

several *Myosurus* species native to America in the Great Basin and on the Pacific slope of the continent; and when "limestone shingle" is named as another environment of the Belleville *Myosurus*, the mind of the widely travelled student of these plants is reminded of the habitat of certain far western members of the genus. So also does the Belleville rocky pasture locality; for that should mean on the rocks themselves, either in their seams and crevices or on top of them, where there is little depth of earth, and some considerable degree of aridity; for as far north as eastern Ontario, all, except the rocks of a pasture, is occupied by perennial grasses, into the sod of which no *Myosurus* or other annual finds a foothold. In a word, the whole story of the Ontario locality for these plants points to the derivation of this colony from the far westward. Moreover, between the northwestern shore of Lake Ontario and those far-away *Myosurus* stations of the Southern States, there is practically no commercial traffic at all; whereas, by means of the Canadian Pacific Railway System, there is a very direct and constant inter-communication between all British Columbia and even eastern Ontario.

Long after his having discovered that Belleville colony of these plants, Professor Macoun found *Myosurus* on Vancouver Island, and I find his remark on this also very interesting. It occurs in his supplement to the volume already quoted, page 479. Listing it there, still under the name *Myosurus minimus*, he says: "It is extremely probable that the British Columbia form is a distinct species." This is a plain intimation that while still regarding the eastern plant as the real original *M. minimus* and native there, he saw discrepancies between the two, and suspected the Vancouver Island plant to be really new and nameless. Into these matters the present writer intends making further and critical research, the results of which may be presented later.

THE GENUS *ANTENNARIA* IN GREENLAND.

BY MORTEN P. PORSILD.

The *Antennarias* of Greenland have for a long time—by Joh. Lange and later authors—been determined as (1) *A. alpina* (L.) Gaertn., (2) *A. alpina* var. *glabrata* J. Vahl, (3) *A. dioica* var. *hyperborea* Don, to which L. K. Rosenvinge has added (4) *A. alpina* var. *intermedia* Rosenv. A closer study

of the forms and their occurrence in the field has shown, that the last mentioned three are hereditary constant and hence probably distinct species, the hitherto called *A. dioica* var. *hyperborea* from Greenland being in some details different from all specimens seen by me of *A. dioica* from Europe or Asia. Having, however, a very restricted access to literature and a still lesser one to collections, I am at a loss to give full particulars concerning the synonymy and distribution of some of the species, and allow me to invite the attention of American botanists to them, as most likely one or another of the species here considered as new may also occur in the eastern parts of arctic or subarctic America.

A more detailed study of the species together with full diagnoses and figures will soon appear in the "Arbejder fra den Danske Arktiske Station paa Disko."

SYNONYMY AND DISTRIBUTION OF THE GREENLAND SPECIES OF ANTENNARIA.

1. ANTENNARIA ALPINA (L.) GAERTN.

West-Greenland: common to about Disco Bay, hence becoming scarcer and confined to well exposed lowland stations, collected however at Cape York, 76° 07' and in Hayes Sound, on Grinnell Land, 79° 04'.

East-Greenland: from the south to about 72°, common in the better investigated places, but *not found in North-East Greenland*.

America: Arctic Archipelago up to Melville Island, arctic, subarctic and alpine continental North America, Rocky Mountains, American and Asiatic coasts of Behring Strait, arctic and subarctic East-Siberia to Lena River, whence it seems to be replaced by *A. carpathica*, Altai, reaching the coast again in arctic Russia, Kolgужew, arctic and alpine North-Europe, Iceland, *wanting* on Jan Mayen, Spitsbergen, Nova Zembla, Franz Josef Land and New Siberian Islands; in other words, an arctic alpine, nearly circumpolar species, however, not reaching the northernmost limits for plant-growth.

A. alpina var. *Frieseana* Trautvetter: Act. Hort. Petropol. VI. 1879, page 24. *A. monocephala* (DC.) Ledeb. Fl. Ross. II, page 611. *A. alpina* var. *monocephala* (DC.) Torr. & Gray: Fl. of North America II, page 430.

In East-Siberia the commonest form, but connected with the main form by numerous transitions; also found in Greenland and America.

2. ANTENNARIA GLABRATA (J. VAHL) PORSILD n. sp. Syn.: *A. alpina* var. *glabrata* J. Vahl: Flora Danica tab. 2786, fig. 4. Joh. Lange: Conspectus Florae Groenlandicae, Meddelelser om Grönland III. 1880, page 100.

West-Greenland: between 64° and $72^{\circ} 20'$.

East-Greenland: between 66° and 72° .

Not rare on Disco Island, although much rarer than the preceding. Probably often overlooked, although it is very conspicuous. Not found in the southernmost parts of Greenland by collectors knowing the plant very well (Vahl, Rosenvinge, Hartz, Kruuse).

3. ANTENNARIA GROENLANDICA PORSILD nom. nov. Syn.: *A. dioica* var. *hyperborea* Lange l. c. but probably not *A. hyperborea* Don: Edinburgh Philosophical Journal, 1834, (a paper not accessible to me), more probably—*A. hyperborea* Fernald & Sornborger: Some recent additions to the Flora of Labrador, The OTTAWA NATURALIST, 1899, page 106.

West-Greenland: 60° and 67° , commonest in the South.

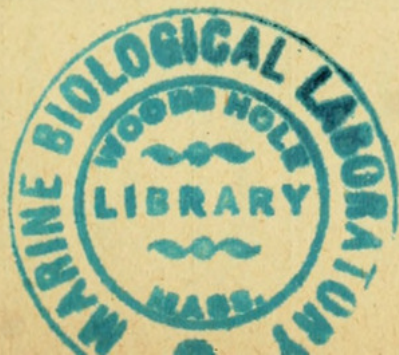
East-Greenland: twice collected, at 61° and 66° .

Labrador?

On Iceland neither is *A. groenlandica*, nor *A. dioica* nor any other of the nearest allies of this species found.

4. ANTENNARIA INTERMEDIA (ROSENVINGE) PORSILD n. sp. Syn.: *A. alpina* var. *intermedia* L. K. Rosenvinge: Andet Tillæg til Grönlands Fonerogamer og Karsporeplanter.. Meddelelser om Grönland III. Forts. 3. 1892, page 698. *A. alpina* ô Th. Holm. Beiträge zur Flora Westgrönlands, Engler's Bot. Jahrb. 8, 1887, page 310.

West-Greenland: hitherto only found a few times between $61^{\circ} 45'$ and $70^{\circ} 05'$. On South Disco, near Godhaven, several stations are known to me. The plant flowers here much later than do *A. alpina* and *A. glabrata* on the same spots, whence I suppose that it here is near its northern limit and should be searched for in more southerly latitudes.



	(1) <i>A. dioica</i> (L.) GAERTN. from Europe and Asia.	(2) <i>A. groenland-ica</i> PORSILD	(3) <i>A. intermedia</i> (ROSEN V.) PORSILD	(4) <i>A. alpina</i> (L.) GAERTN.	(5) <i>A. glabrata</i> (VAHL) PORSILD
Caudex	with rosulate clus- ters and with pros- trate, apically up- ward bent stolons	=1.	=1	=1, the stolons are, however, relatively shorter	cespitose, stolons wanting, with den- sely aggregated clusters of rosulate leaves
Rosulated leaves	lanceolate - spathu- late, ordinarily with small apicu- lus, 15-30 (-45) mm long, 5-9 mm broad	=1, but smaller and narrower, 10- 24mm long, 2-5mm broad	=2	lanceolate - spathu- late, often without apiculus, 10-20mm long, 2-4mm broad	narrow lanceolate, apiculus ordinarily distinct, 10-20 mm long, 1-3 mm broad
Tomentum of rosulate leaves	ordinarily only on the underside, in the var. <i>hyperborea</i> on both sides. Tomentum dense, but thin, snowy white, almost shin- ing, reminding one of napless, worn out cloth.*	equally on both sides. Tomentum dense and thick, not snowy white, but with a faint gray-greenish tint, reminding one of nappy, not worn cloth.*	=2	varying much, near- ly always densely tomentous on the underside, often on both. Sometimes the felt is with interstices, floc- cose, grayish white, not shining	ordinarily tomen- tum quite absent, with isolated ru- dimentary hairs, rarely with small isolated floccose tufts
Flowering stems	12-20 (-25) cm high tomentous	10-16 (-20) cm high tomentous	=2	5-12 (-18) cm high, tomentous	8-10 (-12) cm high, slender, without hairs
Inflorescence	cymose with 3-7 brevipedicellate heads, rarely cor- ymbiform (var. <i>corymbifera</i> HARTM.	=1	subglobose, heads 8-12 small nearly sessile	=1, the var. <i>Frie- seana</i> only with 1-3 heads	ordinarily one large head seldom two.
Length of flower ing heads	10-12 mm	6-8 mm	4-6 mm	6-8 mm	8-12 mm

Involucral bracts	obtuse, entire or faintly crenulate, the scarious parts bright purple or white, the basal parts tomentous	=1	obtuse, entire or faintly crenulate the scarious parts dark greenish brown, basal parts tomentous	acute, irregularly lacerate the scarious parts with various tints of brown, European forms often reddish brown, basal parts tomentous	acute, the scarious parts irregularly lacerate, dark greenish brown, basal parts green without tomentum
Flowers and propagation	dioicous, pistillate and staminate flowers, fertilization normal.	only with pistillate flowers, apogamic	=2	=2	=2
Pappus bristles of pistillate flowers	slender, 20-30 μ thick, rather faintly denticulate	somewhat coarser, 30-40 μ thick, denticulate, teeth of upper parts faintly curved upwards	still coarser, 40-50 μ , basal parts squarrosely denticulate, teeth of the upper parts larger, erectopate	coarse, 50-60 μ , especially in the upper parts densely denticulate, teeth patent, up to 50 μ long	=4

*Through the courtesy of the Botanical Museum of Copenhagen, I have had dried specimens of *A. dioica* and its variety *hyperborea* from some 18 different parts of Europe and Asia for examination. The localities range from Kolguev to Southern France, and from Scandinavia to Western Siberia. Besides, I have seen a good deal of *A. alpina* from various parts of the world, and all the material of the genus from Greenland, preserved in the named Museum.

All species of *Antennaria* in Greenland produce well developed fruits having the power of germination. As staminate flowers are totally wanting, the propagation of all species must be apogamic, as for a long time such has been known to be the case with *A. alpina*. The *A. glabrata* and *A. intermedia*, as they are growing near my home, are without doubt hereditary constant. They often form extended pure patches, the form of which depends on the circumstances of local wind or the outlet of melting water in the spring.

If my understanding of the species be right, *A. alpina* must be regarded as an old species that found its way to Greenland after the glacial period, probably over Smith Sound, where the crossing may have taken place during an epoch with milder climate than now rules in Greenland. *A. groenlandica*, however, belongs to the large contingent of American plants of South Greenland,* that cannot have immigrated by this way. *A. glabrata* and *A. intermedia* are undoubtedly young species, or perhaps species *in statu nascendi*, the former developed from *A. alpina*, the second from *A. groenlandica*.

We have thus in the Greenland species of *Antennaria* a new example of polymorphy in apogamic genera (cfr. *Alchimilla*, *Taraxacum*, *Hieracium*).

Disko, Greenland, Dec. 1913.

EXCURSIONS.

The third excursion of the season was held at Britannia, on the afternoon of Saturday, May 16th. The party walked to a wooded grove, and the time was mostly engaged in botanical observations. At the addresses leaders spoke of the plants, birds, insects, and batrachians observed or collected, and information along general lines of natural history was imparted.

The fourth excursion was held at Fairy Lake. This was on the afternoon of Saturday, May 23rd. After leaving the electric cars, the party walked for a distance, until this ideal spot, known as Fairy Lake, was reached. The excursion was of the nature of a saunter, and the usual addresses were purposely dispensed with, this leisurely walk homewards through the woods of the Beaver Meadow taking for this occasion their place.



Porsild, Morten P. 1914. "The Genus *Antennaria* in Greenland." *The Ottawa naturalist* 28(7), 87–92.

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