese name "Ôba-tachitubo-sumire" was incorrect].
Russian name: Fialka Langsdorfa.
Japanese name: Takane-tachitsubo-sumire.
Habitat: Coastal meadows to mountain slopes.
Specimens: Takahashi 21536, 21551, 28173, 28199 (SAPS); Zhuravlev and Ilushko 821, Barkalov 20126, 20176 (VLA); Gage 2046 (WTU).

5) **Viola selkirkii** Pursh ex Goldie in Edinburgh Philos. J. 6: 324 (1822); Bezdeleva in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 106 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 497 (1995); Akiyama, Ohba and Tabuchi in Iwatsuki et al., Fl. Jap. **2c**: 172 (1999).
Russian name: Fialka Selkirka.
Japanese name: Miyama-sumire.
Habitat: In *Calamagrostis* meadows and under alder bushes on slope.
Specimens: Tatewaki 17306, 17307, Takahashi 28185 (SAPS); Barkalov 20280 (VLA).

ONAGRACEAE
1) **Circaea alpina** L., Sp. Pl.: 9 (1753); Skvortsov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 204 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 319 (1995); Boufford in Iwatsuki et al., Fl. Jap. **2c**: 230 (1999).
Russian name: Dbulepestnik al'pijskij.
Japanese name: Miyama-tanitade.
Habitat: Coastal meadows and under tall grasses in low elevation.
Specimens: Takahashi 21448 (SAPS); Zhuravlev and Ilushko 466, Barkalov 20212 (VLA); Gage 2067, Semsrott 212 (WTU).

2) **Epilobium alpinum** L., Sp. Pl.: 348 (1753); Skvortsov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 195 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 319 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 26 (2002).
Russian name: Kiprej al'pijskij.
Habitat: Meadows near snow bed.
Specimen: Zhuravlev and Ilushko 475 (VLA).

3) **Epilobium ciliatum** Raf. subsp. **glandulosum** (Lehm.) P.C.Hoch et P.H.Raven, Ann. Missouri Bot. Gard. **64** (1): 136 (1977) —*E. glandulosum* Lehm., Pugillus **2**: 14 (1830); Hooker, Fl. Bor.-Amer. **1**: 206 (1832); Skvortsov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 199 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 320 (1995) —*E. glandulosum* Lehm. var. *kurilense* (Nakai) H.Hara
Russian name: Kiprej zhelezistyj (for *E. glandulosum*).
Japanese name: Ô-chishima-akabana (for *E. glandulosum* var. *kurilense*).
Habitat: By streams.
Specimen: Zhuravlev and Ilushko 471 (VLA).
Note: The species delimitation and distribution of the three closely related species; *Epilobium ciliatum* Raf., *E. glandulosum* Lehm. and *E. maximowiczii* Hausskn. needs reexamination. Here we tentatively follow Lievens and Hoch (1999), but critical study on *Epilobium* of the Kurils should be done.

4) **Epilobium hornemannii** Rchb., Iconogr. Bot. Pl. Crit. **2**: 73, t. 180, f. 313 (1824); Skvortsov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 196 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 320 (1995); Lievens and Hoch in Iwatsuki et al., Fl. Jap. **2c**: 245 (1999).
Russian name: Kiprej Hornemana.
Japanese name: Miyama-akabana.
Habitat: Coastal meadows and stream side on volcanic slopes.
Specimens: Takahashi 21457, 21465, 21468, 28186, 28187, 28201, 28202 (SAPS); Zhuravlev and Ilushko 481, Barkalov 20192, 20236, 20247 (VLA); Gage 2080, Semsrott 239 (WTU).

HIPPURIDACEAE
1) **Hippuris vulgaris** L., Sp. Pl.: 4 (1753); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 274 (1995); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 267 (1996); Akiyama in Iwatsuki et al., Fl. Jap. **2c**: 251 (1999).
Russian name: Khvostnik obyknovennyj.
Japanese name: Suginamo.
Habitat: Small lake.
Specimens: Takahashi 28157 (SAPS); Bogatov 20114 (VLA).

CORNACEAE
1) **Chamaepericlymenum suecicum** (L.) Aschers. et Graebn., Fl. Nordostdeutsch. Flachl.: 539 (1899); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 191 (1995); Vishin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 211 (1991); Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Noshiro in Iwatsuki et al., Fl. Jap. **2c**: 258 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 26 (2002).
Russian name: Dyoren shvedskij.
Japanese name: Ezo-gozen-tachibana.
Habitat: Subalpine meadows on volcanic slopes.
Specimens: Takahashi 21520, 21524 (SAPS); Zhuravlev and Ilushko 239, Barkalov 20163 (VLA); Gage 2052 (WTU).

APIACEAE
1) **Angelica gmelinii** (DC.) Pimenov, Novosti Syst. Vyssh. Rast.: 199 (1965); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 250 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 9 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 26 (2002) —*Coelopleurum gmelinii* (DC.) Ledeb.; Takahashi

et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Ohba in Iwatsuki et al., Fl. Jap. **2c**: 287 (1999); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 133 (1999).

Russian name: Dudnik Gmelina.

Japanese name: Ezo-no-shishiudo.

Habitat: On seashore to meadows on lower slopes.

Specimens: Takahashi 21473 (SAPS); Barkalov 20166 (VLA).

2) **Heracleum lanatum** Michx. in Fl. Bor.-Amer. **1**: 66 (1903); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 269 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 17 (1995); Takahashi et al. in Acta Phytotax. Geobot. **54**: 27 (2002) —*H. dulce* Fisch.; Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997) —*H. sphondylium* L. subsp. *montanum* (Schleich. ex Gaudin) Briq.; Ohba in Iwatsuki et al., Fl. Jap. **2c**: 302 (1999).

Russian name: Borshchevik sherstistyj.

Japanese name: Ôhana-udo.

Habitat: On seashore.

Specimen: Takahashi 21521 (SAPS).

3) **Ligustichum scoticum** L., Sp. Pl.: 250 (1753); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 239 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 19 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 27 (2002)—*L. hultenii* Fernald; Takahashi et al. in Acta Phytotax. Geobot. **48**: 38 (1997); Ohba in Iwatsuki et al., Fl. Jap. **2c**: 287 (1999); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999).

Russian name: Ligustikum shotlandskij.

Japanese name: Maruba-tôki.

Habitat: On seashore.

Specimens: Takahashi 21503 (SAPS); Zhuravlev and Ilushko 131 (VLA); Gage 2008 (WTU).

4) **Tilingia ajanensis** Regel et Tiling in Nouv. Mém. Soc. Nat. Mosc. **11**: 97 (1858); Pimenov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 241 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 28 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997), the author name as "Regel"; Ohba in Iwatsuki et al., Fl. Jap. **2c**: 286 (1999), the author name as "Regel".

Russian name: Tilingiya ayanskaya.

Japanese name: Shirane-ninjin.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21541, 28148 (SAPS); Barkalov 20143, 20154, 20210, 20265 (VLA).

ERICACEAE

1) **Arcterica nana** (Maxim.) Makino in Bot. Mag. Tokyo **20**: 85 (1906); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 144 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 52 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 221 (1995);.

Russian name: Arkterika nizkaya.

Japanese name: Komeba-tsugazakura.

Habitat: On volcanic pumice and subalpine meadows.

Specimens: Tatewaki 17296, Takahashi 28171 (SAPS); Barkalov 20171 (VLA).

2) **Arctous alpina** (L.) Nied. var. **japonica** (Nakai) Takeda in Bull. Biogeogr. Jap. **4**: 288 (1934); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 54 (1993), "*A. alpinus* var. *japonicus*"; Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997), "*A. alpinus* var. *japonicus* (Nakai) Ohwi" —*A. japonica* Nakai; Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 148 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 221 (1995).

Russian name: Arktous yaponskij.

Japanese name: Urashima-tsutsuji.

Habitat: Mountain tundra.

Specimens: Tatewaki 17209, 17305, Takahashi 28143 (SAPS); Barkalov 20177 (VLA).

3) **Bryanthus gmelinii** D.Don in Edinb. New Phil. J. **17**: 160 (1834); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 127 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 8 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 221 (1995).

Russian name: Mokhotsvetnik Gmelina.

Japanese name: Chishima-tsugazakura.

Habitat: Mountain tundra.

Specimens: Tatewaki 17289, 17297, Takahashi 28144 (SAPS); Barkalov 20179 (VLA).

4) **Cassiope lycopodioides** (Pall.) D.Don in Edinb. New Phil. J. **17**: 158 (1834); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 142 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 51 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 221 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 27 (2002).

Russian name: Kassiopeya plaunovidnaya.

Japanese name: Iwahige.

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Tatewaki 17215 (SAPS); Barkalov 20165 (VLA); Semsrott 215 (WTU).

5) **Loiseleuria procumbens** (L.) Desv. in J. Bot. Appl. (Paris) 3, **1**: 35 (1814); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 137 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 8 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 222 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 28 (2002).

Russian name: Lojzeleuria lezhachaya.

Japanese name: Mine-zuô.

Habitat: Mountain tundra.

Specimens: Tatewaki 17214, 17292 (SAPS); Barkalov 20170 (VLA).

6) **Phyllodoce aleutica** (Spreng.) A.Heller in Muehlenbergia **1**: 1(1900); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 140 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 9 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 222 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997).

Russian name: Fillodotse aleutskaya.

Japanese name: Aono-tsugazakura.

Habitat: Subalpine meadows.

Specimens: Tatewaki 17299, Takahashi 21530 (SAPS);

Barkalov 20178 (VLA).

7) **Rhododendron aureum** Georgi, Bemerk. Reise Russ. Reich. **1**: 214 (1775); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 131 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 43 (1993); Czerepanov, Vasc. Russ. Adj. Stat.: 222 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997).

Russian name: Rododendron zolotistyj.

Japanese name: Kibana-shakunage.

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Tatewaki 17206, Takahashi 21571, 28147 (SAPS); Barkalov 20169 (VLA).

8) **Therorhodion camtschaticum** (Pall.) Small in North Amer. Fl. **29**: 45 (1914); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 11 (1993); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 28 (2002) — *Rhododendron camtschaticum* Pall.; Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 136 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 222 (1995).

Russian name: Rododendron kamchatskij.

Japanese name: Ezo-tsutsuji.

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Takahashi 21518 (SAPS); Zhuravlev and Ilushko 314, Barkalov 20257 (VLA); Gage 2032, Semsrott 217 (WTU).

9) **Vaccinium uliginosum** L., Sp. Pl.: 350 (1753); Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 151 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 223 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 28 (2002).

Russian name: Golubika.

Japanese name: Kuromame-no-ki (in the broad sense).

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Takahashi 21531 (SAPS); Zhuravlev and Ilushko 829, Barkalov 20157 (VLA); Gage 2035 (WTU).

10) **Vaccinium vitis-idaea** L., Sp. Pl.: 351 (1753); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 58 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 223 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 28 (2002) — *Rhodococcum vitis-idaea* (L.) Avrorin; Khokhryakov and Mazurenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 154 (1991).

Russian name: Brusnika obyknovennaya.

Japanese name: Kokemomo.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Tatewaki 17211, 17301, Takahashi 21532 (SAPS); Zhuravlev and Ilushko 823, Barkalov 20255 (VLA); Gage 2051 (WTU).

EMPETRACEAE

1) **Empetrum nigrum** L., Sp. Pl.: 1022 (1753), sensu lato; Takahashhi et al. in Acta Phytotax. Geobot. **53**: 28 (2002)— *E. sibiricum* V. Vassil.— *E. albidum* V.Vassil.

Russian name: Shiksha chjornaya (for *E. nigrum*), Shiksha sibirskaya (for *E. sibiricum*), Shiksha belovataya (for *E. albidum*).

Japanese name: Gankôran (in the broad sense).

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Tatewaki 17213, Takahashi 21506 (SAPS); Zhuravlev and Ilushko 292 (*E. albidum* s.str.), 301, Barkalov 20156, 20227 (VLA); Gage 2055 (WTU).

Note: Infraspecific variation and the distinctions between the species listed above needs clarification.

PRIMULACEAE

1) **Primula cuneifolia** Ledeb. in Mém. Acad. Sci. St.-Pét. **5**: 522 (1814); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 147 (1987); Yamazaki in Iwatsuki et al. Fl. Jap. **3a**: 93 (1993), Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 419 (1995).

Russian name: Pervotsvet klinolistnyj.

Japanese name: Ezo-ko-zakura.

Habitat: On marine terrace slopes.

Specimens: Tatewaki 17303, Takahashi 21494, 28198 (SAPS); Barkalov 20238, 20259 (VLA).

2) **Trientalis europaea** L., Sp. Pl.: 344 (1753); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 166 (1987); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 85 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 420 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 28 (2002) — *T. arctica* Fisch. ex Hook.; Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 167 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 420.

Russian name: Sedmichnik yevropejskij (for *T. europaea*), Sedmichnik arkticheskij (for *T. arctica*).

Japanese name: Tsumatori-sô (in the broad sense).

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21442, 21576 (SAPS); Barkalov 20172 (VLA); Gage 2034 (WTU).

GENTIANACEAE

1) **Gentiana kurilensis** Grossh. in Komarov, Fl. URSS **18**: 750 (1952) — *G. kawakamii* Makino p.p. — *G. nipponica* auct., non Maxim.; Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 261 (1995) — *G. jamesii* auct., non Hemsl.

Russian name: Gorechavka kuril'skaya.

Japanese name: Rishiri-rindô (in the broad sense).

Habitat: Subalpine meadows in low elevation.

Specimens: Tatewaki 17290, 17309 (SAPS).

2) **Gentianella auriculata** (Pall.) Gillett in Ann. Miss. Bot. Gard. **44**: 261 (1957); Toyokuni and Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 146 (1993); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 269 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 270 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 29 (2002).

Russian name: Gorechavochka ushastaya.

Japanese name: Chishima-rindô.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21467 (SAPS); Zhuravlev and Ilushko 318 (VLA); Gage 2033, Semsrott 196 (WTU).

3) **Halenia corniculata** (L.) Cornaz in Bull. Soc. Sci. Nat. Neuch,tel **25**: 171 (1897); Toyokuni and Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 140 (1993); Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 278 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 271 (1995).

Russian name: Galeniya rozhkovidnaya.

Japanese name: Hana-ikari.

Habitat: Coastal meadows.

Specimens: Takahashi 21569 (SAPS); Gage 2054 (WTU).

4) **Swertia tetrapetala** Pall., Fl. Ross. **1**(2): 99, fig. 2 (1789); Toyokuni and Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 143 (1993); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997) —*Ophelia tetrapetala* (Pall.) Grossh.; Charkevicz in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **7**: 276 (1995); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 271 (1995).

Russian name: Svertsiya chetyrekhlepestnaya (for *Swertia tetrapetala*), Ofeliya chetyrekhlepestnaya (for *Ophelia tetrapetala*).

Japanese name: Chishima-senburi.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21480, 21526, 28188, Yabe s.n. (SAPS); Zhuravlev and Ilushko 334, Barkalov 20144 (VLA); Semsrott 197 (WTU).

RUBIACEAE

1) **Galium kamtschaticum** Steller ex Roem. et Schult., Syst. Veg. Mant. **3**: 182 (1827); Petelin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 221 (1991), the author names as "Steller ex Schult. et Schult.f."; Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 235 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 461 (1995), the author names as "Steller ex Schult. et Schult.f.".

Russian name: Podmarennik kamchatskij.

Japanese name: Ezono-yotsuba-mugura.

Habitat: Under alder bushes on slope.

Specimens: Takahashi 21446, 28193 (SAPS); Barkalov 20184 (VLA).

2) **Galium trifidum** L. var. **brevipedunculatum** Regel, Tent. Fl. Ussur.: 77 (1861); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 237 (1993)—*G. trifidum* L.; Petelin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 225 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 462 (1995).

Russian name: Podmarennik trekhrazdelnyj (for *G. trifidum*).

Japanese name: Hosobano-yotsuba-mugura.

Habitat: Wet meadows around the lake.

Specimens: Takahashi 21459, 21498, 28203 (SAPS); Zhuravlev and Ilushko 718, Barkalov 20233 (VLA).

BORAGINACEAE

1) **Mertensia maritima** (L.) S.F.Gray subsp. **asiatica** Takeda in J. Bot. **49**: 222 (1911); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 253 (1993); Takahashi et al. in Acta Phytotax. Geobot. **48**: 39 (1997)—*M. maritima* (L.) S.F.Gray; Starchenko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 259 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 122 (1995).

Russian name: Mertenziya primorskaya (for *M. maritima*).

Japanese name: Hama-benkeisô.

Habitat: On sandy beach.

Specimens: Takahashi 21517 (SAPS); Zhuravlev and Ilushko 148 (VLA); Gage 2056 (WTU).

SCROPHULARIACEAE

1) **Euphrasia mollis** Ledeb. ex Wettst., Monogr. Euphrasia: 141, fig. 4, 205-210, table 125 (1896); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 362 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 474 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 29 (2002).

Russian name: Ochanka myagkaya.

Japanese name: Karafuto-kogomegusa (in the broad sense).

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21463 (white fls.!), 21464 (yellow fls.), 21471, 21537 (white fls.!), 21538 (yellow fls.) (SAPS); Zhuravlev and Ilushko 773, 774, Barkalov 20128 (VLA); Gage 2028 (WTU).

2) **Pedicularis chamissonis** Steven in Mem. Soc. Nat. Moscou **6**: 20 (1823); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 358 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 478 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 29 (2002).

Russian name: Mytnik Shamisso.

Japanese name: Yotsuba-shiogama (in the broad sense).

Habitat: Subalpine meadows on volcanic slopes and on marine terrace.

Specimens: Takahashi 21451, 28176 (SAPS); Zhuravlev and Ilushko 793, 794, Barkalov 20149 (VLA); Gage 2006 (WTU).

Note: A white flowered form is found (Fig. 8).

3) **Pedicularis labradorica** Wirsing, Eclog. Bot.: tab. 10 (1778); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 350 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 479 (1995).

Russian name: Mytnik labradorskij.

Japanese name: Chishima-shiogama.

Habitat: Tundras near seashore.

Specimens: Takahashi 28136 (SAPS), Yabe s.n. in 2000 (SAPS); Barkalov 20220 (VLA).

4) **Pennellianthus frutescens** (Lamb.) Crosswhite in Amer. Midl. Nat. **83**: 362 (1970); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 293 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 480 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 29 (2002)—*Penstemon frutescens* Lamb.; Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 329 (1993); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997).

Russian name: Pennelliant kustarnikovyj.

Japanese name: Iwabukuro.

Habitat: On pumice.

Specimens: Takahashi 21543, 28189 (white fls!; Fig. 9), 28190 (SAPS); Zhuravlev and Ilushko 803, 804, Barkalov 20164, 20183 (VLA); Gage 2009, Semsrott 231 (WTU).

5) **Veronica americana** (Rafin.) Schwein. ex Benth. in DC., Prodr. **10**: 468 (1846); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. 5: 320 (1991); Yamazaki in Iwatsuki et al., Fl. Jap. **3a**: 357 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 483 (1995).

Russian name: Veronika amerikanskaya.

Japanese name: Ezo-no-kawajisha.

Habitat: By streams in low elevation.

Specimen: Takahashi 21461 (SAPS).

6) **Veronica stelleri** Pall. ex Link in Spreng., Schrad. & Link, Jahrb. Gewachsk. **1**: 40 (1820); Ivanina in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **5**: 323 (1991); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 486 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 29 (2002).

Russian name: Veronika Stellera.

Japanese name: Chishima-kuwagata.

Habitat: Borders of dry stream bed and costal meadows.

Specimens: Takahashi 21469, 21553, 28163 (SAPS); Zhuravlev and Ilushko 809, 810, 811 , Barkalov 20120, 20249, 20274 (VLA); Gage 2079 (WTU).

LENTIBULARIACEAE

1) **Pinguicula vulgaris** L. var. **macroceras** (Pall. ex Link) Herder in Acta Hort. Petrop **1**: 380 (1872); Kadono in Iwatsuki et al., Fl. Jap. **3a**: 400 (1993) —*P. macroceras* Pall. ex Link; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 305 (1995); Tsvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 261 (1996).

Russian name: Zhiryanka krupnoshporotsvetnaya.

Japanese name: Mushitori-sumire.

Habitat: Meadows near bog on marine terrace.

Specimen: Takahashi 28175 (SAPS).

CAPRIFOLIACEAE

1) **Linnaea borealis** L., Sp. Pl.: 631 (1753); Ohba in Iwatsuki et al., Fl. Jap. **3a**: 431 (1993); Nedoluzhko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 297 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 158 (1995).

Russian name: Linneya severnaya.

Japanese name: Linne-sô.

Habitat: Marine terrace slope.

Specimens: Tatewaki 17203, Takahashi 21479 (SAPS); Zhuravlev and Ilushko 200 (VLA).

2) **Lonicera caerulea** L., Sp. Pl.: 174 (1753) Nedoluzhko in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 285 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat: 158 (1995) —*L. caerulea* L. subsp. *edulis* (Turcz.) Hultén; Ohba in Iwatsuki et al., Fl. Jap. **3a**: 438 (1993).

Russian name: Zhimolost' golubaya.

Japanese name: Ke-yonomi (in the broad sense).

Habitat: Coastal meadows and marine terrace slope.

Specimens: Takahashi 21485 (SAPS); Zhuravlev and Ilushko 206, Barkalov 20139, 20275 (VLA); Gage 2059 (WTU).

Note: In Nedoluzhko (1987), *L. caerulea* L. is native to the Kurils and *L. edulis* Turcz. ex Freyn (=*L. caerulea* subsp. *edulis*) is regarded as the more continental species which is not native to the Kurils. But according to Japanese literature (e.g., Ohba 1993), the latter *L. caerulea* subsp. *edulis* is regarded as the species growing in Sakhalin and the Kurils. There may be differences on the recognition of the infraspecific taxa of *L. caerulea* s.l. between Russia and Japan. Infraspecific variation of *L. caerulea* s.l. needs further clarification.

CAMPANULACEAE

1) **Campanula chamissonis** Fed. in Fl. URSS **24**: 279 (1957); Shimizu in Iwatsuki et al., Fl. Jap. **3a**: 412 (1993): Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 154 (1995); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 295 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997).

Russian name: Kolokol'chik Shamisso.

Japanese name: Chishima-gikyÙ.

Habitat: On sandy soil by streams.

Specimen: Barkalov 20185 (VLA).

2) **Campanula lasiocarpa** Cham. in Linnaea **4**: 39 (1829); Shimizu in Iwatsuki et al., Fl. Jap. **3a**: 412 (1993); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 155 (1995); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 297 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 30 (2002).

Russian name: Kolokol'chik pushistoplodnyj.

Japanese name: Iwa-gikyô.

Habitat: Subalpine meadows on volcanic slopes and volcanic pumice field.

Specimens: Takahashi 21507, 21508 (SAPS); Zhuravlev and Ilushko 193, Barkalov 20229, 20244 (VLA); Gage 2016, 2031, 2083, Semsrott 181, 233 (WTU).

3) **Peracarpa carnosa** (Wall.) Hook.f. et Thoms. var. **circaeoides** (F.Schmidt ex Miq.) Makino, Ill. Fl. Nippon: 82, fig. 245 (1940); Takahashi et al. in Acta Phytotax. Geobot. **53**: 30 (2002)—*P. circaeoides* (F.Schmidt ex Miq.) Feer; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 156 (1995); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 299 (1996).

Russian name: Meshkoplodnik dvulepestnikovidnyj.

Japanese name: Tani-gikyô.

Habitat: Under alder and tall grasses in meadows.

Specimens: Zhuravlev and Ilushko 196, Barkalov 20272 (VLA); Semsrott 237 (WTU).

ASTERACEAE

1) **Achillea alpina** L. subsp. **camtschatica** (Rupr. ex Heimerl) Kitam. in Acta Phytotax. Geobot. **23**: 3 (1968); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 77 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 30 (2002)—*A. sibirica* Ledeb. p.p. — *Ptarmica camtschatica* (Rupr. ex Hiemerl) Kom.; Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 102 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 92 (1995).

Russian name: Chikhotnik kamchatskij (for *Ptarmica camtschatica*).

Japanese name: Shumshu-nokogirisô.

Habitat: On stabilized sand dunes and in meadows along streams.

Specimens: Takahashi 21539 (SAPS); Zhuravlev and Ilushko 74, Barkalov 20222 (VLA); Semsrott 191 (WTU).

2) **Anaphalis margaritacea** (L.) Benth. et Hook.f., Gen. Pl. **2**: 303 (1873); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 184 (1992), the author names as "(L.) A.Gray"; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 37 (1995), the author names as "(L.) A.Gray"; Koyama in Iwatsuki et al., Fl. Jap. **3b**: 109 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 30 (2002).

Russian name: Anafalis zhemchuzhnyj.

Japanese name: Yamahahako.

Habitat: On low slopes.

Specimens: Takahashi 21460 (SAPS); Zhuravlev and Ilushko 7, Barkalov 20263 (VLA); Gage 2012 (WTU).

3) **Arctanthemum arcticum** (L.) Tzvelev in Novosti Sist. Vyssh. Rast. **22**: 274 (1985); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 109 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 39 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 30 (2002)—*Dendranthema arcticum* (L.) Tzvelev subsp. *arcticum*; Koyama in Iwatsuki et al., Fl. Jap. **3b**: 93 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999).

Russian name: Arktotsvetnik arkticheskij.

Japanese name: Chishima-ko-hamagiku.

Habitat: On seashore.

Specimens: Takahashi 28134 (SAPS); Barkalov 20211 (VLA); Semsrott 216, 227 (WTU).

4) **Arnica unalaschcensis** Less. in Linnaea **6**: 238 (1831); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 27 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 39 (1995); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 35 (1995), "*unalascensis*"; Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997), "*unalascensis*".

Russian name: Arnika unalashkinskaya.

Japanese name: Ezo-usagi-giku.

Habitat: Subalpine meadows.

Specimen: Barkalov 20284 (VLA).

Note: In some Japanese literature the spelling "*unalascensis*" has been used for the specific epithet.

5) **Artemisia unalaskensis** Rydb., North Amer. Fl. **34**: 266 (1916); Korobkov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 127 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 43 (1995); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 86 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Polyn' unalyashkinskaya.

Japanese name: Chishima-yomogi.

Habitat: On low slopes and tall grass meadows.

Specimens: Takahashi 21491 (SAPS); Zhuravlev and Ilushko 14, Barkalov 20123 (VLA); Gage 2005 (WTU).

6) **Cirsium kamtschaticum** Ledeb. ex DC., Prodr. **6**: 644 (1837); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 305 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 51 (1995); Kadota in Iwatsuki et al., Fl. Jap. **3b**: 139 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997), the author name as "Ledeb."; Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Bodyak kamchatskij.

Japanese name: Chishima-azami.

Habitat: On low moist slopes and tall grass meadows.

Specimens: Takahashi 21452 (SAPS); Zhuravlev and Ilushko 47, 48, Barkalov 20273 (VLA); Gage 2020 (WTU).

7) **Hieracium triste** Willd. ex Spreng., Syst. Veg. **3**: 640 (1826); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 77 (1995)—*Stenotheca tristis* (Willd. ex Spreng.) Schljak. in Arct. Fl. SSSR **10**: 387 (1987); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 326 (1992).

Russian name: Uzkoyacheynik pechalnyj (for *Stenotheca tristis*).

Habitat: Subalpine meadows on volcanic slopes.

Specimen: Barkalov 20148 (VLA).

8) **Petasites japonicus** (Siebold et Zucc.) Maxim. subsp. **giganteus** (F.Schmidt ex Trautv.) Kitam. in Mem. Coll. Sci. Kyoto Univ. ser. B. **16**: 164 (1942); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 36 (1995), "*japonicum*"; Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997)—*P. amplus* Kitam. in Acta Phytotax. Geobot. **1**: 115 (1932); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 215 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 86 (1995).

Russian name: Belokopytnik shirokij.

Japanese name: Akita-buki.

Habitat: On low moist slopes (introduced?, only found near ruins).

Specimen: Takahashi 21548 (SAPS).

9) **Picris hieracioides** L. subsp. **kamtschatica** (Ledeb.) Hultén, Fl. Kamtchatka **4**: 217 (1930); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 4 (1995)—*P. kamtschatica* Ledeb. in Mém. Acad. Sci. St.-Pét. **5**: 557 (1815); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. 6: 331 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 87 (1995).

Russian name: Gorlyukha kamchatskaya.

Japanese name: Kanchi-kôzorina.

Habitat: On stabilized sand dunes.

Specimens: Takahashi 21443, 28166 (SAPS); Zhuravlev and Ilushko 64, Barkalov 20146 (VLA); Gage 2004 (WTU).

10) **Saussurea riederi** Herder in Bull. Soc. Nat. Moscou **41**(2): 35 (1868); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. 6: 292 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 95 (1995); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 158 (1995).

Russian name: Sossyureya Ridera.

Japanese name: Nagaba-kita-azami.

Habitat: Subalpine meadows.

Specimens: Takahashi 21556 (SAPS); Zhuravlev and Ilushko 83 (VLA); Gage 2019 (WTU).

11) **Senecio cannabifolius** Less. in Linnaea **6**: 242 (1831); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 244 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 97 (1995); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 41 (1995).

Russian name: Krestovnik konoplelistnyj.

Japanese name: Hangon-sô.

Habitat: Coastal meadows and tall grass meadows on lower slopes.

Specimens: Takahashi 21454 (SAPS); Zhuravlev and Ilushko 95, 97, Barkalov 20130 (VLA); Gage 2060 (WTU).

12) **Senecio pseudoarnica** Less. in Linnaea **6**: 240 (1831); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 243 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 98 (1995); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 42 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997).

Russian name: Krestovnik lzhearnikovyj.

Japanese name: Ezo-oguruma.

Habitat: On seashore.

Specimens: Takahashi 21439 (SAPS); Gage 2002 (WTU); Barkalov 20271 (VLA).

13) **Solidago virgaurea** L. subsp. **leiocarpa** (Benth.) Hultén, Fl. Aleut. Isl.: 315 (1937); Koyama in Iwatsuki et al., Fl. Jap. **3b**: 57 (1995); Takahahsi et al. in Acta Phytotax. Geobot. **48**: 40 (1997)—?*S. decurrens* Lour.; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 100 (1995)—*S. paramuschirensis* Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 52 (1992) —*S. virgaurea* L. sensu lato: Takahashi et al. in J. Phytogeogr. Taxon. **47**: 134 (1999).

Russian name: Zolotarnik paramushirskij (for *S. paramuschirensis*).

Japanese name: Miyama-akino-kirinsô (for *S. virgaurea* subsp. *leiocarpa*).

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Takahashi 21523 (SAPS); Barkalov 20153, 20251 (VLA); Gage 2061 (WTU).

Note: Taxonomy and nomenclature of the *Solidago virgaurea* group is very complex, so this name is tentatively adopted here maily based on Japanese opinion.

14) **Taraxacum ceratophorum** (Ledeb.) DC., Prodr. **7**(1): 146 (1838); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 376 (1992); Czerepanov, Vasc. Pl. Russia Adj. Stat.: 103 (1995).

Russian name: Oduvanchik rogatyj.

Japanese name: Kanchi-hime-tanpopo.

Habitat: Meadows on volcanis slopes.

Specimen: Barkalov 20226 (VLA).

15) **Taraxacum ketoiense** Tatew. et Kitam. in Acta Phytotax. Geobot. **3**: 106 (1934); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 380 (1992), "*ketojense*"; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 104 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Oduvanchik ketojskij.

Japanese name: Ketoi-tanpopo.

Habitat: Coastal meadows.

Specimen: Barkalov 20231 (VLA).

16) **Taraxacum perlatescens** Dahlst. in Ark. Bot. (Stockholm) **20A**(1): 13, fig. 8 (1926); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 382 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 105 (1995).

Russian name: Oduvanchik rasshirennyj.

Japanese name: Araito-tanpopo.

Habitat: Meadows by rocks.

Specimens: Zhuravlev and Ilushko 103, Barkalov 20235 (VLA).

17) **Taraxaxum shikotanense** Kitam. in Acta Phytotax. Geobot. **2**: 126 (1933); Tzvelev in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **6**: 383 (1992); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 106 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Oduvanchik shikotanskij.

Japanese name: Shikotan-tanpopo.

Habitat: Coastal sandy meadows.

Specimens: Takahashi 21502, 21515 (SAPS); Gage 2014 (WTU).

LILIACEAE

1) **Fritillaria camschatcensis** (L.) Ker Gawl. in Curtis' Bot. Mag. **30**: sub tab. 1216 (1809); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 370 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 305 (1995).

Russian name: Ryabchik kamchatskij.

Japanese name: Kuro-yuri.

Habitat: On big rocks in coastal meadows.

Specimen: Takahashi 21580 (SAPS).

Note: In many Japanese literature the spelling "*camtschatcensis*" has been used for the specific epithet.

2) **Lilium debile** Kittlitz in Denkwürd. **2**: 261, 321 (1858); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 366 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 307 (1995)— *L. medeoloides* auct. p.p., non A.Gray; Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997).

Russian name: Liliya slabaya.

Japanese name: Kuruma-yuri.

Habitat: Meadows on lower slopes to subalpine meadows on volcanic slopes.

Specimens: Takahashi 21525 (SAPS); Barkalov 20267 (VLA).

3) **Lloydia serotina** (L.) Reichenb., Fl. Germ. Exscurs.: 102 (1830); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 373 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 308 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997).

Russian name: Llojdiya pozdnyaya.

Japanese name: Chishima-amana.

Habitat: On rocks by upper of river.

Specimen: Barkalov 20199 (VLA).

4) **Maianthemum dilatatum** (Wood) A.Nels. et J.F.Macbr. in Bot. Gaz. **61**: 30 (1916); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 405 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 190 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 40 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Majnik shirokolistnyj.

Japanese name: Maizuru-sô.

Habitat: Subalpine meadows along seasonal streamlets on volcanic slopes.

Specimens: Takahashi 21476, 21581 (SAPS); Zhuravlev and Ilushko 455, Barkalov 20258 (VLA); Gage 2081, Semsrott 198 (WTU).

5) **Streptopus amplexifolius** (L.) DC. in Lam. et DC., Fl. Fr., ed. 3, **3**: 174 (1805); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 408 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 190 (1995).

Russian name: Streptopus stebleobyemlyushchij.

Japanese name: Ôba-takeshimaran (in the broad sense).

Habitat: Under alder bushes in dry creek bed.

Specimen: Semsrott 223 (WTU).

6) **Trillium camschatcense** Ker Gawl. in Curtis' Bot. Mag. **22**: sub. tab. 855, in adnot. (1805); Barkalov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 172 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 492 (1995)—*T. kamtschaticum* Pall.

Russian name: Trillium kamchatskij.

Japanese name: Ôbanano-enreisô.

Habitat: Under alder bushes on slope.

Specimen: Barkalov 20204 (VLA).

IRIDACEAE

1) **Iris setosa** Pall. ex Link in Sprengel et al., Jahrb. Bot. Gart. Berlin **1**(3): 71 (1820); Pavlova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **2**: 420 (1987); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 282 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997), the author name as "Pall."

Russian name: Kasatik shtsetinistyj.

Japanese name: Hiôgi-ayame.

Habitat: Meadows on low elevation.

Specimens: Takahashi 21484, 28183, 28184 (white fls.) (SAPS); Zhuravlev and Ilushko 379, Barkalov 20137 (VLA).

JUNCACEAE

1) **Juncus filiformis** L., Sp. Pl.: 362 (1753); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 66 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 284 (1995).

Russian name: Sitnik nitevidnyj.

Japanese name: Ezo-hosoi.

Habitat: By small pond.

Specimens: Takahashi 21563, 28158 (SAPS).

2) **Juncus haenkei** E.Mey., Syn. Juncor.: 10 (1822); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 67 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 285 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002).

Russian name: Sitnik Genke.

Japanese name: Hama-i.

Habitat: In dry lake bed / late snow field and subalpine meadows along seasonal streamlets on volcanic slopes.

Specimens: Takahashi 21510, 28149 (SAPS); Zhuravlev and Ilushko 397, 399, Barkalov 20225 (VLA); Semsrott 180, 194 (WTU).

3) **Luzula arcuata** (Wahlenb.) Sw. subsp. **unalaschkensis** (Buchenau) HultÈn in Arkiv Bot. **7**(1): 32 (1968); Takahashi et al. in Acta Phytotax. Geobot. **53**: 31 (2002)— *L. unalaschkensis* (Buchenau) Satake in J. Jp. Bot. 14: 260 (1938); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 84 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 287 (1995).

Russian name: Ozhika unalashkinskaya.

Japanese name: Kumoma-suzumenohie.

Habitat: On volcanic ash (pumice).

Specimens: Takahashi 28168 (SAPS); Barkalov 20162, 20250 (VLA); Semsrott 232 (WTU).

4) **Luzula capitata** (Miq.) Kom., Fl. Kamch **1**: 288 (1927); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 86 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 286 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997), the author names as "(Miq.) Miq.".

Russian name: Ozhika golovchataya.

Japanese name: Suzumeno-yari.

Habitat: Coastal sandy meadows.

Specimens: Takahashi 21509, 21572 (SAPS).

Note: For the author name we follow Czerepanov (1995).

5) **Luzula kjellmanniana** Miyabe et Kudô in Trans. Sapporo Nat. Hist. Soc. **5**: 38 (1913); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 88 (1985), "*kjellmaniana*"; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 286 (1995), "*kjellmaniana*"; Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002).

Russian name: Ozhika Chjellmana [Ch'ellmana].

Japanese name: Chishima-suzumenohie.

Habitat: Meadows in low elevation to subalpine meadows on volcanic slopes.

Specimens: Takahashi 21493 (SAPS); Zhuravlev and Ilushko 392, Barkalov 20260 (VLA); Semsrott 182 (WTU).

6) **Luzula parviflora** (Ehrh.) Desv. in J. Bot. Appl. (Paris) **1**: 144 (1808); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 81 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 286 (1995).

Russian name: Ozhika melkotsvetkovaya.

Habitat: Along stream sides.

Specimen: Barkalov 20191 (VLA).

7) **Luzula plumosa** E.Meyer in Linnaea **22**: 387 (1849); Novikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 80 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 286 (1995).

Russian name: Ozhika operennaya.

Japanese name: Nukaboshi-sô (in the broad sense).

Habitat: Meadows on the terrace and coast.

Specimens: Takahashi 21578, 28177 (SAPS).

POACEAE

1) **Agrostis clavata** Trin. in Spreng., Neue Entdeck. **2**: 55 (1821); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 210 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 342 (1995).

Russian name: Polevitsa bulavovidnaya.

Japanese name: Yama-nukabo.

Habitat: On marine terrace slope and wet sandy places

around lake.

Specimens: Takahashi 21490 (SAPS); Zhuravlev and Ilushko 539, Barkalov 20160, 20201, 20270 (VLA).

2) **Agrostis flaccida** Hack. in Bull. Herb. Boiss. **7**: 649 (1899); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 207 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 343 (1995); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002).

Russian name: Polevitsa gibkaya.

Japanese name: Miyama-nukabo.

Habitat: In dry lake / late snow field.

Specimens: Takahashi 21540a (SAPS); Zhuravlev and Ilushko 545, Barkalov 20152, 20262 (VLA); Gage 2023, Semsrott 179 (WTU).

3) **Agrostis mertensii** Trin. in Linnaea **10**: 32 (1836); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 214 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 343 (1995).

Russian name: Polevitsa Mertensa.

Japanese name: Komiyama-nukabo.

Habitat: In dry lake / late snow field and subalpine meadows on volcanic slopes.

Specimens: Takahashi 21540b, 28170 (SAPS); Semsrott 174 (WTU).

4) **Calamagrostis langsdorffii** (Link) Trin., Gram. Unifl.: 225, pl. 4, fig. 10 (1824); Probatova in Charkevicz et al., Pl. Vasc. Orient Extr. Soviet. **1**: 197 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 354 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002).

Russian name: Vejnik Langsdorfa.

Japanese name: Iwa-nogariyasu.

Habitat: Coastal meadows in low elevation.

Specimens: Kuwahara s.n., Takahashi 21455, 28153 (SAPS); Zhuravlev and Ilushko 552, 553, Barkalov 20277 (VLA); Semsrott 213 (WTU).

5) **Calamagrostis neglecta** (Ehrh.) Gaertn., Mey. et Schreb. in Fl. Wett. **1**: 94 (1799), sensu lato; Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 189 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 354 (1995)—*C. inexpansa* A.Gray; Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 189 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 354 (1995).

Russian name: Vejnik nezamechen'nyj (for *C. neglecta*), Vejnik szhatometel'chatyj (for *C. inexpansa*).

Japanese name: Chishima-gariyasu (in the broad sense).

Habitat: Coastal lakes.

Specimen: Barkalov 20216 (VLA).

Note: The species distinction of *Calamagrostis neglecta* s.l. needs future clarification.

6) **Calamagrostis sesquiflora** (Trin.) Tzvelev in Arct. Fl. SSSR **2**: 74 (1964); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 184 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 355 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002).

Russian name: Vejnik polutoratsvetkovyj.

Japanese name: Miyama-nogariyasu.

Habitat: In dry lake / late snow field and on meadow on volcanic slopes.

Specimen: Takahashi 21566, Kuwahara s.n. (SAPS); Barkalov 20134 (VLA); Semsrott 226 (WTU).

7) **Deschampsia atropurpurea** (Wahl.) Scheele var. **paramushirensis** Kudô in J. Coll. Agr. Hokkaido Univ. **11**: 71 (1922); Osada, Ill. Grass. Jap.: 256 (1989)—*Vahlodea flexuosa* (Honda) Ohwi in Acta Phytotax. Geobot. **2**: 33 (1933); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 174 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 401 (1995).

Russian name: Valodeya izvilistaya (for *Vahlodea flexuosa*).

Japanese name: Takane-komesusuki.

Habitat: Stream sides on slopes.

Specimens: Takahashi 28182 (SAPS); Barkalov 20138 (VLA).

8a) **Deschampsia cespitosa** (L.) P.Beauv. subsp. **beringensis** (Hultén) W.E.Lawr. in Amer. J. Bot. 32: 302 (1945); Chiapella and Probatova in Bot. J. Linn. Soc. 142: 217 (2003)—*D. beringensis* Hultén in Kungl. Sv. Vet. Akad. Hand. 3: 107 (1927); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. 1: 169 (1985); Takahashi et al. in J. Phytogeogr. Taxon. 47: 135 (1999); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 358 (1995).

Russian name: Shchuchnik beringijskij.

Habitat: On seashore.

Specimen: Zhuravlev and Ilushko 581 (VLA).

Note: On the taxonomy of the *Deschampsia cespitosa* complex we follow Chiapella and Probatova (2003). In most Japanese literature the spelling "*caespitosa*" has been used for the specific epithet.

8b) **Deschampsia cespitosa** (L.) P.Beauv. subsp. **borealis** (Trautv.) Á.Löve et D.Löve in Op. Bot. **5**: 65 (1961); Chapella and Probatova in Bot. J. Linn. Soc. **142**: 217 (2003)—*D. borealis* (Trautv.) Roshev.; Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 172 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 358 (1995).

Russian name: Shchuchnik severnyj.

Habitat: On wet rocks by streams on volcanic slopes.

Specimens: Zhuravlev and Ilushko 576, Barkalov 20189 (VLA).

8c) **Deschampsia cespitosa** (L.) P.Beauv. subsp. **orientalis** Hultén, Kungl. Svensk. Vetensk. Handl. **5**: 109 (1927); Chapella and Probatova in Bot. J. Linn. Soc. **142**: 222 (2003)—*D. cespitosa* (L.) P.Beauv. var. *festucaefolia* Honda; Osada, Ill. Grass Jap.: 254 (1989)—*D. paramushirensis* Honda in J. Fac. Sci. Univ. Tokyo, Sect. 3, Bot. **3**(1): 140 (1930); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 171 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 359 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999).

Russian name: Shchuchnik paramushirskij (for *D. paramushirensis*).

Japanese name: Hiroha-no-kome-susuki.

Habitat: In dry lake / late snow field and coastal lakes.

Specimens: Takahashi 21573 (SAPS); Semsrott 192, 195 (WTU); Barkalov 20121 (VLA).

9) **Deschampsia flexuosa** (L.) Nees, Gen. Pl. Fl. Germ. **1**: tab. 43 (1833); Osada, Ill. Grass. Jap.: 252 (1989); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41(1997)—*Lerchenfeldia flexuosa* (L.) Schur, Enum. Pl. Transsilv.: 753 (1866); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 174 (1985)—*Avenella flexuosa* (L.) Drej.; Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 349 (1995).

Russian name: Shchuchnik izvilistyj (for *Deschampsia flexuosa*), Lerkhenfeldiya izvilistaya (for *Lerchenfeldia flexuosa*).

Japanese name: Kome-susuki.

Habitat: Subalpine meadows on volcanic slopes to exposed uplands.

Specimens: Kuwahara s.n., Takahashi 21486a, 28140 (SAPS); Zhuravlev and Ilushko 605, Barkalov 20264 (VLA); Gage 2022, Semsrott 171 (WTU).

10) **Festuca rubra** L., Sp. Pl.: 74 (1753); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 246 (1985); Osada, Ill. Grass. Jap.: 112 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 370 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002).

Russian name: Ovsyanitsa krasnaya.

Japanese name: Ôushinoke-gusa.

Habitat: Subalpine meadows on volcanic slopes to seashore.

Specimens: Takahashi 21450, 21511, 28181 (SAPS); Zhuravlev and Ilushko 589, Barkalov 20286 (VLA); Gage 2013, Semsrott 225 (WTU).

11) **Glyceria alnasteretum** Kom. in Feddes Repert. **13**: 87 (1914); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 328 (1985); Osada, Ill. Grass. Jap.: 214 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 372 (1995).

Russian name: Mannik olkhovnikovyj.

Japanese name: Miyama-dojôtsunagi.

Habitat: Borders of dry stream and coastal meadows and under alder bushes in dry creek bed.

Specimens: Takahashi 28191, 28192 (SAPS); Zhuravlev and Ilushko 597, Barkalov 20127, 20278 (VLA); Gage 2084 (WTU).

12) **Leymus mollis** (Trin.) Pilger in Bot. Yahrb. **74**: 6 (1945); Osada, Ill. Grass. Jap.: 430 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 378 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 135 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 32 (2002)—*L. mollis* (Trin.) H.Hara in Bot. Mag. Tokyo **52**: 232 (1938), invalid combination published as a synonym; Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 135 (1985)—*Elymus mollis* Trin.

Russian name: Kolosnyak myagkij.

Japanese name: Tenki-gusa.

Habitat: On seashore.

Specimens: Takahashi 21440 (SAPS); Zhuravlev and Ilushko 609, 614, Barkalov 20142 (VLA); Gage 2003 (WTU).

13) **Poa arctica** R.Br., Suppl. App. Parry's First Voy. Bot.: 288 (1824); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 272 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 385 (1995).

Russian name: Myatlik arkticheskij.

Habitat: Tundras near seashores.

Specimens: Takahashi 21486b, 28150 (SAPS); Barkalov 20213 (VLA).

14) **Poa macrocalyx** Trautv. et C.A.Mey. in Middendorf, Reise Nord. u. Ost. Sib. **1**(2): 103 (1856); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 275 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 386 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 136 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 33 (2002).

Russian name: Myatlik krupnocheshujnyj.

Japanese name: Karafuto-ichigotsunagi (in the broad sense).

Habitat: On sandy beach to subalpine meadows on volcanic slopes.

Spacimens: Takahashi 21505, 21547, 21555, 21575, 21545, 28152 (SAPS); Zhuravlev and Ilushko 619, 620, 636, Barkalov 20223, 20240, 20241 (VLA); Gage 2015, 2025, Semsrott 177,178 (WTU).

15) **Poa turneri** Scribn. in Bull. U.S. Dept. Agr., Div. Agrost. **8**: 5 (1897); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 276 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 388 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 136 (1999).

Russian name: Myatlik Ternera.

Habitat: On seashores.

Specimen: Barkalov 20232 (VLA).

16) **Trisetum sibiricum** Rupr., Beitr. Pflanzenk. Russ. Reich. **2**: 65 (1845); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 159 (1985); Osada, Ill. Grass. Jap.: 246 (1989); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 398 (1995).

Russian name: Trishchetinnik sibirskij.

Japanese name: Chishima-kanitsuri.

Habitat: Dried lake bed / late snow field barren and meadows in low elevation.

Specimens: Takahashi 21444, 21483, 28151 (SAPS); Zhuravlev and Ilushko 648 (VLA); Gage 2021 (WTU).

17) **Trisetum spicatum** (L.) K.Richt. subsp. **alascanum** (Nash) Hultén, Svensk. Bot. Tidskr. 53: 210, fig. 3 (1959); Osada, Ill. Grass. Jap.: 238 (1989)—*T. alascanum* Nash in Bull. New York Bot. Gard. **36**: 155 (1901); Probatova in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **1**: 161 (1985); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 398 (1995).

Russian name: Trishchetinnik alyaskinskij.

Japanese name: Rishiri-kanitsuri.

Habitat: Dried lake bed / late snow barren.

Specimens: Takahashi 21557 (SAPS); Zhuravlev and Ilushko 662, Barkalov 20150 (VLA); Semsrott 172, Gage 2024 (WTU).

CYPERACEAE

1) **Carex caryophyllea** Latour. var. **microtricha** (Franch.) Kük., Cyper. Caric.: 466 (1909); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 160 (1982)—*C. microtricha* Franch. in Nouv. Arch. Mus. Hist. Nat. (Paris), ser. 3, **9**: 189 (1897); Kozhevnikov

in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 267 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 204 (1995).

Russian name: Osoka melkovolosistaya.

Japanese name: Chashiba-suge.

Habitat: Meadows on marine terrace.

Specimen: Barkalov 20261 (VLA).

2) **Carex flavocuspis** Franch. et Sav., Enum. Pl. Jap. **2**: 147, 574 (1877, 1878); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 161 (1982); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 303 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 202 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997).

Russian name: Osoka zheltokonechnaya.

Japanese name: Miyama-kurosuge.

Habitat: Meadows on volcanic ash slopes.

Specimens: Takahashi 21565, 28137 (SAPS); Barkalov 20135, 20159 (VLA); Semsrott 224 (WTU).

3) **Carex gmelinii** Hook. et Arn. in Bot. Beech. Voy. **3**: 118 (1832); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 162 (1982); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 306 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 202 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 41 (1997); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 136 (1999); Takahashi et al. in Acta Phytotax. Geobot. **53**: 33 (2002).

Russian name: Osoka Gmelina.

Japanese name: Nemuro-suge.

Habitat: On seashore and subalpine meadows on volcanic slopes.

Specimens: Takahashi 21504 (SAPS); Zhuravlev and Ilushko 254 (VLA); Gage 2026 (WTU).

4) **Carex hakkodensis** Franch. in Bull. Soc. Philom. Paris, ser. 8, **7**: 28 (1895); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 161 (1982); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 314 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 203 (1995).

Russian name: Osoka khakkodskaya.

Japanese name: Itokin-suge.

Habitat: Coastal meadows.

Specimens: Takahashi 21550 (SAPS); Barkalov 20147 (VLA).

5) **Carex kraschenninnikovii** Kom. ex. V.Krecz. in Bot. Mat. (Leningrad) **9**: 22 (1941); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 303 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 203 (1995)—*C. flavocuspis* Franch. et Sav. subsp. *kraschenninnikovii* (Kom. ex V.Krecz.) Egor.—?*C. nesophila* Holm in Amer. J. Sci. ser. 4, **17**: 315 (1904); Akiyama, Caric. Far East. Reg. Asia: 115 (1955).

Russian name: Osoka Krasheninnikova.

Japanese name: ?Chishima-miyama-kurosuge (for *C. nesophila*).

Habitat: Upper streams on volcanic slopes.

Specimens: Barkalov 20129, 20193, 20195, 20198 (VLA).

6) **Carex lyngbyei** Hornem, Fl. Dan., tab. 1883 (1827); Ohwi in Satake et al., Wild Fl.Jap. Herb. Pl. **1**: 163 (1982)—*C. cryptocarpa* C.A.Mey. in Mém. Prés. Acad. Sci. Pétersb. Div. Sav. **1**: 226, tab. 14 (1831); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 356 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 201 (1995).

Russian name: Osoka skrytoplodnaya (for *C. cryptocarpa*).

Japanese name: Yarame-suge.

Habitat: Coast of lake and by pond.

Specimen: Zhuravlev and Ilushko 256 (VLA).

7) **Carex oxyandra** (Franch. et Sav.) Kudô, Rep. Veg. North Sagh.: 72 (1923); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 156 (1982); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 288 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 205 (1995).

Russian name: Osoka ostroverkhaya.

Japanese name: Hime-suge.

Habitat: Subalpine meadows on volcanic slopes.

Specimen: Barkalov 20161 (VLA).

8) **Carex rariflora** (Wahlenb.) Sm. in Engl. Bot. **35**: 35 (1813); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 334 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 206 (1995).

Russian name: Osoka redkotsvetkovaya.

Japanese name: Chishima-suge.

Habitat: Wet meadows around lake.

Specimens: Takahashi 28165 (SAPS); Barkalov 20214 (VLA).

9) **Carex rhynchophysa** C.A.Mey. in Suppl. Ind. Sem. Hort. Bot. Petrpol. **9**: 9 (1844); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 149 (1982); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 347 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 207 (1995).

Russian name: Osoka vzdutonosaya.

Japanese name: Ôkasa-suge.

Habitat: On bogs near small lakes.

Specimen: Zhuravlev and Ilushko 250 (VLA).

10) **Carex scabrinervia** Franch. in Bull. Soc. Philom. Paris, ser. 8, **7**: 37 (1895); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 300 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 207 (1995); Takahashi et al. in Acta Phytotax. Geobot. **48**: 42 (1997).

Russian name: Osoka sherochovatozhilkovaya.

Japanese name: Shikotan-suge.

Habitat: Coastal meadows.

Specimens: Takahashi 21482, 21522 (SAPS); Barkalov 20136, Bogatov 20252 (VLA); Gage 2063, Semsrott 170, 175 (WTU).

11a) **Carex scita** Maxim. var. **koraginensis** (Meinsh.) Kük., Cyper. Caric.: 415 (1909); Akiyama, Caric. Far East. Reg. Asia: 118 (1955)—*C. koraginensis* Meinsh. in Acta Horti Petropol. **18**(3): 351 (1901); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 301 (1988).

Russian name: Osoka karaginskaya (for *C. koraginensis*).

Japanese name: Kita-chishima-suge (for *C. koraginensis*).

Habitat: On wet rocks by streams on volcanic slopes.

Specimen: Barkalov 20186 (VLA).

11b) **Carex scita** Maxim. var. **riishirensis** (Franch.) Kük., Cyper. Caric.: 414 (1909); Akiyama, Caric. Far East. Reg. Asia: 118 (1955)—*C. riishirensis* Franch. in Bull. Soc. Philom. Paris, ser. 8, **7**: 88 (1895); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 300 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 207 (1995); Takahashi et al. in J. Phytogeogr. Taxon. **47**: 136 (1999).

Russian name: Osoka rishirinskaya.

Japanese name: Rishiri-suge.

Habitat: Meadows by lake.

Specimen: Barkalov 20117 (VLA).

12) **Carex stenantha** Franch. et Sav. var. **taisetsuensis** Akiyama in J. Fac. Sci. Hokkaido Imp. Univ. ser. 5, **1**: 60, tab. 11, fig. 6 (1931); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 161 (1982); Takahashi et al. in Acta Phytotax. Geobot. **48**: 42 (1997)—*C. ktausipali* Meinsh. in Acta Horti Petropol. **18**(3): 359 (1901); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 296 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 203 (1995).

Russian name: Osoka ktauzipalskaya (for *C. ktausipali*).

Japanese name: Taisetsu-iwa-suge.

Habitat: On pumice field.

Specimens: Takahashi 28169 (SAPS); Barkalov 20182 (VLA); Semsrott 228 (WTU).

13) **Carex stylosa** C.A.Mey. in Mém. Prés. Acad. Sci. Pétersb. Div. Sav. **1**: 222 (1831); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 310 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 208 (1995); Katsuyama in J. Jap. Bot. **70**: 233 (1995).

Russian name: Osoka stolbikonosnaya.

Japanese name: Rausu-suge (Katsuyama, 1995).

Habitat: Wet meadows around lake.

Specimens: Takahashi 28133 (SAPS); Barkalov 20132, 20133 (VLA).

14) **Carex thunbergii** Steud. var. **appendiculata** (Trautv. et Mey.) Ohwi in J. Jap. Bot. **11**: 409 (1935); Akiyama, Caric. Far East. Reg. Asia: 76 (1955); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 164 (1982)—*C. appendiculata* (Trautv. et Mey.) Kük. in Bull. Herb. Boiss. ser. 2, **4**: 54 (1904); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 364 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 200 (1995).

Russian name: Osoka pridatkonosnaya.

Japanese name: Ôaze-suge.

Habitat: By small pond and dry lake bed.

Specimens: Takahashi 21560, 28154 (SAPS); Barkalov 20219 (VLA); Semsrott 193 (WTU).

15) **Carex vaginata** Tausch in Flora **5**: 557 (1821); Akiyama, Caric. Far East. Reg. Asia: 153 (1955); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 155 (1982)—*C. falcata* Turcz. in Bull. Soc. Nat. Mosc. **28**(2): 341 (1855); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 331 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 202 (1995).

Russian name: Osoka vlagalishchnaya (for *C. vaginata*), Osoka serpovidnaya (for *C. falcata*).

Japanese name: Saya-suge or Keyari-suge (for *C. vaginata*).

Habitat: Coastal meadows.

Specimens: Takahashi 21554, 28164 (SAPS); Barkalov 20266 (VLA).

16) **Eleocharis palustris** (L.) Roem. et Schult., Syst. Veg. **2**: 151 (1817); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 210 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 210 (1995)—*E. intersita* Zinserl. in Fl. SSSR **3**: 581 (1935); Ohwi in Satake et al., Wild Fl. Jap. Herb. Pl. **1**: 173 (1982).

Russian name: Bolotnitsa bolotnaya.

Japanese name: Kuronuma-harii (for *E. intersita*).

Habitat: By small pond.

Specimens: Takahashi 21562, 28155 (SAPS); Barkalov 20217 (VLA); Gage 2047 (WTU).

17) **Eriophorum angustifolium** Honck. subsp. **subarcticum** (Vassil.) Hultén—*E. polystachion* L., Sp. Pl.: 52 (1753); Kozhevnikov in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **3**: 193 (1988); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 211 (1995).

Russian name: Pushitsa mnogokoloskovaya (for *E. polystachion*).

Japanese name: Shumshu-watasuge.

Habitat: Wet meadows around lake.

Specimens: Tatewaki 17295 (SAPS); Bogatov 20116 (VLA).

ORCHIDACEAE

1) **Orchis aristata** Fisch. ex Lindl., Gen. Sp. Orch.: 262 (1835); Takahashi et al. in Acta Phytotax. Geobot. **48**: 42 (1997), the author name as "Fisch."—*Dactylorhiza aristata* (Fisch. ex Lindl.) Soó, Nom. Nova Gen. Dactylorhiza: 4 (1962); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 323 (1995); Vyshin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 308 (1996).

Russian name: Palchatokorennik ostistyj (for *Dactylorhiza aristata*).

Japanese name: Hakusan-chidori.

Habitat: Subalpine meadows on volcanic slopes.

Specimens: Zhuravlev and Ilushko 493, Barkalov 20151 (VLA); Semsrott 183 (WTU).

2) **Platanthera chorisiana** (Cham.) Reichb.f., Icon. Fl. Germ. **13-14**: 162 (1851); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 329 (1995); Vyshin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 314 (1996).

Russian name: Lyubka Khorisa.

Japanese name: Takane-tonbo.

Habitat: Subalpine meadows in low elevation.

Specimens: Takahashi 21582, 28172 (SAPS); Barkalov 20140, 20158 (VLA).

3) **Platanthera tipuloides** (L.f.) Lindl., Gen. Sp. Orch.: 285 (1835); Czerepanov, Vasc. Pl. Russ. Adj. Stat.: 329 (1995); Vyshin in Charkevicz et al., Pl. Vasc. Orient. Extr. Soviet. **8**: 318 (1996); Takahashi et al. in Acta Phytotax. Geobot. **48**: 42 (1997), the author name as "Lindl.".

Russian name: Lyubka komarnikovaya.

Japanese name: Hosobano-kiso-chidori.

Habitat.: Meadows on marine terrace.

Specimens: Takahashi 28139 (SAPS); Barkalov 20141 (VLA).