
Data

Plant list during the expedition of Kamchatka in 2007

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Abstract

During the expedition of Kamchatka in July 2007, 4 species of bryophyte and 192 species of vascular plants (including 4 red data plants) were enumerated.

Key words: flora, Kamchatka

Introduction

Flora of Kamchatka was first investigated at the beginning of 20 c. (Hultén, 1968; Komarov, 1927), and recently general flora list was presented (Yakubov and Chernyagina, 2004), in which 1166 species and subspecies were recognized for vascular plants. However, the plants of Kamchatka have not been familiar with Japanese botanists, having few chances for organized expedition, and only a few materials are available in herbariums of Japan. Though many of the ‘northern’ species are already known from other areas, including those from Sakhalin, materials from Kamchatka may help us, for example, in biogeographic studies.

During July 1-18, 2007, I had a chance to attend to the expedition in Kamchatka by Institute of Volcanology (Petropavlovsk-Kamchatsky, Russia), and to collect plant materials on the basis of contract between the Institute and Kyoto University Museum (to which I belonged). As the expedition aimed to study hot springs, some of the plants were collected closely around the hot springs, together with ground temperature data. Specimens in this list are deposited in Kyoto University herbarium (KYO) except those in Red Data Book of Kamchatka (2007) and of Russia (1988).

Localities for collection

Plants were collected mainly at the following localities (these localities are indicated in Fig. 1);

A-1. Petropavlovsk-Kamchatsky; in the meadows or at the roadside in the city (53.55-56N, 158.39-40E).

A-2. Petropavlovsk-Kamchatsky; at the foot or on the slope of Mt. Avacha (alt. ca. 900-1300m) (53.14N, 158.45E).

B. Esso; from the meadows to low mountain (alt. ca.500-900m) (55.55-56N, 158.40-41E).

C-1. Apapel; in the bog along the river Anavgai, partly along the warm streams (56.18.979N, 159.15.047E).

C-2. Apapel; in the meadow on the slopes (56.19.153N, 159.15.229E).

C-3. Apapel; Along the warm stream with hot springs, with more than 30°C ground temperature (56.19.162N, 159.14.610E).

D. Anavgai, in the village and in the woods of roadside (55.59E, 159.03-09N).

E. Dachnoe; at the hot spring of Mt. Mutnovsky, and in the meadow along the way to the hot springs (52.31.828N, 158.11.447E).

List of the specimens

Specimens collected were indicated in Table 1. Names were ordered according to Iwatsuki Z.(2001) for Bryophyta, Iwatsuki K. et al.(1995) for Pteridophyta and to the Engler system for Gymnospermae and Angiospermae (Melichior, 1964). Latin names follow Yakubov and Chernyagina (2004), Yonekura and Kajita (2003) and the International Plant Names Index (2004-2008).



Fig 1. Map of Kamchatka peninsula. A–E indicate the localities for collection. See text in detail.

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References

- Chernyagina, O. A.** (ed.) (2007) Red Data Book of Kamchatka, vol. 2. Plants, mushrooms and thermophilic microorganisms. Kamchatsky Pechatny Dvor publishing house, Petropavlovsk-Kamchatsky.
- Hultén, E.** (1968) Flora of Alaska and Neighboring Territories. A Manual of the Vascular Plants. Stanford University Press, California.
- Iwatsuki, K., Yamazaki, T., Boufford, D.E. and Ohba, H.** (eds.) (1995) Flora of Japan I. Pteridophyta and Gymnospermae. Kodansha Ltd., Tokyo.
- Iwatsuki, Z.** (ed.) (2001) Mosses and Liverworts of Japan. Heibonsha Ltd., Publishers, Tokyo.
- Komarov, V. L.** (1927) Flora of Kamchatka peninsula. Izd-vo Academy of Sciences, USSR, Leningrad (in Russian).
- Melchior, H.** (1964) A. Engler's Syllabus der Pflanzenfamilien II. Gebrüder Borntraeger, Berlin-Nikolassee.
- Yakubov, V. V. and Chernyagina, O. A.** (2004) Catalog of Flora of Kamchatka (vascular plants). Kamchatpress, Petropavlovsk-Kamchatsky (in Russian).
- Yonekura, K. and Kajita, T.** (2003) BG Plants – index for Japanese-scientific plant names (Ylist). [http://bean.bio.chiba-u.jp/bgplants/ylist_main.html]
- Red Data Book of Russia, vol.2 “Plants” (1988). [<http://www.biodat.ru/db/rbp/index.htm>]
- The International Plant names Index (2004-2008): search for plant names. [<http://www.ipni.org/ipni/plantnamesearchpage.do>]

Table 1. List of the specimens.

Family / species name	det.* ¹	Jpn. name	Col. No.* ²	Loc.* ³	Habitat* ⁴	Note
BRYOPHYTA						
Polytrichaceae						
<i>Polytrichum juniperinum</i> Willd. ex Hedw.	A.H.	スギゴケ	K 0304	B	grassland	
Ditrichaceae						
<i>Ceratodon purpureus</i> (Hedw.) Brid.	A.H.	ヤノウエノアカ ゴケ	K 0305	C		
Funariaceae						
<i>Funaria hydrometrica</i> Hedw.	A.H.	ヒヨウタンゴケ	K 0306	D	On the rock along the stream	
Marchantiaceae						
<i>Marchantia polymorpha</i> L.	A.H.	ゼニゴケ	K 0307	C	marsh	
PTERIDOPHYTA						
Lycopodiaceae						
<i>Lycopodium complanatum</i> L.	C.O.	アスヒカズラ	K 0168	D	in <i>Betula platyphylla</i> forest	
Equisetaceae						
<i>Equisetum hyemale</i> L.		トクサ	K 0021	A-B	forest edge	
Ophioglossaceae						
<i>Botrychium lunaria</i> (L.) Sw.		ヒメハナワラビ	K 0092 K 0143 K 0165	B C-1 C-1	grassland marsh-grassland grassland	
Dennstaedtiaceae						
<i>Pteridium aquilinum</i> (L.) Kuhn		—	K 0149 K 0280	C-1 C-3	marsh-grassland	
Adiantaceae						
<i>Cryptogramma acrostichoides</i> R.Br.	C.O.	—	K 0088	B	On the rock	
Dryopteridaceae						
<i>Dryopteris fragrans</i> (L.) Schott	C.O.	ニオイシダ	K 0089 K 0116	B B	On the rock (alt.900m) On the rock (alt.900m)	
GYMNOSPERMAE						
Coniferopsida						
Coniferae						
Pinaceae						
<i>Larix cajanderi</i> Mayr		—	K 0182	D	forest	
<i>Pinus pumila</i> (Pall.) Regel		ハイマツ	K 0121	B	On the rock (alt.900m)	
Cupressaceae						
<i>Juniperus sibirica</i> Burgsd.		リシリビヤクシ ン	K 0120	B	On the rock (alt.900m)	
ANGIOSPERMAE						

Dicotyledoneae

Archichlamydeae

Salicales

Salicaceae

<i>Chosenia arbutifolia</i> (Pall.) A.K.Skvortsov	Y.V.	ケシヨウヤナギ	K 0026	A-B	riverside	ca. 3m tall
<i>Salix arctica</i> Pall.	Y.V.	—	K 0250	E	slope	creeping
<i>S. bebbiana</i> Sarg.	Y.V.	—	K 0124	B	in shrub with <i>Pinus pumila</i>	
<i>S. udensis</i> Trautv. et Mey.	Y.V.	オノエヤナギ	K 0019	A-B		ca. 3m tall
<i>Salix</i> sp.			K 0071	B	riverside	
	Y.V.		K 0027	A-B		

Fagales

Betulaceae

<i>Alnus fruticosa</i> Pall.	—		K 0119	B	slope near the summit (ca.900m).	
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Urticales

Urticaceae

<i>Urtica platyphylla</i> Wedd.		エゾイラクサ	K 0020	A-B		
			K 0048	B	In the thermal gully, in mass.	

Polygonales

Polygonaceae

<i>Acetosella vulgaris</i> (Koch) Fourr.	C.O.	ヒメスイバ	K 0188	D	roadside	Immigrant
<i>Bistorta vivipara</i> (L.) S.F.Gray		ムカゴトラノオ	K 0069	B	grassland	
			K 0152	C-2	grassland	
<i>Oxyria digyna</i> (L.) Hill		ジンヨウスイバ	K 0242	A-2	rocky slope	
			K 0248	A-E	roadside slope	
<i>Polygonum aviculare</i> L.		ミチヤナギ	K 0059	B	marsh side	Immigrant
<i>Rumex aquaticus</i> L.	Y.V.	ヌマダイオウ	K 0195	B	roadside	
<i>R. lapponicus</i> (Hiitonen) Czernov	C.O.	タカネスイバ	K 0142		marsh-grassland	
<i>R. longifolius</i> DC.	C.O.	ノダイオウ	K 0047	B	riverside	Immigrant

Centrospermae

Caryophyllaceae

<i>Cerastium beeringianum</i> Cham.	Y.V.	—	K 0126	C-1	marsh	
<i>C. holosteoides</i> Fries	Y.V.	—	K 0060	B	marsh	Immigrant
<i>Minuartia macrocarpa</i> (Pursh) Ostenf.	Y.V.	—	K 0209	A-2	rocky slope (alt. 900m)	
			K 0230	A-2	rocky slope (alt. 900m)	
<i>Moehringia lateriflora</i> (L.) Fenzl		オオヤマフスマ	K 0011	A-1	marsh	
			K 0167	C-2	grassland	

			K 0173	D	<i>Betula platyphylla</i> forest	
<i>Sagina saginoides</i> (L.) Karst.	C.O.	チシマツメクサ	K 0114	B	Between the rocks	
	C.O.		K 0203	D		
<i>Silene alba</i> (Mill.) E.H.L.Krause	Y.V.	マツヨイセンノウ	K 0054	B	grassland	
	C.O.		K 0034	A-B	grassland, in mass	
<i>S. repens</i> Patrin	C.O.	カラフトマンテマ	K 0101	B	grassland	
<i>S. vulgaris</i> (Moench) Garcke	Y.V.	シラタマソウ	K 0035	A-B	grassland, in mass	Immigrant
<i>Stellaria eschscholtziana</i> Fenzl	Y.V.	—	K 0233	A-2	rocky slope (alt. 1300m)	
<i>S. longifolia</i> Muhl.ex Willd.		ナガバツメクサ	K 0030	A-B		
<i>S. radians</i> L.		エゾオオヤマハコベ	K 0080	B	moist grassland	
Ranunculales						
Ranunculaceae						
<i>Anemone narcissiflora</i> L.		ハクサンイチゲ (広義)	K 0207	A	with <i>Pinus pumila</i> shrub (alt.900m)	
<i>Atragene ochotensis</i> Pall. (<i>Clematis alpina</i> subsp. <i>ochotensis</i>)		エゾミヤマハンショウヅル	K 0086	B	rocky slope (alt. 900m)	
			K 0157	C-2	grassland	
<i>Batrachium trichophyllum</i> (Chaix) Bosch	C.O.	—	K 0201	D	in the stream, in mass	
<i>Clematis fusca</i> Turcz.		クロバナハンショウヅル	K 0103	B	grassland	
			K 0146	C-1	marsh-grassland	
			K 0170	D	in <i>Betula platyphylla</i> forest	
<i>Delphinium brachycentrum</i> Ledeb.		チシマヒエンソウ	K 0246	C-2	grassland	2m tall.
<i>Ranunculus propinquus</i> C.A.Mey.	Y.V.	—	K 0052	B		Immigrant (?)
<i>R. repens</i> L.	Y.V.	ハイキンボウゲ	K 0127	C-1	marsh-grassland	
<i>Thalictrum contortum</i> L.	Y.V.	—	K 0141	C-1	marsh-grassland	
<i>T. minus</i> L.	Y.V.	—	K 0275	A-1		
			K 0291	C-3		
<i>T. sparsiflorum</i> Turcz.ex Fisch.et Mey.		ツリフネカラマツ	K 0104	B	grassland	
Papaverales						
Papaveraceae						
<i>Papaver microcarpum</i> DC.		—	K 0235	A-2	rocky slope (alt. 1300m)	
Cruciferae						
<i>Arabis hirsuta</i> (L.) Scop.	C.O.	ヤマハタザオ	K 0109	B	dry slope	

<i>A. stelleri</i> DC.(syn. <i>A. hirsuta</i> (L.) Scop. ssp. <i>stelleri</i> (DC.) Hultén)		ハマハタザオ	K 0154	C-2	dry slope	
	Y.V.		K 0279	C-3		
<i>Barbarea orthoceras</i> Ledeb.	Y.V.	ヤマガラシ	K 0004	A-1	roadside	
<i>Cardamine regeliana</i> Miq.	Y.V.	オオバタネツケバナ	K 0024	A-B		
	Y.V.		K 0257	E	riverside	
<i>Cardaminopsis lyrata</i> (L.) Hiit.	C.O.	—	K 0063	B	marsh	
			K 0129	D	marsh-grassland	
	Y.V.		K 0107	B	dry slope	
			K 0220	A-2		
<i>Draba nemorosa</i> L.		イヌナズナ	K 0108	B	dry slope	Immigrant (?)
			K 0128	C-1	marsh-grassland	
<i>Draba</i> sp.			K 0110	B	dry slope	
			K 0226	A-2		
<i>Christolea parryoides</i> (Cham.) N.Busch		—	K 0223	A-2	rocky slope (alt. 1300m)	
<i>Erysimum hieracifolium</i> L.	Y.V.	—	K 0072	B	dry slope	
<i>Parrya nudicaulis</i> (L.) Regel		グンジソウ	K 0231	A-2	rocky slope (alt. 900m)	
Rosales						
Crassulaceae						
<i>Rhodiola integrifolia</i> Raf.	Y.V.	ムラサキイワベンケイ	K 0244	A-2	dry slope	
<i>Sedum camtschaticum</i> Fisch.		—	K 0042	D	dry slope	
			K 0074	B	dry grassland	
<i>S. telephium</i> L.var. <i>purpureum</i> L.		ムラサキベンケイソウ	K 0184	C-3	by fumarole of hot spring	
Saxifragaceae						
<i>Parnassia palustris</i> L.		ウメバチソウ	K 0131	C-1	marsh-grassland	
			K 0290	C-3	riverside	
<i>Saxifraga cherlerioides</i> D.Don	C.O.	—	K 0040	D	rocky criff	
	C.O.		K 0091	B	rocky slope	
			K 0202	D		
<i>S. funstonii</i> (Small) Fedde	C.O.	—	K 0041	D	rocky criff	
			K 0151	C-3	on the rock	
<i>S. nelsoniana</i> D.Don	C.O.	—	K 0043	B	riverside	
			K 0247	E	roadside slope	
			K 0258	E	riverside	

<i>S. purpurascens</i> Kom.	—	K 0228	A-2	rocky slope	
Rosaceae					
<i>Alchemilla subcrenata</i> Buss.	—	K 0002	A-1	roadside in the city	Immigrant
<i>Aruncus dioicus</i> (Walter) Fernald var. <i>kamtschaticus</i> (Maxim.) H.Hara	ヤマブキシヨウ マ	K 0277	A-1	roadside meadow	0.5m tall
<i>Crataegus chlorosarca</i> Maxim.	Y.V. クロミサンザシ	K 0187	D	roadside	tree, 3-4m
<i>Dryas punctata</i> Juz.	—	K 0218	A-2	rocky slope (alt. 900m)	
<i>Geum aleppicum</i> Jacq.	Y.V. オオダイコンソ ウ	K 0033	A-B	roadside	Immigrant
	Y.V.	K 0186	D	roadside	Immigrant
	Y.V.	K 0288	C-3		
		K 0083	B	thermal pool side	
		K 0302	C-3	riverside	
<i>Potentilla arenosa</i> (Turcz.) Juz.	Y.V. —	K 0084	B	rocky slope (alt. 800m)	
<i>P. bifurca</i> L.	C.O. クサキンロバ イ	K 0097	B	rocky slope (alt. 800m)	
<i>P. fruticosa</i> L.	キンロバイ	K 0122	B	In <i>Pinus pumila</i> shrub	1m shrub
	Y.V.	K 0196	B	forest edge, alt.500m	
<i>P. norvegica</i> L.	エゾノミツモト ソウ	K 0185	D	roadside	Immigrant
<i>P. stolonifera</i> Lehm.ex Ledeb.	ツルキジムシ ロ	K 0001	A-1	dry meadow	
		K 0022	A-B	roadside	
		K 0283	C-3	around hot springs	
<i>P. vulcanicola</i> Juz.	C.O. —	K 0212	A-2	rocky slope (alt. 900m)	
<i>Rosa acicularis</i> Lindl.	オオタカネバラ	K 0029	A-B	grassland	
<i>Rubus arcticus</i> L.	チシマイチゴ	K 0008	A-1	marsh	
<i>Sanguisorba officinalis</i> L.	ワレモコウ	K 0023	A-B		
		K 0232	A-2	rocky meadow	
<i>Sorbaria sorbifolia</i> (L.) A. Braun	Y.V. ホザキナナカ マド	K 0169	D	forest edge	
<i>Spiraea beauverdiana</i> C.K.Schneid.	エゾノマルバシ モツケ	K 0044	B	riverside	
		K 0053	B		
		K 0265	E	around hot springs	
<i>S. salicifolia</i> L.	C.O. ホザキシモツ ケ	K 0197	B	grassland	
		K 0301	C-3	around hot springs	
Leguminosae					
<i>Astragalus alpinus</i> L.	—	K 0099	B	dry meadow	

			K 0132	C-1	marsh-grassland
<i>Lathyrus japonicus</i> Willd.		ハマエンドウ	K 0003	A-1	roadside meadow
<i>L. pilosus</i> Cham.	C.O.	エゾノレンリソウ	K 0031	A-B	grassland
<i>Oxytropis kamtschatica</i> Hultén	Y.V.	—	K 0252	E	riverside
<i>O. pumilio</i> (Pall.) Ledeb.	C.O.	—	K 0215	A-2	rocky slope
<i>O. revoluta</i> Ledeb.	Y.V.	オカダゲンゲ	K 0251	E	riverside
Geraniales					
Geraniaceae					
<i>Geranium erianthum</i> DC.		チシマフウロ	K 0274	A-1	grassland, in mass
			K 0282	C-3	around hot springs
Violales					
Violaceae					
<i>Viola crassa</i> Makino		タカネスマレ	K 0210	A-2	rocky slope
<i>V. epipsiloides</i> A et D. Löve	Y.V.	タニマスマレ	K 0256	E	marsh-grassland
			K 0160	C-2	pondside
<i>V. langsdorfii</i> Fisch.ex Ging.		—	K 0006	A-1	marsh
<i>V. sacchalinesis</i> H.Boiss.	C.O.	アイヌタチツボ	K 0007	A-1	marsh
	Y.V.	スマレ	K 0287	C-3	around hot springs sterile
Myrtiliflorae					
Onagraceae					
<i>Epilobium glandulosum</i> Lehm.	C.O.	—	K 0081	B	riverside
			K 0159	C-2	grassland
<i>Epilobium</i> sp.			K 0177	D	riverside
			K 0273	E	around hot springs
Umbelliflorae					
Umbelliferae					
<i>Anthriscus sylvestris</i> (L.) Hoffm.		シヤク	K 0018	A-B	grassland
			K 0194	B	grassland
<i>Bupleurum triradiatum</i> Adams ex Hoffm.		—	K 0236	A-2	
Sympetalae					
Ericales					
Pyrolaceae					
<i>Moneses uniflora</i> (L.) A. Gray		イチゲイチヤクソウ	K 0211	A-2	rocky slope (alt. 900m)
<i>Orthilia secunda</i> (L.) House		コイチヤクソウ	K 0175	D	in <i>Betula platyphylla</i> forest
<i>Pyrola incarnata</i> (DC.) Freyn		ベニバナイチヤクソウ	K 0036	A-B	in <i>Larix/Abies</i> forest
			K 0077	B	slope in forest
			K 0190	B	in forest
<i>Pyrola</i> sp.			K 0172	D	in <i>Betula platyphylla</i> forest

Ericaceae					
<i>Cassiope lycopodioides</i> (Pall.) D. Don		イワヒゲ	K 0214	A-2	on the rocks (alt. 1300m)
<i>Ledum palustre</i> L.		—	K 0037	A-B	in <i>Larix/Abies</i> forest
			K 0090	B	rocky hill summit
<i>Loiseleuria procumbens</i> (L.) Desv.		ミネズオウ	K 0217	A-2	rocky slope (alt.900m)
<i>Phyllodoce caerulea</i> (L.) Bab.		エゾノツガザクラ	K 0206	A-2	rocky slope (alt.900m)
<i>Rhododendron aureum</i> Georgi		キバナシヤクナゲ	K 0239	A-2	with <i>Pinus pumila</i> shrub (alt.900m)
<i>R. camtschaticum</i> Pall.		エゾツツジ	K 0240	A-2	rocky slope (alt.900m)
<i>Vaccinium vitis-idaea</i> L.		コケモモ	K 0123	B	with <i>Pinus pumila</i> shrub (alt.900m)
Primulales					
Primulaceae					
<i>Androsace chamejasme</i> Wulfen		—	K 0219	A-2	rocky slope (alt.900m)
<i>A. septentrionalis</i> L.		ハリコザクラ	K 0070	B	grassland
			K 0133	D	grassland
			K 0284	C-3	
			K 0076	B	dry slope
			K 0112	B	grassland
<i>Primula cuneifolia</i> Ledeb.	Y.V.	エゾコザクラ	K 0253	E	marsh-grassland
<i>Trientalis europaea</i> L.		ツマトリソウ	K 0010	A-1	pondside
Gentianales					
Rubiaceae					
<i>Galium ruthenicum</i> Willd.	C.O.	エゾキヌタソウ	K 0038	A-B	in <i>Larix/Abies</i> forest
	C.O.		K 0100	B	grassland
			K 0156	D	forest edge
<i>Galium verum</i> L.	C.O.	カワラマツバ	K 0073	B	dry slope
Tubiflorae					
Boraginaceae					
<i>Eritrichium sericeum</i> (Lehm.) A. DC.	Y.V.	—	K 0227	A-2	rocky slope (alt. 900m)
<i>Lappula deflexa</i> (Wahlenb.) Garcke	Y.V.	イワムラサキ	K 0049	B	dry grassland
<i>Myosotis cespitosa</i> K.F. Schultz	Y.V.	—	K 0066	B	marsh
<i>M. suaveolens</i> Waldst. et Kit.	Y.V.	—	K 0137	C-1	marsh-grassland
Labiatae					
<i>Mentha arvensis</i> L.			K 0183	D	In stream, in mass
Scrophulariaceae					

<i>Pedicularis chamissonis</i> Stev.	エゾヨツバシオ ガマ	K 0138	C-1	marsh-grassland	
<i>P. resupinata</i> L.	シベリアシオガ マ	K 0094	B	grassland	
		K 0135	C-1	marsh-grassland	
		K 0153	C-2	grassland	
		K 0162	C-2	grassland	
		K 0193	B	grassland	
<i>P. verticillata</i> L.	タカネシオガマ	K 0224	A-2	rocky slope (alt.1200m)	
		K 0237	A-2		
<i>Penstemon frutescens</i> Lamb. [<i>Pennellianthus frutescens</i> (Lambert) Crosswhite]	イワブクロ	K 0241	A-2	rocky slope (alt. 900m)	
<i>Veronica americana</i> Schwein.ex Benth.	エゾノカワヂ シャ	K 0148	C-1	marsh-grassland	
		K 0161	C-2	marsh	
<i>V. glandiflora</i> Gaerth.	Y.V. —	K 0213	A-2	dry slope	
<i>V. humifusa</i> Dicks.	C.O. テングクワガタ	K 0136	C-1	marsh-grassland	
Globulariaceae					
<i>Lagotis glauca</i> Gaertn.	ウルップソウ	K 0208	A-2	rocky slope (alt. 900m)	
		K 0261	E	riverside slope	
Plantaginales					
Plantaginaceae					
<i>Plantago asiatica</i> L.	オオバコ	K 0286	C-3	by fumarole, with 38-50°C ground	
Dipsacales					
Caprifoliaceae					
<i>Linnaea borealis</i> L.	リンネソウ	K 0174	D	in <i>Betula platyphylla</i> forest	
<i>Lonicera chamissoi</i> Bunge ex P.Kir.	チシマヒヨウタ ンボク	K 0087	B		shrub 0.5m; fr. red
<i>Sambucus kamtschatica</i> E.L.Wolf	エゾニワトコ	K 0176	D		tree 5m
Campanulatae					
Campanulaceae					
<i>Campanula lasiocarpa</i> Cham.	イワギキョウ	K 0234	A-2	rocky slope (alt. 900m)	
Compositae					
<i>Artemisia arctica</i> Less.	Y.V. サマニヨモギ	K 0254	E	grassland	
<i>A. boealis</i> Pall.	C.O. —	K 0098	B	rocky slope	
<i>A. glomerata</i> Ledeb.	ハハコヨモギ	K 0216	A-2	rocky slope	
<i>A. opulenta</i> Pamp.	C.O. エゾオオヨモギ	K 0292	C-3	by fumarole, with 40-50°C ground	
<i>Aster sibiricus</i> L.	Y.V. タカスギク	K 0204	D		
<i>Cacalia hastata</i> L.	ウラゲヨブスマ ソウ	K 0189	B	grassland	
<i>Cirsium setosum</i> (Willd.) Bess.	Y.V. エゾノキツネア ザミ	K 0276	A-1	grassland	Immigrant

<i>Erigeron thunbergii</i> A.Gray subsp. <i>glabratus</i> (A.Gray) H.Hara	ミヤマアズマギ ク	K 0158	C-2	meadow on slope	
		K 0238	A-2		
<i>Gnaphalium uliginosum</i> L.	C.O. ヒメチチコグサ	K 0268	E	by fumarole	
<i>Picris kamtschatica</i> Ledeb.	C.O. カンチコウゾリ ナ	K 0285	C-3	around hot springs	
		K 0095	B	meadow on slope	
<i>Solidago spilaefolia</i> Fisch.ex Herd.	C.O. —	K 0096	B	meadow on slope	
		K 0171	D	in <i>Betula</i> <i>platyphylla</i> forest	
		K 0260	E	riverside slope	
Monocotyledoneae					
Helobiae					
Juncaginaceae					
<i>Triglochin palustris</i> L.	ホソバノシバナ	K 0062	B	marsh	
		K 0144	C-1	marsh-grassland	
		K 0178	D	riverside	
Liliiflorae					
Liliaceae					
<i>Allium schoenoprasum</i> L.	—	K 0105	B	meadow on slope	
		K 0150	C-1	marsh-grassland	
		K 0281	C-3		
<i>A. victorialis</i> L. subsp. <i>platyphyllum</i> Hultén (<i>A.</i> <i>ochotense</i> Prokh.)	ギョウジャニン ニク	K 0147	C-1	marsh-grassland	
		K 0163	C-2	grassland	
<i>Fritillaria camtschaticensis</i> (L.) Ker Gawl.	クロユリ	K 0012	A-1	roadside slope	
		K 0200	B	riverside	
		K 0278	E	riverside	
		K 0046	B	riverside	
		K 0156	C-2	grassland	
<i>Lilium pensylvanicum</i> Ker Gawl.	エゾスカシユリ	—	D	forest edge	Red Data plant
<i>Lloydia serotina</i> (L.) Reichenb.	チシマアマナ	K 0245	A-2	rocky slope	
<i>Maianthemum dilatatum</i> (A.W.Wood) A.Nels.et J.F.Macbr.	マイヅルソウ	K 0005	A-1	pondside, in forest	
<i>Veratrum oxysepalum</i> Turcz.	バイケイソウ	K 0134	C-1	marsh-grassland	
Iridaceae					
<i>Iris setosa</i> Pall.ex Link	ヒオウギアヤメ	K 0085	B	grassland slope	
		K 0125	C-1	marsh-grassland	
Juncales					
Juncaceae					

<i>Juncus alpinoarticulatus</i> Chaix	Y.V.	—	K 0130	C-1	marsh-grassland	
<i>J. beringensis</i> Buchenau	Y.V.	ミヤマイ	K 0262	E	marsh-grassland	
<i>J. bufonius</i> L.	C.O.	ヒメコウガイゼ キショウ	K 0067	B	around hot springs	
	Y.V.		K 0180	D	riverside	
	Y.V.		K 0269	E	around hot springs	
<i>J. filiformis</i> L.	C.O.	エゾホソイ	K 0266	E	around hot springs	
<i>Luzula multiflora</i> (Ehrh.ex Retz.) Lej.	Y.V.	ヤマズズメノヒ エ	K 0221	A-2		
<i>L. pallescens</i> Sw.	Y.V.	—	K 0057	B		
	Y.V.	—	K 0115	B	grassland slope	
<i>L. parviflora</i> (Ehrh.) Desv. [<i>L. piperi</i> (Cov.) Jones]	Y.V.	—	K 0263	E	marsh-grassland	
<i>L. rufescens</i> Fisch.ex E.Mey var. <i>macrocarpa</i> Buchenau	Y.V.	—	K 0111	B	grassland slope	
Graminales						
Gramineae						
<i>Agrostis scabra</i> Willd.	C.O.	エゾヌカボ	K 0270	E	around hot springs	
	Y.V.		K 0271	E	around hot springs	
<i>Alopecurus aequalis</i> Sobol.		ズズメノテツポ ウ	K 0181	D	pondside	
<i>Beckmannia syzigachne</i> (Steud.) Fern.		ミノゴメ	K 0061	B	around hot springs	
			K 0082	B	in river water	
<i>Calamagrostis purpurea</i> (Trin.) Trin.	C.O.	—	K 0267	E	by fumarol	
<i>Deschampsia flexuosa</i> (L.) Nees.	Y.V.	コメススキ	K 0289	C-3	by fumarol	
<i>Festuca altaica</i> Trin.	Y.V.	—	K 0079	B	slope in forest	
	Y.V.		K 0113	B	grassland	
<i>Festuca rubra</i> L.		オオウシノケグ サ	K 0293	C-3	by fumarole with 39-47°C ground	
<i>Hierochloe odorata</i> (L.) Beauv.	Y.V.	セイヨウコウボ ウ	K 0051	B	grassland	
<i>Melica nutans</i> L.		コメガヤ	K 0093	B	grassland slope	
<i>Phalaris arundinacea</i> L.	Y.V.	クサヨシ	K 0205			
<i>Phragmites australis</i> (Cav.) Trin. ex Steud.		ヨシ	K 0294		by hot spring	
<i>Poa annua</i> L.	Y.V.	ズズメノカタビ ラ	K 0028	A-B	roadside	Immigrant
	Y.V.		K 0303	B	pondside	Immigrant
<i>P. glauca</i> Vahl	Y.V.	タカネタチイチ ゴツナギ	K 0025	A-B		
	Y.V.		K 0118	B	rocky slope	
<i>P. malacantha</i> Kom.	Y.V.	ムラサキシモソ モ	K 0222	A-2		
	Y.V.		K 0225	A-2		

<i>P. pratensis</i> L.	Y.V.	ナガハグサ	K 0249	E	grassland	
	Y.V.		K 0050	B		Immigrant (?)
<i>Puccinellia kamtschatica</i> Holmb.	Y.V.	—	K 0032	A-B		
	Y.V.		K 0068	B	marsh	
	Y.V.		K 0179	D	riverside	
Cyperales						
Cyperaceae						
<i>Carex canescens</i> L.		ハクサンスゲ	K 0045	B	riverside	
<i>C. jacutica</i> V.Krecz	O.J.	—	K 0145	C-1	marsh-grassland	
<i>C. longerostrata</i> C.A.Mey.		ヒエスゲ	K 0064	B	grassland, in mass	
<i>C. mesophila</i> Holm.	O.J.	—	K 0229	A-2		
<i>C. obtusata</i> Liljebl.		—	K 0102	B	grassland slope	
			K 0106	B	grassland slope	
<i>C. pallida</i> C.A.Meyer	O.J.	ウスイロスゲ	K 0055	B	grassland	
	O.J.		K 0117	B	grassland slope	
<i>C. pediformis</i> C.A.Mey.	O.J.	—	K 0078	B	forest slope	
<i>C. riishirensis</i> Franch.	O.J.	リシリスゲ	K 0164	C-2	marsh	
	O.J.		K 0255	E	marsh-grassland	
	O.J.		K 0259	E	marsh-grassland	
<i>C. rostrata</i> Stokes		カラフトカサスゲ	K 0058	B	marsh-grassland	
			K 0166	C-2	marsh-grassland	
<i>C. vaginata</i> Tausch.	O.J.	サヤスゲ	K 0009	A-1	pondside	
<i>C. vanheurckii</i> Müll.Arg.		ヌイオスゲ	K 0039	A-B	in forest	
<i>Carex</i> sp.			K 0056	B	grassland	Fruits unripened
<i>Eleocharis kamtschatica</i> (C.A.Mey.) Kom.		—	K 0272	E	by fumarole, with 31-57°C ground	
			K 0065	B	marsh	
<i>Fimbristylis ochotensis</i> (Meinsh.) Kom.			—	E	by fumarole, with 46-71°C ground	Red Data plant
Microspermae						
Orchidaceae						
<i>Cypripedium macranthon</i> Sw.		アツモリソウ (広義)	—	C-2	grassland	Red Data plant
<i>Cypripedium yatabeanum</i> Makino		キバナノアツモリソウ	—	C-2	grassland	Red Data plant
<i>Dactylorhiza aristata</i> (Fisch.ex Lindl.) Soó		ハクサンチドリ	K 0140	C-1	marsh-grassland	
<i>Platanthera convallariifolia</i> Fisch.ex Lindl.	Y.V.	シロウマチドリ	K 0139	C-1	marsh-grassland	fl. white

*1: abbreviations indicate followings: A.H.=Akiyama, Hiroyuki; C.O.=Chernyagina, Olga; O.J.= Oda, Jiro; Y.V.=Yakubov, Valentin.

*2: As Red Data plants were not collected, collection number for them are shown by "—".

*3: Localities' numbers are corresponded to those in "Localities for collection" and to those, indicated in the map of Fig. 1.

*4: Ground temperatures were measured by electric thermometer at the depth of 10cm from the ground surface.

福田知子：カムチャツカ調査（2007年）で採集された植物リスト

2007年7月のカムチャツカ植物調査により、コケ植物4種と維管束植物192種を確認した。

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