

Arctostaphylos



Most of

The plants here enumerated were procured on a small island called Ura Kanutsheschem & sometimes Kiene It is the same that is separated from the main by the Strait called by Russian Botanists, Senjavin Strait. The collection was made between the 4th of August & the 13th of September. Containing little or nothing of novelty botanically considered it yet adds something to our knowledge of the geographical distribution of northern plants.

Meantime Mr Small on the Steamer landed at several places on the shore of the Okhotsk Sea & added a variety of interesting things to those obtained at Behrens's Straits.

Arctic Asia

- Astragalus alpinus* L
Thalictrum alpinum L
Anemone ranunculiflora L
" *coerulea* DC
" *Richardsonii* Hook
" *parviflora* Mx
Ranunculus aquatilis L
" *hyperboreus* L
" *pygmaeus* Winkl
" *nivalis* L
" *affinis* R Br
Urtica palustris L
Aconitum Lycoctonum L
" " " var *ranunculoides*
" *protractum* Reich
" *Kaemtschaticum* Pall
" *delphinifolium* Reich
Delphinium elatum L
" *Middendorffii* Traut
Papaver alpinum L
Sicentia tenuifolia DC
Corydalis ambigua Cham & Schlecht
" *peoniaphila* Pers
" *pauciflora* " var *caesia*
Barbarea vulgaris R Br
Arabis hirsuta Scop
" *Kaemtschatica* Fisch
Scardamine bellidifolia L

Leontodon hispidus Cham. & Schlecht
~~Leontodon~~ *prolensis* L
" *hispidus* L
Sentaria leucopolia Ledeb
Pavonia macrocarpa R Br
Draba algida Adams
" " var *macrocarpa*
" *alpina* L
" *affinis* Ledeb
" *nivalis* Ledeb
" *hirta* L
" *meana* L
" *gracilis* Ledeb
" *stenobot.* Ledeb
" *nemorosa* L
Leachia oblongifolia Dc
" *anglica* L
" *barica* L
Idlaxia cochlearifolia H.
Sisymbrium sphaeroides Hook
Crysinum cheimanthoides L
Prunella purpurea Brunz
Centaura Edwardsii R Br
Viola Selkirkii Pursh
" *palustris* L.
" *syriaca* Fries
Parnassia palustris L
" *Koskei* Ch. Schlecht
Dianthus repens Willd
Silene acaulis L

Silene pauciflora Ledeb
" *inflata* Sm
" *procumbens* Murr
" *ochotensis* sp. nov.
" *repens* Patrin
Melandrium apetalum Geisl
Sagina Silene Tunnei Post
Alsine verna Bart
" *macrocarpa* Geisl
" *arctica* Geisl
Houkera reptoides Ehrh
Merckia physodes Fisch
Moehringia lateriflora Geisl
Stellaria cuspa Cham. & Schlecht
" *gracilis* Richardson
" *longipes* Goldie
" *florida* Fisch
" *humifusa* K. & U.
Levanthus vulgatum L
Geranium eranthum Dc
Chaytonia acutifolia Willd
Montia fontana L
Astragalus alpinus L
Caryophyllus Wolenski Dc
" *Merbensianus* Thunb
" *caespitosus* Dc
Phaca aboriginum Hook *oxytrips*
Pisum maritimum Linn
Lathyrus palustris L
Didysarum boreale Nutt
Sporca betulifolia Pall

- Spiraea Aruncus* L
Dryas octopetala L
 " *integrifolia* Vahl
Sanguisorba officinalis L } distributed among Jap Plants
 " *lemnifolia* Franch
Gam. strictum Ait.
Sicresia glacialis R. Br
 " *Rivrosii* R. Br.
 " *anemonoides* Wttr
Potentilla Norvegica L
 " *stolonifera* Lehmann
 " *anserina* L
 " *rupestris* L
 " *vallon* Pall
 " *biflora* Wttr
 " *fruticosa* L
 " *elegans* Cham. & Schlecht
Rubus aceticus L
 " *chamaemorus* L
Rosa cinnamomea L. var
 " " "
 " "
Pyrus esculenta Cham. & Schlecht
Epilobium angustifolium L
 " *latifolium* "
 " *organophilum* Lam
 " *alpinum* Bong. ~~det.~~ L
 " *affine* Bong.
~~Scilla~~ *Hippuris montana* Ledeb
Scilla *vern* L
Ribes
Umbilicus spissum Dc
Sedum elongatum Ledeb
 " *Rhodiola* H
 " *cyaneum* Rudolbk

Sedum *Arborescens* L.
Succifraga oppositifolia L.
 " *bruncheata* " "
 " *nitida* Schreb
 " *Loeschkeana* Sternb
 " *Merkii* Fisch
 " *Arvenses* L
 " *stellata* L
 " *DuRoi* Pall
 " *nivale* L
 " *hercynica* Waldst & Koch.
 " *punctata* L
 " *nudicaulis* Don
 " *cernua* L
 " *bracteata* Don
 " *rotundifolia* L.
 " *sibirica* Sternb
Chrysosplenium *Kuantschaticum* Schlecht
 " *alternifolium* L
Cegopodium *alpestre* Ledeb
Bupleurum *campanuloides* L
Leptosticum *scoticum* L
Cornoselinum *Fischeri* Wimmer & Grabowski
Archangelica *lynetini* DC.
Cornus *Suecica* L
 " *leana* L.
Sambucus *racemosa* L
Lonicera *myrica* L
 " *coerulea* L.
Linnaea *borealis* L.
Brevilla

Galium boreale L
" *verum* "
Valeriana capitata Pall
Nardosmia frigida Hook
Aster sibiricus L.
Trigonon uniflorum L
" *elongatum* Ledeb
Solidago Virginica L
Achillea sibirica Ledeb
Leucanthemum integrifolium DC
" *arcticum* "
" *sibiricum* "
Tanacetum vulgare L.
" *Pallasianum* Griseb
Artemisia borealis Pall
" *Norvegica* Fries
" *vulgaris* L
" *glomerata* Ledeb
" *Senguerimensis* Besser
Antennaria alpina R. Br.
Legularia sibirica Less
Leucalis hastata L
" *auriculata* DC
Arnica alpina Ledeb
Senecio frigidus Less
" *uscadaplinus* Less
" *Hookeri* Torr & Gray
" *octozylosus* DC
" *Pseudo-Arnica* Less
Saussurea subsinuata Ledeb

Saussurea Gilesii Ledeb
" *angustifolia* DC
Scorzonera radiata Griseb
Hieracium umbellatum L
Mulgedium sibiricum Less
Thryasacum seu-leonis Desf
" *ceratophorum* DC
Campanula expansa Rudolphi var *dentata*
" " "
" *uniflora* L
Vaccinium prostratum
" *Vitis Idaea* L
" *uliginosum* "
Arctostaphylos alpina Spreng
Loasium tetragonum Don
" *ercoides* "
Phyllocladus taxifolia Salisb.
Loiseleuria procumbens Desv.
Rhododendron Lapponeum Wahl
" *Kamtschaticum* Pall
Ledum palustre L
Pyrola rotundifolia L
" *secunda* "
Moneses uniflora Gray
Primula nivalis Pall
" *borealis* Duby
" *cuneifolia* Ledeb
Androsace arctica Cham & Schlecht
" *chamaejasme* Koch
" *septentrionalis* L.
Dodecatheon frigidum Cham & Schlecht

Orientalis Europaea L.
Gentiana auriculata Pall
" *tenella* Kottl
" *propinqua* Richard
" *barbata* Froel
" *prostrata* Honke
" *frigida* Honke
" *glauca* Pall
Pleurogynne leianthaica Griseb
Halenia Sibirica Borkh.
Sweetia obtusa Ledeb
Polemonium caeruleum L
" *putchellum* Bunge
Siapensia Lapponica L.
Mertensia maritima G. Don
" *dentata* G. Don
Nyssa sylvatica Hoffm
Drosera rotiflora L.
Vernonia sessyloides L
Castilleja pallida Kunth
Bratisia alpina L
Pedicularis verticillata L
" *resupinata* L
" *euphrasioides* Steph
" *sudetica* Willd
" *lanata* "
" *versicolor* Wahl
" *capitata* Adam.
Boschniakia glabra L. G. Meyer
Gymnanandra Stelleri Cham & Schlecht
Statice
Rhenn Rhaunaticum L
Oxyria reniformis Hook
Rumex *franco*
" *acetosa* L
" *acetosella* "

Rumex graminifolius Turcz
Koenigia Islandica L.
Polygonum bistorta L.
" *viviparum* L.
" *polymorphum* Ledeb
" *tristemonifolium* K. Torr.
" *divaricatum* L.
Oenothera nigra L.
Salix leucocarpa L.
" *phylicarpa* L.
" *hastata* L.
" *rhynchocarpa* Pall
" *glauca* L.
" *arctica* Pall
" *Ura-ursi* Pursh
" *reticulata* L.
Salix polaris Wahl
" *retusa* Linn
Populus suaveolens
Potamogeton perfoliatus Cham
" *fruticosa* Pall
" *nana* L.
Alnus viridis DC
Prunus ajanensis Fisch
" *Sibirica* Ledeb
" *laevis* L.
Triglochin palustre L.
Oxalis aristata Fisch
Peristyles viridis Lindl
Iris setosa Pall
" *Pseudacorus* L.?

Grillium obovatum Pursh
Stenotopus roseus Mey
Smilacina hypoleuca Desf
Leloydia serotina Salisb
Allium splendens Willd
 " *Schoenoprasum* L
Fritillaria
Veratrum album L
Tofieldia palustris Huds
 " *coccinea* Brown
 " *calyculata* Wahl
Leucosticta pilosa Willd
 " *spadicea* Sp
 " *arcuata* Wahl
 " *canadensis* Sp
 " *spicata* Sp
Juncus castaneus Sm
 " *triglumis* L
 " *biglumis* L
Ondochloa vaginata L
 " *capitata* Aost
 " *Chamissonis* C. A. Meyer
 " *angustifolia* Roth
 " *latifolia* H. W. M.
Dryas spicata Hook
 " *erecta* Mert. & Koch
Carex suspiriosa Mey
 " *nardina* Griseb
 " *incurva* Lightf.
 " *lugospina* Wahl
 " *glauca* Wahl
 " *secuta* Dewey

Carex auriculata Smith
 " *fuliginosa* Steud. & Hook
 " *Gmelini* Hook & Arn
 " *rigida* Good
 " *stans* Dreyer
 " *hyperborea* Dreyer
 " *cryptocarpa* Meyer
 " *saxatilis* L.
 " *compacta* Br
 " *Polarensis* Booth
 " *proxa* Jacq
 " *capillaris* L
 " *longirostris* Meyer
 " *ampullacea* Good
Clypeus mollis Trin.
Festuca ovina var *vivipara* L
 " *trivifida* R. Br
 " *scutellata* Torr
Poa arctica R. Br
 " *casia* Sm
 " *remoralis* L
Leopodium fulvum Ledeb
 " *latifolium* R. Br
Dupontia Fischeri R. Br.
Catabrom alga Torr
Citronia angustata Ledeb
Glyceria distans Wahl?
 " *arctica* Hook
Pterochloa alpina Roem. & Schultes
Trisetum subspicatum Beauv

Aira brevipolia R. Br
" *coarctata* L
Leucanagrostis deschampsii Trin
" *strigosa* Bong
" *canadensis* P. & B.
Phleum alpinum L
Equisetum arvense L
" *sylvaticum* L
" *varegatum* Schleich
Lycopodium Selago L
" *annotinum* L
" *complanatum* L
Selaginella rupestris Spring
Polypodium Dryopteris L
Woodsia ilvensis R. Br
" *glabella* "
Aspidium fragrans L
" *spumulosum* L
Cystopteris fragilis Bernh
Asplenium filix-foemina "
Blechnum spicant Roth

Ranunculaceae.

Aragone alpina, Linm. A. alpina & A. Ochotensis, Ledeb. Fl. Ross. 1, p. 4. Clematis alpina, Willd.; Cham. & Schlecht. in Annuaire, 6, p. 371. C. Sibirica, Willd.; Hook. & Arn. Bot. Beechey, p. 111. Aragone platysepala, Frauct. & Meyer, Fl. Ochot. (in Nordend. Sibir.) p. 5. Petrospaulovski, climbing among bushes

Specimens from the same station and of the same date have both linear, narrowly spatulate, and some of them more broadly spatulate and remarkably large petals; thus obliterating the principal distinction between A. alpina, and A. Ochotensis, and the recently proposed A. platysepala. The sepals also vary from ovate to narrowly oblong, the shape evidently depending much upon their age. The geographical range of this species is from the Pyrenees and the Alps, through Siberia to the Ochotsk sea and Kamtschatka, reappearing on the American continent in the Rocky Mountains, about Lat. 44° (Aragone columbiana, Nutt. in Torr. & Gray, Fl. 1, p. 112) and in Lat. 36° (A. Ochotensis, Gray, Fl. Feudl. p. 4). But it appears to be absent from all

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Scandinavia and from Eastern North America; adding another to the numerous instances which indicate a stronger botanical connection between the New and the Old World via Siberia &c. than via Canada and Western Europe.

Thalictrum alpinum, Linn. Hb.

Prodr. 1, p. 12; Torr. & Gray, Fl. p. 39. Urakamschetschene Island.

The specimens are uncommonly large 4-10' high; flowers purplish - anthers yellow.

Anemone narcissiflora, Linn. var.

monantha, Hb. Prodr. p. 22; Cham. & Schlecht. in Trunee, 6, p. 576; Ledeb. Fl. Ross. 1, p. 18.

Urakamschetschene Island.

In appearance, this is strikingly distinct from the ordinary state of the species (which was not met with), being smaller and the numerous specimens, both in blossom and in fruit, being uniformly one-flowered.

Anemone Richardsoni, Hook. Fl. Bor-

Am. 1, p. 6, t. 4; Ledeb. Fl. Ross. 1, p. 16.

Urakamschetschene Island.

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Anemone coerulea, Fl. Syst. 1, p. 203;
Ledeb. l. c. Arakantschekene Island.

The leaves of the involucre show an occasional incision. The ^{white} flowers are uniformly solitary.

Anemone parviflora, Michx. Fl. Bor.
Am. 1, p. 319; Fl. Prodr. 1, p. 19; Torr. & Gray,
Fl. 1, p. 13. Arakantschekene Island.

Ranunculus aquatilis, Linna. var.
divaricatus, R. divaricatus, Schrank, R.
circinatus, Sibth. Margin of pools, Arakantschekene Island

Ranunculus hypoboreus, Rothb.; Fl. Prodr.
Prodr. 1, p. 35; Ledeb. Fl. Ross. 1, p. 35. In
pools, Arakantschekene Island

Ranunculus pygmaeus, Wahl.; Fl. Prodr.
Prodr. 1, p. 35; Hook. Fl. Bor. Am. 1, p. 16;
Ledeb. Fl. Ross. 1, p. 36. On hillsides and sand-
beaches, Arakantschekene Island. (Flowers yellow)

Ranunculus nivalis, Linna. Wahl. Fl.
Suppl. p. 154; Schlecht. Ranunc. Annad. 2, p.
14; R. Brown, in Parry's Voy. Suppl. p. 264;
Hook. l. c. Ledeb. l. c. Swamp grounds and

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margin of foot, Urakamschere
Island

Plant from four or five inches to more than a foot in length and varying in foliage, especially in the radical leaves, as described by Schlechtendal and by Brown. The radical leaves of the larger specimens are, for the most part, just those of *R. frigidus*, Willd. (*R. Altaicus*, Gaym. & Gedib.), being incisely-ovate or slightly several-lobed, rather than deeply 3-5-lobed or parted (although they sometimes are so). Were it not that the petals are quite entire and their veins seldom anastomosing, we could not hesitate to reduce *R. frigidus* to this species, contrary to Brown's and Schlechtendal's opinion; indeed it can hardly be expected to remain distinct upon these characters. The style forms a slender and straight beak, a little shorter than the mature achenium.

Ranunculus affinis, R. Brown in Parry's
1. Voy. App. p. 263; Schlecht. Ranunc. Animad.
2, p. 18; Trautv. Fl. Sibir. p. 62, (in Bradden
Sibir.) Urakamschere Island

The leaves have commonly the middle lobe entire and larger than the others which

decrease in size to the margin. The sepals are not perceptibly pubescent.

Caltha palustris, Linn. Db. Prodr. 1, p. 44; Hook. & Arn. in Bot. Beechey, p. 112.

Margin of pools, Petropaulovski. Coal Bay, ~~see~~ J. Small var. Rudicans. C. rudicans, Forst. in Linn. Trans.; Db. l. c. Arakamschetken Island.

Delphinium elatum, Linn.; Ledeb. Fl. Ross. 1, p. 61. Hillsides and ravines, Ayau, shore of Ochotsk Sea. J. Small.

This certainly belongs to D. elatum as that species is received by Ledebour. It accords in many, but not in all respects with the D. laxiflorum var. geocarpum of Gaubert & Meyer Fl. Ochot. l. c. p. 11. Perhaps it is rather their D. intermedium; but the stems are pubescent and the ovaries glabrous.

Delphinium Middendorffii; Gaubert. Fl. Jaimeyr. (in Middendorff. Sibir.) p. 63, t. 1. Arakamschetken Island.

Gaubert's figure and description leave no doubt that our specimens belong to this Arctic Siberian species, although they are rather larger; the stem is pubescent,

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and the lower petals generally more notched. The thick and oblique or horizontal caudex, the large, long-spurred flowers, and the densely tomentose ovaries are characteristic. It may be also the imperfectly known *D. pauciflorum* of Reichenbach, which came from the same region as our plants, but the characters do not accord. On the other hand it might be compared with the Western American *D. Mendocino*, which was gathered at Botzeb's Sound according to Hooker and Arnott, and extends to Cape Lisburne, according to Seemann. But the rootstock is very unlike the grumore-tuberous root of that species, the plant is much stouter, more leafy and the lower petioles much more dilated.

Aconitum delphinifolium, Reichenb.

Monogr. gen. Aconit. p. 79, t. 9. *A. napellus*, var. *delphinifolium*, Hook. & Arn. l. c.; Ledeb. l. c.
Arakautschene Island.

Aconitum Kautschaticum, Reichenb. l. c.

H. l. c. *Pall. ex Reichenb.*; *Schlecht. in Linnaea*,
6, p. 582; *Ledeb. l. c. Obersee. J. Small*
H. Blue. Flowers blue, on hillsides. Fabius Bay & Coal Bay
J. Small

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Aconitum productum, Reichenb.; Ledeb.
l. c.; Hb. l. c. Arakamshetene Island.

They were collected in different localities plants belonging apparently to the three species above named, but the slight differences in the form of the hood and spur, the greater or less length of the points of the helmets, the denseness or laxness of the raceme, and the difference in pubescence, seem hardly sufficient data on which to establish three species. They all probably belong to A. Napellus.

Aconitum Lycostomum, Linn.; Ledeb. l. c.
Travels of Meyer, Fl. Ochot. (in Middend. Sibir.)
p. 11. Ayan, J. Small.

The specimens are of two forms: one rather stout, erect; raceme densely many-flowered; flowers light yellow. The other is slender, with few leaves and a raceme with few, distant, smaller, light greenish flowers: perhaps A. Lycostomum, var. ranunculoides, Turez. Fl. Baik. 1, p. 48.

Papaveraceae.

Papaver alpinum, Linn.; Frucht. Fl.
Taimyr. p. 60, (in Middend. Sibir.). P. alpinum,
var. nudicaule, Ledeb. Fl. Ross. 1, p. 87. P. nu-
dicaule, St. Prodr. 1, p. 117. Arakamschischee
and Herats Islands.

Fumariaceae.

Dicentra tenuifolia, DC.; Ledeb. *D. tenuifolia* & *lachenaliaeflora*, Ledeb. *Fl. Ross.* 1, p. 97. *Dicentra tenuifolia* & *lachenaliaeflora*, DC. *Syst.* 2, p. 111, & *Prodr.* 1, p. 126. *Fumaria tenuifolia*, Ledeb. in *Mem. Acad. St. Petersburg.* 5, p. 551. *Corydalis tenuifolia*, Pursh, *Fl.* 2, p. 462. - Ayan on bare hillsides. J. Small "Flowers pink"

The specimens of this interesting little plant all belong to the *D. lachenaliaeflora* as that is distinguished by De Candolle, none of them having quite so short pedicels nor so blunt lobes to the leaves as *D. tenuifolia* according to the description by De Candolle and the figure in *Deless. Ic. Sel.* 2, t. 9. But the differences indicated rest upon such insufficient materials and such imperfect comparisons, and relate to points so unlikely to be constant that we have no hesitation in uniting the two supposed species, as Ledebour was inclined to do. In doing this the name *tenuiflora* is preferred as having been earlier used, both by Ledebour and by Pursh, for both forms; and as being particularly appropriate. The numerous and very fine specimens

were collected by Mr. Small on the first of September, and are all in flower.

Corydalis pauciflora, Peus. Syn. 2, p. 69;
Hb. Prodr. 1, p. 127; Deless. Ic. Sel. 2, t. 9; Hook.
& Arn. Bot. Beechey, p. 121; Ledeb. Ic. Pl. Alt. 5, t.
450, & Fl. Ross. 1, p. 97.

Var. exigua: tenuior; foliis submembranaceis; calcar adscendente cylindraceo brevi vel parum incurvo. — Arakauschekene Island.

I was not myself so fortunate as to find this plant; but a few specimens were brought in by Purser W. B. Boggs. Like those from the Island of St. Lawrence, of which the acute Ledebour noted the peculiarities, these specimens differ not a little from the Siberian plant, and still more from Delessert's figure. The leaflets are much thinner; the flowers still fewer, and the long and the large spur, strikingly ascending, proportionally thickens towards the base, more regularly cylindraceous, and nearly straight, instead of incurved; so that we are not surprised that Ledebour should have questioned its really belonging to *C. pauciflora*. That, we may add, is erroneously represented in Delessert's Icones as to the shape of the corolla; for the spur is, in fact, much longer than the limb, instead of much shorter, as it is depicted Ledebour's figure rightly

represents the flower. The corolla in our plant is purple.

Corydalis ambigua, Cham. & Schlecht. in Linnaea, 1, p. 558; Hook. & Arn. Bot. Beechey, p. 112; Ledeb. Fl. Ross. 1, p. 101. Pitropaulovski; on hills in damp and rich soil.

The plant accords well with Chamisso's specimens. Flowers purple. Raceme varying from two to six inches in length. Strophoid of the seed obovate and entire.

Corydalis peonifolia, Pers. Syn. 2, p. 269; Db. Prodr. 1, p. 127; Cham. & Schlecht. l. c.; Ledeb. Fl. Ross. l. c. Tschantar Island, J. Small; on shady hillside

var. humilis, subpedatis, foliis multo minoribus. Ayan. in valleys, J. Small.

Plant of extraordinary size for the genus; the foliage well compared with that of a Peonia. The thick tuberos root is nearly two inches in diameter at the crown, where it is invested with thin scales, abruptly narrowed below; corolla purple. In the variety, as we doubt not it is, the leaves of the smaller specimens are only 5 or 6 inches long including the petioles, and the leaflets small in proportion. But the plant is young.

Corydalis pauciflora Pers. Enum. 2, p. 69. Db. Prodr. 1, p. 127
Uru kamtschechem?

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Crucifera.

Barbarea vulgaris, R. Br.; Fl. Prodr.
1, p. 140; Levl. Fl. Ross. 1, p. 114; Hook. Fl. Bor.
Am. 1, p. 39. Petropantovski. Coal Bay Small

Arabis hirsuta, Scop.; Fl. Prodr. l. c.;
Levl. Fl. Ross. l. c.; Hook. Fl. Bor. Am. l. c.
Western coast of Japan, J. Small Petropantovski.

Arabis Kamtschatica, Fisch.; Levl. Fl. Ross. l. c.
A. lyrata, var. Kamtschatica, Fl. Prodr. 1, p. 146. ~~Sp.~~
Sisymbrium araboides, Hook. Fl. Bor. Am. p. p.
63, t. 21. Petropantovski.

We have specimens varying very much in form and size; from those with a single slender stem furnished with 4-6 linear-lanceolate leaves, the lower commonly incised or toothed the upper entire; to those which are stouter, very much branched and exactly resembling Hooker's figure of Sisymbrium araboides. They are all furnished, at base, with a rosette cluster of leaves more or less lyrate dissected, though those of the smaller specimens are sometimes nearly entire. The cotyledons are incumbent and the elongated pods are erect. It is probably specifically distinct from the A. lyrata of the United States as suggested by Dr. Gray in ^{the} Manual of Botany p. 33.

Cardamine bellidifolia, Linn.; Fl. Prodr.
1, p. 150; Ledeb. Fl. Ross. 1, p. 123; Torr. & Gray, Fl.
1, p. 84; Trautv. Fl. Jacony. p. 54 (in Middend. Sib.)

Arakamschekene Island.

The ^{numerous} specimens with well-grown fruit vary from less than inch to three or four inches in height.

Cardamine purpurea, Cham. & Schlecht.
in Linnaea, 1, p. 20; Hook. Fl. Bor. Am. 1, p. 44.

Var. abliftora: glabra; foliis nunc angulato-
 uni-bidentatis; stylo brevi. — Arakamschekene
 Island.

Our specimens are mostly from two to five inches high, from a long creeping root, with about five leaves, not strictly radical, but scattered at about equal distances along the lower part of the stem; a few serrate but the greater number quinately pinnate; the terminal ^{leaflet} ~~the~~ mostly orbicular in outline slightly three-lobed; the lateral ones oval, entire, or with one or two short lobes or teeth. Raceme of rather large white flowers somewhat compact, (some fruiting specimens particularly so) the lowest flower in one or two cases subtended by a bract or reduced leaf.

Notwithstanding the points of difference indicated above there is little doubt that our plant is a variety of *Chamisso's C. purpurea*; an unfortunate name

in any case, since the color of the petals is not likely to be constant. For example, those of *C. pratensis* and *C. rhomboida* in the United States vary from deep rose-color or purple to pure white. On the other hand our specimens differ from *C. angulara* of Hooker only in their smaller size and in their pinnate leaves almost uniformly of five leaflets. But some of Dr. J. M. Bigelow's specimens from the Sierra Nevada of California are quadrifoliate; and the suite of specimens in Dr. Gray's herbarium leads to the conclusion that *C. angulara*, Hooker, & *C. paucisepta* Benth. are forms of one polymorphous Western American species which ranges from the eastern side of Behring's Straits to California.

Caidamine pratensis, Linn.; D.C. Prodr. 1, p. 151; Hook. Fl. Bor.-Am. 1, p. 45, var. angustifolia; Ledeb. Fl. Ross. 1, p. 125; Mantz. Fl. Taimyr. (in Middend. Sibir.) p. 54; Rupr. Fl. Samojed. casuat. No 34. Arakantschken Island. Coal Bay. J. Small

Caidamine hirsuta, Linn.; D.C. Prodr. 1, p. 152; Hook. Fl. Bor.-Am. l.c.; Ledeb. Fl. Ross. 1, p. 127. Petropaulovski.

A form with remarkably undivided leaves; only the lowest being pinnately-paired.

Dentaria tenuifolia, Ledeb. Mem. Acad. Petersb. 3, 1815, p. 547; Fl. Prodr. 1, p. 156; Hook. Fl. Bor.-Am. 1, p. 56; Trautv. Fl. Sib. (in Middend. Sibir.) p. 16. Shantar Island, J. Small.

The leaflets of the cauline leaves (radical ones wanting) are broader than they are represented in the descriptions and figures; the tubers are much compressed and plano-convex.

Parrya macrocarpa, R. Br. in Parry's Voy. App. p. 268; Trautv. Fl. Sibir. (in Middend. Sibir.) p. 55. *P. macrocarpa*, var. *glabra*, Hook. Fl. Bor.-Am. 1, p. 47. Damp stony hills, Coal Bay, J. Small. Urakantschchem Island.

There seems to be nothing in the descriptions of *P. Guineana*, Ledeb. Fl. Ross. 1, p. 131, and *P. macrocarpa* of sufficient importance to constitute them distinct species, and some of our plants (allowing for the lengthening of the raceme with age,) exactly answer to the figure in Ginn. Amer. Acad. 2, f. 20, except that the petals are retuse, while they resemble the figures in Hook. l.c. except as to the pubescence, so closely as to leave no doubt that they are the same species. Most of the specimens, however, as well flowering as fruiting

ones have the leaves narrowly lanceolate and entire, notwithstanding they were collected at different stages of growth and in ^{different} ~~the same~~ localities

Draba algida, Adams; Hb. Prodr., 1, p. 167; Hook. Fl. Bor. Am., 1, p. 150; Ledeb. Fl. Ross., 1, p. 146; Grav. Fl. Sibir. (in Middlem., Sibir) p. 56. Arakantschene Island, in fruit. And. var. racemo laxo 3-5-floro; pedicellis elongatis; siliculis hirsutulis immaturis lineari-oblongis in stylum longiusculum attenuatis. Arakantschene Island, in flower & young fruit

In the leaves with their margins fringed with long and bristly hairs, and in most of their characters, our specimens accord with *D. algida*, of which we have not seen the fruit. But they are pretty large (scapes often four inches high); the flowers or silicles on rather long peduncles pedicels; and the style is not very short. The fructiferous plant here referred to this plant here referred to this species has its silicles from 3 to 4½ lines in length, varying ovate-oblong to broadly oval. The variety with its immature silicles from 4 to 5 lines long on pedicels fully 3 lines long, if rightly referred to this species must resemble the var. macrocarpa of Ledebour.

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Draba alpina, Ginn.; Db. Prodr. l. c.,
Hook. Fl. Bor. Am. l. c.; Ledeb. l. c.; Trautv.
Fl. Faunyt. (in Nordden. Sibir.) p. 57. On stony
hills, Arakamtchetchene Island.

The siliques are broadly oval; otherwise
the specimen agree with the Norwegian plant.

Draba affinis, Ledeb. Fl. Ross. 1, p. ~~444~~
148. Arakamtchetchene Island.

Perhaps too near to D. depens, Bieb.

Draba nivalis, Georgbl. in nov. Act. ~~up~~
Wpäl. 6, p. 47, t. 2, p. 2. D. mucella, Wahlenb. Fl.
Lapp. p. 174; Db. Prodr. l. c. Arakamtchetchene Island.

Our plant differs from D. nivalis in no
respect except that the pods are rather too short.
From D. frigida, (found in this region by the
Russian Botanists,) it differs in the perfectly
leafless scapes and closely canescent (not toment-
ose) leaves.

Draba hirta, deinum; Db. Prodr. l. c.; Hook
& Arn. Bot. Beechey, p. 121; Fl. Bor. Am. 1, p. 52.
Trautv. Fl. Faunyt. (in Nordden. Sibir.) p. 58.
Arakamtchetchene Island

Draba incana, Linna.; Hook. Fl. Bor-
Am. 1, p. 54; Ledeb. Fl. Ross. l. c.; Rupr. Fl.
Jamoy. Cisural. No. 29. D. confusa, Hb. Prodr. l. c.
Frank. & Meyer, Fl. Coch. (in Nordden. Sibir.) p. 16.
West coast of Yeso, J. Small.

Draba gracilis, Ledeb. Fl. Ross. l. c.
D. confusa, var. pauciflora, Hb. Prodr. l. c. Petropane-
lovski. Arakantschekene Island.

Draba stenobotra, Ledeb. Fl. Ross. 1, p. 154.
D. hirta, var. siligiosa, Cham. & Schlecht. in Lin-
naea, 1, p. 23. Arakantschekene Island.

Draba nemorosa, Linna.; Hb. Prodr.
l. c.; Ledeb. Fl. Ross. l. c. Locality uncertain

Cochlearia oblongifolia, Hb. Syst. 2, p.
363; Ledeb. Fl. Ross. l. c.; Frank. & Meyer, Fl. Jamoy.
Cisural. No. 24. C. arctica, Frank. & Meyer, Fl. Jamoy. (in
Nordden. Sibir.) p. 58. Yamsk Gulf, J. Small
Arakantschekene Island.

Cochlearia Anglica, Linna.; Ledeb. Fl.
Ross. l. c.; Hook. Fl. Bor. Am. 1, p. 57. Younaighi
Island

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Cochlearia lanica, Linn.; Fl. Prodr. 1, p. 173; Hook. Fl. Bor.-Am. l. c. Herato Island, Officers of the Vincennes, Arakamtschekene Island.

Thlaspi cochleariforme, Fl. Prodr. Syst. 2, p. 381; Ledeb. Fl. Ross. l. c.; Hook. Fl. Bor.-Am. 1, p. 58. Shantar Islands, J. Small

The wing is not conspicuous as represented in Lessert's figure (l. c., t. 52.) in fact it is nearly obsolete and the lower leaves are without serratures.

Sisymbrium sophioides, Hook. Fl. Bor.-Am. 1, p. 61, t. 20; Ledeb. Fl. Ross. 1, p. 181; Trautv. Fl. Taimyr. (in Widdend. Sibir.) p. 39. On pebbly beaches near the sea, Arakamtschekene Island.

Crysinum cheiranthoides, Linn.; Fl. Prodr. 1, p. 198; Ledeb. Fl. Ross. 1, p. 89; Trautv. and Meyer, Fl. Echot. in Widdend. Sibir. p. 18; Rupr. Fl. Samojed. Casural. No. 35. Petropawlofski.

Braya purpurascens, Bunge in Ledeb. Fl. Ross. 1, p. 195; Trautv. Fl. Taimyr. in Widdend. Sibir. p. 60. Platypetalum purpurascens, R. Br. in Parry's 1. Voy. App. p. 268; Hook. Fl. Bor.-Am. 1, p. 66, t. 28. Arakamtschekene Island

Our specimens differ from the figure in Hooker l. c. in having much narrower leaves

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and pods, the latter varying from 2 1/2 to 5 lines in length and from minutely pubescent to quite glabrous.

Eutrema Edwardsii, R. Br. in Pary's
1, Voy. p. 267, t. A; Ledeb. Fl. Alt. 3, p. 163;
Hook. Fl. Bor.-Am. 1, p. 67. Draba levgasa,
Cham. & Schlecht. in Gussone, 1, p. 25. Arakamitch-
eschem Island.

Nilacea, (A. G.)

Niela Selkirkii, Pursh (vide Coll. Jap. p.); var Kamtschatica, N. Kamtschatica, Gingin Linnaea, l. p. 406; Ledeb. Fl. Ross. l. p. 245. Petropaulovski.

The specimens, although larger than the imperfect ones communicated by Chamisso to Gingins, can hardly fail to belong to N. Kamtschatica. But they accord with N. Selkirkii of Canada (which seems indistinguishable from N. umbrosa, Fries, and, judging from the figure, N. imbutis, Ledeb.), except that the appendages of the sepals are narrower and not ciliate at the base, and the large spur does not broaden scarcely broadens downwards.

Niela palustris, Linn.; Ledeb. Fl. Ross. l. p. 247. Petropaulovski (~~Flora~~ corolla light purple, with dark veins). From Kamtschatsk Island: a smaller-flowered form.

Niela sylvatica, Fries (Norsylvestris, Lamour. Koch); var. Kamtschatica, N. canina var. Kamtschatica, Gingin Linnaea, l. p. 407.

Petropaulovski.

The specimens well accord with large-flowered forms of the N. sylvatica of Fries, except in the ~~stipules~~ broad, oblong or even ovate, and ~~toothed~~ toothed rather than fringed stipules. Trautvetter and Meyer notice a similar form in the Flora Ochotensis.

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Droseracea.

Parnassia palustris, Linn. Fl. Prodr.
1, p. 320; Ledeb. Fl. Ross. 1, p. 262; Trautv. & Steud.
Abeyr, Fl. Ceylon. in Nordend. Sibir. p. 19; Rupr.
Fl. Samojw. Cisural. No. 45. Coal Bay. J. Small

Parnassia Kotzebuei, Cham. & Schlecht.
in Yunca, 1, p. 549; Ledeb. Fl. Ross. l. c.; Hook.
Fl. Bor. Am. 1, p. 83, t. 28. Arakamschekene
Island.

Caryophyllaceae

Dianthus ripens, Willd. Spec. 2, p. 681; Hook. & Arn. Bot. Beechey, p. 122; Ledeb. Fl. Ross. 1, p. 281; Seem. Bot. Herald, p. 27, t. 4; Trank. & Meyer, Fl. Ochot. in Nordend. Sibir. p. 20. In crevices of rocks near the sea J. Small

The petals are lacinate-toothed rather than crenate; otherwise the numerous fine specimens accord well with Seemann's figure. The calycine bracts are more commonly shorter than longer than the calyx

Silene acaulis, Linna.; Ledeb. Fl. Ross. 1, p. 303; Hook. Fl. Bor.-Am. 1, p. 87; Rapport. Fl. Samojed. Casual. No. 50. Stony hills, Brakawtschetchene Island.

Silene pauciflora, Ledeb. Fl. Ross. 1, p. 306.

var. uniflora; foliis angustissimis, radicalibus linearibus spatulatis. Brakawtschetchene Island. also on table-lands at Coal Bay, J. Small.

Densely caespitose. The flowering stems 3 or 4 inches high from thick unbranched caudexes, slender, glabrous, as is the whole plant. Radical

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and lower cauline leaves about an inch long, the dilated upper portion or blade little over a line in breadth; the one or two upper cauline pairs 3 or 4 lines long, subulate or filiform from a dilated base, bractlike, villose ciliate. Peduncle about half an inch long, erect. Calyx vesiculate-inflated, broadly campanulate, 10-nerved, not reticulated, 7 or 8 lines long; the teeth uniformly broadly ovate and rounded. Petals light purple; their claws dilate-cuneiform, glabrous, acuminate-dilated at the summit, bearing a very small two-parted crown; lamina deeply obcordate, 4 lines long, two-lobed rather than two-parted, the lobes obovate, entire. The flowers of this handsome plant are considerably larger than in *S. lurida*, the leaves much narrower, the stamens and claws of the petals are glabrous, &c. Our specimens accord with Ledebour's description of *S. paucifolia* in all respects, except in the points indicated. At the same time, they so nearly approach the character of his *S. stenophylla*, as to render it probable that it is no more than a variety of the present species with a rather narrower calyx entire petals, &c.

This is doubtless ^{*S. graminifolia* Benth} var *stenophylla* of Regel's, Pl. G. Rade

to which species, ~~to which~~ are reduced. *S. viscapoda* Hornem. *S. graminifolia* Regel. *S. stenophylla*, *paucifolia*, *lurida*, *graminifolia* Ledebour in Ledeb. Fl. Ross. also *S. tenuifolia*, *ulubina*, *teluris*, *obsoletophylla*, *chamaecerasus* Vahl.

Silene inflata, Sm.; Ledeb. Fl. Ross. l.c.; Hook. Fl. Bor-Am. 1. p. 90; Trautv. and Meyer, Fl. Ochot. in Middend. Sibir. p. 20. Agnes, J. Small.

A tall and large-leaved state of the species,

Silene procumbens, Murr. Comm. Gart. 7, t. 2; Ledeb. l.c. Fabric. Bay. J. Small

S. procumbens Murr var?

Silene Ochotensis (sp. nov.);
caespitosa, tenuiter puberula; caulibus
e caudici multicipite plurimis spithameis
gracillimis laxis ad apicem usque folia-
tis unifloris; foliis conformibus mem-
branaceis linearibus basi subattenuatis; sum-
mis pedunculatum flore nutante dimidio
breviorem bis superantibus; calyce cylin-
driceo-camparulato 10-nervi, dentibus
ovatis obtusiusculis; petalis fauce coron-
atis, lamina obovata retusa vel emar-
ginata, unguibus glaberrimis. Hillsides
J. Small

A well marked species with the foliage nearly that of a *Stellaria* or *Moehringia*, the habit and character somewhat intermediate

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between the sections *Behenantha* & *Rupifraga*
and *Heliosperma*: the capsule and seeds un-
known. Cauline leaves 4 or 5 pairs rather glaucous,
uniform, about an inch long and a
line and a half broad, sessile by somewhat
connate bases; the radical similar but
tapering into a petiole. Calyx 5 or nearly
6 lines long, thin & more or less inflated
not reticulated between the nerves. Petals
pink; the lamina 3 or 4 lines long. Stipe
not half the length of the oblong-linear and
completely one-celled ovary.

Silene repens, Patrin in Pers. Syn.
1, p. 500; Ledeb. Fl. Ross. 1, p. 308, & Ic. Fl.
Ross. t. 425; Trautv. & Meyer. Fl. Borst. C. c.
p. 21. New Bay and Old Bay. J. Small.

According to Mr. Small, the collector, the
calyx is purple and the petals yellowish-white.
The latter, it may be remarked, have barely
any trace of the crown; in other respects the
specimen accord with the Siberian plant.

Melandrium apetalum, Fenzl in Ledeb.
Fl. Ross. 1, p. 326; Trautv. Fl. Tamyr. in Nord-
dend. Sibir. p. 53. *Lychnis apetalus*, Linn. Sp.
626; G. Prodr. 1, p. 386. Arakanische Inseln

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Sagina Ginnai, Presl; Ledeb., Fl. Ross. 1, p. 339; Rupr. Fl. Samojed. Cissural. No. 57. Spargula saginoidis, Linn. Sp. 631; Hb. Prodr. 1, p. 344. Arakantschekene Island

Alsina verna, Barth.; Ledeb., Fl. Ross. 1, p. 347; Trautv. and Meyer, Fl. Sibier. in Abhandl. Siber. p. 21; Rupr. Fl. Samojed. Cissural. No. 58. Arenaria costata & Arenaria verna, Auct. Petropaulovski and Arakantschekene Island.

Four rather distinct varieties occur in the collection; var. glauca, sepals very strongly nerved; pedicels glandular-pubescent; stems one-flowered; var. hirta, very smooth; stems one-flowered; another form larger and more diffused of the same variety, and a more leafy, very pubescent, slender form with the stems from one to four-flowered and the leaves very strongly three-nerved.

Alsina macrocarpa, Zensl; Ledeb., Fl. Ross. 1, p. 353; Trautv. Fl. Samojed. in Abhandl. Siber. p. 51. Arenaria macrocarpa, Auct. Coal Bay, J. Small. Arakantschekene I

Arsine arctica, Hurt.; Wedd. Fl. Ross.
c.c.; Transtr. Fl. Taimyr in Middend. Sibir.
p. 51. Arenaria arctica, Auct. Arakantch
tschetchene Island.

A densely caespitosa form has long slender very leafy branches; leaves broad, strongly falcate, distinctly nerved, beset especially at base with a few long cilia: a second similar to this has much narrower smooth leaves and no sterile branches; a third has the sepals ovate very obtuse dark red; pedicels elongated; all have one-flowered stems.

Honkenya peploides, Chrsk.; Wedd.
Fl. Ross. 1, p. 358; Transtr. & Meyer, Fl. Cesch.
in Middend. Sibir. p. 21. Arenaria peploides,
Auct. Javanai, W. coast of Yesso, J. Small.
Arakantchetchene Island.

Merckia physodes, Fisch.; Hook.
Fl. Bor.-Am. 1, p. 103; Torr. & Gray, Fl. 1, p. 176
Arenaria physodes, Auct. Fl. Bor. 1, p. 413.
Arakantchetchene Island.

Harvey

Moehringia lateriflora, Fenzl; Zedl.
Fl. Ross. 1, p. 371; Trankv. & Meyer in Nordenf.
Sibir. Fl. Ochot. p. 22; Rupr. Fl. Samojed.
Casual. No. 60. Arenaria lateriflora, St.
Prodr. 1, p. 412; et Auct. Arakantschekow
Island.

Stellaria crispata, Cham. & Schlecht.
in Lunaea, 1, p. 57; Hook. Fl. Bor.-Am. 1, p. 97;
Sedeb. Fl. Ross. 1, p. 382; Torr. & Gray, Fl. 1, p. 186.
Fabius Bay, J. Small.

Stellaria gracilis, Richardson in Wrinkl.
1 Journ. ed. 2, App. p. 17; Hook. Fl. Bor.-Am. 1,
p. 97. Arakantschekow Island.

The flowers are on long, slender peduncles,
 often in the axillary position of still longer leafy sterile
 branches, which are terminated by a bulb (or
 transformed flower-bud?)

Stellaria longipes, Godrie; Zedl. Fl.
Ross. 1, p. 386. Arakantschekow Island.

There are two pretty well-marked varieties;
 one with linear leaves and single-flowered stems,
 pedicels short; the other with broader leaves, & stems
 bearing from 1 to 4 flowers on long peduncles.

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Stellaria florida, Fisch.; Ledeb. Fl. Ross.
1, p. 385; Fl. Prodr. 1, p. 399; Stellaria Fischeriana,
Lex. in Fl. Prodr. l.c. Cow Bay, J. Small.

Stellaria humifusa, Rostk.; Ledeb. Fl.
Ross. 1, p. 408; Trunk. & Meyen, Fl. Cechot. p. 23
in Abthend. Sibir; Ruper. Fl. Samojed, Casural.
No. 61. Arakantschekene Island.

Cerastium vulgatum, Linn.; Ledeb.
Fl. Ross. 1, p. 408; Ruper. Fl. Samojed. Casural.
No. 72. Arakantschekene Island.

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Geranaceae.

Geranium erianthum, Dc. Prodr. 1, p.
641; Hook. & Arn. Bot. Beechey, p. 113; Ledeb. Fl.
Ross. 1, p. 464; Trautv. & Meyer. Fl. Cechot.
p. 25, in Middend. Sibir.
Coul Bay & Yansk Gulf, J. Small. Petro-
paulovski.

Portulacaceae.

Claytonia acutifolia, Willd.; Ledeb. Fl.
Ross. 2, p. 147; Fl. Prodr. 3, p. 361. C. arctica
Grantz. Fl. Faungr. p. 46 in Middlew. Sibir.
Coast Bay, J. Small. Arakamshetchen
Island.

The specimens from the latter locality show all intermediate forms of leaves, from those that are linear, to such as are broad lanceolate; with the latter the plants from the former locality also agree. The caudex varies from the thickness of a goosequill to that of the thumb.

Mertensia fontana, Linna.; Ledeb. Fl.
Ross. 2, p. 152; Fl. Prodr. 3, p. 362.
Arakamshetchen Island.

Leguminosae.

Phaca australis, Linn.; Ledeb. Fl. Ross.
1, p. 577; DC. Prodr. 2, p. 274.
 Arakanschetken Island.

The ~~specimens~~^{flowers} agree quite well with authentic specimens except that the leaflets are pretty generally linear-lanceolate and more or less hairy;

Cyrtopsis Mertensiana, Turcz. Ledeb. Fl.
Ross. 1, p. 589. C. unphylla, Cham. in Annua,
6, p. 546; DC. Prodr. 2, p. 278. Arakanschetke
 ne Island.

Cyrtopsis campestris, DC.; Ledeb. Fl.
Ross. 1, p. 590; DC. Prodr. 2, p. 278 excl. var. p, 57.
 Fabius Bay, J. Small. Arakanschetken
 Island

We have from the latter locality two forms, of which one has very small leaflets, revolute on the margins, and sparsely pubescent; flowers purple. The other has larger, more pubescent leaflets and yellow flowers. The specimens from Fabius Bay are larger every way, very stich, silky pubescent, with yellow flowers and densely black pubescent legumes.

(33^x) after Oxytropis

Astragalus alpinus, Linn.; Ledeb.

M. Ross. 1, p. 501; Trautv. & Meyer, Fl. Borst. p. 27
in Abhandl. Sibiri; Rupr. Fl. Samojed. Cisural. No. 81.

Phaca astragalina, Hook & Arn. Bot. Beechey, p. 122
Flowers purple. On stony hills, Anakanutchetene
Island.

Phaca aboriginum Hook. fl. Bor. Am. 1, p.
143, t. 56. Torr. & Gr. Fl. N. Am. p. 346

Anakanutchetene Island. On sandy flats. Our speci-
mens are recorded as having yellow flowers white in Torr. &
Gr., they are said to be white tinged with blue. The spikes
are fewer flowered & the leaflets rarely half an inch long.

~~Cryptopsis Worlandensis DC~~

Cryptopsis Worlandensis DC. Astr. p. 55, No 3, Prodr

C. arctica R. Br. App. Pavy's Voy. p. 278? DC. Prodr. 2, p. 267?

On stony hills. Arakansschekhen Island

Our specimens in side pubescence &c compare well with the smaller

N. Asiatic forms: in the black hairs of the calyx & the pod with those from Northern America but are much less caespitose. The peduncles are densely ^{The margins of the leaflets are remarkably & broadly serrate} the petioles slightly yellow, fl. purple or violet

Cryptopsis Mertensiana Turcz in Bull. de la Soc. des

Nat. de Mosc. 1840, p. 68. Ledeb. Fl. Ross. 1, p. 589. C. tupehilla

Lehmann in Lunen 6, p. 456 (non Pers)

Arakansschekhen I. on stony hills fl. violet

Cryptopsis leucomystri DC. Astr. p. 59, No. 10; Prodr

2, p. 278. Ledeb. Fl. Ross. 1, p. 590. C. sordida DC. Prodr. 2, p. 276

Shores of the Okhotsk Sea J. Smell. Arakansschekhen I

The specimens exactly correspond to northern forms both American & Asiatic

Cryptopsis

Cryptopsis Coralensis, Gle. Astrag. p. 35;
No. 3; & Prodr. 2, p. 276; Ledeb. Fl. Ross. 1, p. 593.

C. arctica, Hook. & Arn. Bot. Beechey, p. 122. &
Hook. Fl. Bor.-Am. 1, p. 146, ex Ledeb.

Arakantschken Island.

Pisum maritimum, Linn.; Ledeb. Fl.
Ross. 1, p. 661; Gle. Prodr. 2, p. 368; Trautv. & Meyer
Fl. Ochot. p. 27 in Middend. Sibir. Arakantsche
schem Island. Petropawlovske

Besides the ordinary state a very small
 was collected by Purser W. B. Bozys. This has the
 leaves less than half an inch long, oval, very ob-
 tuse, mucronate or apiculata, rather incon-
 spicuously veined, and minutely pubescent.
 The bracts are obliquely sub-cordate, as large as
 the leaflets and without serratures.

Lathyrus palustris, Linn.; Gle. Prodr. 2, p. 371;
Ledeb. Fl. Ross. 1, p. 686; Trautv. & Meyer, Fl. Ochot.
p. 29 in Middend. Sibir. Arakantschekhen Island.

Aedysarum boreale, Nutt.; Gle. Prodr.
1, p. 343; Hook. Fl. Bor.-Am. 1, p. 155; Torr. & Gray,
Fl. 1, p. 456. Coal Bay, J. Small. Arakant-
schekhen Island.

Rosaceae.

Spiraea betulifolia, Pall.; Ledeb. Fl. Ross. 2, p. 14; Hb. Prodr. 2, p. 544; Trautv. & Meyer, Fl. Ochot. p. 15 in Middew. Sibir. Ayan, J. Small. Arakantschekene Island.

Spiraea Aruncus, Linn.; Ledeb. Fl. Ross. 2, p. 16; Hb. Prodr. 2, p. 545; Trautv. & Meyer, Fl. Ochot. l. c. Petropaulovski.

Dryas octopetala, Linn.; Ledeb. Fl. Ross. 2, p. 20; Hb. Prodr. 2, p. 549; Torr. & Gray Fl. 1, p. 420; Trautv. Fl. Tannyr. p. 47 in Middew. Sibir. Arakantschekene Island.

A form with small leaves, not narrowed but truncate, or even subcordate, at the base.

Dryas integrifolia, Vahl; Ledeb. Fl. Ross. l. c.; Hook. Fl. Bor.-Am. 1, p. 174; Torr. & Gray, Fl. l. c. Arakantschekene Island.

The short, tufted stems are very densely clothed with leaves. The peduncles are from one-half inch to one and a half inches in length, and the flowers, when fresh, were yellow.

Sanguisorba officinalis, Linna.; Sedeb.
Fl. Ross. 2. p. 27; Transtr. & Meyer, Fl. Ochot.
p. 35. Ayan; in marshy valleys.

Sanguisorba tenuifolia, Fisch.; Bl.
Prodr. 2. p. 593; Sedeb. l.c.; Transtr. & Meyer,
l.c. Ayan.

Flowers pink and nearly white.
A small state of the species, with ~~broader~~
leaflets, ^{broader} than usual, truncate or subcor-
date at the base, but nearly sessile, the
calyx nearly glabrous.

Gemma strictum, Witt.; Ledeb. Fl. Ross. 2, p. 22; Trautv. & Meyer, Fl. Petrus p. 32 in
Medden. Sibir. Petropaulovski.

Sieversia glacialis, R. Br.; Cham. &
Schlecht. in Linnaea 2, p. 5; Ledeb. Fl. Ross. 2,
p. 25; Hook. Fl. Bor.-Am. 1, p. 176; Trautv.
Fl. Faunus p. 47 in Medden. Sibir.
Arakantschekene Island.

Sieversia Rossii, R. Br.; Cham. &
Schlecht. in Linnaea², p. 5; Hook. Fl. Bor.-Am.
1, p. 176. Gemma Rossii, DC. Prod. 2, p. 553; Torr.
& Gray, Fl. 1, p. 424. Arakantschekene Island.

Sieversia acuminoides Willd. Hook. Fl. Bor.
Am. 1, p. 176. Ledeb. Fl. Ross. 2, p. 24. Torr. & Gray, Fl. Fil.
N. Am. 1, p. 423

Shores of the Okhotsk Sea J. Small

Potentilla Korvegica, Linn.; Lidb. Fl. Ross. 2, p. 36; Fl. Prodr. 2, p. 573; Trautv. and Meyer, Fl. Coch. in Abhandl. Sibir. p. 32. Ayan, J. Small. Petropaulovski.

Rev. Pot. p. 44, t. 15

Potentilla stolonifera, Lehm.; Lidb. Fl. Ross. 2, p. 38. P. fragarioides, Cham. & Schlecht. in Linnaea, 2, p. 25; Hook. & Arn. Bot. Beechey, p. 113, ^{non Lange} Petropaulovski.

Potentilla Anserina, Linn.; Lidb. Fl. Ross. 2, p. 44; Fl. Prodr. 2, p. 582; Trautv. & Meyer, Fl. Coch. p. 33 in ~~Abhandl. Sibir.~~ Rusp. Fl. Sibir. Cisural. No. 91. Arakantschekene Island.

Potentilla nivea, Linn.; Lidb. Fl. Ross. 2, p. 57; Fl. Prodr. 2, p. 571; Lehm. Revers. Potent. p. 165. Arakantschekene Island.

The larger specimens are at least, nine inches high; the stems are from three to five, & have from one to five flowers. The largest leaflets are but little more than half an inch long. A much smaller variety has the 1-2 flowered stems 1-3 inches high, and the leaflets are hardly half as large as those of the former, with fewer and deeper serrations.

Potentilla villosa, Pall. in Lamour. herb. ex
Pursh. Fl. Bor.-Am. 1, p. 353; Dc. Prodr. 2, p. 573;
Lidb. Fl. Ross. 2, p. 58; Hook. Fl. Bor.-Am. 1, p.
194; Torr. & Gray Fl. 1, p. 442; Lehmann. Potent. p.
166, t. 16. P. villosa, var. gracilis, Hook. & Arn. Bot.
Beechey, p. 123. Yamusk Gulf & Fabius Island,
J. Small. Arakantschekene Island.

The variety was obtained at the first locality,
 the ordinary forms at the others.

Potentilla biflora, Willd.; Lidb. Fl. Ross.
2, p. 61; Dc. Prodr. 2, 586; Hook. Fl. Bor.-Am. 1, p. 195;
Torr. & Gray, l. c. Arakantschekene Island

Potentilla frutescens, Linn.; Lidb. Fl.
Ross. 2, p. 61; Dc. Prodr. 2, p. 574; Torr. & Gray, Fl. l.
c. Coal Bay & Ayan, J. Small. Arakantsche-
skene Island

Potentilla elegans, Cham. & Schlecht. in
Linnaea, 2, p. 22; Lidb. Fl. Ross. 2, p. 56.
Arakantschekene Island.

Rubus arcticus, Linn.; Dc. Prodr. 2,
p. 565; Lidb. Fl. Ross. 2, p. 70; Hook. Fl. Bor.-Am.
1, p. 192; Torr. & Gray Fl. 1, p. 451. Coal Bay &
Fabius Bay, J. Small. Arakantschekene Island.

Rubus Chamaemorus, Linn.; Ledeb. Fl. Ross. 2, p. 71; Fl. Prodr. 2, p. 565; Hook. Fl. Bor. Am. l. c.; Torr. & Gray, Fl. l. c.
Arakantschken Island.

~~et. l. c. ... cinnamomea? var. rugatis?~~
~~Rosa alpina~~, Linn.; ~~Ledeb. Fl. Ross. l. c.~~; ~~Fl. Prodr. l. c.~~ ~~R. sicularis~~ ^{Frucht. Gräntz.} & Meyer, Fl. Cehot. in Middeln. Sibir. p. 36
Ayan, J. Small.

Rosa cinnamomea, Linn. Ledeb. Fl. Ross. 2, p. 76; Fl. Prodr. 2, p. 605; Trautw. & Meyer, Fl. Cehot. p. 36 in Middeln. Sibir. Petropaulovski.

Pyrus sambucifolia, Cham. & Schlecht. in Linnæus, 2, p. 36; Ledeb. Fl. Ross. 2, p. 99; Hook. & Arn. Bot. Beechey, p. 114; Torr. & Gray, Fl. 1, p. 472. Coal Bay, Ayan, J. Small. ~~Arakantschken Island.~~
Arakantschken Island.

Onagraceae.

Epilobium angustifolium, Linn. Hook.
Fl. Bor.-Am. 1, p. 205; Ledeb. Fl. Ross. 2, p. 105,
Trautv. & Meyer, Fl. Cechot. p. 27 in Nordland, Sibir.
Rupr. Fl. Samojed. cesural. No 111. Cape Roman-
zoff, Neost of Yeso & Jansk Galy, J. Small.

Epilobium latifolium, Linn.; Ledeb.
Fl. Ross. 2, p. 106; Fl. Prodr. 3, p. 40; Hook. Fl.
Bor.-Am. 1, p. 295; Torr. & Gray, Fl. 1, p. 487;
Trautv. & Meyer, Fl. Cechot. p. 38 in Nordland, Sibir.
Coal Bay, J. Small. Arakanschetchem
Island.

Epilobium palustre, Linn.; Fl. Prodr.
3, p. 43; Ledeb. Fl. Ross. l. c.; Trautv. & Meyer, l. c.
Coal Bay, J. Small.

Epilobium origanifolium, Lam. Fl. Prodr.
3, p. 41; Ledeb. Fl. Ross. 2, p. 111; Hook. Fl. Bor.-
Am. 1, p. 206. A few specimens were mixed with
E. palustre.

Epilobium affine, Linn. Bong.; Ledeb.
Fl. Ross. 2, p. 110. Petropaulovski.

(41)

Epilobium alpinum, Linn.; Ledeb. Fl. Ross. l. c.; Dc. Prodr. 3, p. 41; Hook. Fl. Bor.-Am. 1, p. 203; Trautv. Fl. Taimeyr. p. 47. in Middle Siberia; Rupr. Fl. Samojed. Cisural. No. 108. Arakanschetken Island.

Hippuris montana, Ledeb. in Reichenb. Ge. bot. 1, p. 71, t. 86. f. 181; Dc. Prodr. 3, p. 71; Hook. Fl. Bor.-Am. 1, p. 218; Torr. & Gray, Fl. 1, p. 531. Margin of pools, Arakanschetken Island.

Callitriche verna, Linn. Dc. Prodr. 3, p. 70; Hook. Fl. Bor.-Am. 1, p. 217; Rupr. Fl. Samojed. Cisural. No. 112. Sandy flats near the seaside, Arakanschetken Island.

Grossulaceae,

Ribes nigrum, Linn.; Ledeb. Fl. Ross. 2, p. 200. R. Dikuscha, Fisch. ?; Trautv. & Meyer. Fl. Ochot. ? Shantar Islands: in fruit.

(41⁷)

Crassulaceae.

Urtibicus spinosus, Hb. Prodr. 3, p. 400;
Lidb. Fl. Ross. 2, p. 174; Trautv. & Meyer, Fl. Behar.
p. 38 in Middend. Sibir. Fl. yellowish-green. On rocks
near the sea side, Shantar Island. J. Small

Sedum elongatum, Lidb. Fl. Alt. 2, p. 193 &
Fl. Ross. 2, p. 178; Hook. & Arn. Bot. Beechey, p. 114. 123?
Rhodiola elongata, Trautv. & Meyer, Fl. Behar. l. c.
Coal Bay, J. Small, Anakouritchene Island.

Sedum Rhodiola, Hb. Prodr. 3, p. 401; Lidb.
Fl. Ross. 2, p. 179; Trautv. Fl. Sibir. p. 46 in Middend.
Sibir. Rhodiola rosea, Rupr. Fl. Sibir. Central, p. 118.
Coal Bay, Western Kamtschatka, J. Small. Fl. purple.

Sedum cyanum, Rudolphi; Hb. Prodr. 3, p.
404; Trautv. & Meyer, Fl. Behar. l. c.; Coal Bay Lidb.
Fl. Ross. 2, p. 182. Coal Bay, Yamsk Giltz, J. Small

Sedum Aizoon, Linn.; Lidb. Fl. Ross. l. c. in
Hb. Prodr. 3, p. 402; Trautv. & Meyer, l. c. Fl. yellow
Mountain sides, Ayau. J. Small

(41⁺) after S. Escholtzii

Saxifraga Mendikii, Fisch.; Lindb. Fl.
Ross. 2, p. 208; Dc. Prodr. 4, p. 24; Cham. in Linnæa,
6, p. 556. Flowers white. Coal Bay, in ravines.
J. Small

The plants are too young to show very clearly the
inflation of the capsule and the calyx is quite smooth;
otherwise they agree well with the description.

Saxifraga.

Saxifraga oppositifolia, Linnaeus; Ledeb.
Fl. Ross. 2, p. 204; Fl. Prodr. 4, p. 18; Don, Saxifr.
p. 400; Torr. & Gray, Fl. 1, p. 563; Hook. Fl. Bor-
Am. 1, p. 242. Arakantschekene Island.

Saxifraga bronchialis, Linnaeus; Ledeb.
Fl. Ross. 2, p. 207; Fl. Prodr. 4, p. 47; Transtr. Fl.
Taimyr. p. 41 in Nordden. Sibir; Hook. Fl. Bor-
Am. 1, p. 564. Arakantschekene Island.

The trigonous form of the leaves ~~is not~~ as des-
 cribed by Don is not observable in our specimen.
 nor is it noticed in other authors.

Saxifraga nitida, Schreb.; Ledeb. Fl. Ross.
Fl. Prodr. 4, p. 22. S. chekerioides, Don, Saxifr.
p. 382; S. pseudo-burseriana, Torr. & Gray, Fl. 1, p.
563. Yamuk Gulz. J. Small

Saxifraga Eschscholtzii, Steud.; Ledeb.
Fl. Ross. 2, p. 208; Fl. Prodr. 4, p. 18; Hook. Fl.
Bor. Am. 1, p. 243; Torr. & Gray, Fl. 1, p. 564
Arakantschekene Island.

Saxifraga Herzogii, Linnaeus; Ledeb.
Fl. Ross. 2, p. 210; Fl. Prodr. 4, p. 44; Hook. Fl.

Bor.-Am. 1, p. 292; Trautv. Fl. Tarinys. Fl.
p. 43 in Middend. Sibir. Coal Bay, J. Small
Arakamschekene Island.

Saxifraga stellata, Guss.; Lidle.
Fl. Ross. 2, p. 211; Fl. Prodr. 4, p. 40; Hook. Fl.
Bor.-Am. 1, p. 250; Trautv. Fl. Tarinys. p. 43
in Middend. Sibir.; Don, Saxifr. p. 356.

Coal Bay, J. Small. Arakamschekene Island
 The specimens all belong to the var. comosa, Poir.

Saxifraga Davurica, Pall.; Lidle, Fl.
Ross. 2, p. 212; Hook. Fl. Bor.-Am. 1, p. 250; Fl.
Prodr. 4, p. 38; Torr. & Gray, Fl. 1, p. 569; Don,
Saxifr. p. 388. Coal Bay, J. Small. Arakamschekene Island

Though the plants from the above localities are apparently quite unlike they seem to be included in the description and annexed observation of Lidbourn, i.e. If, as is very probable they are only one very variable species they may as well embrace S. pauciflora, Spreng., S. neglecta, Bray, and S. flabellifolia, R. Brown, as they certainly do, if we may judge from the figure & description S. reflexa, Hook. The specimens from Western Kamtschatka have the inflorescence corymbose-paucitate, the calyx erect, and the ovaries short; those from

Bekun's plants, on the other hand, have the flowers truly racemose on rather long, slightly spreading pedicels; the calyx strongly reflexed, and the ovaries long; the petals of the former are white, of the latter dark red. In height, in the form & arrangement of the leaves, and in the degree of pubescence, both sets of specimens, very well agree.

Saxifraga nivalis, Linn.; De. Prodr. 4, p. 38; Gard. Fl. Ross. 2, p. 213; Hook. Fl. Bor.-Am. 1, p. 248; Travtr. Fl. Taimyr. p. 43 in Middend. Sibir; Don, Sib. p. 387.

Arakamshetchene Island.

Saxifraga hircifolia Waldst. & Kit;
Fl. Ross. 2, p. 214; De. Prodr. 4, p. 39; Hook. Fl. Bor.-Am. 1, p. 249; Travtr. Fl. Taimyr. p. 44 in Middend. Sibir; Don, Sib. p. 383.

Arakamshetchene Island. Fl.

Petals dark crimson, anthers orange

Saxifraga pumetasa, Linn.; Hook. Fl. Bor.-Am. 1, p. 251; Gard. Fl. Ross. 2, p. 215.
Coal Bay, J. Small. Petropavlovski. Arakamshetchene Island.

Fl.

To this doubtless belong *S. aestivalis*, Fisch. as well as *S. Nelsoniana* & *S. arguta*, Don: but probably not *S. heterantha*, Hook. (*S. aestivalis*, var. *S.* Torr. & Gray, Fl. 1, p. 568,) which is well distinguished by Ledebour. Small's specimens are a large part of those from Behring's Straits, as well as those from Petropaulovski, attain a height of a foot & even more, with leaves two inches in width, on petioles three inches long. The others from Behring's Straits are only from two to five inches high, with leaves hardly half an inch wide, on petioles half an inch to an inch in length. The larger form has the filaments dilated, while those of the smaller are subulate.

Saxifraga nudicaulis, Don, Saxifr. p. 366; Ledeb. Fl. Ross. 2, p. 216; Ob. Prodr. 4, p. 37; Hook. Fl. Bor.-Am. 1, p. 253; Torr. & Gray, Fl. 1, p. 568. Fubius Bay, J. Small, Arakanschetken Island.

The somewhat orbicular-oviform leaves are mostly less than half an inch broad, not palmate, but only coarsely dentately, 5-9-lobed to about one-third of their length. The petals are very light pink. The plants vary from two to seven inches in height.

(46)

Saxifraga cernua, Linn.; Gled. Fl. Ross. 2, p. 219; DC. Prodr. 4, p. 36; Hook. Fl. Bor. Am. 1, p. 245; Trautv. Fl. Sibir. p. 44 in Moench. Sibir.; Torr. & Gray, Fl. 1, p. 573. Herat's Island, Officers of the Vincennes. Arakant-schetchem Island.

The plants from Herat's Island are sparingly bulbiferous in the axils and have the lower orbicular and cauline subreniform leaves with fewer and broader rounded or obtuse very short teeth or lobes. Another form has the axillary bulblets producing abundantly little orbicular or slightly three-lobed leaves.

Saxifraga bracteata, Don, Saxifr. p. 367:

Caulibus e radice fibrosa adscendentibus viscido-villosis basi saepe perulato-bulbiferis, usque ad apicem foliatis; foliis conformibus membranaceis reniformibus incisof(5-9) lobatis creberrime ~~punctatis~~ punctatis, summis breviter inferioribus longissime petiolatis; floribus 3-5 in axillis foliorum summorum vel bractearum solitariis confertis breviter seu brevissime pedunculatis; petalis (albis) obovatis simplicissimis triplinerviis calycis laciniis ovatis obtusis longioribus; capsula semi-supera apice emarginato-

(47)

biloba; stigmatibus capitatibus sessilibus. Yonnanghi an isles near Arakam
Whitchene Island

This is no doubt Don's *S. bracteatum*,
founded on a specimen gathered by Merck,
somewhen in the Eastern Siberia and preserved
in the herbarium of Pallas, but which has hitho
otherwise remained wholly unknown to bot-
anists. Our specimens are all in fruit, but
with the stamens & the withered petals often
remaining. The flowers are mostly shorter
than the leaves which subtend them and
rather large; the capsule being 3 or 4 lines long.
A peculiarity unnoticed by Don is found in the
large scaly gemmae, either sessile or on
short succuli at the base of the stem. These
are made up of broad pergamentaceous
scales, which are a sort of dilated stipules,
as many of them are continued from a notch
at the summit into a short petiole, bearing
a diminutive blade. The lower cauline
petioles are more or less scarious dilated
at the base. In these and some other respects
the plant is evidently a near relative of *S.*
vaginalis, Yuriz, in Ledeb. Fl. Ross. 2, p. 220.

Saxifraga simulans, Linna., Lidb. Fl. Ross. 2, p. 221; De. Prodr. 4, p. 36; Hook. Fl. Bor. Am. 1, p. 246; Torr. & Gray, Fl. 1, p. 574; Frank. Fl. Faunys. p. 45 in Altden. Sibir. Herud Island, Offices of the Vincennes. Arakantchekem Island

The plant from the former locality has larger leaves and flowers and is more diffuse in habit as if it grew in the shade; while the others are rigidly erect with very many stems from the caudex, smaller leaves, & sometimes smaller flowers. Stems of the former with one, of the latter with from one to three flowers.

Saxifraga elegantior, Herub.; Lidb. Fl. Ross. 2, p. 224; Hook. Fl. Bor. Am. 1, p. 245; Torr. & Gray Fl. 1, p. 566. Saxifragoides condensata, Seringe. in De. Prodr. 4, p. 31?
Arakantchekem Island.

Chrysosplenium kaantschaticum, Schlecht. pat. in Herb. Willd.; Fische. in De. Prodr. 4, p. 48.
(Vide. Jap. Coll.) Petropanovski.

Chrysosplenium alternifolium, Linna.; Lidb. Fl. Ross. 2, p. 226; De. Prodr. 4, p. 48

Grant, The Fairway, p. 45 in Abdend. Sibir,
 Herald Island, Officers of the Vincennes. West
 coast of Kamtschatka, J. Small. Arakanut-
 chetcheu Island.

Small's plant has the cauline leaves
 somewhat deeply 3-5 toothed or lobed and throws
 out from the caudex stoloniferous branches.
 The specimens from Behring's Straits are
 erect, those from Herald Island spreading,
 and the stems & petioles are densely villose-
 pubescent.

Umbelliferae.

Egopodium alpestre, Ledeb. Fl. Alt. 1, p. 354;
Fl. Ross. 2, p. 248; Ic. Pl. Ross. t. 7, Ayun, J. Small

The plant is only in flower & hence too young to be determined with certainty, but it accords well with the detailed description in Ledebour's Flora Altaica and with the figure in the Icones Florae Rossicae of the same author.

Bupleurum ranunculoides, Linn.; Ledeb. Fl.
Ross. 2, p. 265; Hook. Fl. Bor. Am. 1, p. 263; St. Prodr
4, p. 131; Torr. & Gray, Fl. 1, p. 609. Coal Bay, J. Small

Ligusticum Scoticum, Linn.; Ledeb. Fl.
Ross. 2, p. 286; St. Prodr. 4, p. 157; Hook. & Arn. Bot.
Beechey, p. 115, 125. Yamak Gulch, J. Small. Petro-
paulski.

Comoselinum Fischeri, Wimmer & Gradowski;
Ledebour Fl. Ross. 2, p. 290; St. Prodr. 4, p. 164;
Hook. & Arn. Bot. Beechey, p. 124; Hook. Fl. Bor. Am.
1, p. 266. Fabius Bay, J. Small.

Archangelica Gmelini, St. Prodr. 4, p. 170
Hook. Fl. Bor. Am. 1, p. 267; Torr. & Gray, Fl. 1, p. 621.
Scelopleurum Gmelini Ledeb. Fl. Ross. 2, p. 361.

(51)
Physalophium sayakii, Turcz. Fl. Granh. & Abyss.
Fl. Geobot. p. 44 in Nordden. Sibir. Arakanische
Ichem Island. (See Sup. Coll.)

Cornacea.

Cornus succinea, Linn. Ledeb. Fl. Ross.
2, p. 377; Gb. Prodr. 4, p. 274; Torr. Flay. Fl. 1,
p. 653; Hook. Fl. Bor.-Am. 1, p. 227; Trautv. &
Meyer, Fl. Gchok, p. 45, in Middend. Sibir.
Leval Bay, J. Small. Petropaulovski, ^{Chene Island.} Arakauschev

The specimens from Petropaulovski attain, in some instances, the height of seven inches, with four or five pairs of leaves, the upper ones often having small axillary branches; those from the other places are only from two to four inches high and unbranched.

Cornus canadensis, Linn.; Ledeb. Fl.
Ross. 2, p. 378; Gb. Prodr. 4, p. 274; Hook. Fl. Bor.-Am.
1, p. 227; Trautv. & Meyer, Fl. Gchok, p. 45 in Middend. Sibir.
Layan, J. Small.

Cuprifoliaceae.

Sambucus racemosa, Linn.; Ledeb., Fl. Ross. 2, p. 383; Fl. Prodr. 4, p. 322; Hook. Fl. Bor.-Am. 1, p. 279; Trautv. & Meyer, Fl. Cehot. p. 46. in Abdden, Sibir. Petropaulovski.

Lonicera nigra, Linn.; Ledeb., Fl. Ross. 2, p. 389; Fl. Prodr. 4, p. 335; Hook. & Arn. Bot. Beechey, p. 115. Petropaulovski.

The specimens very uniformly show the flowers as long as the pedicels, and pretty well grown fruit with its pedicels not more than one third as long as the leaves.

Lonicera oerulea, Linn.; Ledeb., Fl. Ross. 2, p. 390; Fl. Prodr. 4, p. 337; Trautv. & Meyer, Fl. Cehot. l. c.; Hook. & Arn. Bot. Beechey, p. 115. Petropaulovski.

Linnaea borealis, Gronov.; Ledeb., Fl. Ross. 2, p. 392; Fl. Prodr. 4, p. 340; Hook. & Arn. Bot. Beechey p. 125; Trautv. & Meyer, Fl. Cehot. l. c. Felkistoff Harbor, J. Small. Arakanutchehona Island

The insular plants have their leaves two lines and less in length and the flowers but little longer, while the leaves & flowers of those from the eastern side Okhotsk sea are more than twice the size.

Diosvilla Middendorffiana, Gray,
(Vide Japan, Ed. p.) Calypstostigma
Middendorffianum, Trautv. & Meyer, Fil.
Ocht., p. 16. t. 25, a. b. Ayan, Ochotsk
Sea, J. Small; in fruit,

~~Although the~~

We have not seen the flowers.
Even if a normal state is correctly
represented in the Florula Ochotsk.,
Dr. Gray does not hesitate to refer
this plant to Diosvilla (including
Weigela). The lobes of the calyx in our
specimens, although sometimes united
in the manner represented, are ~~very various~~
~~combined in their ins~~ as often ~~are~~ nearly
to the base and regular, or else various
and irregularly combined. Although
persisting on the beak of the fruit they
~~probably wither and fall~~ appear to fall
off at last. ^{chortaceo-cinaseopus,} Capsule ~~ovoid~~-^{pyriform},
half an inch long, abruptly narrowed into
a beak of about 2 or 2½ lines in length. Seed
very numerous, oblong or lanceolate in form, the
thin wing ~~very much~~ many times larger than
the nucleus.

(53')

Rutaceae.

Galium boreale, Linna.; Ledeb. Fl. Ross.
2, p. 412; DC. Prodr. 4, p. 600; Trautv. &
Boyer, Fl. Cedoiz, p. 48 in Middleind. Sibis. Kamste
Gutp. J. Small. Petropaulovski

Galium verum, Linna.; Ledeb. Fl. Ross.
2, p. 414; DC. Prodr. 4, p. 603; Trautv. & Boyer, l. c.
Falkistoff Harbor, J. Small. Petropaulovski.

(53")

Valerianacea.

Valeriana capitata, Pall.; Gb. Prodr.
Hb. p. 637; Lich. Fl. Ross. 2, p. 435; Trautv. & Beyers
Fl. Taimyr. p. 40 in Nordend. Sibir.; Rupr. Fl.
Samojed. cesural. No. 146. Ayan, J. Small.
Arakamschitken Island.

Compositae, by A. Gray.

Nardosmia frigida, Hook. Fl. Bor-
neae Am. 1. p. 307; Ledeb. Fl. Ross. 2. p. 467.
~~Nardosmia~~ Jussilago frigida, Linn.

Var. corymbosa. N. corymbosa, Hook.
l.c. Jussilago corymbosa, R. Br. in Perry's
voy. p. 269. Arakantchene Island,
on hill sides (Flowers light purple.)

Lessing was doubtless right in
reducing N. corymbosa to N. frigida.
The differences are merely in the degree
of toothing or sinuation of the leaf, and
are of ~~the~~ no specific account. N.
sagittata is clearly but another form
of the same species, and even N. pal-
mata may not really be distinct.

Aster Sibiricus, Linn. var. subintegerrimus,
Franch. Fl. Mogaid. in Middend. Sibir.
p. 166. A. Richardsonii, Spring.; DB. Prod. 5.
p. 229; Hook. l.c.; Ledeb. l.c. A. Eschberg-
gensis, Nes.; DB. l.c. A. montanus, Richardson, in
Frankl. Journ.; Ruprecht. Fl. Amoj. A. Presettii,
Link. in DB. l.c.; Ledeb. Fl. Ross. 2. p. 476. Arakantchene

Kamtschekene Island, Ola Bay, Ochotsk Sea, near lat. 60°.

The specimens from Behring Straits are simple and only 3 or 4 inches high: the others are taller and sometimes a little branched. All of them have the aspect of dwarfed states of a larger species; and Frantvetter has probably rightly referred the plant to *A. Sibiricus*.

Erigeron uniflorum, Linn.;
Ledeb. Fl. Ross. 2. p. 490. *E. pulchellum*
var. *Almalaschense*, DC. Prodr. 5. p. 287.
Arakamtschekene Island. (Rays
white or light purple.)

Erigeron elongatum, Ledeb. Fl.
Alt. 4. p. 91, Fl. Ross. 2. p. 487, & Fl.
Ill. 1. t. 31; Frantv. & Meyer. Fl. Ochot.
p. 50. Kamtsk Gulf and Argau,
Ochotsk Sea; in valleys near the sea.
(Rays purple.)

Whole plant glabrous: involucre
pubescent-glandular. Rays purple,
rather long.

Solidago Virgaurea, Linn.; Ledeb.
Fl. Ross. 2. p. 493. Petropaulovski;

also Coal Bay, west coast of Kamt-
schatka. Ayau, Ochotsk.

Var. mulliradiata, Torr. & Gray, Fl.
2, p. 207. S. mulliradiata, Nit. S.
virgaurea var. arctica, Ledeb. l. c.
Arakanitchchere Island.

The larger forms, ^{some of them,} too nearly ap-
proach S. thysoides and have
equally glabrous achenia. The
higher northern specimens all belong
to the var. mulliradiata. Judging
from the way the species varies in the
Old World, it ~~must~~ should probably
include ^{our} S. humilis also.

Achillea (Parmica) Sibirica, Ledeb.
Bot. Dorsp. 1811, & Fl. Ross. l. c.; Franch. & Meyer,
Fl. Ochot. l. c. sub Parmica. Parmica
Mangolica, Fisch. in Ob. Prodr. b, p. 22. A.
mulliflora, Hook. Fl. Bor. Am. p. 318; Torr.
& Gray, Fl. 2, p. 408. (Barank Gulf,
Ochotsk Sea; in valleys.

This is certainly the same as the Ar-
ctic American plant, & Richardson's A.
Parmica. It is probably A. serrata of
Retz (Parmica serrata, Ob.), as Ledebour

suspects.

Leucanthemum integrifolium, D.C.
 Prodr. 6. p. 45. & 7. p. 296; Ledeb. Fl. Ross. 2.
 p. 540. Chrysanthemum integrifolium,
 Richards. in Frankl. Journ.; Volk. Fl. Bor-
 Am. 1. p. 319, t. 109. Arakantchetchene
 Island.

Leucanthemum arcticum, D.C.
 l.c.; ^{Frankl. & Meyen. Fl. Ochot. p. 52.} L. arcticum & L. Gmelini,
 Ledeb. l.c. Arakantchetchene Island,
 Gamsk Gulf; and Oval Bay, Kamtschatka,
 on the shore.

The specimens, especially those
 from the gulf, manifestly unite
 Ledebour's L. Gmelini with L. arcticum.

Leucanthemum sibiricum, D.C.
 l.c.; Ledeb. l.c.; Ruprecht, Fl. Samoj.
 bisural. p. 42. Ayan, Ochotk
 Sea. Rays bright purple.

Even this may pass through L. Gmelini
 into L. arcticum. But the leaves are
 thin, ~~and~~ bright green, and more divided.

Tanacetum vulgare, Linn.; var. boreale, Trautv. & Meyer, Fl. Ochot. p. 54. ~~The~~ T. boreale, Fisch. in Ob. Prodr. b. p. 128; Ledeb. Fl. Ross. l.c. Wet table-land, Coal Bay, on the West coast of Kamtschatka.

Tanacetum Pallasianum, Trautv. & Meyer, Fl. Ochot. p. 55. Artemisia Pallasiana, Fisch. in Ob. l.c. p. 116. Ayau Bay; on bluffs near the sea.

The specimens accord well with Trautvetter and Meyer's description, and were gathered in the same region. The flowers are yellow and altogether those of Tanacetum.

Artemisia borealis, Pall, Flin. 3. p. 725. t. III. f. 1; Bess. in Volk. & Ob.; Ledeb. Fl. Ross. 2. p. 569; Trautv. & Meyer, Fl. Ochot. p. 53. Petropaulovski, Kamtschatka; and Arakantschekene Island.

In various forms, all rather large and well developed. One of them, from Kamtschatka 1175, is remarkably white, and forms a compound panicle, a foot high. The heads consequently rather smaller, the involucral scales greenish.

It accords very well with Besser's var. *Mertensii*. At the same time it is undistinguishable from his *A. commutata*, at least ^{or to} the American plant, which is only a northern state of *A. canadensis* of Michaux.

Artemisia Norvegica, Fries, Wit.
ed. 1. (1817), p. 56, & ed. 2, p. 265, & Summ Veg.
Scand., p. 185; Richenk. 2c, Brit. t. 89.

Var. *Arctica*, *A. arctica*, Less. in
Linnaea, b. p. 213; Ob. Prodr. b. p. 119; Hook. &
Arn. Bot. Beech., p. 125; Ledeb. l. c. *A. Cham-*
issoniana, Besser, in Hook. l. c. Jamsh Gull,
Ochotsk, in vallies near the Sa. Kra-
Kantchetchere Island, on hills, and a
large form on grassy flats near the
shore.

Some of the forms, although larger than the Norwegian plant, confirm Hooker's suspicion, and lead us to refer *A. arctica* to *Norvegica* without hesitation. The base or tube, but not the apex, of the corolla is beset with very long villous hairs.

Artemisia vulgaris, Linn., var.
Filesii, Ledeb. Fl. Ross. 2. p. 586. A.
Filesii, Ledeb. in Mem. Acad. Petersb.;
 Db. l. c.; Torr. & Gray, l. c.; Trautv. & Meyer,
 l. c. Coal Bay, West coast of Kamts-
 chatka (Flowers yellow). Petropaulovski,
 Arakantchetchene Island.

Artemisia glomerata, Ledeb. in
 Mem. Acad. Petersb. & Fl. Ross. l. c.; excl.
 n. n. Hook. & Arn. Bot. Stony hillsides,
 Arakantchetchene Island.

Silky-carescent with a fine appres-
 sed pubescence. ^{"yellow"} Cordula, sparingly hairy
 on the outside of the lobes.

Artemisia Senjavimensis, Besser,
 "Suppl. p. 64"; Db. Prodr. 1. p. 116; Ledeb.
 l. c. A. Semavimensis, Besser. Abstr. p. 65.
A. glomerata, Hook. & Arn. Bot. Beech. p.
 423, non Ledeb. A. androsaeca, Seemann,
 Bot. Herald. p. 4.

With the last; abundant on stony
 hills.

Dr. Seemann has confirmed the
 doubt expressed in the Flora of North America,

by showing that, as was suspected, the specimens from Karel's Summit referred to *A. glomerata* by Hooker and Arnott, do not belong to that species. He has described and admirably figured the plant, under the ~~new~~ characteristic name of *A. androsacea*. We cannot doubt, however, that it was already published, under the name of *A. Senjavinensis*. The numerous and very fine specimens before us were gathered at a station ~~at~~ about half way between the two at ~~from~~ which *A. Senjavinensis* has been collected. The corollas, yellow when fresh, are glabrous, but dotted with ^{scattered} resinous glands. The leaves in the smaller specimens vary from entire to three-cleft; in the larger ones those of the tufts are deeply 3-5-cleft, and very densely and strongly silky-villous.

Antennaria alpina, V. Br.: Torr. Gray, Fl. 2. p. 430 (excl. var. β .?); Ledeb. Fl. Ross. 2. p. 511. Arakantchetchene Island.

and) some specimens are monocephalous; ~~but~~ the ~~set~~ scales of the involucre (in

female plants) are all slenderly acuminate, livid, and scarious. They clearly belong to *A. moncephala*, DC. Other specimens, otherwise the same have two, three, and four heads. ~~The~~ The plant from Labrador which Dr. Steud. has communicated under the name of *A. moncephala*, has the inner involueral scales obtuse and whitish, and it must be a variety of *A. Carpathica*.

Ligularia sibirica, Cass.; DC. Prodr. b. p. 315; Ledeb. Fl. Ross. 2. p. 620; Trautv. & Meyer. Fl. Ochot. p. 56. Ayan Bay, Ochotsk Sea.

Cacalia hastata, Linn.; DC. l. c.; Ledeb. l. c.; Trautv. & Meyer, l. c. Ayan Bay; with the preceding.

Cacalia auriculata, DC. l. c.; Ledeb. l. c.; Trautv. & Meyer, l. c. Feklistoff Harbor, Shantar Island, Ochotsk Sea, on shaded hillsides.

Slender forms with a simple raceme,

and 4-5-flowered heads; and stouter plants with crowded, thyrsoid-paniculate, 7-8-flowered heads. "Flowers white".

Arnica alpina, Levad.; Less. in Linnaea, b. p. 235; Ledeb. Fl. Ross. l. c. A. angustifolia, Vahl. Arakantchekene Island.

Senecio frigidus, Less. in Linnaea, b. p. 239; DC. Prodr. b. p. 347; Hook. Fl. Bor-
neum. p. 334, t. 112; Torr. & Gray. Fl. 2. p. 445; Ledeb. Fl. Ross. 2. p. 632; Trautv. Fl. Tamyr. p. 39. Cineraria frigida, Richards. App. Frankl. Jour. p. 20; Hook. & Arn. Bot. Blechn. p. 126. Still sides, Arakantchekene Island. (Folia integerrima, ovata vel spatulata pubes floccosa - ~~lanata~~ lanata.)

Var. dentatus: ~~glab~~ foliis glabris vel ~~pub~~ glabris, oblongo-vel lineari-lanceolatis plerisque acutis, caulinis praesertim argute dentatis; involucri lana densa intricata (brunnea) vestito. — Arakantchekene Island.

The first form is the same as Chamisso's plant from the island of St. Lawrence, and also like Hooker's figure, ~~only~~ but only half as large in all its parts. The variety, which grows in similar situations is often as large as the figure cited (except as to the heads); but the leaves are mostly bare from an early period, and are ~~remarkably~~ nearly all toothed, the cauline ones pretty strongly so, and acute or tapering from a broader partly-clasping base. The involucre is densely woolly with ~~the~~ purplish brown jointed hairs, as is well described by Lessing and by Ledebour. In the other form ~~they~~ ^{these} are much fewer and shorter, inconspicuous, and under a lens glandular. The pappus in both varies ~~from~~ in length, but generally it scarcely exceeds the slender tube of the disk-colla. It is so closely and strongly denticulate and roughish that the species (along with *S. Pseudo-Arnica*) would probably be ~~best~~ ^{as well} placed in the genus *Arnica*. Like the latter genus, moreover, the rays of the larger heads are frequently furnished with sterile stamens. — This

Species is said to extend into Altai and Dauria, and Turczaninow, in his Flora Baicalensi-Daurica, refers to it Seebard's *Senecio Turczaninowii*, the character of which pretty well accords. But our Altai specimen under the name of *S. pigidus* from Bunge, which is probably the "*Planta Altaica densius floccosa tomentosa*", was not only a different kind of wool, but a ~~finer and softer~~ softer of much finer and softer bristles, only obscurely and somewhat denticulate, and fully as long ^{It can hardly belong to *S. pigidus*,} as the disk-corolla. Variable as that ~~present~~ species is in ~~many~~ some respects.

Senecio vesicifolius, Less. in Linnaea, p. p. 243; Hook. l. c. t. 117; Ledeb. l. c. Hillsides, Arakantchetchene Island.

A great variety of forms as to size and foliage; but all have moncephalous scapes.

Senecio Hookeri, Torr. & Gray, Fl. 2. p. 438? Boal Bay, West coast of Kamtschatka, on table lands.

Senecio octoglossus, Bl. Prodr. b. p. 354; Nar. Turczaninowii, Fisch. & Lallens; Trantv. & Meyer. Fl. Ochot. p. 57. S. Fuchsii, var. Turczaninowii, Bl. l. c. p. 353. Ayan Bay, Ochotsk; in ravines.

Senecio Pseudo-Arnica, Less. in Linnaea, b. p. 240; Hook. Fl. Bor.-Am. 1. p. 334, t. 113; Torr. & Gray, l. c.; Ledeb. l. c. p. 643; Trantv. & Meyer, l. c. Arakantchitchene Island; on sand beaches near the sea.

Stems from 2 to 8 inches ^(fleshy) high, naked below, sending down long and coarse fibrous roots from the lower end. Leafy above, mostly moncephalous; the lowest leaves obovate spatulate and entire. Achenia 4 lines long, very smooth, somewhat angled, but only obscurely if at all sulcate.

Saussurea subsinuata, Ledeb. Je. Pl. t. 62. & Fl. Ross. 2. p. 662; Trantv. & Meyer, l. c. p. 57. ~~Boal Bay, West coast of Kamtschatka, in ravines and shaded places. Camusk Gulf; on hillsides.~~
Stems a foot and a half high

Lower leaves broader, and the stem shorter and more leafy than in Ledebour's figure. It would appear to pass into the next; but the receptacle is naked.

Saussurea Fieslii, Ledeb. l.c.
 t. 60. Serratula Fieslii, Ledeb. in
Mém. Acad. Petersb., 5, p. 562. Coal
 Bay, West coast of Kamtscharka, in
 ravines and shaded places.

A tall and thin-leaved state of the species, with the leaves green on both sides and nearly glabrous. Stem a foot and a half high, much exceeding the radical leaves. Receptacle chaffy with filiform paleae.

Saussurea angustifolia, Stb.;
Ledeb. l.c. Ara Kamtchetchene Island.
 Ledebour doubtless admits too many species. This is Stb. and Seban-
olle's S. angustifolia, although the lower leaves are sometimes oblong and obscurely denticulate; but it corresponds with narrow-leaved specimens of S. alpina var. nervatifolia of Hooker, and it appears

to pass into *S. alpina*.

Scorzonera radiata, Fischer; Ledeb.
Fl. Alt. 4. p. 160. & Fl. Ross. 2. p. 793; Trautv.
& Meyer, Fl. Ochot. p. 58. Valleys and
hillsides, Habius Bay and Ayan Bay,
Ochotsk Sea.

Stiracium umbellatum, Linn.;
Dc. Prodr. 7. p. 224; Ledeb. Fl. Ross. 2. p. 855;
Trautv. & Meyer, l. c. Shaded hillsides,
Ayan Bay.

Mulgedium Sibiricum, Less.
Syn. p. 142; Dc. l. c.; Ledeb. l. c.; Trautv.
& Meyer, l. c. Lansk Gulf and Ola
Bay, Ochotsk Sea.

Taraxacum dens-leonis, Desf., Fl.
Atl. 2. p. 228; Dc. Prodr. 7. p. 145; Torr. & Gray,
Fl. 2. p. 494. T. officinale, Vill.; Ledeb.
l. c. p. 812. Arakatchetchene Island; on
hillsides.

Taraxacum ceratophorum, Dc.
l. c.; Torr. & Gray, Fl. 2. p. 494; Ledeb. Fl.

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Leontodas ceratophorum, Ledeb., Fl. Alt. & Z. R.

Ross, 2. p. 813,

t. 34.

Arakantche tchene
Island; on flats.

(70)

Campanulacea.

Campanula expansa, Rudolphi, Traitv.
v. Meyer, Fl. Coch., p. 60 in Abdend. Libir.; Chamisso,
v. Schlecht. in Linnaea, 6, p. 41. Wahlenbergia homal-
lanthina, Bl. Prodr. 7, p. 425; Ledeb. Fl. Ross. 2, p. 87.
Gabius Bay, J. Small

Var. dentata: major; foliis admodum
compressis laevibus et brevioribus, grosse et acute
dentatis, lanceolatis oblongis vel inferioribus obovatis
oblongis; corolla caerulea.

In many respects our plants accord with
the description given by Chamisso & Schlechtendal.
The root is rather thick, and sends up from the crown
several stems about nine inches high, at the
same time that it throws off stoloniferous branches,
furnished with stems at their extremities. The leaves
are mostly narrow lanceolate, rather crowded
than scattered, furnished on each side above the
middle with from two to four more or less salient
acute teeth, the lower and the upper smaller than the
intermediate ones and none much exceeding an inch
in length. The filaments are not perceptibly broader
at the base than at the apex & the style is smooth.

Campanula uniflora, Linna.; Ledeb. Fl.
Ross. 2, p. 890. Arakanatche Island.

Ericaceae.

Naccinium praestans (Lamb.,
 in Linn. Trans. 10, p. 264, t. 9); pyg-
 maum; caule a basi repente gracili
 assurgente inferne bracteato ~~apice~~
 superne 3-5-foliato; foliis late ob-
 ovatis ovatisse in petiolulum subito
 contractis reticulato-venosis acute
 mucronato-sermularis ciliatis subtilis
 ad venas pubescentibus pro planta
 magnis (sesqui-bipollicaribus) deciduis;
 racemo ^{brevi} 3-5-floro; bracteis lanceolatis scario-
 sis deciduis; calycis limbo 5-lobis
 ovatis ciliatis; corolla cylindraceo-
 campanulata; filamentis pilosis; antheris
 inclusis, loculis breviter tubulosis, arista
 dorsali obrolita; bacca ampla 5-locu-
 lari. — Western Kamtschatka, on hill-
 sides near the sea, probably at Coal
 Bay, gathered ~~at~~ the latter part of
 July, by J. Small.

The scanty specimens of this very
 rare plant are mostly in fruit, like
 that of Pallas's herbarium figured by

Lambert; but the remains of a flower
 or two serve for completing the
 character. It is a true Naccinium,
 of the section Euvaccinium, except that
 the filaments are hairy and the dorsal
 awns are reduced to short processes. The
 corolla is reddish. Ovary and young fruit
 5-angled: no vestiges of intermediate parti-
 tions. The ascending stems rise only
 2 or 3 inches above the surface of the
 ground: they rise from an creeping, probably
 subterranean base, ~~like~~ as in Gaultheria
procumbens. The species it most resembles is N.
caespitosum, Michx. but it is much larger in its leaves ⁸³¹

~~Vaccinium~~

Vaccinium Vitis-Idaea, Linn.; Lich. Fl.
Ross. 2, p. 901; Fl. Prodr. 7, p. 568; Hook. & Arn. Bot.
Buchey, p. 116, 127; Trautv. & Meyer, Fl. Ochos. p. 61
in Mordwin. Sibir.; Rupr. Fl. Samojw. Casual.
No. 188. Yamuk Gulp, J. Small. Arakantschekhem
Island.

Vaccinium uliginosum, Linn. Lich.
Fl. Ross. 2, p. 904; Fl. Prodr. 7, p. 574; Hook. &
Arn. Bot. Buchey, p. 116, 127; Trautv. & Meyer, l. c.;
Rupr. l. c. Yamuk Gulp, J. Small. Arakantschek-
hem Island.

Actostaphylos alpina, Spreng.; Fl. Prodr.
7, p. 584; Lich. Fl. Ross. 2, p. 908; Trautv. & Meyer,
Fl. Ochos. l. c.; Rupr. l. c. Arbutus alpina, Hook. &
Arn. Bot. Buchey, p. 127. Coal Bay, J. Small.
Arakantschekhem Island

Cassiope tetragona, Don; Fl. Prodr. 7, p.
611; Lich. Fl. Ross. 2, p. 912. Andromeda tetragona,
Hook. & Arn. l. c. Arakantschekhem Island.

Cassiope encoides, Don; Fl. Prodr. l. c.; Trautv.
& Meyer, Fl. Ochos. p. 63 in Mordwin. Sibir. Fabius Island
J. Small

Phyllocladus saxifraga, Salisb.; Lidch. Fl. Ross. 2, p. 916; Fl. Prodr. 7, p. 713.
Arakamschekene Island.

Lorselearia procumbens, Desv.; Fl. Prodr. 7, p. 714; Lidch. Fl. Ross. 2, p. 918; Trautv. & Meyer, Fl. Chor. l. e. Arctia procumbens, Hook. & Arn. Bot. Beechey, p. 127. Arakamschekene Island.

Rhododendron Laponicum, Wahlb.; Fl. Prodr. 7, p. 723; Lidch. Fl. Ross. 2, p. 920.
Arakamschekene Island.

Rhododendron Kamtschaticum, Pall.; Fl. Prodr. 7, p. 726; Lidch. Fl. Ross. 2, p. 922; Hook. & Arn. Bot. Beechey, p. 116; Hook. Fl. Bor. Am. 2, p. 43. Coal Bay, J. Small. Petropaulovski.
Arakamschekene Island.

Ledum palustre, Linn.; Lidch. Fl. Ross. 2, p. 923; Hook. & Arn. Bot. Beechey, p. 127; Trautv. & Meyer, Fl. Chor. p. 64 in Woodward, Sibir. Russ. Fl. Samojed. Cisural. No. 191. Arakamschekene Island.

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Pyrola rotundifolia, Linnaeus; Lidib. Fl. Ross.
2, p. 928; Db. Prodr. 7, p. 772; Hook & Arn.
Bot. Beechey, p. 127; Frank & Meyer, l. c.; Rupr.
l. c. Hook. Fl. Bor.-Am. 2, p. 46 Acatenatche-
chem Island, var pumila Hook. l. c.; Var. bracteara,
J. Small, locality not recorded.

Pyrola secunda, Linnaeus; Lidib. Fl. Ross.
2, p. 930; Db. Prodr. 7, p. 774; Frank & Meyer, Fl.
Cochon l. c.; Hook. Fl. Bor.-Am. 2, p. 45. Ayam,
J. Small.

Moneses uniflora, Gray, Man. Moneses
grandiflora, Salisb.; Lidib. Fl. Ross. 2, p. 931; Frank &
Meyer, l. c. Pyrola uniflora, Hook. Fl. Bor.-Am. 2,
p. 45; Db. Prodr. 7, p. 775. Ayam, J. Small

Stem with one or two bracts or even bracteolate.

(75)

Primulaceae

Primula nivalis, Pall.; Ledeb., Fl. Ross. 3, p. 10; De. Prodr. 8, p. 39; Hook. & Arn., Bot. Beechey, p. 129. Damp hillsides Arakumschetchene Island

var. parvula; Ledeb., l.c. The specimens vary from little more than one to six or even eight inches in height; the base of the leaves and upper part of the scape and pedicels are more or less furinose, and the segments of the calyx on the inner side remarkably so.

Primula borealis, Duby in De. Prodr. 8, p. 43; Ledeb., Fl. Ross. 3, p. 15. P. mistassinica, Cham. & Schlecht. in Guinea, 1, p. 213; Hook. & Arn., Bot. Beechey, p. 129. Arakumschetchene Island.

Primula cuneifolia, Ledeb.; Duby in De. Prodr. 8, p. 39, P. saxifragifolia, De. Prodr. 8, p. 39; Hook. & Arn., Bot. Beechey, p. 128. Coal Bay and Galrus Bay, J. Small.

Androsace arctica, Cham. & Schlecht. in Guinea 1, p. 220; De. Prodr. 8, p. 48; Ledeb., Fl. Ross. 3, p. 16. On pebbly flats, Arakumschetchene Island.

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Androsace Chamagasma, Koch; Fl. Prodr. 8, p. 51; Lidib. Fl. Ross. 3, p. 18; Hook. & Arn. Bot. Beechey, p. 129. Arakamschekene Island.

Androsace septentrionalis, Linn.; Lidib. Fl. Ross. l. c.; Fl. Prodr. 8, p. 52; Hook. & Arn. Bot. Beechey, p. 129; Rupr. Fl. Samojed. Cisural. No. 202. Hillsides, Petropavlovski. Pebbly beaches near the sea Arakamschekene Island.

Dodecatheon rigidum, Cham. & Schlecht. in Annales, 4, p. 222; Lidib. Fl. Ross. 3, p. 22; Hook. & Arn. Bot. Beechey, p. 129; Fl. Prodr. 8, p. 56. Damp hillsides, Arakamschekene Island. Part of the specimen collected by Mr. Briggs.

The comparative length of the leaves & petiole seems to form a better specific ~~distinction~~ character than any derivable from the tube of stamens. In our plants, the oval leaves are narrowed more or less abruptly into a margined petiole longer than the lamina, while those of D. Meadia are mostly longer and narrower and on much shorter petioles.

Trientalis Europaea, Linn.; Fl. Prodr. 8, p. 59; Lidib. Fl. Ross. 3, p. 23; Grossm. & Meyer, Fl. Sib. p. 67 in Nordend. Sibir.; Hook. & Arn. Bot. Beechey, p. 116. Petropavlovski.

The leaves are very manifestly denticulated towards the point

Gentianaceae.

Gentiana aussicutatus, Pell.; Ledeb. Fl. Ross. 3, p. 55; Griseb. in Db. Prodr. 9, p. 97; Trautv. & Meyer, p. 67 in Abdelland. Sibir. In ravines near rivulets, Koval Bay and on flats near the sea, Taurisk Gully Ola Bay, J. Small.

Gentiana senella, Roebb.; Ledeb. Fl. Ross. 3, p. 56; Griseb. in Db. Prodr. 9, p. 98; Rupr. Fl. Samojed. Cisural. No. 209. Giglacials, Cham. & Schlecht. in Sinnua, 1, p. 182; Hook. & Arn. Bot. Beechey, p. 127. Flowers purple. Dry hillsides, Arakantschekow Island.

Gentiana propinqua, Richardson; Db. Prodr. 9, p. 100; Ledeb. Fl. Ross. 3, p. 57; Hook. Fl. Bor.-Am. 2, p. 62, t. 150. G. Kurikiana, Hook. & Arn. Bot. Beechey p. 127. Flowers purple. Stony flats near the sea and on damp hillsides, Arakantschekow Island.

Gentiana barbata, Gröb.; Ledeb. Fl. Ross. 3, p. 59; Trautv. & Meyer, Fl. Ochot. p. 67 in Abdelland. Sibir. G. detonsa var. barbata, Griseb. in Db. Prodr. 9, p. 101. Flowers blue. Taurisk Gully, Ola Bay and Ayan, J. Small

Gentiana prostrata, Haenke; Ledeb. Fl. Ross. 3, p. 62; Crisb. in Dc. Prodr. 9, p. 106; Cham. and Schlecht. in Linnaea, 1, p. 183. Flowers purple
Sandy hillocks near the sea & on damp hillsides
Arakamtchekene Island.

Gentiana frigida, Haenke; Dc. Prodr. 9, p. 114; Cham. & Schlecht. in Linnaea, 1, p. 173.
Flowers light greenish yellow with dark bluish-purple lines and specks on the outer parts of the corolla. In valleys, Arakamtchekene Island.

Gentiana glauca, Pall.; Dc. Prodr. 9, p. 111; Ledeb. Fl. Ross. 3, p. 66; Hooker Arn. Bot. Beechey, p. 127; Seem. Bot. Herat, p. 36; Cham. & Schlecht. in Linnaea, 1, p. 175. Dry hillsides, Arakamtchekene Island; also on Younaughi Islet.

Pleurogyne Carinthiaca, Crisb.; Dc. Prodr. 9, p. 122; Ledeb. Fl. Ross. 3, p. 71. Flowers ^{bluish} greenish yellow. Ayam, ~~on~~ hillsides. J. Small.
in swamps.

Halenia Sibirica Borkhaus; Dc. Prodr. 9, p. 128; Ledeb. Fl. Ross. 3, p. 74. Flowers greenish yellow. Ayam, on hillsides. J. Small

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Swertia obtusa, Lidch. Fl. Ross. B, p. 75;
S. perennis, Frank. & Meyer, Fl. Ochot. p. 68 in
Middend. Sibiri; De. Prodr. 9, p. 132. S. perennis,
var. alternifolia, Cham. & Schlecht. in Ginnela,
1, p. 189. Fl. Blue. Flowers blue. Cyan, in ravines
J. Small

PolemoniaceaePolemonium caeruleum, Linn.; Fl.

Prodr. 9, p. 317; Lichb. Fl. Ross. 3, p. 83; Griseb.
& Meyer Fl. Ochot. p. 69 in Middelw. Sibir; Hook.
& Arn. Bot. Beechey, p. 127; Seem. Bot. Herald,
p. 37. Fl. blue or bluish-purple. Arkan,
Arakamtschken Island, (Coal Bay, Kamtschatka,
and

Polemonium pulchellum, Bunge; Lichb.

Fl. Ross. 3, p. 84; Fl. Prodr. 9, p. 317; Rupr. Fl. Samojed.
Cisural. No. 207. P. humile, Griseb. Fl. Samojed,
p. 34 in Middelw. Sibir; Hook. & Arn. Bot. Beechey,
p. 116. On sandbeaches, Petropaulovski.

Diapensia Yupponica, Linn.; Lichb.

Fl. Ross. 3, p. 85; Griseb. & Meyer, Fl. Ochot.
p. 69 in Middelw. Sibir; Seem. Bot. Herald, p. 37;
Flowers light yellow tinged with red, Arakamtschi-
shken Island. Coal Bay on open sabb lands, flowers
purple, J. Small

Borraginaceae.

Mertensia maritima, G. Don; Fl. Prodr. 10, p. 88; Lidb. Fl. Ross. 3, p. 132; Griseb. & Meyer Fl. Coch. p. 69 in Nov. den. Sibir.; Seem. Bot. Herab. p. 37. Lithospermum maritimum, Bot. Beechey, p. 116, 128. On sandbeaches, Arukumschetchene Island, Mr. Boggs Petropaulovski, on sandbeaches. Flowers blue.

Mertensia denticulata, G. Don; Lidb. Fl. Ross. 3, p. 133; Fl. Prodr. 10, p. 90. Lithospermum denticulosum, Hook & Arn. Bot. Beechey, p. 116, 128. Mertensia pilosa, Seem. Bot. Herab. p. 37. Flowers purple. Ayan, in vallis. J. Small.

Our plants accord very well with the description and with specimens in Herb. Gray, also with the figure in Lidbom's Icones except that it represents a less leafy form.

Myzosotis sylvatica, Hoffm.; Fl. Prodr. 10, p. 107; Lidb. Fl. Ross. 3, p. 145; Seem. Bot. Herab. p. 37; M. alpestris, Hook. & Arn. Bot. Beechey, p. 128. Flowers blue. Ayan, in vallis; also Yamuk Gut ^{J. Small}.

The plants from the above localities, at first sight, appear sufficiently unlike to belong to distinct species. Those from the latter place are sized by erect, from twelve to eighteen inches high, scarcely branched, with two or three rather close-flowered racemes, and

with erect-appressed, lanceolate, acute, villos-hispid, leaves. The other form, of the same height, has a feeble assurgent habit, fewer & broader simply hispid, spreading leaves, with longer & slenderer racemes.

Centrichum arsioides, Alph. DC. Prodr. 10, p. 125; Ledeb. Fl. Ross. 3, p. 149; Seem. Bot. Herat., p. 37, t. 8. Myosotis arsioides, Cham. in Linnaea, 4, p. 443. Urakamschekene Island, on flats near the sea & on hillsides. A part of the specimens collected by Mr. Broyer.

Scrophulariaceae

Veronica supplefolia, Lin. Benth. in Db.
Prodr. 10, p. 482; Ledeb. Fl. Ross. 3, p. 248.
Peropantovski.

Castilleja pallida, Reinth.; Db. Prodr. 10,
p. 531; Seem. Bot. Herab., p. 37; Rupr. Fl. Samoa.
Leisurat. No. 213; Hook. & Arn. Bot. Beechey, p. 128
Hills near the sea, Arakanscheckene Island.

Boersia alpina, Lin.; Db. Prodr. 10, p.
544; Rupr. l. c.; Ledeb. Fl. Ross. l. c. Flowers
purpl. Ayan, in waste grounds, J. Small.

Pedicularis verticillata, Lin.; Db.
Prodr. 10, p. 563; Ledeb. Fl. Ross. 3, p. 270; Rupr.
l. c.; Seem. l. c. Flowers purpl. Ayan, J. Small
In several flowers examined the filaments
were beardless.

Pedicularis resupinata, Lin. Walp.
Rep. 3, p. 418; Trantv. & Boyer. Fl. Behor. p. 72 in
Medden. Sibir.; Ledeb. Fl. Ross. 3, p. 281. Flowers
pink. Ayan, in vallies, J. Small

Pedicularis euphrasoides, Steph.; De. Prodr. 10, p. 567; Lidb. Fl. Ross. 3, p. 284; Walp. Rep. 3, p. 421; Trank. & Meyer. Fl. Cechot. p. 72 in Medden. Sibir.; Seem. Bot. Herald. p. 38; Flowers yellow, on open tundra lands, Coal Bay, ^{J. Small} Fabius Bay, Arakamutchchem Island.

Pedicularis Ludlowi, Willd.; Lidb. Fl. Ross. 3, p. 286; Grav. Fl. Tannyr. p. 32 in Medden. Sibir.; Seem. Bot. Herald. p. 38; De. Prodr. 10, p. 568; Coal Bay, J. Small, Dump hillsides, Arakamutchchem Island, Mr. Boyce. Upper lip of corolla dark red, lower pink; ^{with crimson} throat speckled.

Pedicularis lanata, Willd., Lidb. Fl. Ross. 3, p. 299; Hook. & Arn. Bot. Beechey, p. 128. Stony hills, Arakamutchchem Island.

Pedicularis versicolor, Wahlent.; Lidb. Fl. Ross. 3, p. 300; Trank. Fl. Tannyr. p. 33 in Medden. Sibir.; Seem. Bot. Herald. p. 38; Benth. in De. Prodr. 10, p. 578. Coal Bay, J. Small Dump hillsides, Arakamutchchem Island.

The flowers have the galea marked with red lines; the tube & lower lip are yellow & the anthers green.

Pedicularis capitata, Adams; Lidb. Fl. Ross. 3, p. 301; De. Prodr. 10, p. 581; Seem. l.c.; Grav. l.c. Flowers yellow tinged at the tip with pink. Arakamutchchem Island.

(85)

Crobachaeae.

Boschniakia glabra, C. A. Meyer; Gb.
Prodr. 11, p. 89; Ludw. Fil. Ross. 3, p. 323. Crobachae
rossica, Cham. & Schlecht., in Linnæa, 3, p. 132. C.
glabra, Hook. Fil. Bot. Am. 2, p. 91, t. 167.
Mountainside in shady places, Habins Bay,
J. Small

(86)

Selaginacea.

Gymnandra Stelleri, Cham. & Schlecht.
in Linnaea, 2, p. 563; Ledeb. Fl. Ross. 3, p. 332;
Ob. Povol. 12, p. 25; Sem. Bot. Herab, p. 38; Grantz.
Fl. Tannyr. p. 32 in Middend. Sibir. Fl. bluish-
purple. Anukarschtschen Island.

(87)

Plumbaginaceae.

Statice Armeria, Linn.; var. arctica,
Ledeb. Fl. Ross. 3, p. 457; Hook. & Arn. Bot. Beechey,
p. 129. Armeria arctica, Seem. Bot. Herald, p. 39;
Trans. Fl. Samoyd. p. 30 in Nordend. Sibir.; Russk.
Fl. Samoyd. Casural. No. 231. A. Lebra. Boissier
in M. Pwdr. 12, p. 681. Arakuntchekem Island.

(90)

Polygonacea.

Rheum Rhaponticum, Linn.; Ledeb. Fl. Ross
3, p. 496; Wein. in De. Prodr. 14, p. 33. Ayan,
on hillsides & in vallies. J. Small

Cyrtia reniformis, Hook.; Lidch. Fl. Ross.
3, p. 498; Franch. Fl. Faunus, p. 28 in Abidder.
Sibir.; Seem. Bot. Herald, p. 39; Hook. & Arn. Bot.
Beechey, p. 129; Meisner in De. Prodr. 14, p. 37.
 Arakantschken Island.

Rumex aceticus, Franch. in Fl. Faunus, p. 29;
Lidch. Fl. Ross. 3, p. 506. Damp hillsides, Arakantschken Island.

Rumex Acetosella, Linn.; Lidch. Fl. Ross.
3, p. 510; Seem. C. c.; Hook. & Arn. C. c.; Franch.
& Meyer, Fl. Cochot, p. 74 in Abidder. Sibir.; Meisner
in De. Prodr. 14, p. 64. J. Small. Locality not given.

Rumex Acetosella, Linn.; Lidch. C. c.;
Meisner in De. Prodr. 14, p. 61; Rupr. Fl. Samojid. Cas-
ural. No. 240; Franch. Fl. Boyand. p. 155 in Abidder.
Sibir. Damp flats near the sea, Arakantschken
Island.

The specimens are from one to three inches high, with long linear not acuminate leaves, fasciculate at the base of the stem and more than half its height; base base widely margined with reddish sheaths, which as well as those of the stem are conspicuously inflated.

Rumex graminifolius, Lamb.; Ledeb. Fl.
Ross. 3, p. 512; Meisner in Ob. Prodr. 14, p. 64.
Plats near the sea, Arakantschken Island.

Haenigia Islandica, Linn.; Ledeb. Fl.
Ross. 3, p. 534; Meisner in Ob. Prodr. 14, p. 82.
Rupr. Fl. Samoja. Casual. No 235. Hillsides, Arakantschken Island.

Polygonum Bistorta, Linn.; Ledeb. Fl.
Ross. 3, p. 518; Seem. l. c.; Rupr. l. c. Frankv.
Fl. Gaimyr. l. c.; Meisner in Ob. Prodr. 14, p. 125.
Cyan on hillsides, J. Small. Arakantschken Island, Hillsides. Flowers rose-color, anthers dark crimson

Polygonum viviparum, Linn.; Ledeb. Fl.
Ross. l. c.; Hook. & Arn. Bot. Beechey, p. 116, 129; Seem.
l. c.; Frankv. Fl. Gaimyr. l. c. Cyan, on hillsides
flowers white, J. Small. Arakantschken Island
Fl

Polygonum polymorphum, Ledeb. Fl. Ross.
3, p. 524; Meisner in Ob. Prodr. 14, p. 139; Frankv. &
Meyer, Fl. Ochot. p. 129 in Modden's, Sibir. P. alpinum,
Hook. & Arn. Bot. Beechey, p. 129 et Ledeb. Shantar
Island, in ravines. Flowers greenish yellow, J. Small.

(92⁺)

Polygonum ³⁻heterocarpum, n. sp.

Caule erecto vel assurgente simplicia vel paucis ramoso, longitudinaliter striato glabro vel ad nodos deorsumque breviter retrorse pubescente; foliis (inferioribus ad ochream reductis) patentibus linearilanceolatis acuminatis basi angustatis breviter petiolatis glabris vel ~~subtus~~ ^{nevisque} subtus ad pubescentis margine ciliatis undulatisque inferioribus supra basin tertia parte superioribus ima basi insertis; ochreis laxis nervoso-striatis rufis glabris vel basi pubescentibus; panicula angusta foliata; pedicellis bracteis latis 1-2 floris; pedicellis exsertis florem equantibus supra medium articulatis; sepalis ovalibus vel obovatis obtusis; Staminiibus ovario ~~amidium~~ amidium equantibus; Achenio exserto calyce 3-4 plo longiore obovato late trivalvato stylis 3 recurvatis coronato Stigmatibus capitatis; Semine ^(immature) valde stipitato, ~~et stipite apice sub contracto~~
Coal Bay, J. Small. Arakamtschekens Island.

The specimens from two rather remote localities ~~are~~ are 8-15 inches high erect or slightly assurgent at the base; the short lower joints two or three times as long as the rather inflated leafless sheaths. Some of the specimens are clothed at & below the ^{of the middle part of the stem} nodes with a more or less dense, short, retrorse pubescence, while the lower & upper parts are nearly or quite smooth. The points, however, in which they seem most to differ from *P. polymorphum*

(92++)

P. divaricatum, and other allied species, are in the conspicuously exserted & broadly winged achenium, as well as in their rather strict nearly unbranched habit.

(93)

Polygonum divaricatum, Linn.; Wedd.

Mil. Rom. 3, p. 526; Meisner in De Prodr 14, p. 140.

var. angustissimum, ^{1°} puberulum, Meisner, l. c.

Jarnak Gulf, near the sea. Flowers yellow. J. Small

(94)

Empetracae.

Empetrum nigrum, Linn.; Yerb. Fl.
Ross. 3, p. 555; Trankv. & Meyer, Fl. bot. p.
76 in Middew. Sibir.; Seem. l. c.; Hook. &
Am. Bot. Beechey, p. 116, 129. Gamstelgulf,
J. Small. Arakamschitchene Island.

Salicaceae.

Salix caprea, Linn.; Host, Salix, p. 24, t. 66, 67; Ledeb., Fl. Ross. 3, p. 609; Frank. & Meyer, Meyer, Fl. Gebirg. p. 79 in Middend. Sibir.; Rupr. Fl. Samojw. Casurat. No. 254. Petropawtowski.
A large spreading bush about fifteen feet high.

Salix physiceifolia, Linn.; Ledeb., Fl. Ross. 3, p. 611; C. discolor, Host, Salix, p. 18, t. 60, 61; Cham. & Schlecht in Linnaea, 6, p. 538. ex Ledeb., Petropawtowski, on hillsides, a spreading bush 6-9 ft high.

Salix hastata, Linn.; Ledeb., Fl. Ross. 3, p. 612; Frank. Fl. Bogarid. p. 153 in Middend. Sibir.; Rupr. Fl. Samojw. Casurat. No. 259
J. Small, particular locality not recorded.

Salix rhamniifolia, Pall.; Ledeb., Fl. Ross. 3, p. 612; Hook. & Arn. Bot. Beechey, p. 117, t. 26; J. Fairmyrensis? Frank. Fl. Fairmyr. p. 27 in Middend. Sibir. Wet flats at the base of hills; branches prostrate. Anakuntchekene Island.

Without staminate flowers it may be impossible to determine whether this plant & J. Fairmyrensis are

#X. 823.
Palmer, Edwin, 1840-1890.

are the identical, but they agree in so many particulars as to leave but little doubt that they are the same.

Salix glauca, Linna.; Ledeb. Fl. Ross. 3, p. 618; Transtr. Fl. Gaimyr. p. 26 & Fl. Bogard. p. 153 in Medden. Sibir.; Rupr. Fl. Samojd. Cisural. No 225. Arakanschetchem Island.

Salix arctica, Pall.; Ledeb. Fl. Ross. l. c. Seem. Bot. Herat. p. 40; Hook. & Arn. Bot. Beechey. p. 129; Transtr. Fl. Bogard. p. 154 & Fl. Gaimyr. p. 26, l. c.

Var. leucocarpa, Ledeb. l. c. S. Richardsoni? Hook. Fl. Bor.-Am. 2, p. 147, t. 142. S. curvata? Gurcz.; Transtr. Fl. Behot. l. c. Coal Bay on table-lands.
J. Small.

Salix Woodwardii, Pursh; Ledeb. Fl. Ross. 3, p. Seem. l. c.; Hook. Fl. Bor.-Am. 2, p. 152; Gray Man. p. 418. S. ovalifolia, Transtr.; Ledeb. Fl. Ross. 3, p. 620. Arakanschetchem Island on dry flat, near the sea.

Salix reticulata, Linna.; Ledeb. Fl. Ross. 3, p. 623; Seem. l. c.; Hook. & Arn. Bot. Beechey. p. 130 & Rupr. Fl. Samojd. Cisural. l. c. Summit of hills, in damp ground

(97)
Salix potanin Wahl
Salix retusa, Linna; Ludlb. Fl. Ross.
3, p. 625; Seem. l. c.; Rupr. l. c.; Hook. & Arn.
l. c.; Hort, Salix, p. 32, t. 103. S. retusa, var.
potaniniana, Brant. Fl. Bogand. p. 152 in Norddend.
Sibir. Among mosses on hillsides, Arakantche-
tchem Island.

Salix ^{retusa} Linna? var. obovata?
Salix potanin, Hook.; Ludlb. Fl. Ross.
3, p. 624; Seem. l. c.; Brant. Fl. Faimeyr. p. 25
in Norddend. Sibir.; Rupr. l. c. Arakantche-
tchem Island

Our numerous specimens present a con-
siderable variety of forms. Those growing in
any sandy soil have the stems intricately branch-
ed, with leaves varying from a little more than
a quarter of an inch to less than a line, & in shape
from elliptical to orbicular, while the aments are
only 3-4-flowered. Another form has the leaves oval,
& even lanceolate, nearly half an inch long, and
the aments little less than an inch. Some of the
specimens have serrated leaves, and the young plants
are more or less pubescent with the leaves ciliate.

Populus suaveolens, Hisch. in Ludlb. Fl. Ross.
3, p. 629; P. balsamifera, Hook. & Arn. Bot. Beechey,
p. 117; Fraunh. & Weyer, Fl. Ochot. p. 76 in Nord-
dend. Sibir. Petropanbovski. A shade tree within
enclosures.

Betulaceae.

Betula Ermani, Cham. in Linnaea,
6, p. 537, t. 6, f. 4; Ledeb., Zil. Ross. 3, p. 363; Frankr.
u. Meyer, Fl. Cechos. p. 83 in Middend. Sibir. Ayan,
on hillsides. A tree 30 ft high. J. Small.

This species is readily distinguished by the
large tuft of densely woolly bud scales at the
base of the fertile aments.

Betula pubescens, Pall., Ledeb. L.c.;
Frankr. & Meyer, L.c. Petropaulovski on hills
in dense thickets. A shrub 4-8 ft high.

In the form of the leaves, their pubescence
and color, as well as in the densation, this
plant is strikingly like the preceding. They
are perhaps a little thinner in texture and
smaller, resinose-punctate beneath, truncate
or slightly cordate at base and on shorter
petioles; the latter and all the veins below and
above are clothed with a slightly tawny
villosity. The linear-lanceolate or subspatulate
light rufous stipules are conspicuously ciliate
at the apex, and the ^{furnished} ~~length~~ of
the ament is ~~clothed~~ with a few similar but
smaller bud scales a little more than its own
length. The subligeous scales of the fertile ament

are ciliate when young, but subglabrous at maturity, less deeply cleft, and the lobes are approximate; the lateral ones sub-recurved. The wing of the seed is scarcely half its width, the auricle hardly reaching the base of the style.

Betula nana, Gron. Ledeb. Fl. Ross. 3, p. 653; Seem. Bot. Herald, p. 41; Frank. & Meyer. Fl. Coch. p. 85 in Medden. Siber.; Hook. & Arn. Bot. Beechey, p. 129; Rupr. Fl. Samojd. Laismat. No. 246. Coal Bay, on table lands. J. Small Arakantchekene Island.

Alnus viridis, St.; Ledeb. Fl. Ross. 3, p. Cham. in Linnaea, 6, p. 538; Seem. l. c. A. fruticosa, Rupr. l. c.; Frank. Fl. Bogam. p. 182. Alnaster viridis, Ledeb. Fl. Ross. 3, p. 655; Frank. & Meyer. l. c. Aryan on hillsides, J. Small. Petropaulovski on hills — a spreading bush 4 or 5 ft. high.

(99)
Compositae

Pinus Ayacuensis, Fisch. mss. sub Picea in Grant.
& Meyer Florula Coch. p. 87. A large tree on moun-
tains in vallis at Alkustoff harbor.

Pinus sibirica, Ledeb. Fl. Alt. 4, p. 204, sub
Larix. Larix sibirica, Link in Linnæ 15, p. 535.
Grant. & Meyer in Florula Coch. p. 88. Pinus Ledbourii;
Endl.; Ledeb. Fl. Ross. 3, p. 672; Abies Ledbourii;
Ruprecht Fl. samojed. cesared. no. 269. Jaounisk
Gulf, Ola Bay. A large tree on mountainsides

Pinus Benuha, Linn. Sp. 1419; Ledeb. l. c.;
Grant. & Meyer, l. c.; Hook. & Arn. in Bot. Beechey
p. 117. Coal Bay. A low bush inclining to spread
over the ground. Ayau, Petropaulovski; a low
spreading bush 4-8 ft high.

(46) (100)

Juncagineae.

Triglochin palustre, Linna. Sp. 482; Ledeb.
Fl. Ross. 4, p. 35; Kunth. Enum. 3, p. 143; Hook. Fl.
Bot.-Am. 2, p. 168; Trautv. & Meyer Fl. Octob. p. 90;
Ruprecht. Fl. Samoyd. cesural. No. 280; Ara-
kantschekene Fluss.

A single specimen only, in fruit and
rather imperfect, was obtained.

(100)

Orchidaceae

Orchis aristata, Gisch.; Gray, Botany of
Perry's Exp/1, p. 320. Orchis latifolia, Lindl. Jl. Ross. 4,
p. 54. Hills, Petrovsk. Flowers purple

Peristylus viridis, Lindl.; Lindl. Jl.
Ross. 4, p. 72. Calyptroglottis viridis, Rupr.
Jl. Sumoy, Veget., No. 274. Damp, hillsides,
Arakumschekene Island. Spikes of flowers dull red.

~~#98~~ (102)

Iridaceae

Iris setosa, Pall. in Willd. herb. No. 993;
Ledeb. Fl. Ross. 4, p. 98. S. Sibirica, Hook. & Arn. Bot.
Bucherj, p. 117? 130? Yamusk Gulf.

+ Iris Pseud-acorus, Linn. Sp. 56; Ledeb. l. c.;
Ayan. (cf. I. lanigata)

The specimens are imperfect, showing only
the top, ~~or~~ more than a foot in length, of, it appears
by, a rather tall stout plant, but without any
radical or lower caudex leaves.

Smilacinae

Trillium boratum, Pursh, Fl. Am., sept. 1, p. 245; Kanuth, Enum. 5, p. 124; Ludl. Fl. Ross. 4, p. 121; Hook. & Arn. in Bot. Beechey, p. 117. Hillsides, Petropaulovski. Flowers white.

Styptopus roseus, My. Fl. Bor.-Am. 2, p. 200, f. 18; Kanuth, l. c.; Hook. Fl. Bor.-Am. 2, p. 173; Lett., Ayam, on shady hillsides. J. Small

The peduncle of the fruit is recurved, but exhibits no trace of the twist.

Smilacina bifolia Desf.; Ludl. l. c.; Hook. l. c.; Ruprecht. Fl. Samojed cisaral. No. 277. Convallaria bifolia, Linn. & Auct. Majantheman bifolium, Hb. & Auct. Ayam in shady valleys. Flowers white. Also Shantar Islands, J. Small, Hillsides, Petropaulovski.

(104)
Liliaceae.

Lelogyne serotina, Salisb.; Benth. Enum.
4, p. 244; Ledeb. Fl. Ross 4, p. 144; Trautv. Fl.
Saimyr. p. 24. Antheneum serotinum, Seem. Bot. Her.
Arakantschekue Island. Flowers whitish,
red-veined externally.

Allium splendens, Villd. herb. No. 6477.e
Benth. Enum. 4, p. 420; Ledeb. l.c. Hillsides at
Petropaulovski. Flowers deep red or crimson.

Seem. Bot. Herald, p. 41.

Allium Schoenoprasum, Linn. Sp.
432; Ledeb. l.c.; Benth, l.c. A. Sibiricum,
Trautv. & Meyer, Fl. Ochoz. p. 93; Hook. & Arn. Bot.
Beechey, p. 118, 130. Ayan on hillsides; flowers
purple.

Fritillaria Kamtschatcensis, Ker.
Bot. Voy. pl. 1216; Kunth, Enum. 4, p. 254;
Hook. Fl. Nov. Am. 2, p. 181, t. 193. (Jank's
Gulf you fruit.)

(105)

Melanthaceae.

Veratrum album, Linn. Sp. 1479; Ledeb.
Fl. Ross. 4, p. 208; Kunth, Enum. 4, p. 186. Viride.
Trautv. & Meyer, Florul. Behot. p. 95; Hook. Fl. Bor-
Am. 2, p. 178. Coal bay in ravines: flowers greenish
yellow. Petropaulovskou damp hillsides

Tofieldia palustris, Hud. Fl. inq. p. 137;
Kunth Enum. 4, p. 166; Ledeb. l. c.; Hook. l. c.;
Trautv. & Meyer, Florula Behot. p. 96. Hillsides
and in damp ~~soil~~ ground, Arakanschetcheu
Island.

Tofieldia coccinea, Brown in Richard.
App. to Frankl. Journ. (ed. 2, 1) p. 11; Kunth l. c.;
Ledeb. l. c.; Hook. l. c.; Hook. & Arn. Bot. Beechey
p. 130, t. 29. Arakanschetcheu Island on
pebbly flats near the bay.

Tofieldia calycularis, Wahlenb. Fl. Guss.
p. 90; Kunth, l. c.; Ledeb. l. c.; Trautv. &
Meyer, l. c. Coal bay on table-lands.

Juncaceae.

Juncula pilosa, Willd.; Lidb. Fl. Ross. 4, p. 214; Meyer in Linnaea, 22, p. 883; Hook. Fl. Bor.-Am 2, p. 188; Rupr. Fl. Samoju. besurat. No. 281. J. vernalis Kenth, Enum. 3, p. 297. Juncus pilosus, Auct. Dry hills, Petropavlovski.

Our specimens have none of the coloration at the base of the leaves mentioned as one of the specific characters; and the carpels are broadly ovate and very decidedly longer than the broadly acute sepals.

Juncula spadzeca, Dr.; Lidb. Fl. Ross. l. c.; Meyer, l. c.; Kenth, l. c.; Grav. & Meyer. Fl. Behr. p. 97 in Arctic Sibir. Coal Bay on tableland & J. Small.

(var. pauciflora; Arakantchekhem Island)

The plants from Coal Bay have the panicle diffuse, the stamens hardly half the length of the sepals, the filaments longer than the anthers and the seeds oblong. Those from Behring's Straits are smaller with the panicle of a few rather dense heads and the oval seeds are quite conspicuously uncinuate.

Juncula acutata, Trakl. l. Meyer, l. c.; Seem. Bot. Herab. p. 42; Lidb. l. c.; Kenth, l. c.; Grav. & Meyer, l. c. Tabun Bay on mountain tops J. Small. Arakantchekhem

ne Island.

Several forms are in the collection. That from Western Bantschaska and some specimens from Behring Straits accord pretty well with the description of *L. hyperborea*, Br. The sepals are longer than the capsules & twice the length of the stamens of which the filaments are longer than the anthers. Another form, *L. acutata*, var. a. Meyer, l. c. has the bract ^{lets} so strikingly fimbriate as to give the spikelets a grayish hue. The stamens are one third shorter than the sepals. Still another form has more diffuse panicles, the very acute sepals a little longer than the acuminate capsules, the stamens half the length of the sepals, and the oval anthers shorter than the filaments.

Luzula campestris, Gb. Fl. Franc. No. 1827;

Ledeb. l. c.; Kunth l. c.; Meyer, l. c.; Trautv. &

Meyer, l. c.; Hook, l. c.; Petropaulovski. Azan.

Arakanschechem Island. (Grapin Japan. Exp. Report, p. 322)

The northern form has the panicles densely spicate. var. f. Meyer, l. c., the capsules nearly or quite as long as the sepals & the stamens half their length; those from the other places have the panicle diffuse. In the Petropaulovski plant the capsules are as long as the sepals, the stamens half as long & the anthers a little longer than the

filaments; while ⁱⁿ those from Ayan the stamens are one third shorter than the sepals, the anther twice the length of the filament, and the caruncle at the base of the oval seed nearly its thickness and almost half its length.

Luzula spicata St. Fl. France. No. 1028;
Ledeb. l. c.; Kunth, l. c.; Meyer, l. c. (Arakant-
chetchem Island. (Seem. Bot. Herat, p. 42.)

The specimens have the rather spicose panicle rigidly erect; I do not find the foliaceous bracts mentioned in the specific character.

(Seem. l. c.) Juncus castaneus, Smith, Fl. Brit. 1, p. 383;
Ledeb. l. c.; Kunth, l. c.; Hook. l. c. Arakant-
chetchem Island. Wet & sandy flats.

In some flowers ^{at least} the stamens are ^{much} longer than ^{the capsule.}

Juncus triglumis, Linn., Spec. p. 467;
Kunth, l. c.; Hook. l. c. Ayan. Arakant-
chetchem Island. J. Small

The sepals ^{are} one third shorter than the capsule, the exterior acute; the stamens of the same length.

Juncus triglumis, Linn. Spec. p. 467;
Ledeb. l. c.; Kunth, l. c.; Ruprecht,
Fl. Samoyed. cesural, No. 289; Vant. Florula
Taimyr. p. 23. Arakantchetchem Island

(109)

The stamens are much elongated, equalling or exceeding the ripe capsule.

~~(110)~~ (110)

Cyperaceae.

Eriophorum caput vaginatum, Linm. Sp.
76; Anders. Pl. Scand. p. 13; Trautv. Fl. Bogovin. p. 151;
Ruprecht. Fl. Samojd. essential. No. 291; Trautv. & Meyer,
Fl. Ochor. p. 97; Ledeb. Fl. Ross. 4, p. 252; Kunth 2, p. 177.
Fabius Bay on mountain tops. J. Small

Eriophorum capitatum, Hook. Fl. Borneo.
2, p. 231; Ledeb. l. c.; Kunth, l. c.; Anders. l. c. ^{2, 3, p. 31} Ruprecht,
Sax. Trautv. Fl. Bogovin. l. c. ^{Sam. l. c.} Trautv. & Meyer, l. c.
Scem. Bot. Herat. p. 47; Hook. & Arn. Bot. Beechey, p. 131.
E. Schenckeri, Ledeb. l. c.; Trautv. Fl. Bogovin. l. c.;
Trautv. & Meyer, l. c. Wet sandy soils at the base
of hills, Arakumschetchem Island.

The mature achenium is narrowly obovate, obtuse
apiculate, subcylindric but with the three angular lines
very distinct, a little longer than the style and as long
as the stigmata. Immature achenia of apparently the
same plant have the style three times the length of the
stigmata twice their length.

Eriophorum Chamissoi, C. A. Meyer. in. Ledeb.
Fl. Alt. 1, p. 70; Fl. Ross. 4, p. 253; Kunth, l. c. Wet
hills, Arakumschetchem Island.

In its cespitose habit & in the shape of the
achenium, this very closely resembles E. vaginatum,
and is perhaps only a form of it. The leaves appear a

~~(107)~~ (111)

little narrower and the capitulum has the broad
bracts at ^{its} base. It also agrees well with specimens
in the herbarium of Dr Gray.

Eriophorum lasyfolium, Hoppe Taschenb. 1800,
p. 108; Less. l. c.; Benth, l. c.; Anders. l. c. Fabius
Bay; on mountain tops.

Eriophorum angustifolium, Roth. Tent. Fl.
Germa. 1, p. 24; Less. l. c.; Benth, l. c.; Anders. l. c.;
Griseb. l. c.; Hook. l. c.; Hook. & Arn. l. c.; Scam. l. c.
Wet grounds, Arakautschkene Island,

Elyna spicata, Schrad.; Hook. Fl. Bor. Am.
2, p. 228; Ledeb. Fl. Ross. 4, p. 262; Kunth, Enum.
Pl. 2, p. 533. Arakantschew Island. Sandy
flats near the seaside.

Elyna caricina, Bert. & Koch; Hook. l.c.;
Ledeb. l.c.; Kunth, l.c. Arakantschew
Island. Pebbly flats near the shore.

(Carex by Mr. G. Booth.)

Carex surpidea, ^{Booth, in} ~~Nov.~~ ^{ick} Hook. Fl. Bor-Am.,
vol. 2, p. 208. Arukantschetschem I. On sandy flats
near the sea-side & on damp hills.

Carex nardina, Griseb., Mant. 2, p. 55;
Ledeb. Fl. Ross. 4, p. 267. Leptocarpus, Booth, l.c., p.
209, t. 207: Arukantschetschem I. On stony flats
& dry hills.

Carex incurva, Lightf.; Ledeb. l.c. p. 269;
Ruprecht. Fl. Samoy. bisural. No 305; Booth, l.c. 211.
Arukantschetschem I. On sandy flats.

Carex lasiocarpa, Wahl. Act. Holm. 1803, n. 37;
Ledeb. l.c. p. 279; Rupr. l.c. Petropaulski ^{ov} & Ara-
kantschetschem I.

Carex glauca, Wahl. l.c. no. 44; Ledeb.
l.c. ^h 284; Booth, l.c. p. 214; Rupr. l.c. no. 304.
Petropaulski ^{ov} & Arukantschetschem I.

Carex siccata, Dewey; Gray, Man. 511; Booth,
l.c. 212. Petropaulski.

Carex uniflora, Smith. Eng. Bot. ^{t.} 2516; Booth,
l.c. ^p 224; Ledeb. l.c. p. 297; Rupr. l.c. no. 300.
Arukantschetschem I. Dry hills & wet grounds.

Carex fuliginosa, Sterub. & Hoppe; Benth.,
Grum. Pl. 2, p. 435; Boott. l. c. C. frigida ex Ledeb.
l. c. p. 294. Arakantschenschem I. On dry hills.

Carex Gmelini, Hook. & Arn. Bot. Beech. p. 118.
t. 27; Ledeb. l. c. p. 288; Boott. l. c. p. 216. Petro-
paulovski & Arakantschenschem I.

Carex rigida, Good.; Gray l. c. p. 517; Boott.
l. c. p. 217; Rupr. l. c. no. 296; Griseb. in Linden. 2, 1,
part. 2, p. 7 Arakantschenschem I. Along dry
banks of rivulets & hillsides; - common.

Carex stans, Dejin. Rev. Ent. p. 40.
Arakantschenschem I. Wet grounds at the foot of
hills.

Carex hyperborea, Dejin, l. c. p. 43. C. sax-
atilis, var. ex Ledeb. l. c. p. 310. Arakantsche-
tschem I. Low wet ground.

Carex cryptocarpa, Meyer; Benth. l. c. p. 416;
Ledeb. l. c. p. 313; Boott. l. c. p. 219. Petro-paulovski.

Carex saxatilis, Linna.; Boott. l. c. p. 220;
Ledeb. l. c. p. 304; Hook. & Arn. l. c. p. 131. C. pullea, Good.
Ledeb. l. c. p. 308. Arakantschenschem I. On wet flats.

Carex compressa ^{acta} ~~acta~~ Brown, in Ross' Voy. Knuth
l.c. p. 524; Brott, l. c. p. 220. ^{C. membranacea, Hook. Polyn. 2nd Voy.} Arakautschene.
In marshy or wet grounds.

Carex Golmieri, Brott, l. c. p. 224.
Petropaulovski & Arakautschene. In
damp grounds.

Carex procox, Jacq.; Gray, l. c. p. 526;
Ledeb. l. c. p. 301. Petropaulovski.

Carex capillaris, Linn.; Gray, l. c. ^{p. 527};
Ledeb. l. c. p. 295; Brott, l. c. p. 227.
Arakautschene On dry hills.

Carex longirostrata, Meyer, Geop. Nov. t. 12;
Ledeb. l. c. p. 293. ~~C. bauschata~~ Causchiatense,
Knuth, l. c. p. 477. Petropaulovski

Carex ampullacea Good, Linn. Trans. II, 207
Ledeb. Bot. Ross. IV. 318.

Leow Bay

J. Small

Gramineae.

Elymus mollis, Trin. in Spreng. N. Entz. 2, p. 72 nec R. Br. ex Ledeb.; Kunth, Enum. 1, p. 453; Ledeb. Fl. Ross. 4, p. 332; Mantz. Fl. Jaivny in Middend. Sibir. p. 20; and Fl. Coch. p. 102.

Petropaulovsk and Arakautschene Island on pebbly beaches near the sea

We have two slightly different forms, ^{as might be expected,} from the two localities, agreeing in most respects with the descriptions and specimens which we have seen of E. mollis, and at the same time apparently not unlike E. dasystachys, Trin. The glumes are certainly not broadly lanceolate as in the former, nor are they glabrous as in the latter. Are not the two forms of the same species?

Festuca ovina, var. vivipara, Trin. Sp. 108; Ledeb. Fl. Ross. 4, p. 350; Kunth, Enum. 1, p. 398; Kupr. Fl. Samojw. Casual. No. 310; Hook. Fl. Bor.-Am. 2, p. 251; Journ. Bot. Herald, p. 43. On sandy ridges, in small tufts, Arakautschene Island.

Festuca brevifolia, R. Br. in Parry's Voy. (esp. p. 289, 309; Hook. Fl. Bor.-Am. l. c. F. brachyphylla, Schult. Mant. 3, p. 646; Kunth, Enum. 1, p. 398. In dense tufts on stony & sandy flats & a rather taller form on hill sides, Arakautschene Island

Festuca scabrella, Torr. mss. in Hook. Fl.
Ross. Am. 2. p. 252, t. 233. On hillsides in dense
 tufts, Anakametchchem Island.

In most respects, our plant appears to
 approach very closely F. altaica, Trin. in Ledeb. Fl.
alt. 1. p. 109 & Ic. Fl. Ross. t. 228. In its espitose
 habit, its size, its diffuse panicle, the scabrousness
 of the palea and smoothness of the glumes, they are
 so much alike, that were it not for the short-awned
 lower palea, we should without hesitation refer it to
 that species. It accords however well with an authen-
 tic specimen of F. scabrella from the Hookerian herbarium,
 which, however, has ~~not~~ the spikelets $\frac{3}{4}$ inch long as
 described, perhaps by a clerical error, but, like ours,
 somewhat less than half an inch. Without specimens
 of F. altaica, it would be unsafe to refer it thither, how-
 ever much the resemblances noted above tend to render
 their identity probable.

~~Poa alpina, Linn. Sp. 99; Ledeb. Fl.~~
~~Ross. 4. p. 370; Kunth, Enum. 1. p. 350~~

Poa arctica, R. Br. in Parry's 1 Voy. p. 188; Hook. Fl. Bor.-Am. 2. p. 246; Lieb. Fl. Ross. 4. p. 373; Trantv. Fl. Faun. in Bidder. Sibir. p. 19; Benth, Enum. 1. p. 349. Abundant and in various forms, Arakamschekene Island. Also, a larger form from Petropaulovski.

Poa caesia, Sm. Brit. 1. p. 103; Lieb. Fl. Ross. 4. p. 374; Steud. Syn. Gram. p. 254. Poa Gaudini, Benth. Enum. 1. p. 355. Arakamschekene Island on damp hillsides & on pebbly flats near the sea.

Some points of resemblance as the generally glaucous ~~Poa triglobata~~, Trin. hue, the length of the culm above the upper leaf and its scabrous summit as well as the general size & habit afford strong grounds to suspect that P. caesia, Smith, P. Gaudini, Ram. & Schultes, & P. minor Gaud. are not specifically distinct.

Poa nemoralis, Linm. Spec. 102; Lieb. Fl. Ross. 4. p. 375; Benth, Enum. 1. p. 353; Hook. Fl. Bor.-Am. 2. p. 246. Petropaulovski, on hillsides, in dense tufts. Also Arakamschekene Island.

The specimens from Behring's Straits have considerable resemblance to P. laxa. May not this be an extreme northern form state of the former?

Colpodium fulvum, Lieb. Fl. Ross. 4. p. 385; Steud. Syn. Gram. p. 255. Poa fulva, Trin.; Benth, Enum. 1. p. 359; Rupr. Fl. Faun. Casuat.

No. 319; Hook. Fl. Bor.-Am. 2, p. 247. Margin
of ponds, Arakamschetchen Island

In our specimens the spikelits are much
reduced the greater number having but one flower
with the rudiments of a second; none appear to
have more than two. The plants are two feet or more
high.

Colpodium latifolium, R. Br. Hook. Fl.
Bor.-Am. 2, p. 238; ^{Fraxetia. Fl. Taimyr in Nordenskjöld's p. 18} ~~Benth~~,
Enum. 1, p. 205, ~~C. pau-~~
~~siflorum?~~ Hook. l. c. Arctagrostis latifolium, Ledeb.
Fl. Ross. 4, p. 434. Filfa arundinacea, Hook. & Arn.
in Bot. Beechey, p. 131. Arakamschetchen Island,
on hillsides.

A small form may be Hooker's C. pauciflorum,
in which was observed the rudimentary flower or appendage by being
but a much larger one was found in the flowers of the larger
stems. The callus is furnished with very short hairs.

Dupontia Fischeri R. Br. in Parry's 1.
Voy. App. p. 291; Ledeb. Fl. Ross. 4, p. 386; Hook. &
Arn. Bot. Beechey, p. 132. ^{near flats,} Arakamschetchen Island.

Var. refracta, ramis refractis vel porosis; florum
spiculis unifloris, rudimentis nullo.

Var. stricta, altiore, firmitore; ramis ^{laevibus} racheidi acute
adpressis; spiculis unifloris cum rudimentario

We can find no trace of a rudimentary flower in the first
variety which besides is slenderer and lower than the
second. This is rather stout one foot in height with the

branches of the panicle widely erect and closely pressed to the rachis. The spikelets have a rudimentary flower about one third the length of the perfect one.

Catabiosa algida, Gr. Monit. Fl. Suec. Naut. 3, p. 174; Ledeb. Fl. Ross. 4, p. 388. Phlypsia algida, Gruntz. Fl. Sibirica p. 18 in Abdow. Sibir.; Hook. Fl. Bor.-Am. 2, p. 238. Vilfa monandra, Hook. & Arn. Bot. Beechey, p. 132. Arakantschekene Island, on steep naked banks.

Atropis angustata, Ledeb. Fl. Ross. 4, p. 390, Poa angustata, R. Br.; Hook. & Arn. Bot. Beechey, p. 132. In small dense tufts, on low flats near the sea, Arakantschekene Island.

Glyceria distans? Wahlent. Festuca distans? Kemik Enum. 1, p. 393; Atropis distans? Ledeb. l. c.

Three young specimens procured by officers of the Vincennes from Herald Island more closely resembling small plants of G. distans in herbarium than any other, we have seen, have been with some doubt referred to that species. They are caespitose, the ^{flat} leaves far exceeding the young panicle.

Glyceria arctica, Hook. Fl. Bor.-Am. 2, p. 248, t. 229. On hills & in flats near the sea in dense tufts. Arakantschekene Island.

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From the abundance of our specimens, this would seem to have been a common grass and it is somewhat remarkable that no one appears to have brought it from that place. Some of our plants are more than a foot high.

Hierochloa alpina, R. & Schult. Syst. 2, p. 515; Hook. & Arn. Bot. Beechey, p. 132; Hook. Fl. Bor.-Am. 2, p. 234; Rupr. Fl. Samoaj. cesural. No. 332; Kunth, Enum. 1, p. 36; Ledeb. Fl. Ross. 4, p. 408. Hillsides, Arakantschekow Island.

Trisetum subspicatum, ^{Seem. Bot. Acad. p. 23;} Beauv.; Kunth, Enum. 1, p. 295; Hook. Fl. Bor.-Am. 2, p. 244; Rupr. Fl. Samoaj. Cesural. No. 328; Franch. & Meyer Fl. Cochot. p. 104 in Middlend. Sibir. Petropaulovski, Arakantschekow Island.

Aira brevifolia, R. Br. Deschampsia brevifolia, Hook. Fl. Bor.-Am. 2, p. 242; Ledeb. Fl. Ross. 4, p. 422; Kunth, Enum. 1, p. 287. D. caespitosa var. Franch. Fl. Saingyr. p. 18 in Middlend. Sibir. Wet flats near the sea, in small dense tufts, Arakantschekow Island.

Aira caespitosa, ^{no. 327} Rupr. Fl. Samoaj. cesural. Trin. Sp. 96; Deschampsia caespitosa, Kunth, Enum. 1, p. 286; Ledeb. Fl. Ross.

4, p. 421; Frankr. Fl. Gaimyr. p. 18 in Nordden. Sibir.
Hook. Fl. Bor.-Am. 2, p. 242. Flats near the sea
 Arakantschetschem Island.

Calamagrostis deschampsioides, Trin. Ic. gram.
3, t. 354; Lich. Fl. Ross. 4, p. 427; Rusp. Fl. Samojw.
Cisural. No. 340; Frankr. & Meyer. Fl. Ochotsk. p. 105
in Nordden. Sibir. Flats near the sea, Arakantsche-
 schem Island.

Calamagrostis strigosa, Bong. veget. ins.
Sitchu p. 171; Lich. Fl. Ross. l. c.; Steud. Gram. p.
189. On hillsides, Arakantschetschem Island.

Calamagrostis canadensis, P. de Beauv. sec.
Hook. Fl. Bor.-Am. 2, p. 240; ^{Seem. l. c.} Hillsides in tufts,
 Arakantschetschem Island.

Phleum alpinum, Linn. Sp. 88; Lich. Fl.
Ross. 4, p. 458; Hook. Fl. Bor.-Am. 2, p. 234; Rusp.
Fl. Samojw. Cisural. No. 333. Petropaulovski.

Equisetaceae.

Equisetum arvense, Linna.; Lindb. Fl. Ross.
4, p. 486; Seem. Bot. Herald, p. 44; Hook. Fl. Bor-
Am. 2, p. 269; Hook & Arn. Bot. Beechey, p. 119; ~~Frank.~~
 Damp ground along rivulet, Petropaulovski.

Equisetum sylvaticum, Linna.; Lindb. Fl.
Ross. l. c.; Seem. l. c.; Hook. l. c.; Frank. & Meyer,
Fl. Behr. p. 106 in Middend. Sibir. Damp ground
 along rivulet, Petropaulovski.

Equisetum variegatum, Schleich.; Lindb. Fl.
Ross. 4, p. 490; Hook. Fl. Bor. Am. 2, p. 270; Frank.
& Meyer, Fl. Behr. l. c. Hillside, Anakanuho
 Ichem Island.

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Lycopodiaceae.

Lycopodium Selago, Linn.; Ledeb. Fl. Ross.
4, p. 496; Lem. Bot. Herold, p. 44; Hook. Fl. Bor-
Am. 2, p. 266; Hook. & Arn. Bot. Beechey, p. 132.

Mountain ravines, in shade places, Shantar Is-
and, J. Small. Arakamtschetken Island, on banks
of rivulets.

Lycopodium annotinum, Linn.; Ledeb. Fl.
Ross. l.c.; Lem. l.c.; Hook. & Arn. l.c.; Hook.
l.c.; Trautv. & Meyer, Fl. Behol. p. 106 in Middend.
Sibir. Ayar, ^{and coal Bay} J. Small.

Lycopodium complanatum, Linn.; Ledeb.
Fl. Ross. l.c.; Hook. l.c.; Trautv. & Meyer, l.c.
Ayar, J. Small.

Selaginella rupestris, Linn. Spring; Ledeb.
Fl. Ross. 4, p. 500; Trautv. & Meyer, l.c. Lycopodium
rupestris, Linn.; Hook. l.c. Pebble flats near the sea,
Arakamtschetken Island. Younanghi islet.

Filices,

Polypodium Dryopteris, Linn.; Ledeb. Fl. Ross. 4, p. 509; Hook. Fl. Bor.-Am. 2, p. 259.
 Mountain ravines, in shady places, Ekisloff Harbor
 Shantar Island, J. Small.

Linn. Trans. 11, p. 178; t. 14
Woodsia ilvensis, R. Brown; Ledeb. Fl. Ross. 4, p. 510; Hook. Sp. Fil. p. 63 & Fl. Bor.-Am. 2, p. 259;
Trankv. & Meyer, Fl. Cechos. p. 108 in Mordden. Sibir.
 Petropaulovski, on hillsides,

Linn. Trans. 11, p. 178; t. 14
Woodsia glabella, R. Brown; Hook. Sp. Fil. 1, p. 149 &
Fl. Bor.-Am. 2, p. 259, t. 237; Ledeb. Fl. Ross. 4, p. 511;
 Among rocks, Arakuntchicheu Island.

While our plants in general outline, ⁱⁿ size and in the
 crowded capsules are strikingly like Brown's figure of *W.*
hyperborea, the perfectly glabrous rachis, the less deeply divided
 pinnae extending nearly or quite to the base of the stipe, ~~which is~~
 and the ^{harshly lined} narrow shape of the frond seem to determine ^{them} to this
 species. ^{roughly lined} The stipes at base are surrounded by chaggy scales and
 the texture of the frond is firmer than any other specimens
 of *W. glabella* we have seen while ~~the~~ the color is inclining to
 brown perhaps from its greater age.

Aspidium fragrans, Swartz; Trankv. & Meyer.
Fl. Cechos. l. c.; Hook. Fl. Bor.-Am. 2, p. 261. Nephrodium
fragrans, Hook. & Arn. Bot. Beechey, p. 132; Hook. & Grev. Ic.

Polystichum japonicum Ledeb. Fl. Ross. 4, p. 514. ¹¹⁴⁷
(122) Lastroea japonica, Seem. Bot. Herb. 44,
Fil. t. 70. Rocky hillsides, Arakamtschekow Island.
A part of the specimen were presented by Courier M. B. Boggis.

Aspidium spinulosum, Swartz; Hook. Fl. Bor.
Am. l. c. Polystichum spinulosum, Ledeb. Fl. Ross. 4, p. 515.
Lastroea spinulosa, Seem. Bot. Herab, p. 44. - Coal Bay,
Aizan & Shansar Island, J. Small. Petropaulovski
on hillsides. Many fronds from the caudex.

Cystopteris fragilis, Bernh.; Ledeb. Fl. Ross. 4, p.
516; Frank. & Meyer, Fl. Cetrar. l. c.; Hook. & Arn. Bot. &
Beechey, p. 119, 132; Hook. Fl. Bor. Am. 2, p. 260. l. c. tenuis,
Seem. Bot. Herab, l. c. On hills among rocks in small dense
lign, Arakamtschekow Island.

Asplenium Filix-femina, Bernh. Ledeb. Fl. Ross.
4, p. 518. Shansar Island, J. Small.

Blechnum Spicant, Roth; Ledeb. Fl. Ross.
4, p. 523; Hook. Fl. Bor. Am. 2, p. 263. J. Small.
Locality not given but from the shores of the Okhotsk Sea

Chapter III.