DET KONGELIGE DEPARTEMENT
FOR HANDEL, SJØFART, INDUSTRI, HÅNDVERK OG FISKERI

NORGES SVALBARD- OG ISHAVS-UNDERSØKELSER
LEDER: ADOLF HOEL

SKRIFTER OM SVALBARD OG ISHAVET

Nr. 56

J. DEVOLD AND P. F. SCHOLANDER

FLOWERING PLANTS AND FERNS OF SOUTHEAST GREENLAND

WITH 46 FIGURES IN THE TEXT, 7 PLATES AND 2 MAPS

OSLO
I KOMMISJON HOS JACOB DYBWAD
1933

Results of the Norwegian expeditions to Svalbard 1906—1926 published in other series. (See Nr. 1 of this series.)

The results of the Prince of Monaco's expeditions (Mission Isachsen) in 1906 and 1907 were published under the title of 'Exploration du Nord-Ouest du Spitsberg entreprise sous les auspices de S. A. S. le Prince de Monaco par la Mission Isachsen', in Résultats des Campagnes scientifiques, Albert Ier, Prince de Monaco, Fasc. XL—XLIV. Monaco.

ISACHSEN, GUNNAR, Première Partie. Récit de voyage. Fasc. XL. 1912. Fr. 120.00.

With map: Spitsberg (Côte Nord-Ouest). Scale 1 : 100 000. (2 sheets.) Charts: De la Partie Nord du Foreland à la Baie Magdalena, and Mouillages de la Côte Ouest du Spitsberg.

ISACHSEN, GUNNAR et ADOLF HOEL, Deuxième Partie. Description du champ d'opération. Fasc. XLI. 1913. Fr. 80.00.

HOEL, ADOLF, Troisième Partie. Géologie. Fasc. XLII. 1914. Fr. 100.00.

SCHETELIG, JAKOB, Quatrième Partie. Les formations primitives. Fasc. XLIII. 1912. Fr. 16.00.

RESVOLL HOLMSEN, HANNA, Cinquième Partie. Observations botaniques. Fasc. XLIV. 1913. Fr. 40.00.

A considerable part of the results of the ISACHSEN expeditions in 1909 and 1910 has been published in Videnskapsselskapets Skrifter. I. Mat.-Naturv. Klasse, Kristiania (Oslo).

ISACHSEN, GUNNAR, Rapport sur l'Expédition Isachsen au Spitsberg. 1912, No. 15. Kr. 5,40.

ALEXANDER, ANTON, Observations astronomiques. 1911, No. 19. Kr. 0,40.

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HOEL, A. et O. HOLTEDAHL, Les nappes de lave, les volcans et les sources thermales dans les environs de la Baie Wood au Spitsberg. 1911, No. 8. Kr. 4,00.

GOLDSCHMIDT, V. M., Petrographische Untersuchung einiger Eruptivgesteine von Nordwestspitzbergen. 1911, No. 9. Kr. 0,80.

BACKLUND, H., Über einige Olivinknollen aus der Lava von Wood-Bay, Spitzbergen 1911, No. 16. Kr. 0,60.

HOLTEDAHL, OLAF, Zur Kenntnis der Karbonablagerungen des westlichen Spitzbergens. I. Eine Fauna der Moskauer Stufe. 1911, No. 10. Kr. 3,00. II. Allgemeine stratigraphische und tektonische Beobachtungen. 1912, No. 23. Kr. 5,00.

HOEL, ADOLF, Observations sur la vitesse d'écoulement et sur l'ablation du Glacier Lilliehöök au Spitsberg 1907—1912. 1916, No. 4. Kr. 2,20.

VEGARD, L., L'influence du sol sur la glaciation au Spitsberg. 1912, No. 3. Kr. 0,40.

ISACHSEN, GUNNAR, Travaux topographiques. 1915, No. 7. Kr. 10,00.

With map: Spitsberg (Partie Nord-Ouest). Scale 1 : 200 000 (2 sheets).

GUNNAR ISACHSEN has also published: Green Harbour, in *Norsk Geogr. Selsk. Aarb.*, Kristiania, 1912—13, Green Harbour, Spitsbergen, in *Scot. geogr. Mag.*, Edinburgh, 1915, and, Spitsbergen: Notes to accompany map, in *Geogr. Journ.*, London, 1915.

All the above publications have been collected into two volumes as Expédition Isachsen au Spitsberg 1909—1910. Résultats scientifiques. I, II. Christiania 1916.

As the result of the expeditions of ADOLF HOEL and ARVE STAXRUD 1911—1914 the following memoir has been published in Videnskapsselskapets Skrifter. I. Mat.-Naturv. Klasse.

HOEL, ADOLF, Nouvelles observations sur le district volcanique du Spitsberg du Nord. 1914, No. 9. Kr. 2,50.

The following topographical maps and charts have been published separately:

Maps:

Bear Island. 1 : 25 000. 1925. Kr. 10,00.

Bear Island. 1 : 10 000. (In six sheets). 1925. Kr. 30,00.

East Greenland. Eirik Raudes Land from Sofiasund to Youngsund. 1 : 200 000. 1932. Kr. 5,00.

Charts:

No. S. 1. Bear Island. 1 : 40 000. 1932. Kr. 4,00.
„ S. 2. Bear Island Waters. 1 : 350 000. 1931. Kr. 5,00.
„ S. 3. From Bellsound to Foreland Reef with the Icefjord. 1 : 200 000. 1932. Kr. 5,00.
„ S. 5. Norway—Svalbard, Northern Sheet. 1 : 750 000. 1933. Kr. 4,00.
„ S. 6. Norway—Svalbard, Southern Sheet. 1 : 750 000. 1933. Kr. 4,00.

A preliminary edition of topographical maps (1 : 50 000) covering the regions around Kings Bay, Ice Fjord, and Bell Sound, together with the map of Bear Island (1 : 25 000), is published in:

Svalbard Commissioner [Kristian Sindballe], Report concerning the claims to land in Svalbard. Part I A, Text; I B, Maps; II A, Text; II B, Maps. Copenhagen and Oslo 1927. Kr. 150,00.

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A. W. BRØGGERS BOKTRYKKERI A/S

Contents.

Preface.

In the summers of 1931 and 1932 four Norwegian expeditions visited Southeast Greenland from Umivik (abt. 64° 30′ N lat.) to Lindenowfjord (abt. 60° 30′ N lat.). Two of these also worked in Kangerdlugsuak (abt. 68° 15′ N lat.) between Angmagssalik and Scoresby Sound. All the expeditions have made botanical collections, only a small part of which has already been described and published (Bjørlykke 1932, Lid 1932, Omang 1932, 1933). The final working up of the large material from these two years has been entrusted to the present authors. For the sake of completeness we have in this paper also included all the published botanical data of earlier expeditions working in the same tracts. The field work and preparation of the plants in Greenland 1932, and the working up of the entire material of vascular plants at the Botanical Museum in Oslo have been carried out jointly by the authors, whereas the final preparation of the manuscript and photo-illustrations has been done by P. F. Scholander.

To Professor Jens Holmboe we are greatly indebted for having furnished us with such excellent working facilities at the Botanical Museum of the Royal Frederic University in Oslo. Here we have consulted the large Norwegian and foreign herbaria, particularly the excellent Arctic collections. Professor Holmboe has been of invaluable help to us with many fruitful suggestions and we have followed his advice in placing the families in the sequence here used.

We want to thank our friend and authority on Arctic floras Mr. Johannes Lid, Curator at the Botanical Museum, who has followed our work with the greatest interest, and who has given us many valuable hints and advice upon critical matters.

Some of the most critical genera of the material have been sent to the following specialists to whom our thanks are due: Rektor Axel Arrhenius, Oslo *(Carex brunnescens — canescens)*; Dr. Hugo Dahlstedt, Stockholm *(Taraxacum)*; Mrs. Elisabeth Ekman, Stockholm (some hybrids of *Draba*); Lektor S. O. F. Omang, Oslo *(Hieracium)*; Professor Gunnar Samuelsson, Stockholm *(Epilobium)*.

We want to express our most cordial thanks to Dr. Gunnar Horn, *Norges Svalbard- og Ishavs-undersøkelser*, who has generously placed

his time at our disposal in translating part of this paper into English. Dr. Gunnar Horn has also helped us with the maps which have been drawn by Mr. Th. Askheim, *Norges Svalbard- og Ishavs-undersøkelser* Oslo. We are much indebted to Miss Liv Barstad for the drawings in this paper, and to Miss Johanne Nitter for valuable assistance in preparing the maps of distribution.

Our special thanks are due to the leader of *Norges Svalbard- og Ishavs-undersøkelser*, Docent Adolf Hoel, who with his broad and never failing interest in Arctic exploration has given us the opportunity to take part in the expeditions to Greenland.

The material collected on the expeditions 1931 and 1932 have been presented to the Botanical Museum of the University in Oslo by *Norges Svalbard- og Ishavs-undersøkelser.*

Botanical Museum, Oslo. April 1933.

P. F. Scholander.

I. Botanical Investigations in Southeast Greenland South of Angmagssalik, and in Kangerdlugsuak Lat. 68° 15′ N.

The coast south of Angmagssalik as far south as Kap Farvel has been one of the parts of the entire Greenland continent botanically least known, and it should be said at once that a vast amount of work still remains to be done before its rich flora may be considered approximately known. This is at once evident from the low number of species known from most localities (see list p. 10), and from the fact that even during short and fortuitous visits ashore remarkable finds were often made, although time did not allow a systematic search.

W. A. Graah and J. Vahl 1829—30.

The first botanist visiting the then so inaccessible southeast coast of Greenland was Jens Vahl, who as biologist accompanied Lieutenant W. A. Graah, Danish Navy, leader of the famous Danish umiak-expedition 1829—30. Vahl travelled along the coast as far as the little bay south of Kap Rantzau, at Karra Akungnak, whence he returned. He collected plants on the voyage going north, and probably considerably more on the return voyage, altogether in 15 different localities.

Graah, however, continued his voyage as far as Dannebrog's Ø in lat. 65° 20′, where he was forced to turn back, and went south to Imarsivik (Nukarbik) where he wintered 1829—30. On his return he had with him 32 species from Dronning Marias dal (Ekalumiut), and 18 from the island Kemisak and a small bay, Ikatamiut, on the mainland opposite (Graah 1832, p. 95, 191, 192). Besides these species determined by Hornemann we have from this expedition also included a few plants (*Cochlearia*, *Vaccinium* a. o.) mentioned by Graah at various places in his book, but not mentioned in his lists p. 191 and 192.

P. L. P. Sylow 1881.

In 1881 Lieutenant Gustav Holm of the Danish Navy undertook a voyage in the southernmost part of Greenland with P. L. P. Sylow as botanist. They also investigated the southernmost part of the east coast, the Ikerasarsuak tract from Kap Farvel to Kangerajak, from which area Sylow brought home plants from 8 different localities.

P. Eberlin 1883—85.

The next exploration of Southeast Greenland was carried out by the Danish umiak-expeditions led by Lieutenant Gustav Holm in the years 1883—85. Peter Eberlin was the botanist of the southern party of the expedition, led by Vilhelm Garde. Whereas the northern party of the expedition in 1884 in their umiaks reached Angmagssalik where they wintered, Garde and Eberlin turned back from Tingmiarmiut, and next year they met the northern party, coming from Angmagssalik, at Umanak on Griffenfeldt's Ø and together they continued the voyage southwards.

In addition to the large survey work carried out by this expedition in the years 1883—85 on Southeast Greenland, Eberlin brought with him home botanical material from 30 different localities from Umanak and southwards.

We then get a total of 47 botanical localities on the coast from Kemisak to Umanarsuak (Kap Farvel) to which should be added 3 localities impossible to place with certainty, namely "Ikitok" (Vahl), and "Chr. IV Ø" (Sylow) without any information, and also "Ikera-sarsuk" (Vahl) without anything more.

G. Amdrup 1900.

In 1900 the Danish Amdrup expedition on the voyage from its winter camp at Kap Dalton south of Scoresby Sound and down to Angmagssalik, also visited a place in Kangerdlugsuak, viz. Skærgaards Halvø. From this point the leader of the expedition Lieutenant G. Amdrup, Danish Navy, brought home 30 phanerogams. For comparison we have in our lists also included his 2 nearest localities, viz. Mikisfjord to the north and N. Aputitek to the south, which points really are outside Kangerdlugsuak.

B. Bjørlykke and Th. Vogt 1931.

Since the time of these four Danish expeditions — of which three visited Southeast Greenland and one Kangerdlugsuak — these tracts have not been investigated botanically until the two Norwegian expeditions came to the country in 1931. That year *Norges Svalbard- og Ishavs-undersøkelser* sent out an expedition in the M/S "Heimen" led by Professor Thorolf Vogt, and with stud. real. Bjørn Bjørlykke as botanist. Bjørlykke brought home a large collection from the districts Umivik, Akorninarmiut, and Tingmiarmiut to which collection Vogt has added some very important finds which he has been kind enough to place at our disposal. A preliminary report on the most interesting botanical discoveries of this expedition has been prepared by Bjørlykke (1932), and S. O. F. Omang (1932).

J. Kr. Tornøe 1931.

In the same year Peter S. Brandal of Sunnmøre, with the support of some Norwegian newspapers, sent the S/S "Signalhorn" to Southeast Greenland. The leader of the expedition was Mr. J. Kr. Tornøe who also made collections of plants. The expedition worked in the Kangerdlugsuak, Tingmiarmiut, and Kangerdlugsuatsiak tracts. The botanical material brought home has been worked up and published by J. Lid (1932), and S. O. F. Omang (1932).

J. Devold and P. F. Scholander 1932.

In 1932 Peter S. Brandal again sent out an expedition to the same coast, this time led by Peter S. Brandal jr. in the S/S "Polaris". With contributions from the Anatomical Institute of the University in Oslo, *Norges Svalbard- og Ishavs-undersøkelser* were able to send the present authors as botanists with this expedition. Botanical work was carried out in Akorninarmiut, Tingmiarmiut, and Kangerlugsuatsiak. After having visited these tracts the expedition sailed northwards to Kangerdlugsuak, between Angmagssalik and Scoresby Sound, with one of the authors (Scholander) as botanist, whereas the other (Devold) already had left the "Polaris" to join another expedition sent out to the Greenland waters by *Norges Svalbard- og Ishavs-undersøkelser* in the M/S "Veslemari" and led by Dr. Gunnar Horn. The botanical work of this expedition was carried out in the same regions as that of the preceding, with the exception of Kangerdlugsuak, and in addition in Umanak, Anoritok and Auarket tracts.

II. Botanical Localities.

In the list below will be found all localities from which plants have been collected in Southeast Greenland and Kangerdlugsuak, partly our own and partly previous localities taken from the literature.

In connection with this list, which as regards the older localities is based upon Conspectus Florae Groenlandicae and sometimes also the travel accounts, we have prepared a map of the localities where all names have been grouped according to the division into districts given by G. Holm and published in "Meddelelser om Grønland", Vol. IX, p. 343. In order to carry through a consistent limitation of our task in the most southerly part of our area, we have found it a practical necessity to define the east coast as distinct from the west coast, and have therefore drawn an arbitrary boundary line naturally starting from Kap Farvel and going northwards. We have studied the descriptions and maps of this part of the country, and have tried to place the boundary in the most inaccessible places as far as possible outside

presumably good botanical localities. We wish to point out that this boundary is not intended to be of any biological significance, as it is at present impossible to draw any such line on account of lacking or scantly information about the vegetation in this area. It is, however, possible and probable that there is a real difference between the flora of the fjords coming from the southwest with its *Alnus*, *Betula pubescens*, *Ledum* etc. and the flora of the fjords coming from the southeast being much more influenced by the drift-ice. Some of the localities situated at the southwestern fjords — in Consp. Fl. Groenl. referred to the east coast — have therefore been excluded from our lists.

From the map p. 211 it might perhaps seem as if the southeast coast is rather well explored judging from all the black dots scattered along the coast. This is, however, far from being the case as only very few of these localities have been so closely examined that it is possible to make approximately representative plant lists. Apart from the northern districts of Akorninarmiut, Umanak, and Tingmiarmiut the flora of the inner fjords is yet unknown, and it is still here one can expect the most prolific vegetation. In order to give a picture as fair as possible, not of the real number of species in each locality, but of how much there remains to be done of botanical work in this so interesting part of Greenland, we have in the list of localities given the number of species known from each place according to the literature and our own investigations.

It is also stated in this list the persons who have visited the various localities and when. In cases where the botanical locality found in literature is only given as a fjord, sound or such like, we have according to best judgement and by studying the travel accounts, photographs etc. tried to place the localities on the map at points where it appears that the botanist has been ashore, camped, done survey work etc.

Some of the inaccuracies undoubtedly present on this map, we hope will be cleared up and corrected in the future.

List of Localities.

The figure in the first column gives the number of species now known from that locality, the figure in parenthesis gives the number of the species previously recorded from the same locality.

93 (30) **Kangerdlugsuak.**

[18 Mikisfjord: G. Amdrup 9/8 1900.]
30 Skærgaards Halvø: G. Amdrup 9/8—10/8 1900.
38 Skardet: J. Kr. Tornøe 22/8 1931, P. F. Scholander 29/8 1932.
13 Spekkpynten: P. F. Scholander 19/8 1932.
19 Elvefaret: J. Kr. Tornøe 21/8 1931.
58 Brandal: J. Kr. Tornøe 21/8 1931, P. F. Scholander 22/8 1932.
71 Storfjord Radio: P. F. Scholander 25/8, 26/8, 27/8 1932.

30 Brandalfjell: P. F. Scholander 23/8 1932.
51 Polarisbreen: P. F. Scholander 21/8 1932.
57 Amdrupneset: P. F. Scholander 28/8 1932.
[23 North Aputitek: G. Amdrup 11/8—16/8 1900.]

[184 Angmagssalik].

53 Umivik.

3 Gabeløya (Putulik): W. A. Graah 17/7 1829.
41 Nordenskiölds Nunatak: B. Bjørlykke 19/8 1931.
10 Utermiut: B. Bjørlykke 20/8 1931.
15 Otto Sverdrupfjorden: B. Bjørlykke 21/8 1931.

18 Igdloluarsuk.

18 Kemisak: W. A. Graah July 1829—July 1830.
Ikatamiut: W. A. Graah 13/7 1829.

173 (32) Akorninarmiut.

59 Kikut: B. Bjørlykke 26/8 1931.
60 Eidsfjorddalen: B. Bjørlykke 25/8 1931.
9 Husøya: J. Devold 18/8 1932.
38 Imarsivik: B. Bjørlykke 27/8 1931.
58 Imarsivikøya: B. Bjørlykke 24/8 1931.
22 Floneset: J. Devold 18/8 1932.
71 Trollfjordeidet: B. Bjørlykke 13/8 1931.
1 Trollfjordbotn: Th. Vogt 13/8 1931.
80 Devoldlia: J. Devold and P. F. Scholander 10/8 1932.
83 Kvanndalen: J. Devold 18/8 1932.
127 Finnsbu: B. Bjørlykke 8/8, 9/8, 10/8 1931; J. Devold and P. F. Scholander 24/7, 10/8, 11/8, 14/8 1932; J. Devold 17/8 1932.
17 Myrodden: Th. Vogt 5/8 1931; J. Devold 15/9 1932.
18 Eskimoneset: J. Devold and P. F. Scholander 12/8 1932.
136 (32) Dronning Marias dal: W. A. Graah 30/8—3/9 1829; B. Bjørlykke 4/8—6/8 1931; J. Devold and P. F. Scholander 24/7, 12/8 1932; J. Devold 20/8, 16/9 1932.
29 Skjoldungen, inner north side: B. Bjørlykke 7/8 1931.
1 Moreneneset: Th. Vogt 5/8 1931.
2 Bjørlykkeneset: Th. Vogt 6/8 1931.
9 Kornok: J. Devold 21/8 1932.
1 Hestmannøyane: Th. Vogt 27/8 1931.
5 Midterhuset: J. Devold 21/8 1932.

148 (60) Umanak.

65 (6) Pilerkit (Umanak fjord): P. Eberlin 13/7, 14/7 1885; B. Bjørlykke 14/8 1931.
41 Claradalen: J. Devold 12/9 1932.
101 Innfjorden: B. Bjørlykke and Th. Vogt 15/8, 16/8 1931; J. Devold 11/9 1932.
103 Vogtsbu: B. Bjørlykke 14/8, 15/8, 17/8 1931.
25 Rudiøya: B. Bjørlykke 16/8 1931.
59 Umanak (on Griffenfeldts Island): P. Eberlin 9/7, 12/7, 15/7 1885.

138 (23) **Tingmiarmiut.**

81 Framneshytta: J. Devold 10/9 1932.
74 Lomvatnet: B. Bjørlykke 2/8 1931.
80 Tvihamna: J. Devold 9/9 1932.
52 Igdlormiut: B. Bjørlykke 2/8 1931.
123 (18) Brattneset (Tingmiarmiut): P. Eberlin 28/7—2/8 1884, 8/7 1885; J. Kr. Tornøe 1/9 1931, J. Devold and P. F. Scholander 8/8 1932
32 Langholmen: B. Bjørlykke 3/8 1931.
4 Ekalungmiut: P. Eberlin 7/7 1885.
1 Narksak: W. A. Graah 25/8 1830.

Ikermiut: no localities.

30 Puisortok.

5 Ingerkajarfik: P. Eberlin 26/7, 9/8 1884, 7/7 1885.
1 Rudøya: P. Eberlin 23/7—25/7, 9/8 1884.
10 Puisortok: P. Eberlin 10/8—12/8 1884, 3/7—6/7 1885.
12 Karra Akungnak: P. Eberlin 6/7—23/7 1884, 20/7—25/7 1885.
5 Kap Rantzau: P. Eberlin 20/7 1884.

66 (56) **Anoritok.**

1 Inugsuit: J. Devold 7/9 1932.
23 Tennøya: J. Devold 7/9 1932.
11 Kanajorkat: P. Eberlin 1884.
35 Anoritok (Okkiosorbik): J. Vahl 18/6—20/6 1829, P. Eberlin 2/7, 16/8—18/8 1884, 2/7 1885.
14 Kap Tordenskjold: P. Eberlin 18/8—20/8 1884.

70 (34) **Auarket.**

2 Koremiut: J. Vahl 1829.
51 Pilskoghytta: J. Devold 6/9 1932.
5 Karra: P. Eberlin 1884.
5 Taterait: J. Vahl 17/6—18/6 1829; P. Eberlin 21/8—23/8 1884.
25 Ingitait: P. Eberlin 23/8—26/8 1884.

89 Iluilek.

56 Kangerdluluk: J. Vahl 1829; P. Eberlin 26/8—27/8 1884.
1 Kajartalik: P. Eberlin 30/6—2/7 1885.
18 Serketnua: J. Vahl 28/5—14/6 1829; P. Eberlin 27/8—30/8 1884, 23/6—30/6 1885.
3 Kangek: J. Vahl 23/5 1829.
13 Iluilek: P. Eberlin Aug. 1883, 8/8 1885.
29 Ivimiut: J. Vahl 23/5—28/5 1829; P. Eberlin 23/6 1885.
1 Kasingertok: P. Eberlin 3/8—7/8 1883, 28/6—29/6, 31/8 1884.
16 Kutek: J. Vahl 23/5 1829; P. Eberlin 10/8—12/8 1883, 5/8 1884.

155 (82) **Kangerdlugsuatsiak.**

4 Kutekfjorden: J. Kr. Tornøe 9/9 1931.
15 Straumen: J. Kr. Tornøe 8/9 1931.
50 Grytvika: J. Devold 2/9—3/9 1932.
78 Mortensberg: J. Kr. Tornøe 9/9 1931; J. Devold and P. F. Scholander 26/7 1932.
6 Svartvika: J. Devold 2/9 1932.

20 Walløehytta (= Nagtoralik, in Lid 1932): J. Kr. Tornøe 6/9 1931.
11 Kangerdluarak: P. Eberlin 14/8—18/8 1883, 16/6—23/6 1885.
32 Nordpollen: J. Devold 31/8, 1/9 1932.
107 Grønlia: J. Devold 29/8, 30/8 1932.
1 Nanusek: P. Eberlin Aug. 1883.
48 Fossheim: Th. Iversen 27/7 1932; J. Devold and P. F. Scholander 31/7 1932.
1 Sagdlia: P. Eberlin 1883.
70 Nenese: J. Vahl 1/5—23/5 1829.
35 Persvatnet: J. Devold and P. F. Scholander 31/7 1932; J. Devold 24/8 1932.
25 Møretind: J. Devold and P. F. Scholander 28/7 1932.
114 Møretun: J. Devold and P. F. Scholander 31/7, 3/8 1932; J. Devold 23/8 1932.
123 (11) Narsak: P. Eberlin Aug. 1883; J. Devold and P. F. Scholander 27/7, 29/7 1932.
1 Dronning Louises Ø: P. Eberlin 7/9, 21/8 1883, 8/8 1885.

85 Ikerasarsuak.

5 Kangerajak: P. Sylow 29/7—3/8 1881.
3 Kekertatsiak: P. Eberlin 11/6—27/6 1884, 23/5—12/6 1885.
36 Aluk: J. Vahl 26/4—29/4 1829; P. Sylow 28/7 1881.
45 Nunatsuk: (J. Vahl 26/4 1829?); P. Sylow 18/7—27/7 1881; P. Eberlin 31/7 1883, 3/6—11/6 1884; M. P. Porsild 1930.
17 Kekertak: J. Vahl 1/4—26/4 1829.
8 Kapiarfik: P. Sylow 11/7—16/7 1881.
1 Kapingajak: P. Sylow July 1881.
1 Akajaruanek: P. Eberlin 22/5 1885.
16 Tunua: P. Eberlin 1883, 1885.
3 Kangerdlup Pava: P. Sylow Aug. 1881.
1 Itivdlek: J. Vahl 1829, 1830.
5 Umanarsuak (Kap Farvel): P. Sylow Aug. 1881.
10 (Chr. IV Ø: P. Sylow 1881, cannot be precisely located).
10 (Ikitok: J. Vahl 1829, cannot be precisely located).
25 (Ikerasarsuk: J. Vahl 1829, cannot be precisely located).

It should be noted that many of Vahl's plants have most probably not been collected at the very early dates given above, but later in the summer on his return voyage, of which, however, no details are known.

The following abbreviations of the names of the collectors are used in this paper.

(A) = G. Amdrup.
(B) = B. Bjørlykke.
(D) = J. Devold.
(E) = P. Eberlin.
(H) = N. Hartz.
(I) = Thor Iversen.
(K) = Chr. Kruuse.
(S) = P. F. Scholander.
(T) = J. Kr. Tornøe.
(V) = Jens Vahl.

If more than one person has collected plants in a locality the initials of the collectors are combined in the following way: (H, K) = N. Hartz and Chr. Kruuse.

III. Enumeration of Flowering Plants and Ferns and their Distribution.

Pteridophyta.

Lycopodiaceae.

1. *Lycopodium alpinum* L.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B), Innfjorden (Vogt, D).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Fossheim (D, I, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Anoritok: Kanajorkat (E).
Iluilek: Kangerdluluk (E), Serketnua (V), Kutek (E).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).
Ikerasarsuak: Aluk (V), Kekertak (V), (Ikerasarsuk (V)).

Common all along the coast northwards to and including the Angmagssalik district, and is often observed fertile. North of Kap Wandel at 66° 18′ N. lat. it has been found only in Scoresby Sound where it is very rare and has its northern limit.

2. *Lycopodium annotinum* L.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Fossheim (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Iluilek: Kangerdluluk (V).

Rather common in Southeast Greenland as far as the Angmagssalik district, but north of this tract it has been found only at its northern limit in Scoresby Sound where it is reported to be common in the inner parts. It often forms runners up to a metre in length, and is frequently found copiously fruiting. Most of our specimens must be referred to f. *pungens* Desv.

Lycopodium complanatum L. var. *chamaecyparissus* (A. Br.) Rosenv.

On the east coast it is only known from Angmagssalik, where it is very rare (Kruuse).

3. *Lycopodium Selago* L.

Kangerdlugsuak: Skardet (S), Brandalfjell (S), Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S) Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Anoritok: Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Serketnua (V), Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), Kapiarfik (Sylow), Tunua (Sylow).

Common along the entire southeast coast; it is common in Angmagssalik, and is known from several points on the coast northwards to Scoresby Sound. Here — as in Eirik Raude's Land — it is also common. It extends to Germania Land, where it is very rare. The northern limit is at Danmarks Havn, abt. 76° 46′ N. lat. (Lundager). In our material we have all transitions from coarse, typical *L. Selago* up to 35 cm in height, to the little short f. *appressa* Desv.

Selaginellaceae.

4. *Selaginella selaginoides* (L.) Link.

Pl. I.

Akorninarmiut: Trollfjordeid (B), Dronning Marias dal (S).
Umanak: Vogtsbu (B).

Has previously not been found on the east coast, where it must be rare — in spite of its inconspicuous appearance. As a rule, the plant was found below crags on the mountain slopes. In Dronning Marias dal — just above the Norwegian station — it was found at an altitude of 300 metres above sea-level. On the hill side above the station Vogtsbu in Umanak it was found at an altitude of about 200 metres, but only sparsely. At Trollfjordeid it grows sparsely along the river in association with ericaceous plants and *Sedum roseum*.

Equisetaceae.

5. *Equisetum arvense* L.

Akorninarmiut: Devoldlia (D, S), Kvanndalen (D), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Kangerdlugsuatsiak: Kangerdluarak (E).

Quite common on the southeast coast, excepting the southernmost part, but is often difficult to discover in the luxuriant growth there. From Angmagssalik it is reported to be rare, and north of this district it has not been found below Kap Dalton in lat. 69° 25′ N. (H, K).

In Scoresby Sound and Eirik Raude's Land it is common. Farther north, in Danmarks Havn in lat. 76° 46′ (Lundager) it is quite rare, and north of this place it has been found only in a few localities on the north coast.

The greater part of our specimens from the southeast coast are erect, unbranched below, and belongs to the f. *borealis* Milde.

6. *Equisetum variegatum* Schleich.

Akorninarmiut: Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D, Vogt), Vogtsbu (B), Rudiøya (B).

Previously not known south of Angmagssalik. Between this place, where it is rare, and Kap Dalton in lat. 69° 25′ (H, K) it has not been collected.

In Scoresby Sound and Eirik Raude's Land it is — like the preceding species — common, and has been found as far north as the Moskusokse Mts. in Germania Land (Lundager). It is known from one locality on the north coast of Greenland, viz. on the southwest

coast of Hendrik Island in lat. 82° 3′ (Th. Wulff). We have in our material all transitions to the f. *anceps* Milde. The closely related *Equisetum scirpoides* Michx. was searched for in vain; it is still unknown on the east coast.

Ophioglossaceae.

7. *Botrychium boreale* Milde.

(*B. lunaria* β *divisum* Lge.)

Pl. I.

Akorninarmiut: Kvanndalen (D).
Tingmiarmiut: Brattneset (D, S).

Previously it has been reported from lat. 61° 4′ on the east coast (Fl. Arct. Ostenf. 1902, p. 2), which locality most likely corresponds to the Kangerdluluk of Vahl, from where, however, β *divisum* is not mentioned in Conspect. Fl. Groenl. with appendix, but only the chief form *B. lunaria*. However this may be, *B. boreale* is certainly very rare on the east coast. We found only a total of 3 specimens: 2 on the talus slope near the Eskimo camp site of Brattneset, and a single specimen in Kvanndalen, which is then its northern limit.

8. *Botrychium lanceolatum* (Gmel.) Ångstr.

Pl. I.

Akorninarmiut: Finnsbu (B, D).

Very rare on the east coast where it previously only had been found at Angmagssalik. We are only in the possession of two specimens from Finnsbu, which are 6,5 and 7,5 cm in height respectively. The northern limit is at Akiliarisek in lat. 66° 18′ (K).

9. *Botrychium lunaria* (L.) Sw.

Akorninarmiut: Dronning Marias dal (D, S), Finnsbu (D, S).
Tingmiarmiut: Brattneset (D, S).

Previously found:

Umanak: Umanak fjord = Pilerkit (E).
Puisortok: Karra Akungnak (E).
Iluilèk: Kangerdluluk (V).

B. lunaria, too, appears to be rare in Southeast Greenland. In Angmagssalik it is very rare, and the same is the case in Scoresby Sound, where it has been found up to Fleming Inlet (71° 40′) which is the northern limit (H, K). From the stretch between the Angmagssalik district and Scoresby Sound we are not aware of any published locality.

Our largest specimen attains a height of nearly 15 cm.

Polypodiaceae.

10. *Asplenium viride* Huds.

Pl. I.

Akorninarmiut: Imarsivikøya (B), Finnsbu (B), Dronning Marias dal (S).
Umanak: Claradalen (D), Innfjorden (D).

Has previously not been found south of Angmagssalik where it is very rare, and has its northern limit at Kakasuak in lat. 66° 8′ (K).

It is often found in cracks in the rock or on small ledges, and prefers some altitude above the sea.

11. *Athyrium alpestre* (Hoppe) Rylands.

Pl. I.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Finnsbu (B), Dronning Marias dal (D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Fossheim (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Iluilek: Kangerdluluk (V), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow), Kangerajak (Sylow)[1].

Rather common on the southeast coast, in contradistinction to the west coast, where it is said to be very rare. Its characteristic green and brown, compact tufts occur especially at some height above the sea, and is found as far north as Kikut in lat. 63° 32′ (B) being so far its northern limit in East Greenland. In Dronning Marias dal it was not found below an altitude of 500 metres above sea-level.

Our rich material is rather homogeneous, having the aspect of *A. alpestre* var. *americanum* Butters (Butters 1917, p. 204). The leaves are more linear oblong, from 4 to 8 times as long as wide, whereas the same figures in our Scandinavian material are 3 to 5 (6). The pinnae on our Greenland plants are more distant, and the pinnules are more deeply incised, giving the leaf the characteristic skeleton-like appearance of var. *americanum*. The sori are as a rule 1/2 mm, submarginal and remains of a rudimentary indusium are very seldom seen. Most specimens are only indistinctly tripinnatifid and therefore more

[1] This locality has previously not been published. The specimen will be found in Herb. Bot. Mus. Oslo with the label "Øst Grønland, N for Øen Aluk 30 juli 1881 Leg. Sylow". As far as we can gather from the travel account this locality must have been Kangerajak.

allied to the Eurasian main form; but with regard to habitus they must in most cases be referred to var. *americanum*.

(See also Fernald: The Eastern American Occurrence of *Athyrium alpestre*. — Rhodora, 1928, p. 44).

12. *Cystopteris fragilis* (L.) Bernh.

Kangerdlugsuak: Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Imarsivik (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Tingmiarmiut: = Brattneset (E).
Anoritok: Anoritok (V).
Iluilek: Kangerdluluk (V), Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
(*Ikerasarsuak*: Ikerasarsuk (V)).

This species is perhaps the most common fern in East Greenland. It had previously not been found on the coast from Angmagssalik to Kap Dalton (69° 25′), but we found it quite common in the Storfjord (Kangerdlugsuak), here occurring to an altitude of 1000 metres. In Scoresby Sound and Eirik Raude's Land it is also quite common, and in the latter area it was found 1300 metres above the sea (S), usually indicating that the plant will also be found further northwards. On the east coast it is further known from Germania Land (Lundager), and from Independence Bay at Cape Schmelck (P. Freuchen) where it has its northern limit. It has not been noted on the north coast.

13. *Dryopteris Filix mas* (L.) Schott.

Pl. I.

Kangerdlugsuatsiak: Nordpollen (D), Grønlia (D).

This species has previously not been found in East Greenland. It occurred in large numbers on the precipitous southern slope of the point south of Grønlia. The specimens here frequently measured nearly 80 cm. It grew along with *Lathyrus maritimus*, *Galium triflorum*, *Viola labradorica*, *Angelica archangelica*, *Stellaria calycantha* a. o.

Some specimens were also found on the luxuriant slopes below the rocks at Nordpollen.

14. *Dryopteris Linnaeana* C. Chr.
(*D. pulchella* (Salisb.) Hayek)

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (B), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Anoritok: Kanajorkat (E).
Iluilek: Kangerdluluk (E, V).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).

Commonly distributed throughout Southeast Greenland, and occurs especially in willow scrub, at the foot of rocks, on talus, and in other places with tall vegetation — frequently along with *D. phegopteris*.

Found at many points in the Angmagssalik district, but is not known north of it. Now and then a specimen more than 30 cm in height is met with.

15. *Dryopteris phegopteris* (L.) C. Chr.

Akorninarmiut: Trollfjordeid (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Iluilek: Kangerdluluk (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow), Tunua (E), (Ikerasarsuk (V)).

Commonly distributed throughout Southeast Greenland like the preceding species along with which it often grows. At many points in Akorninarmiut these two ferns are forming large stands along the small brooks flowing through the willow scrub on the mountain slopes, readily recognized even at a considerable distance on account of their characteristic green colour, being of a different shade from the green of the other vegetation.

According to Kruuse *D. phegopteris* is rare in Angmagssalik where it has — like the preceding species — its northern limit.

Specimens with rachis more than 30 cm in length are not infrequently seen.

16. *Dryopteris spinulosa* (O. F. Müll.) sens. lat.

Pl. I.

Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Nordpollen (D), Møretun (D, S), Narsak (D, S).

Previously found:

Anoritok: Anoritok (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Tunua (Sylow).

Rare in the localities mentioned. The northern limit is at Anoritok (V).

Dr. C. Christensen of Copenhagen refers all specimens previously collected on Southeast Greenland to *D. spinulosa* var. *americana* (Fisch.) Weatherby (see M. Porsild 1930, p. 8). Fernald (1926, p. 146) gives a description of this variety, being non-glandular, and with basal inferior and superior pinnules of the lowest pinnae remote, 0,5—2 cm apart. About half the number of our specimens are more or less strongly glandulose on the lower side of the leaves, but with a mostly glabrous indusium and the corresponding measures are only 0,2—0,5 cm. Further, in var. *americana* the basal inferior pinnule of the lowest pinnae should be 2—4 times as long as the superior, and commonly exceeding the 2nd inferior pinnule in length. In our material the length of the inferior pinnule is very rarely as much as twice that of the superior; it is, however, always longer than the second inferior pinnule.

From these disagreements it will be evident that not all specimens from Southeast Greenland fit in naturally with Fernalds description of var. *americana*.

Professor Jens Holmboe, who has paid much attention to *D. spinulosa* (O. F. Müll.) Kuntze and *D. austriaca* (Jacq.) Woynar in the field and who is very well aquainted with the Norwegian forms has been kind enough to look through our material. He says that it is not possible for him to distinguish between the well-developed Greenland specimens and the Scandinavian *D. austriaca*, whereas, on the other hand, none of them can be referred to *D. spinulosa* in the restricted sense.

The scales of the stipe in our specimens taper into a point, but is often light brown without a dark brown medial stripe.

An attempt to refer our material definitely to one of the 3 subdivisions *D. austriaca* (Jacq.) Woynar, *D. spinulosa* (O. F. Müll.) Kuntze and the mentioned variety *americana* (Fisch.) Weatherby proved so difficult that the authors of this paper did not venture on the basis of their scanty material to take a definite stand in this matter.

Our specimens do not rarely attain a height of 50 cm.

17. *Polystichum Lonchitis* (L.) Roth.

Akorninarmiut: Eidsfjorddalen (B), Imarsivik (B), Trollfjordeidet (B), Devoldlia (D), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).

Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Anoritok: Tennøya (D).
Kangerdluksuatsiak: Grytvika (D), Mortensberg (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Anoritok: Anoritok (E).
Iluilek: Serketnua (E), Kutek (E).
Ikerasarsuak: Tunua (Sylow), Nunatsuk (Sylow) (Rosendahl 1918, p. 212.)

Rather common on grassy slopes, talus, in canyons etc. throughout the investigated area south of Angmagssalik.

In the Angmagssalik district it has been found at many points, but not farther north on the east coast. Some of our specimens attain a height of nearly 40 cm.

18. *Woodsia alpina* (Bolt.) Gray.
(*W. hyperborea* R. Br.)

Umanak: Claradalen (D).

Two entirely typical specimens, 5 and 6 cm in height respectively, were found of this fern, which undoubtedly is extremely rare throughout East Greenland. As typical *W. alpina* they are conspicuously different from *W. ilvensis* in their bright green colour, missing scales, pinnae as broad as long with very shallow incisions etc.

Some sterile specimens from Narsak are not quite typical, and are therefore not included in the list.

Woodsia alpina has previously not been found south of Angmagssalik as the locality Anoritok in Consp. Fl. Groenl. p. 189 is cancelled (see Rettelser og Tilføielser p. 445 in the same paper).

In the Angmagssalik district Kruuse reports it to occur "here and there", and to be even "common" in Scoresby Sound between which areas it is mentioned from 4 points. It is probable that the species formerly was considered in a wider sense than now stated in the Scand. Flora of Holmberg (1922, p. 4). Rosendahl (1918, p. 213) records it from one single locality in Eirik Raude's Land: Frans Josef Fjord 73° 20 (Copeland, Pansch), its northern limit.

19. *Woodsia glabella* R. Br.

Not observed by us, previously reported from[1]:

Anoritok: Anoritok (V).

[1] Rosendahl's record (1918, p. 214) "Ruds Ø 62° 10'1891 J. Hartz" must be due to a mistake as N. Hartz has not visited that place as far as we can see.

This is the most southerly locality in East Greenland for this graceful little fern. It is very rare in the inner part of the Angmagssalik district, and is otherwise only known from Scoresby Sound and Eirik Raude's Land (1 200 metres above sea-level at Kap Humboldt, Vaage), where it is quite common. Further it is reported from Germania Land, and Cape Schmelck in Independence Bay (P. Freuchen), the latter being its most northern locality in Greenland.

20. *Woodsia ilvensis* (L.) R. Br.

(*W. ilvensis* R. Br. α *rufidula* (Michx.) Koch.)

Kangerdlugsuak: Brandalfjell 900 m (S), Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Anoritok: Anoritok (V), Kap Tordenskjold (E).
Iluilek: Kangerdluluk (V), Kutek (E).
Ikerasarsuak: Nunatsuk (Sylow), (Ikerasarsuk (V)).

As shown by the numerous localities, this *Woodsia* is very common in Southeast Greenland, and is found nearly everywhere on dry ground. The height does, as a rule, not exceed 10 cm, and is often only some few centimetres.

It is very common in Angmagssalik, and has previously also been found in several places between this area and Scoresby Sound where it is common. In Eirik Raude's Land it must be very rare, as it has only been found once, by Hartz and Kruuse, on Sabineøya this being its northern limit so far. In Kangerdlugsuak it was collected at an altitude of 900 metres.

Spermatophyta.

GYMNOSPERMAE

Cupressaceae.

21. *Juniperus communis* L.

Pl. I.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Imarsivik = Nukarbik (Graah), Dronning Marias dal (Graah 1832, p. 108).
Umanak: Umanak (E).
Puisortok: Ingerkajarfik (E).
Anoritok: Anoritok (V).
Iluilek: Kangerdluluk (V), Kangek (V).
Ikerasarsuak: Aluk (Sylow), Nunatsuk (Sylow), Kapiarfik (Sylow), Kangerdlup Pava (E).

Very common on dry slopes throughout the whole southeast coast to Angmagssalik, where it is not rare in the inner tracts. It has not been found north of Kap Wandel in lat. 66° 18′ N. (Kruuse).

We have only seen the creeping, dwarfed form, *J. communis* var. *nana* (Willd.) Loud. Copiously fruiting with berries not rarely having a diameter of 8 mm or more.

ANGIOSPERMAE

Dicotyledones.

Ranunculaceae.

22. *Coptis groenlandica* (Oeder) Fernald.

(*Coptis trifolia* Auct.)

Fig. 1.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B), Innfjord (D).

Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Puisortok: Puisortok (E).
Anoritok: Kanajorkat (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (Sylow), Tunua (Sylow), (Ikerasarsuk (V)).

Fig. 1. Carpels of *Coptis groenlandica*. Specimen from Southeast Greenland. Magn. 2,7/1.

Fernald has shown (Rhodora 1929, p. 136) that the original *Coptis trifolia* (L.) Salisb. from Northeastern Asia and Alaska in several respects differs from Oeder's *Anemone groenlandica* of Northeastern America and Greenland, and for the present he considers them to represent two different species. *Coptis groenlandica* is common throughout the southeast coast. The largest numbers were found at the foot of rocks where it could form a compact peaty layer of densely interwoven roots. It is also not rare in the willow scrubs.

In Angmagssalik it is known from many points, and has there its northern limit at the Kangerdlugsuatsiakfjord (Kruuse).

23. *Ranunculus acris* L.

Not seen by us, previously found:

Ikerasarsuak: Nunatsuk (Sylow, M. Porsild), Akajaruanek (E).

We did not succeed in finding this plant on the southeast coast. According to Porsild it is very common at Nunatsuk. From this point and up to its northern limit in Angmagssalik — where it is rare — it has apparently never been observed. We have, at any rate, not been able to find in the literature any locality corresponding to the statement by Ostenfeld in his list of 1926.

It is probable that the plant occurs on the coast mentioned, but it must be rare.

24. *Ranunculus glacialis* L.

Fig. 2.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).

Previously found:

Kangerdlugsuak: Mikisfjorden (A), Skærgaards Halvø (A), N. Aputitek (A).

It is rare in Angmagssalik, and has not been found further south, but is more or less common up to Scoresby Sound, and also in Eirik Raude's Land where Vaage found it to an altitude of 700 metres. At the northern limit in Germania Land it is common (Lundager).

A beautiful fasciation was found at Storfjord Radio in Kangerdlugsuak (Fig. 2). The stem was 8 cm in length and ribbon-shaped, 1,5 cm broad, and about 3 mm thick, curved in the form of an S. It has two crowns of stem-leaves, 6 in the upper and 5 in the lower. Below the latter the stem is naked for a length of 3 cm down to the large rosette of normal leaves. The flower is oblong, 3,5 cm in length, with the naked thalamus projecting in the middle as a longitudinal, uneven and curved edge having a length of 2 cm. The crown is more or less filled, on account of a petalization of part of the stamens, and there are also irregularities with regard to the arrangement and size of the sepals.

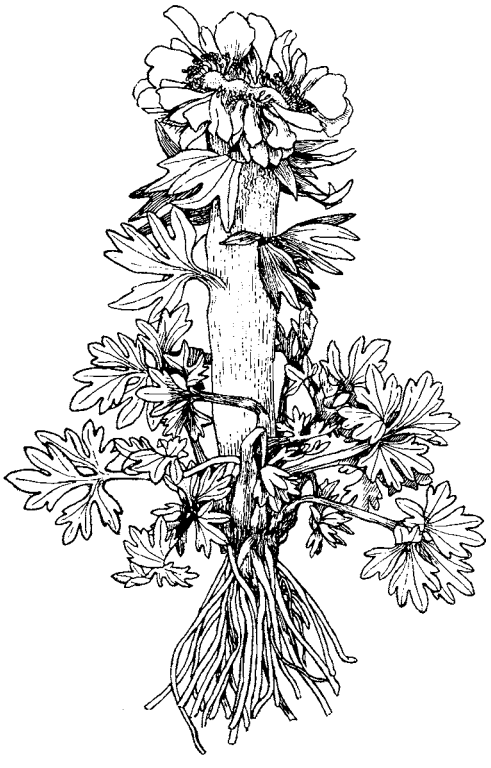

Fig. 2. Fasciation of *Ranunculus glacialis* from Kangerdlugsuak. Size 4/5.

How far cases like the mentioned are due to an insufficient fission at a very early stage, into 2 or 3, perhaps several, individual stems (cf. Siamese twins), or are due to an abnormal prolification for some unknown reason, based on a single disposition, is as far as we can make out still an open question. An active coalescence of two originally separate dispositions is very improbable.

Corresponding fasciation by other members of the genus *Ranunculus* is common and has also previously been described in *R. glacialis* (Cf. O. Penzig: Pflanzen-Teratologie, Bd. II, p. 24).

25. *Ranunculus hyperboreus* Rottb.

Akorninarmiut: Myrodden (Vogt).
Kangerdlugsuatsiak: Narsak (S).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Iluilek: Ivimiut (E, V).
Kangerdlugsuatsiak: Nenese (V).

Like other aquatic plants *R. hyperboreus* appears to be very rare in Southeast Greenland. It has been found in several places in Angmagssalik, being, however, very rare here (Kruuse). It seems not yet to have been found between Eskimo Ø (lat. 66° 15′ N.) and Kap Dalton (lat. 69° 25′ N.), and neither did we find the plant in Kangerdlugsuak.

In Scoresby Sound and Eirik Raude's Land it is rather common and has been found at 2 points in Germania Land of which the northernmost is Danmarks Havn in lat. 76° 46′ (Lundager). North of this it has been found only in two localities on the north coast (Th. Wulff).

26. *Ranunculus pygmaeus* Wahlenb.

Kangerdlugsuak: Skardet (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Kikut (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Tingmiarmiut: Brattneset (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A), N. Aputitek (A).
Igdloluarsuk: Kemisak (Graah).
Ikerasarsuak: Nunatsuk (M. Porsild).

Has not yet been recorded on the stretch from Nunatsuk to Tingmiarmiut, where, however, it should be found.

It is common in Angmagssalik and also along the coast northwards to Eirik Raude's Land where it likewise is common and has been found to the height of 700 metres (Vaage). It also occurs further north, and at the present northern limit in Germania Land it is rather common (Lundager).

In the autumn it is not unusual to find the flower-stems elongated to 15 or 20 cm.

Ranunculus reptans L.

Not seen by us.

On the east coast only known from Amaka in Angmagssalik where it "formed a complete, but open cover over some hundred □ mt." (Kruuse 1905, p. 239).

27. *Ranunculus trichophyllus* Chaix.

Tingmiarmiut: Brattneset (S).

Previously known from Angmagssalik and Scoresby Sound, but very rare in both places, and further in Eirik Raude's Land where it has been found at several points, with its northern limit on Wollaston

Foreland east of the Sachenberg in about 74° 30′ N. lat. (Seidenfaden). In the literature we have not been able to find published any locality from the coast 67°—70°, corresponding to the statement by Ostenfeld 1926.

In Tingmiarmiut our *Ranunculus* was found floating in a shallow little pond on a level headland below the big fertile talus at Brattneset. It had a copious number of flowers and fruits, and was the only aquatic plant growing there.

Our specimens belong nearest to the var. *confervoides* Fr., but the carpels are not quite typical.

28. *Thalictrum alpinum* L.

Akorninarmiut: Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Kangerdlugsuatsiak: Narsak (E).
(*Ikerasarsuak*: Ikerasarsuk (V)).

Rather common on the southeast coast and in the Angmagssalik district, where it has been found as far north as Kap Wandel in lat. 66° 18′ N. (Kruuse). It has not been noted between this point and Kap Dalton in lat. 69° 25′ (H, K). Occurs rather sparsely in Scoresby Sound and Eirik Raude's Land. The northern limit is at the head of Moskusoksefjorden in lat. 73° 38′ (Seidenfaden). At the foot of rocks and in other places with an abundant vegetation it may attain a height of 25 cm. Fruiting specimens were not rare.

Crassulaceae.

Sedum acre L.

Not seen by us.

As far as we can ascertain the Angmagssalik district is still the only area in Greenland where this plant is known. Here it was found by Kruuse at three different points.

29. *Sedum annuum* L.

Pl. I.

Kangerdlugsuak: Amdrupneset (S).
Akorninarmiut: Devoldlia (D, S), Finnsbu (B, D, S), Eskimoneset (S), Dronning Marias dal (D, S).
Umanak: Claradalen (D).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D).

Previously found:
Umanak: Umanak (E).
Puisortok: Karra Akungnak (E).
Ikerasarsuak: Nunatsuk (E), (Ikerasarsuk (V)).

Appears to be quite rare in Southeast Greenland. It was especially found on dry, sandy slopes and on rocky ledges. It occurs sparsely in the Angmagssalik district, north of which it had previously not been found. At Amdrupneset in Kangerdlugsuak (lat. 68° 27′ N.) a small colony of this plant was found on a sandy slope about 100 metres above sea-level, this being its present northern limit.

30. *Sedum roseum* (L.) Scop.

Kangerdlugsuak: Elvefaret (T), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias Dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Lomvatnet (B), Igdlormiut (B), Brattneset (D, S, T).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Kangerdlugsuak: Skærgaards Halvø (A).
Umanak: Umanak (E).
Anoritok: Anoritok (V).
Auarket: Taterait (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), Kekertak (V), Kapiarfik (Sylow).

Commonly distributed along the coast as far as Eirik Raude's Land, where it is less common. The northern limit is at Kap Mary on Clavering Isl. in lat. 74° 10′ (Copeland and Pansch 1870, Dusén and Nathorst 1899).

Sedum villosum L.

Not seen by us.

In East Greenland it is only known from the Angmagssalik district where it has been found at several points, but is rare (Kruuse).

Saxifragaceae.

31. *Saxifraga aizoides* L.

Pl. I.

Kangerdlugsuatsiak: Grønlia (D).

This plant has previously not been collected on the east coast proper south of Angmagssalik, but is nearest our area known from

the western inlet of Ikerasarsuk. Only a few specimens were found on a moist rocky surface on the southern slope of the point south of Grønlia on Aug. 31. The fruits were then ripe.

It occurs sparsely in the Angmagssalik district, and has been found a little to the north of it between the Steenstrup glaciers in lat. 66° 27′ N. (K). Further north it has not been observed below Scoresby Sound where it is not common. It is rather common in Eirik Raude's Land with its northern limit on the northwest side of Claveringøya at Revet (Seidenfaden, Vaage). From 61° to 65° and 67° to 70° we have in the literature not been able to find any localities for this plant.

32. *Saxifraga Aizoon* Jacq.

Pl. I.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S).
Akorninarmiut: Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (S), Dronning Marias Dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Svartvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S).

Previously found:
Umanak: Umanak (E).
Anoritok: Kap Tordenskjold (E).
(*Ikerasarsuak*: Chr. IV Ø (Sylow)).

This saxifrage — the rarest of the Scandinavian species — is quite common in Southeast Greenland, where, however, it easily escapes notice as it usually grows high up on the mountain sides, at points often difficult to reach. In Angmagssalik it is quite common, too, and also a little farther northwards to Kap Warming in lat. 67° 1′ (H, K). North of this place it was previously not known below its northern limit in Scoresby Sound. It was, however, quite common in the two new localities from this coast, viz. in Kangerdlugsuak.

In our rich collections we have specimens attaining a height of nearly 30 cm.

33. *Saxifraga cernua* L.

Pl. I.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Claradalen (D).
Kangerdlugsuatsiak: Møretun (D).

Previously found:
Kangerdlugsuak: Mikisfjorden (A).
Iluilek: Kangerdluluk (V).

We were surprised to find this otherwise in the Arctic very common saxifrage, so rare in Southeast Greenland. In the most southern part of this area, at Møretun, we only found a single small specimen at an altitude of a few 100 metres. In Akorninarmiut it was rather common in the mountains, and is known from most of the investigated places northwards, right up to the north coast where it is also common (Th. Wulff). At Hoelsbu in Moskusoksefjorden it was common at an altitude of 1300 metres (S).

No fruiting specimens with developed capsules were found.

34. *Saxifraga groenlandica* L.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Imarsivik (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Kutekfjorden (T), Grytvika (D), Nordpollen (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A), N. Aputitek (A).
Igdloluarsuk: Kemisak (Graah).

In Consp. Fl. Groenl. with appendix no exact localities are given south of Angmagssalik, it is only stated to be common, and found at many points.

In the southern portion of the investigated area, *Saxifraga groenlandica* occurs rather sparsely, and becomes more common as one goes northwards along the coast. In Eirik Raude's Land it was found at an altitude of 1300 metres (S). It is common in Germania Land and has been found at two points in Independence Bay. Also common on the north coast.

35. *Saxifraga nivalis* L.

Kangerdlugsuak: Skardet (S), Brandalfjell 1000 m (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Imarsivikøya (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B), Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Møretind 900 m (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjorden (A).
Umanak: Umanak (E).

Tingmiarmiut: = Brattneset (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).

Saxifraga nivalis occurs rather sparsely in the sub-arctic vegetation of Southeast Greenland, but was common in Kangerdlugsuak with its Arctic environments. Common in Scoresby Sound, Eirik Raude's Land, and Germania Land. It has been collected in Lambert Land in lat. 79° 8′ N. (J. P. Koch), and is known from several points on the north coast.

A common mountain plant: Møretind 900 metres, Brandalfjellet 1000 metres, Moskusoksefjorden in Eirik Raude's Land 1200 metres and at Kap Humboldt 1100 metres.

36. *Saxifraga nivalis* L. var. *tenuis* Wahlenb.
(*S. tenuis* (Wahlenb.) Smith)

Kangerdlugsuak: Skardet (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Amdrupneset (S).
Akorninarmiut: Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Igdlormiut (B).

Previously found:
Igdloluarsuk: Kemisak (Graah).

Compared with *S. nivalis* the var. *tenuis* is "omnibus partibus gracilioribus, tenuioribus, glabrioribus; floribus paucioribus et minoribus, non capitatis, ita pedicellatis, ut cymam fere efficiunt; bracteis latioribus, plerumque foliis subsimilibus; fructu minore et stigmatibus magis recurvatis" (Smith 1920, p. 194). Most scientists agree that these two as a rule represent two distinct types. It may, however, be open to a matter of opinion which systematical value we dare ascribe to these relative and not quite constant features in these two types which are both much liable to variation. If the occurring intermediate forms are due to a convergence or not it is hardly possible yet to decide, and for the present we prefer personally to regard the var. *tenuis* as belonging to the form-series of *S. nivalis*. In any way it may be classified: as a form, variety or species it is not for that reason more easily or less easily distinguished from *S. nivalis*.

The slender var. *tenuis* is, it seems to us, quite rare in Southeast Greenland. In Angmagssalik it is rather common according to Kruuse and it has been observed on the coast northwards to Scoresby Sound, but no localitites are given as the plant has not been kept apart from *S. nivalis* as a separate species. In Kangerdlugsuak it was equally common as *S. nivalis*, and northwards it has the same distribution as

this species. It is thus quite common in Scoresby Sound, Eirik Raude's Land and Germania Land. Is further known from the north coast, but was not found by the 1st Thule Expedition on the intervening coast of Northeast Greenland, where it certainly occurs.

37. *Saxifraga oppositifolia* L.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Elvefaret (T), Brandalfjell (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Trollfjordeidet (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Møretun (D), Narsak (D).

Previously found:
Kangerdlugsuak: Skærgaards Halvø (A), N. Aputitek (A).

South of Angmagssalik are given no detailed localities, only remarks that it is common.

In extreme Arctic localities this saxifrage often occurs in vast numbers, but in Southeast Greenland it is found only sparsely, forming an inconspicuous element of the luxuriant vegetation of this region. Just as the preceding species it was quite common in the Arctic fjord Kangerdlugsuak.

Saxifraga oppositifolia grows to high altitudes (in Eirik Raude's Land 1200 metres (S)), and far to the north. From Northeast Greenland and the north coast it is reported from nearly every point where plants have been collected and is apparently very common in these northern tracts.

38. *Saxifraga rivularis* L.

Kangerdlugsuak: Skardet (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Eidsfjorddalen (B), Imarsivik (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Kangerdlugsuatsiak: Grytvika (D), Svartvika (D), Møretun (D, S), Narsak (D, S).

Previously found:
Kangerdlugsuak: Mikisfjorden (A), N. Aputitek (A).
Anoritok: Anoritok (V), Kap Tordenskjold (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Serketnua (E), Ivimiut (V), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kangerajak (Sylow), Nunatsuk (Porsild).

In the most southern part of the east coast it appears to occur rather sparsely, but is otherwise common, at any rate as far north as Germania Land. This plant, elsewere common in high-Arctic latitudes, has strangely enough, not been found farther north in East Greenland either by the "Danmark"-expedition or any of the expeditions to the north coast.

In Kangerdlugsuak it was found to an altitude of 1000 metres.

39. *Saxifraga stellaris* L.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Devoldlia (D, S), Trollfjordeidet (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Anoritok: Kap Tordenskjold (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (Sylow), Nunatsuk (Sylow), Kekertak (V).

Very common on the southeast coast, especially in its southern part where it is particularly found in brooks along with mosses. In Angmagssalik it is rarer, and has its northern limit some distance north of this tract, at Lilleø (K) in lat. 66° 58′ N.

Saxifraga comosa (Retz.) Fellm., on the other hand, has not been found south of Kap Dalton (69° 25′), where, however, it is common (H, K). It is the only form met with in Arctic regions proper, such as Spitsbergen, Frans Josef Land, Nowaya Zemlya, and North Greenland.

Saxifraga tricuspidata Rottb.

Not seen by us. Only known from Scoresby Sound: Hurry Inlet (H, K), Turner Sund (69° 45′) and Kap Dalton (69° 25′) (H, K).

Rosaceae.

40. *Alchemilla alpina* L.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).

Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Anoritok: Anoritok (V).
Iluilek: Serketnua (E).
Ikerasarsuak: Aluk (V).

Alchemilla alpina proved to be very common throghout the investigated area south of Angmagssalik. In this district it is common, but has on the east coast not yet been found north of the fjord Nigertusok in lat. 66° 18′ (K).

41. *Alchemilla glomerulans* Buser.

Fig. 3 and Pl. II.

Akorninarmiut: Trollfjordeidet (B), Kvanndalen (D), Finnsbu (D, S), Dronning Marias dal (D, S).
Umanak: Pilerkit (B), Claradalen (D), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found: (H. Lindberg 1909, p. 107).

Umanak: Umanakfjorden = Pilerkit (E).
Iluilek: Iluilek (E).
Ikerasarsuak: Nunatsuk (Sylow, Porsild).

Commonly distributed throughout Southeast Greenland and is more frequent than the following species.

It often attains a considerabe size, with stems up to 40 cm in length or even more. H. Lindberg has seen specimens from Angmagssalik, and Kruuse has observed it at an altitude of 1000 metres in that district, this being quite remarkable. It goes much farther north, as it has been found by Hartz on Gaaseland in Scoresby Sound. Not yet seen on the intervening coast.

42. *Alchemilla minor* Huds.

subsp. *filicaulis* (Buser) Lindb. fil.

Fig. 3 and Pl. II.

Akorninarmiut: Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).

Fig. 3. *Alchemilla minor* subsp. *filicaulis* *Alchemilla glomerulans* *Alchemilla minor*
Shows the different types of hairiness in the inflorescense. Specimens from Southeast Greenland 1932. Magn. 5/1.

Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found: (H. Lindberg 1909 p. 97).
(*Anoritok*: Anoritok (61° 30′) 31. 7. 1894 A. Jessen)?
Ikerasarsuak: Aluk (V).

Rather common in Southeast Greenland, especially in the willow scrubs, and occurs probably also in Angmagssalik, from where, however, Lindberg, did not see any specimens.

The forms of *A. vulgaris* L. as given by Kruuse (1906) do not conform with modern treatments of this collective species. Therefore no certain conclusions as to the occurrence and distribution of these forms may be drawn from his paper.[1]

43. *Alchemilla minor* Huds.
(*A. filicaulis* Bus. f. *vestita* Bus.)

Fig. 3 and Pl. II.

Kangerdlugsuatsiak: Nordpollen (D).

This species is undoubtedly very rare on the east coast, and has previously not been recorded from this part. It must be rare on the

[1] By the courtesy of the Director of the Botanical Museum in Copenhagen we have lately had the opportunity to study the Danish *A. vulgaris* collections from East Greenland. We have seen specimens of *A. minor* subsp. *filicaulis* from the following places in Angmagssalik, leg. Chr. Kruuse: Akiliarisek Sermilik 66° 19′; Cassiopefjæld Kingorsuak 66° 10′; Kingorsuak 66° 8′; Tunok 65° 56′; Amagâ Tasiusak 65° 39′; Elvebakker Tasiusak 65° 37′; Tasiusak 65° 37′.
Alchemilla minor did not occur in the collection.

west coast too, as we have only found it reported from one locality here, viz. Julianehaab (Vahl) (H. Lindberg 1909, p. 92).

Our only specimen has a heigth of 18 cm, flowers and is in every respect typical.

From Angmagssalik is given *A. alpestris* Schmidt (Kruuse 1906, p. 222) about which H. Lindberg writes (1909, p. 147):

" . . . . ; doch scheint es mir ganz sicher, dass es sich hier nur um eine forma subglabra von *A. glomerulans* handelt. Ich habe nämlich kein einziges Exemplar weder aus Grönland noch aus Island, noch von den Fær-Öer-Inseln oder von den Shetlands-Inseln gesehen".

From Angmagssalik Kruuse gives also *A. Wichurae* (Buser) (1906 p. 223) about which H. Lindberg writes (1909, p. 146) when dealing with *A. acutidens* Bus.:

"Aus Grönland habe ich kein einziges Exemplar gesehen. Buser erwähnt jedoch, dass er im Herb. Sthlm. Exemplare aus Kong Oscars Havn (bei Angmagsalik an der Ost-Küste Grönlands, etwas südlich vom Polarkreis) gesehen habe. Auch Chr. Kruuse hat diese Art als *A. Wichurae* aus Grönland angeführt, aber da er seine Form als mit unten behaarten Blättern beschreibt, scheint es, als ob er eine kahlere Form von *A. glomerulans* hier gefunden hätte. Doch könnte diese Art hier an der Ost-Küste vorkommen, da dieselbe auf Island und den Fær-Öer-Inseln häufig ist."

In a foot note he says: "Die Exemplare von Berlin bei Oscars Havn gesammelt, sind hier als *A. glomerulans* aufgenommen. Meiner Ansicht nach ist es auch recht wahrscheinlich, dass diese Art hier vorliegt."

In his list of 1926 Ostenfeld again records *A. acutidens* as occurring in Angmagssalik. We are not able to verify this record, as we have not seen the original specimens[1].

Dryas integrifolia M. Vahl.

Is rather rare in Angmagssalik. Further south on the east coast it is reported only from one locality, which, however, is uncertain, cf. Lange 1886, p. 277 "*Dryas*

[1] In the Danish material lately seen there are some forms from Angmagssalik having no characters to distinguish them from *A. acutidens*. The upper half of the stem, pedicels and calyces are glabrous as well as the leaf blades with the exception of the veins, and the lower side of the basal lobe which, as a rule, are hairy. The lower part of the stem, the petiole and leaf-veins are pubescent with appressed hairs. If these specimens were only incidental glabrate forms of *A. glomerulans*, which according to Lindberg are very rare, it would be strange to find them only in Angmagssalik where they apparently are not rare. In our extensive collections from the region south of Angmagssalik these forms do not appear.

The following specimens we are not able to distinguish from *A. acutidens:*

Angmagssalik:

Kuarmiut 65°, 16 July 1902 (det. Ostenf.: *A. acutidens*).

sp. (*integrifolia* M. Vahl) ? Sagdlia Fjord (E.). (Not previously found in E. Gr.). (Specimens not present)". The following year the locality has been incorporated in Consp. Fl. Gr. II part p. 234, but without any comment. *Dryas* is very rare on the southernmost southwest coast.

44. *Potentilla alpestris* Hall.

Fig. 4 and 6.

Kangerdlugsuak: Polarisbreen (S), Storfjord Radio (S).
Akorninarmiut: Trollfjordeidet (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D).

Previously found:[1]

Umanak: Umanak (E).
Puisortok: Karra Akungnak (E).
Anoritok: Kap Tordenskjold (E).
Kangerdlugsuatsiak: Narsak (E).

Was found to be quite rare in the southern parts of Southeast Greenland, but is more common northwards. It is common in Angmagssalik, and north of this tract it has been found at Kap Warming, 67° 1–2′ (K). North of this place it was previously not known below Turner Sund in lat. 69° 45′ N. (H, K). It was, however, quite common in Kangerdlugsuak, is common in Scoresby Sound, and also in Frans Josef Fjord in Eirik Raude's Land. Farther to the north it is sparsely distributed up to the northern limit at Sabineøya in lat. 74° 30′ (H, K). On Kap Humboldt it was found at an elevation of 1000 metres (Vaage).

45. *Potentilla anserina* L. var. *groenlandica* Tratt.

Akorninarmiut: Finnsbu (D, S), Dronning Marias dal (B, D, S).
Tingmiarmiut: Brattneset (D, S),
Kangerdlugsuatsiak: Straumen (T).

Previously found:

Tingmiarmiut: = Brattneset (E).
Auarket: Karra (E).
Iluilek: Kutek (E).

Kap Wandel 1/8 99 (det. Ostenf.: *A. acutidens*).
Tasiusarsik 11/9 98 (det. Ostenf.: *A. minor* f. *glabra*).
Tasiusak Misutok 66°, 22 July 1902 (det. Kruuse: *A. alpestris* Schmidt; det. Ostenf.: *A. minor* Huds. *filicaulis* (f. *denudata*).
S. Bræfjord (?) (det. Ostenf.: *A. minor* f. *glabra*).

All of these specimens are collected by Chr. Kruuse. The specimen from Tasiusak Misutok, by Kruuse determined as *A. alpestris* is undoubtedly very close to that species. It would be of great interest to get more material of *Alchemilla* from this region as many of Kruuse's specimens do not in our opinion allow a definite determination.

[1] Since this was written we have had the pleasure to see the entire Danish material of *P. Ranunculus* Lge. from Greenland. In this material we have found a specimen of *P. alpestris* from *Akorninarmiut:* Dronning Marias dal (Ekalumiut) (Graah).

Appears to occur very sparsely in Southeast Greenland, and is also rather rare in Angmagssalik where it has its northern limit. Usually one finds its long runners on clayey beaches in mats of *Carex glareosa*, *Puccinellia phryganodes*, *Stellaria humifusa* and occasionally *Carex rariflora*. It is often sterile.

One of our specimens from Dronning Marias dal approaches closely our Scandinavian var. *vulgaris* on account of the 2—3 parted outer sepals, the tomentose upper side of the leaves, the abundant, long silky hairs on the veins on the lower side of the leaf, and the hairy stem and runners. However, apart from the silk-haired veins, the tomentum is otherwise exposed and dull. This specimen resembles also with regard to habit more the var. *groenlandica* than our Scandinavian var. *vulgaris* with the more acutely dentate leaves of the latter. Until further finds may change our opinion we prefer to regard it as a strongly tomentose form of the ordinary var. *groenlandica*.

We also have some specimens where macroscopically every trace of a tomentum is missing on the lower side of the leaves, but where traces are seen microscopically, in other words forms passing imperceptibly into var. *Egedii* Torr. et Gr.

46. *Potentilla emarginata* Pursh.

Kangerdlugsuak: Brandalfjell 1000 m (S).

Kruuse has seen sterile specimens of this plant as far south as Angmagssalik: Kakasuak at Kingorsuak in lat 66° 8′, which locality is however, not included in the list of Ostenfeld 1926. The next locality from which it is known is our finding place in Kangerdlugsuak. Then it is known from Kap Dalton (H, K) in lat. 69° 25′. In Scoresby Sound and Eirik Raude's Land it is common, and in the latter area — at Kap Humboldt — it has been found to an altitude of 1000 metres (Vaage). In Germania Land it is also common and thence up to Cape St. Jacques in lat. 77° 36′ (Koefoed). In Independence Bay it has been collected at 3 points (Freuchen), and is common along the north coast (Wulff).

On Brandalfjellet in Kangerdlugsuak, just south of the radio station, it was found at an altitude of 1000 metres on the edge of a precipice; the specimens here (collected Aug. 23) were past flowering and had ripe fruits.

47. *Potentilla nivea* L.

Kangerdlugsuak: Storfjord Radio (S).

The most southern finding point on the east coast of this *Potentilla* is at Kingorsuak lat. 68° 8′ in Angmagssalik (Kruuse), where it has otherwise not been found. In addition to our locality in Kangerdlugsuak it is not found before Kap Dalton in lat. 69° 25′ from which point it is

common at any rate up to Germania Land and Ymer's Nunatak in lat. 77° 24′ (J. P. Koch). It has been collected in Danmark Havn and Independence Bay (Freuchen) and from 2 points in Wulff Land on the north coast (Th. Wulff).

The specimens were found on the north side of a little brook at the back of the radio station where it grew on dry rocky shelves along with *Carex rupestris*, *Saxifraga Aizoon* a. o.

Our specimens belong to the var. *vulgaris* (Schlecht. et Cham.) Lehm.

48. *Potentilla palustris* Scop.

Pl. I.

Umanak: Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B).

Previously found:
Ikerasarsuak: Nunatsuk (Sylow, Eberlin, Porsild).

Potentilla palustris has not been found farther north than Angmagssalik, where it is rather rare (Kruuse). From the stretch between this tract and Nunatsuk, we have no knowledge of any older localities, and it seem to us that this plant must be very rare on the southeast coast, at any rate south of Angmagssalik. On the Norwegian expeditions it was only found by Bjørlykke. Our specimens grew at the border of small, boggy ponds and rivulets. They are vigorous with leaves up to 8 cm broad and flowers up to 1½ cm in diam.

49. *Potentilla Ranunculus* Lge.

Fig. 5, 7 and Pl. II.

Akorninarmiut: Trollfjordeidet (B), Kvanndalen (D), Dronning Marias dal (B, D, S), Søndre Nyfjord (Th. Vogt, see map p. 199).
Umanak: Pilerkit (B).

Previously found:
Akorninarmiut: Dronning Marias dal (Graah).

In East Greenland it is only known from the areas Akorninarmiut and Umanak, and has hitherto only been found far inland, where it preferably grows in willow scrubs, along with *P. alpestris* which superficially is very similar. The most important diagnostical difference between our species and *P. alpestris* is summarised thus by Lange in Consp. Fl. Gr. p. 7: "Habitus ab omnibus, quas vidi, formis P. maculatae valde alienus, pluribusque characteribus bene, ut videtur, distinctus, impr. rhizomate valido sublignoso, multicipiti, glabritie et glaucedine omnium partium, foliolis multo profundius laciniatis (folia iis plurium Ranunculorum, v. c. R. acris exacte similia), petalis pallidioribus immaculatis etc., quare potius speciem distinctam quam formam P. maculatae sistere videtur".

Fig. 4. *Potentilla alpestris*

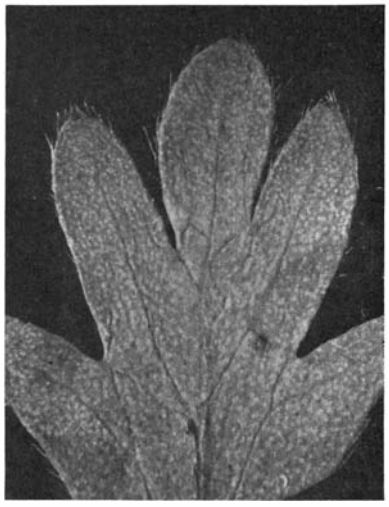

Fig. 5. *Potentilla Ranunculus*

Upper side of terminal leaflets. Note the hairy and shining surface in that of *P. alpestris* whereas the leaflet in *P. Ranunculus* is naked, dull and clearly whitedotted. Specimens from Akorninarmiut. Magn. 6/1.

Th. Wolff (Monogr. der Gattung Potentilla 1908, p. 514) in his comment says: "Aber der Hauptunterschied liegt auch hier wieder in der totalen Verschiedenheit der Griffelbildung, auf welche Lange nicht geachtet hat." Scholander has not been able to discover any such "totale Verschiedenheit der Griffelbildung" in our abundant material from the east coast, and if there is any difference at all between the long, regular and narrow styles of these two species, it cannot amount to more than a shade.

One of the best diagnostic means of differentiating between even fragments of these species are various features of the leaves.

In *P. Ranunculus* the dried leaves are thick, greyish-green and nearly glabrous (resembling the leaves of *Brassica*, *Turritis* etc.). On the upper side they are clearly white-dotted, this being due to the air-filled cavities around the stomata which are also the cause for the greyish-green colour (Fig. 5). Epidermis itself is dull, non-glandular.

In *P. alpestris* the dried leaf is thin and the homologeous air cavitites are only seen under the microscope as tiny light spots. The epidermis cells on both the upper and lower side of the leaf are shining, glandular-hairy (Fig. 4), and by this species, too, the glossy in dried material usually brownish veins are more conspicuous than by the preceding one (resembling those of a *Dryopteris spinulosa*).

Another very good distinctive character when present, separating these species, is the hairiness at the junction between stem and calyx. Here *P. Ranunculus* has a dense, white almost tomentose hair-cover,

Fig. 6. *Potentilla alpestris*

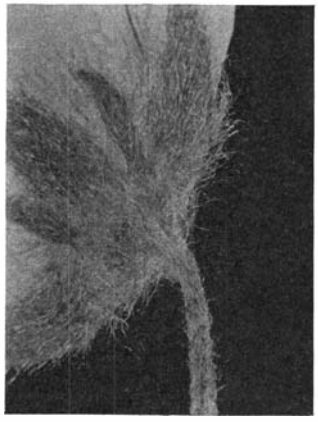

Fig. 7. *Potentilla Ranunculus*

Shows the different types of hairiness on the calyx. Magn. 5/1.

whereas *P. alpestris* has relatively few, scattered and comparatively thick, bristling hairs (Fig. 6 and 7).

With regard to the hairiness elsewhere it is characteristic of *P. Ranunculus* that it is entirely glabrous between the veins of the leaves, at any rate if these are full-grown, whereas the epidermis also between the larger veins in *P. alpestris* is nearly always ± glandular hairy. This, however, is not quite constant in either species and may in single cases be useless as a diagnosticum. Even other characters such as the thick rhizoma, the deeply incised leaves, light-yellow petals etc. are subject to much variation in either species, and have all only a relative value compared with the two mentioned. Especially to be emphasised are the white-dotted thick and dull leaves as being characteristic of *P. Ranunculus*.

50. *Potentilla tridentata* Soland.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Møretind (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Iluilek: Kangerdluluk (V), Serketnua (E), Ivimiut (V), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).

Common in dry slopes along with Ericales, in lichen heaths and similar places all along the south-east coast visited by us.

In Angmagssalik it is rather rare, but has been found to the north of this district, viz. at Langø in lat. 67° 4′ (Kruuse), where it has its northern limit. It is everywhere copiously flowering and may reach a height of 20 cm.

51. *Rubus saxatilis* L.

Pl. I.

Akorninarmiut: Dronning Marias dal (B, D, S).

Previously also found here by Graah. This find has later been doubted as the specimens are not to be found in the herbarium of the Botanical Garden in Copenhagen (see Consp. Fl. Gr. p. 654). It was, however, found to be quite common in the slope — abt. 200 metres above sea-level — above the Norwegian station.

The specimens are well developed and had occasionally berries. In West Greenland, too, it is extremely rare, and to our knowledge it is here still only known from a single locality, viz. Tasersuak in lat. 60° 15′ (Hartz).

52. *Sibbaldia procumbens* L.

Kangerdlugsuak: Skardet (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S) Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut, (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Kangerdlugsuak: Mikisfjorden (A), Skærgaards Halvø (A), N. Aputitek (A).
Puisortok: Puisortok (E), Karra Akungnak (E).
Anoritok: Kap Tordenskjold (E).
Iluilek: Kangerdluluk (V), Iluilek (V).

Very common on the southeast coast, and is further known from a number of points in Angmagssalik and along the coast to Scoresby Sound where it is rather common. In Eirik Raude's Land it is only known from Antarctichamna, Husbukta, Geographical Society-øya and Kap Humboldt 650 m on Ymerøya, where it has its northern limit (Vaage).

Fig. 8. The glabrous and relatively short style of *Chamaenerium latifolium*. Magn. 5/1.

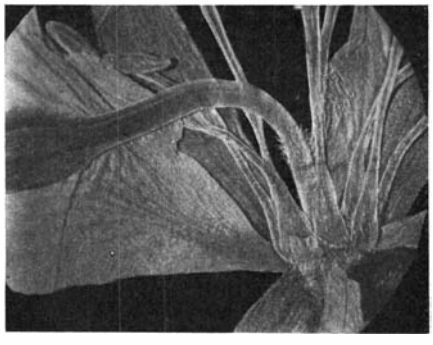

Fig. 9. The long and below hairy style of *Chamaenerium augustifolium*. Magn. 5/1.

Leguminosae.

53. *Lathyrus maritimus* (L.) Bigelow.

Pl. II.

Kangerdlugsuatsiak: Grønlia (D), Møretun (D, S), Narsak (D,S).

Previously found:
Kangerdlugsuatsiak: Narsak (E).
Ikerasarsuak: Aluk (V), Nunatsuk (Eberlin, Porsild).

Common on the shore at Narsak where it was found flowering in the last days of July. At Møretun a small stand was found on the shore on the south side of the small bay. Especially common on the steep southern slope of the point at Grønlia. Here it covered the ground almost completely up to an altitude of 200 m, with fruits well advanced in the last days of August.

Oenotheraceae.

54. *Chamaenerium angustifolium* (L.) Scop.

Fig. 9 and 43.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Husøya (D), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S, T).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Iluilek: Kangerdluluk (V).

Common in Southeast Greenland growing especially att he foot of rocks, on old Eskimo sites, and often together with *Elymus* on the shore precipice. Not rarely it grows to a height of 1/2 meter and may occur in rather dense stands.

In Angmagssalik it is known from several localities to Kangerdlugsuatsiak fjord at 66° 19′ (Kruuse), the northern limit.

Practically all of our specimens are to be referred to the small Arctic var. *intermedium* (Wormskj.) Lange. Two specimens are leiostylae.

Fig.10. Anthers with the octahedral pollen grains in *Chamaenerium*, (here *Ch. latifolium*). Magn. 12/1.

55. *Chamaenerium latifolium* (L.) Sweet.

Fig. 8 and 10.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Straumen (T), Grytvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Igdloluarsuk: Kemisak (Graah).
Puisortok: Karra Akungnak (E).

Especially common in gravelly stream beds where it may grow in large and dense stands. Occurs also in other gravelly localities, and is very common throughout Southeast Greenland and also in the Angmagssalik region. It has been collected in several localities from this region

to Scoresby Sound where it is common, as also in Eirik Raude's Land where it has been noted at an altitude of 850 m on Kap Humboldt (Vaage). It is rather common in Germania Land and it has also been collected in Danmarksfjord and Independence Bay where it finds its northern limit. It has not been observed on the north coast.

These two species of *Chamaenerium* may habitually look much alike and for this reason a very hypothetical so-called hybrid has also been described. However, no serious genetic proof has been advanced just as is the case for so many other "cross breeds" in floristic treatments. Poorly developed pollen and fruits may be caused by various reasons and it is often difficult to form an opinion from herbarium material. We have in our herbarium two specimens interpreted as this hybrid (from Godhavn in West Greenland), which are, as far as we can see in every morphological respect typical and quite successful *Ch. latifolium*.

Fernald treats this question in Rhodora 1918, p. 6 (The assumed hybridization of Epilobium angustifolium and E. latifolium).

56. *Epilobium anagallidifolium* Lam.
(*E. alpinum* L. in Consp. Fl. Groenl.)

(Det. G. Samuelsson, Sthlm.).

Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S), Nordpollen (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), (Ikerasarsuk (V)).

Common in the area investigated south of Angmagssalik, particularly along running water, in moist localities at the foot of rocks and in similar places, where it usually grows quite hidden by the other vegetation.

In Angmagssalik it is rare but is found in several localities to 66° 19′ in Kangerdlugsuatsiak fjord (Kruuse) which appears to be the northern limit. Kruuse's statement that this species grows in Scoresby Sound is apparently not correct as it is omitted in Ostenfeld's list of 1926 and *E. arcticum* inserted in its place for this locality.

57. *Epilobium Hornemanni* Rchb.

(*E. alsinefolium* Vill. in Consp. Fl. Groenl.)

(Det. G. Samuelsson, Sthlm.).

Akorninarmiut: Trollfjordeid (B), Finnsbu (B), Dronning Marias dal (B).
Umanak: Claradalen (D), Vogtsbu (B).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Tunua (E), (Chr. IV Ø 1500 f. s. m. (Sylow)).

Appears to be rather rare in Southeast Greenland. It grows often in dense, erect tufts among wet mosses by running water, commonly together with *Saxifraga stellaris*. In Angmagssalik it is not common, found along the coast to the fjord Kangerdluarsikajik 65° 57′ (Kruuse). Inland at Kingorsuak fjord it is found somewhat farther north, at 66° 10′ (Kruuse), where it reaches its northern limit as far as we know. Many of our specimens reach a height of 25 cm.

58. *Epilobium lactiflorum* Hausskn.

(Det. G. Samuelsson, Sthlm.).

Akorninarmiut: Kikut (B), Imarsivikøya (B), Floneset (D), Kvanndalen (D), Finnsbu (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Nordpollen (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Auarket: Ingitait (E).
Iluilek: Kangerdluluk (E).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).

More common than the preceding species and is frequently seen to grow in somewhat drier places. It attains commonly a height of more than 30 cm. Our specimens reach a maximum height of 42 cm.

The species is rare in Angmagssalik where it is found as far north as Kangerdlugsuatsiakfjord at about 66° 18′ (Kruuse), its northern limit.

Halorrhagidaceae.

59. *Hippuris vulgaris* L.

Pl. II.

Akorninarmiut: Myrodden (D), Kornok (D).
Umanak: Rudiøya (B).
Tingmiarmiut: Lomvatnet (B).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Iluilek: Ivimiut (V).
Ikerasarsuak: Nunatsuk (E), Kapiarfik (Sylow).

Like the other water plants this species is rare in Southeast Greenland and Angmagssalik. North of Angmagssalik it is not observed below Scoresby Sound where it is found in several localities. It is rare in Eirik Raude's Land, the northern limit being Danmarks Havn in Germania Land at 76° 46′ (Lundager).

Our material does not contain specimens of f. *maritima* Bl. (*H. tetraphylla* L. fil.) with few and relatively broad leaves.

Papaveraceae.

60. *Papaver radicatum* Rottb.

Kangerdlugsuak: Brandalfjell 900 m (S).

Previously found:
Tingmiarmiut: Tingmiarmiut (E).

Papaver, which usually is a distinguishing feature of Arctic vegetation occurring in unbelievable masses, is exceedingly rare in Southeast Greenland. It is all together found once by Eberlin in Tingmiarmiut and once by Kruuse in Angmagssalik by Cassiope Fjæld at an altitude of 500 m in latitude 66° 10′—8′. Along the coast to Scoresby Sound it has been found in 5 localities but is everywhere of rare occurrence. Only north of Scoresby Sound it appears to grow in such profusion which in the Arctic is possible only for *Draba*, *Saxifraga oppositifolia* and this species. In Eirik Raude's Land it ascends to an altitude of at least 1300 m, and in Northeast Greenland and the north coast it is very common in all localities visited.

In Kangerdlugsuak only two sterile leaf tufts were found at an altitude of 900 m on Brandalfjell above the Norwegian Radio Station. It is very possible that the poppy as a nunatak plant is more frequent in Southeast Greenland than our lowland localities indicate.

Cruciferae.

61. *Arabis alpina* L.

Kangerdlugsuak: Storfjord Radio (S), Amdrupneset (S).
Akorninarmiut: Imarsivikøya (B), Trollfjordeid (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Straumen (T), Nordpollen (D), Møretun (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak fjord = Pilerkit (E).
Anoritok: Kap Tordenskjold (E).
Iluilek: Kangerdluluk (E), Ivimiut (V).
(*Ikerasarsuak*: Ikerasarsuk (V)).

In the localities in Kangerdlugsuatsiak *Arabis alpina* appeared to be rather rare but it was common further north. In Angmagssalik it is common and on the coast northwards to Scoresby Sound it is known from Kap Warming at 67° 1′—2′, the 3 localities in Kangerdlugsuak stated above, Kap Irmiger at 68° 5′, Kap Dalton at 69° 25′, and Turner Sund at 69° 45′ (A, H, K).

In Scoresby Sound it is common (Hartz) but it is very rare in Eirik Raude's Land reaching its northern limit at Kap Franklin in latitude 73° 16′ (Seidenfaden).

Our specimens show the usual variations in hairiness and size.

62. *Arabis Holboellii* Hornem.

Akorninarmiut: Eskimoneset (S).

On the entire east coast this species was previously known only from Scoresby Sound where it is common in the inner parts and grows to a height of 75 cm (Hartz). It is found also slightly south of Scoresby Sound, in Turner Sund at 69° 45′ (H, K).

The two specimens collected are somewhat more than 1/2 m in height and were found growing on sandy ground sloping towards the sea in association with *Cobresia scirpina*, *Draba incana*, *Sedum annuum* *Woodsia ilvensis*, and others. It was found only in this locality, but when this utmost interesting Skjoldungen region is systematically explored, which may take several summers of field work, it will undoubtedly be found also in other localities.

63. *Cardamine bellidifolia* L.

Kangerdlugsuak: Skardet (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Finnsbu (B, D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B).
Kangerdlugsuatsiak: Møretind 1200 m (D, S), Narsak (D, S).

Previously found[1]:
Kangerdlugsuak: N. Aputitek (A).
Umanak: Umanak (E).
Auarket: Ingitait (E).

Rather rare in rock crevices and similar habitats usually at some altitude. In Angmagssalik it is not common but further north it is found in several places along the coast to Scoresby Sound, where it is common. In Eirik Raude Land it is infrequent, in Germania Land rather common, one specimen has been found at the head of Independence Bay at Cape Schmelck (P. Freuchen), and it is known from several places on the north coast (Th. Wulff).

In Umivik Bjørlykke collected a very vigorous tussock 8 cm in height (including the fruits), an exceptional size in the Arctic for this small plant.

64. *Cardamine pratensis* L.

Umanak: Vogtsbu (B), Rudiøya (B).
Kangerdlugsuatsiak: Narsak (D, S).

In Southeast Greenland *C. pratensis* was previously not known south of Angmagssalik where it is very rare and collected in sterile condition only (without flowers). Along the coast northwards the next finding place is Scoresby Sound where it is rare but found in several localities. In Eirik Raude's Land it is very rare, but it is found still further north, at Danmarks Havn in Germania Land 76° 46′ (Lundager), where it has been collected in flowering condition. This is, as far as we know, its northern limit on the east coast.

Our specimens from Narsak and Rudiøya are in flower with siliques reaching a lenght of 6 mm, but hardly capable of producing viable seeds which seems to be the case also in other parts of the Arctic.

It seems to us difficult to decide whether the pinnae of the cauline leaves are petiolulate or not. The veins of the petals are rather distinctly coloured. It appears that the differences between the two forms *C. pratensis* L. and *C. dentata* Schultes in the Arctic are less distinct. This is, at any rate, the case in our material so that no further classification is given here.

[1] See Consp. Fl. Groenl. p. 445 and p. 251.

65. *Cochlearia officinalis* L. var. *groenlandica* (L.) Gel.

Umivik: Utermiut (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Skjoldungen, inner north side (B).
Umanak: Pilerkit (B).

Previously found:

(*Pikiutdlek*: Snedorfs Ø 65° (Graah))
Umivik: Gabeløya 64° 22′ (Graah) v. Graah 1832 p. 100.
Umanak: Umanak (E) and (Graah) v. Graah 1832 p. 89.
Puisortok: Probably at Cape Bille (Graah) v. Graah 1832 p. 153.
Iluilek: Ivimiut (E).
Ikerasarsuak: Nunatsuk (E), Kapiarfik (Sylow), Kangerdlup Pava (E), Umanarsuak (Sylow).

Our impression is that *Cochlearia* is very rare in Southeast Greenland as compared with other parts of the Arctic especially those with a rich bird-life (Spitsbergen, Novaya Zemlya) where the bird rocks are more or less completely covered with the scurvy grass. It is rare in Angmagssalik and it is known only from 6 localities along the coast northwards to Scoresby Sound. It is frequent neither in Scoresby Sound nor in Eirik Raude's Land, but is common further north at Danmarks Havn in latitude 76° 46′. On the east coast it has not been found north of this place. But it is known from one locality on the north coast: Gunnar Andersson Valley (Th. Wulff).

66. *Draba aurea* M. Wahl.

Pl. II.

Akorninarmiut: Kvanndalen (D), Finnsbu (B), Dronning Marias dal (B, D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Auarket: Karra (E).

Draba aurea is common in Southwest Greenland where it is known as far east as Ujarasarsuk in the western end of Ikerasarsuk. It was not found in the southern part of the southeast coast investigated by us. Further north it appears to be quite rare. It is rare also in Angmagssalik where it is found only in the inner part. North of Kap Warming at 67° 1′—2′ it is known only from its northern limit in Scoresby Sound where it is common in the inner parts (Hartz).

Many of our specimens reach a height of 30 cm, and they were usually found growing in small groups on dry slopes, lichen heats and similar habitats. They were particularly found near the Norwegian station at Dronning Marias dal.

67. *Draba crassifolia* Graham.

Fig. 11.

Kangerdlugsuak: Storfjord Radio (S).

On the east coast previously known from one locality near Kingorsuak on Kakasuak in Angmagssalik (Kruuse), next finding place north of this is our locality in Kangerdlugsuak and then Kap Dalton at 69° 25′ (H, K). In Scoresby Sound it is not common but known from several localities, and in Eirik Raude's Land it is very rare with its northern limit at Kap Hold with Hope (Hartz).

Our specimens are 2—4 cm in height and of the characteristic yellowish green color. They were collected only in one locality in Kangerdlugsuak, on the slopes behind the radio station.

Fig. 11. *Draba crassifolia* with its glabrous siliques and very short style. Specimen from Kangerdlugsuak. Magn. $^{3,5}/_{1}$.

68. *Draba fladnizensis* Wulf. (?)

Not seen by us. Previously found:

Kangerdlugsuak: N. Aputitek (A).

Kruuse states that this species is rather common in Angmagssalik, also giving a few localities northwards along the coast to Scoresby Sound, and further a series of localities north to Little Pendulum Island. However, on account of his very broad diagnosis "all white-flowered, ciliate, short-ribbed individuals" (1905, p. 163) it is not possible, without having seen the original material, to know which species according to modern revisions are here included. It seems to us that he possibly has included *D. lactea* Adams and forms of *D. rupestris* R. Br. E. Ekman (1932, p. 442) states on the basis of the material which she has examined that the distribution of the pure *D. fladnizensis* in East Greenland is from Alpfjorden at about 72° 20′ N to Little Pendulum Island at 74° 40′ N.

69. *Draba incana* L.

Pl. II.

Akorninarmiut: Myrodden (D), Eskimoneset (D, S).

Previously found:

Iluilek: Kangek (V).
(*Ikerasarsuak*: Ikerasarsuk (V)).

This rather conspicuous plant which according to M. Porsild (1930) is very common in Southwest Greenland seems on the contrary to be

very rare on the southeast coast. Here we did not see it except in Akorninarmiut where only three specimens were found. They are more or less branched at the base, the biggest one being 15 cm high.

In Angmagssalik it is rare reaching its northern limit at Akiliarisek at 66° 18′ (Kruuse) in Sermilik fjord.

70. *Draba nivalis* Liljebl.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Amdrupneset (S).
Akorninarmiut: Trollfjordeid (B).
Umanak: Vogtsbu (B).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Umanak: Umanak (E).
Iluilek: Kangerdluluk (V).

Draba nivalis is very rare in the southern parts of the southwest and southeast coast. *Drabae* in general are rare here as compared with truly Arctic regions.

In Angmagssalik it is rare. Along the coast northwards to Scoresby Sound it is known from several places and is rather common in Kangerdlugsuak. In Scoresby Sound it is common, but rather sparse in Eirik Raude's Land where it reaches its northern limit on Sabineøya at 74° 30′ (Copeland et Pansch, Dusén et Nathorst, Hartz et Kruuse).

71. *Draba rupestris* R. Br.

Fig. 12.

Kangerdlugsuak: Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Finnsbu (B, D, S), Dronning Marias dal (D, S).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found: (here included all data in Consp. Fl. Groenl. under: *D. rupestris* R. Br., *D. hirta* L. and *D. corymbosa* R. Br.).

Umanak: Umanak (E) (*D. corymbosa*).
Tingmiarmiut: Brattneset (E) (*D. corymbosa*).
Anoritok: Between Anoritok and Puisortok (V) (*D. corymbosa*).
Iluilek: Kangerdluluk (V) (*D. corymbosa*).

Kruuse 1905 p. 234 states that *D. hirta* L. and particularly forms belonging to *D. rupestris* R. Br. are common in Angmagssalik. In his list of 1926 Ostenfeld records both *D. rupestris* and *D. hirta* (*borea*) from Angmagssalik and southwards, and records *D. cinerea* from Angmagssalik and northwards. This latter record may not be derived from the works of Hartz and Kruuse.

It is hardly possible from literature only to give an approximately correct and detailed picture of the distribution of these species in Southeast Greenland. The old material has to be revised.

Our impression is that *D. rupestris* occurs only sparingly in Southeast Greenland particularly in the southernmost parts. It is very rare also in the southern parts of the southwest coast.

In Kangerdlugsuak it is rather common and it seems not to have been found in pure state north of this fjord.

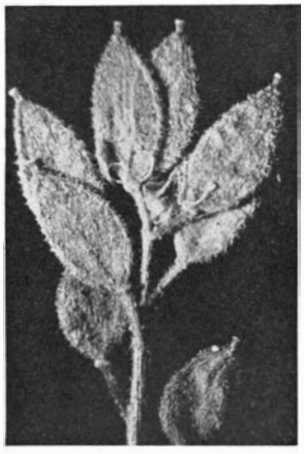

Fig. 12. *Draba rupestris*. Specimen from Narsak by Lindenowfjord. Magn. 3,5/1.

The *Draba* flora of Southeast Greenland is exceedingly poor in individuals. In most places we did not see any *Drabae*, a sharp contrast to the conditions in truly Arctic regions.

Some of the more critical forms of our limited material were sent to Mrs. E. Ekman, Stockholm, who has kindly furnished the following determinations.

Draba nivalis × *rupestris* from Dronning Marias dal (D, S) with f. *leiocarpa* from Finnsbu (B). From the same localities we also have a few less certain hybrids of these species.

Draba lactea × *nivalis*, one specimen from Storfjord Radio in Kangerdlugsuak. No pure *D. lactea* was found by us.

Subularia aquatica L.

Not seen by us.

On the east coast it is known only from Angmagssalik where it has been found in 3 localities near Tasiusak (= Kong Oscars havn 65° 37′) (Eberlin, Kruuse). As far as we know it is exceedingly rare also in Southwest Greenland where it has been found only at Tasersuak Kingua at 60° 15′ and south of this place at Fredriksdal at 60°.

Callitrichaceae.

72. *Callitriche hamulata* Kütz.

Pl. II.

Umanak: Innfjorden (D).
Kangerdlugsuatsiak: Møretun (D, S).

Previously found:
Ikerasarsuak: Nunatsuk (E) (v. Consp. Fl. Gr. p. 445).

This aquatic plant which preferably occurs in running water is certainly rare in Southeast Greenland, although it may not be so rare as our localities indicate.

At Møretun it was found growing in running water at the bottom of the outlet of a small lake at an altitude of 200 m. In Innfjorden it was growing in still water in a lake.

The northernmost locality for this plant is Kruuse's *C. hamulata* var. *trichophylla* at Elvbakker in Angmagssalik, which, however seems to be uncertain as it is recorded in Ostenfeld's list (1926) with a question mark.

73. *Callitriche verna* L. emend. Lønnr.

Pl. II.

Kangerdlugsuak: Storfjord Radio (S).
Akorninarmiut: Myrodden (D, Vogt), Dronning Marias dal (B).
Umanak: Rudiøya (B).
Tingmiarmiut: Lomvatnet (B).

Appears to be rare on the east coast where it was previously known only from Angmagssalik (mostly as f. *minima* Hoppe) and from a few localities in Scoresby Sound (only as f. *minima*).

We have typical f. *minima* from moist ground at Storfjord Radio (this form only) and Dronning Marias dal (this form only). On Myrodden either form was found, and in the other localities the aquatic main form only. We have seen no. *C. anceps* Fern. (Fernald 1908, p. 51) from East Greenland which has been recorded from many places on the west coast (Samuelsson 1925, p. 621).

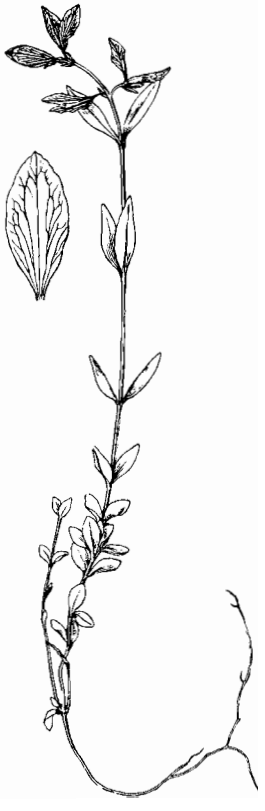

Fig. 13. *Polygala serpyllaceum*. The specimen from Dr. Marias dal. Magn. 1/1

Polygalactaceae.

74. *Polygala serpyllaceum* Weihe.

(*P. depressum* Wend.)

Fig. 13 and Pl. II.

Akorninarmiut: Dronning Marias dal (D).

This species has not previously been found in Greenland. Our single specimen was found on the slopes above the Norwegian station. It did not attract our attention until the days harvest was being pressed in the evening so that the locality, unfortunately, can not be fixed with any greater exactness. Later in the summer when we again visited Dronning Marias dal we were not able to rediscover it. At this time of the year it would be without flowers and much more difficult to detect in the dense vegetation at this place.

On account of the ascending stem, the opposite leaves, and the few-flowered inflorescence our specimen is to be referred to *P. serpyllaceum* Weihe. However, this species is not in all cases easily distinguished from *P. vulgare*. Our specimen is 9 cm high with 4 flowers (Fig. 13).

P. serpyllaceum is a West-European species and the localities closest to our region are the Norwegian west coast, the Faroes and Scotland. It seems not to have been found in Iceland from which country *P. vulgare* is recorded.

Cornaceae.

75. *Cornus suecica* L.

Pl. II.

Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Anoritok: Kanajorkat (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Kutek (E).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), Tunua (Sylow), (Ikerasarsuk (V)).

Our impression is that *Cornus* is rather rare in Kangerdlugsuatsiak. On the other hand it is stated to be very common on the southwest coast (M. Porsild 1930). It was in several localities seen fruiting. The northern limit is Kanajorkat at 61° 37′ (E).

Umbelliferae.

76. *Angelica archangelica* L.
(*Archangelica officinalis* Hoffm.)

Fig. 14 and Pl. II.

Akorninarmiut: Trollfjordeid (B), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Brattneset (D), Tvihamna (D).
Kangerdlugsuatsiak: Straumen (T), Grytvika (D), Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Nukarbik (=Imarsivik) (Graah 1832 p. 130), Dronning Marias dal (Graah 1832 p. 108).
Umanak: Umanak (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Tunua (E).

In the larger fjord regions in Southeast Greenland north to Angmagssalik the angelica root seems now to be rather common. It grows in the inner part of the fjords preferably by brooks and in willow scrub, ascending to some hundred metres altitude. Between Iluilek and Tingmiarmiut it has not been collected but it is highly probable that it will be found also in this region when the fjords here are more exhaustively investigated, particularly in places far from old sites where one might suppose that the Eskimos in former times could not permanently have decimated the stand. In Angmagssalik it is rather rare, found only in the inner parts where it ascends to an altitude of 700 m (Kruuse). The northern limit is here at 66° 19′.

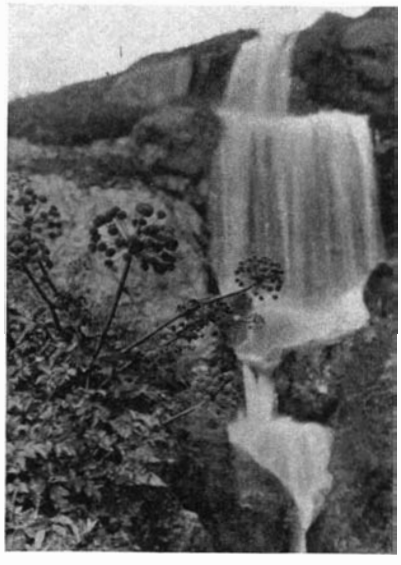

Fig. 14.
Angelica archangelica.
Narsak at Lindenowfjord 29/7 1932.

The *Angelica* not rarely exceeds 1 m in height with a stem diameter in the lower part of more than 7 cm (Kruuse has observed a diameter of 8 cm in Angmagssalik).

Violaceae.

77. *Viola labradorica* Schrank.

Kangerdlugsuatsiak: Grønlia (D).

New for the east coast.

This species was found growing in great quantities on the steep southern slopes of the point at Grønlia, together with *Lathyrus maritimus*, *Galium triflorum*, and others. All the specimens were in fruit.

78. *Viola palustris* L.

Akorninarmiut: Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Puisortok: Karra Akungnak (E).
Iluilek: Kangerdluluk (V), Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow).

More or less rare on moist fertile slopes along the entire southeast coast to its northern limit in Angmagssalik. In the latter part of July it was, as a rule, past flowering.

Caryophyllaceae.

79. *Cerastium alpinum* L.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandalfjell (T), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Husøya (D), Imarsivikøya (B), Imarsivik (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Myrodden (D), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T).
Kangerdlugsuatsiak: Grytvika (D), Svartvika (D), Grønlia (D), Møretind 800 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Igdloluarsuk: Kemisak (Graah).
Puisortok: Puisortok (E).
Anoritok: Anoritok (V).
Auarket: Koremiut (V), Ingitait (V).
Iluilek: Kangerdluluk (V, E), Ivimut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V).

Very common in Southeast Greenland and is especially vigorous on the old Eskimo sites. It is more or less common along the entire east coast as far north as investigations have been extended, but it has not yet been found on the north coast. In Eirik Raude's Land it ascends to an altitude of at least 1300 m (S).

C. arcticum Lge. is recorded for Nunatsuk and Kapiarfik in Ikerasarsuak (Sylow), but is not included in Ostenfeld's list of 1926. Some of the specimens in our large collection from Southeast Greenland can hardly be distinguished from *C. arcticum* Lge. (*C. Edmondstonii* (Wats.) Murb. et Ostenf.).

A monographic treatment of the forms of *C. alpinum* in East Greenland, including a comparison with the closely related species of *Cerastium* in Spitsbergen, would be very desirable.

80. *Cerastium lapponicum* Cr.

(*C. trigynum* Vill., *C. cerastioides* (L.) Britton)

Kangerdlugsuak: Skardet (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Utermiut (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rùdiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Nordpollen (D), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).
Igdloluarsuk: Kemisak (Graah).
Anoritok: Anoritok (V).
Auarket: Taterait (E).
Iluilek: Ivimiut (V), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Kekertak (V).

Very common in Southeast Greenland in gravelly, moist places frequently in association with *Carex lagopina*, but grows also in other places particularly on old Eskimo sites. It is common in Angmagssalik and on the coast northwards to Scoresby Sound where it is also common. It is rare in Eirik Raude's Land, known only from a few localities, the northernmost of which is Kap Franklin at 73° 16′ (Seidenfaden).

81. *Honckenya peploides* (L.) Ehrh.

Akorninarmiut: Devoldlia (D, S), Kvanndalen (D), Dronning Marias dal (B, D, S).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Langholmen (B).
Kangerdlugsuatsiak: Kutekfjorden (T), Straumen (T), Mortensberg (D, S, T), Grønlia (D).

Previously found:

Kangerdlugsuatsiak: Kangerdluarak (E).
Ikerasarsuak: Kekertak (V).

Our impression is that this species is rather rare in the greater part of the southeast coast. It is known from several localities in Angmagssalik, but has not been found on the coast between this region and Scoresby Sound. In the inner part of Scoresby Sound it is rather common (Hartz), and it is known from several localities in Eirik Raude's Land. The northern limit is Little Pendulum Island (Dusén et Nathorst) at about 74° 30′.

82. *Minuartia biflora* (L.) Schinz et Thell.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Devoldlia (D, S), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Kangerdlugsuatsiak: Møretind 600 m (D, S).

Previously found:

Kangerdlugsuak: N. Aputitek (A).
Umanak: Umanak (E).
Anoritok: Kanajorkat (E), Kap Tordenskjold (E).
Auarket: Ingitait (E).
(*Ikerasarsuak*: Ujarasarsuk (V)).

Rare in the southernmost part of Southeast and Southwest Greenland. In Akorninarmiut it is not rare, and in Angmagssalik it appears to be rather common, which is likewise the case in Scoresby Sound and on the coastal stretch lying between. In Eirik Raude's Land it is rather common in the outer parts. It is known from one locality in Germania Land at Danmarks Havn at 76° 46′ (Lundager) which is its northern limit on the east coast. It has not been found on the north coast.

83. *Minuartia groenlandica* (Retz.) Ostenf.
(*Arenaria groenlandica* (Retz.) Spreng.)

Pl. III.

Kangerdlugsuatsiak: Møretun (D, S), Narsak (D, S).

Previously found:

Puisortok: Puisortok (E).
Iluilek: Ivimiut (E).
Ikerasarsuak: Tunua (Sylow), (Ikerasarsuk (V)).

Found by us only in two localities. At Narsak it was found growing in river sand in a small valley leading east from the old Eskimo sites to Møretun. At Møretun it was found growing in the same way by a brook in the valley leading to Persvatnet. Our specimens are partly in flower, partly in fruit. The northern limit is Puisortok at 61° 55′ (E), south of the large glacier of the same name.

84. *Minuartia rubella* (Wahlenb.) Graebn.

Kangerdlugsuak: Brandalfjell 900 m (S), Storfjord Radio (S).
Akorninarmiut: Finnsbu (D, S), Dronning Marias dal (D, S), Skjoldungen, inner north side (B).
Tingmiarmiut: Brattneset (D, S).

As far as we know this species has not previously been found on the east coast any further south than Angmagssalik. By us it was not seen south of Tingmiarmiut. However, it appears not to be particularly rare on the southwest coast where the finding place nearest to our region is at Ujarasarsuk in the western end of Prins Christians Sund (Vahl). It may also in time be found in the southernmost part of the southeast coast. In the fertile talus slope by Brattneset it was found growing profusely in large dense tussocks reaching a diameter of more than 10 cm, and a height of 7—8 cm.

It is known from several localities in Angmagssalik north to Kap Wandel at 66° 18′, but was previously not observed between this place and Kap Dalton just south of Scoresby Sound. However, on this stretch it was found to be rather common in Kangerdlugsuak, where it was collected up to an altitude of 900 m. It is common in Scoresby Sound and Eirik Raude's Land, and rather common in Germania Land where it is found as far north as Ymer's Nunatak at 77° 24′ (J. P. Koch). Further north it has been collected in Danmarksfjord and Independence Bay (Freuchen) and it is known from several localities on the north coast (Th. Wulff).

Sagina caespitosa (J. Vahl) Lge.?

Recorded only from four places in Angmassalik by Kruuse, but not mentioned in the list of Ostenfeld 1926 from that district.

85. *Sagina intermedia* Fenzl.

Kangerdlugsuak: Spekkpynten (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Umivik: Otto Sverdrupfjorden (B).
Akorninarmiut: Finnsbu (B, D, S), Skjoldungen, inner north side (B).
Umanak: Rudiøya (B).
Tingmiarmiut: Lomvatnet (B).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Kangerdlugsuak: N. Aputitek (A).
Iluilek: Kangek Isl. 60° 53′ (V), Ivimiut (E, V).
Ikerasarsuak: Nunatsuk (Porsild).

Occurs very sparingly in Southeast Greenland, on the beaches and in gravelly places. It appears to be rather rare along the entire

coast north to, and including Germania Land. Further north a single, small specimen has been collected at the head of Independence Bay in Heilprin Land (Freuchen). It is known only from one locality on the north coast: Sommerdalen in Wulff Land at 82° 29′ (Th. Wulff).

86. *Sagina Linnaei* Presl.

Akorninarmiut: Imarsivikøya (B), Finnsbu (D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Nordpollen (D), Grønlia (D).

Previously found:
Kangerdlugsuak: Skærgaards Halvø (A).
Ikerasarsuak: Aluk (V), Nunatsuk (Porsild).

Rare in Southeast Greenland and rather rare in Angmagssalik. North of this place to Scoresby Sound it is known only from Skærgaards Halvø in Kangerdlugsuak (A), in which fjord we did not succeed in finding it. It is rare in Scoresby Sound, found only on Jameson's Land (H). The northern limit is in Eirik Raude's Land at Kap Seaforth on the north side of Fleming Inlet at about 71° 50′ (H, K).

In our collection *Sagina Linnaei* may in some cases be distinguished from *S. intermedia* only with difficulty.

87. *Sagina procumbens* L.

Pl. III.

Kangerdlugsuatsiak: Mortensberg (D, S), Nordpollen (D), Møretun (D, S).

Previously found:
Iluilek: Ivimiut (V).

Was found growing in dense mats on bare soil, preferably near the shore. It is rather rare and appears to occur only in the southernmost part of Southeast Greenland. The northern limit is Vahl's locality in Iluilek.

88. *Silene acaulis* L.

Kangerdlugsuak: Skardet (S, T), Spekkpynten (S), Elvefaret (T), Brandalfjell 1000 m (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Utermiut (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Fossheim (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Umanak: Umanak (E).
Puisortok: Kap Rantzau (E).
Anoritok: Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Ivimiut (V).
Ikerasarsuak: Aluk (V), Kekertak (V).

Very common along the entire east coast at least as far north as Germania Land. Further north it is known from Danmarksfjord and Independence Bay and has also been collected in many places on the north coast. It ascends to high altitudes: at Lindenowfjord 1200 m, in Kangerdlugsuak 1000 m, Eirik Raude's Land 800 m.

89. *Stellaria calycantha* (Ledeb.) Bong.

(*Stellaria borealis* Big.)

Akorninarmiut: Eidsfjorddalen (B), Husøya (D), Imarsivik (B), Floneset (D), Kvanndalen (D), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S, T).
Kangerdlugsuatsiak: Grytvika (D), Svartvika (D), Nordpollen (D), Grønlia (D), Persvatnet (D), Møretun (D, S), Narsak (D, S).

Previously found:

Auarket: Taterait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Tunua (E).

Seems to be common in places where vigorous vegetation occurs as far north as Akorninarmiut. It grows particularly well on the fertile talus slopes and old Eskimo sites where it may entirely penetrate the other vegetation. In Angmagssalik it is very rare. The northern limit is still at Kingorsuak at 66° 8′ (Kruuse).

90. *Stellaria humifusa* Rottb.

Umivik: Utermiut (B).
Akorninarmiut: Imarsivik (B), Imarsivikøya (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Anoritok: Tennøya (D).
Kangerdlugsuatsiak: Nordpollen (D), Møretun (D, S).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Umanak: Umanak (E).
Tingmiarmiut: Ekalungmiut (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V).

More or less rare on the beaches of the southeast coast north to Angmagssalik at 66° 20′. It has not been found between this point and Kap Dalton at 69° 25′. It is common in Scoresby Sound at the coast, and it is not rare in the outer parts of Eirik Raude's Land where the northern limit is on Sabine Island at 74° 30′ (Copeland et Pansch, Dusén et Nathorst, Hartz et Kruuse).

It grows as a rule in flat tussocks on the beach in association with *Puccinellia phryganodes* and *Carex glareosa*. In Southeast Greenland it is usually profusely flowering.

91. *Stellaria longipes* Goldie.

Pl. III.

Akorninarmiut: Eskimoneset (D, S), Dronning Marias dal (B).

This species was previously unknown south of 69° 30′ near Scoresby Sound. In Scoresby Sound, Eirik Raude's Land, and Germania Land it is common everywhere. Further north it is found in several places to Fr. Hyde Fjord in Peary Land at 83° 15′ (J. P. Koch). It is common on the north coast (Th. Wulff).

In Akorninarmiut it was certainly very rare. The specimens are vigorous and fertile, reaching a height of 20 cm.

92. *Stellaria media* (L.) Cyr.

Pl. III.

Not seen by us. Previously found:

Anoritok: Anoritok (V).
Iluilek: Ivimiut (V).

Certainly now very rare along the east coast and probably because the Eskimos a long time ago have ceased regularly to travel and live here. Northern limit: Ivimiut.

93. *Viscaria alpina* (L.) G. Don.

Kangerdlugsuak: Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Husøya (D), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).

Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah), (Graah 1832 p. 109 "vellugtende Lychnis").
Tingmiarmiut: = Brattneset (E).
Anoritok: Anoritok (V).
Auarket: Koremiut (V), Karra (E), Taterait (E).
Iluilek: Kanderdluluk (V), Serketnua (E), Iluilek (E), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V).

Very common in most places on the east coast north to the inner parts of Scoresby Sound. The northern limit is at Kap Humboldt (73° 6′) in Eirik Raude's Land, the only locality in this area (Vaage).

Specimens with white flowers are occasionally seen: Nenese (V), Dronning Marias dal (D, S).

Portulacaceae.

94. *Montia lamprosperma* Cham.

Pl. III.

Akorninarmiut: Myrodden (Th. Vogt), Dronning Marias dal (B).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Anoritok: Anoritok (V).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).

Usually found growing on the edge of small ponds. It is apparently very rare in Southeast Greenland. The northern limit is at Myrodden (Th. Vogt).

Polygonaceae.

95. *Koenigia islandica* L.

Kangerdlugsuak: Brandal (S).
Akorninarmiut: Kikut (B), Dronning Marias dal (B), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Rudiøya (B).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Anoritok: Anoritok (V).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).

This species is really rare in Southeast Greenland where it was found only scattered and sparingly in each place.

In Angmagssalik it has been found in several localities. On the stretch between this region and Kap Dalton south of Scoresby Sound it is known from two localities only: Nualik at 67° 16′ (K) and our locality in Kangerdlugsuak.

In Scoresby Sound and Eirik Raude's Land it appears to be less rare than further south. Its northern limit is Germania Havn on Sabine Island at about 74° 30′ (Gredin, Hartz et Kruuse).

96. *Oxyria digyna* (L.) Hill.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Elvefaret (T), Brandalfjell (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Utermiut (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (B), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Kutekfjorden (T), Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).

In the region south of Angmagssalik the plant is said to be common but records of localities are missing. Graah (1832), in the account of his travel, records the sorrel ("syre") from the following places:

Umivik: Gabeløya (Graah p. 100).
Akorninarmiut: Imarsivik (Graah p. 135, 139).
Umanak: Umanak (Graah p. 88).

This widely distributed plant is very common in East Greenland having been collected in most places where plants have been found at all. It is likewise known from several places on the north coast. In Eirik Raude's Land it was collected at an altitude of 1000 m (Vaage).

97. *Polygonum aviculare* L. sens. lat.

Ikerasarsuak: Nunatsuk (E).

Not seen by us. It is apparently very rare if it occurs at all further north on the uninhabited coasts of Southeast Greenland.

98. *Polygonum viviparum* L.

Kangerdlugsuak: Spekkpynten (S), Elvefaret (T), Brandal (S, T), Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Kvanndalen (D), Finnsbu (B, D, S), Myrodden (D), Dronning Marias dal (B, D, S), Midterhuset (D).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).

This species is said to be common south of Angmagssalik but no detailed records of localities are given in Consp. Fl. Groenl. *P. viviparum* is common at least as far north as Eirik Raude's Land where it has been found up to an altitude of 1000 m. North of Little Pendulum Island it is known from the vicinity of Danmarks Havn in Germania Land at about 76° 40′ (Lundager), from Valmuedalen at the head of Independence Bay (Freuchen), and from several places on the north coast (Th. Wulff).

On old sites it frequently exceeds a height of 25 cm. Fruiting specimens have as far as we know never been found in the Arctic.

99. *Rumex acetosella* L.

Tingmiarmiut: Brattneset (D, S).

The plants were found in profusion on a small, low promontory below the big talus slope somewhat on the westside of the old Eskimo sites.

This species has previously not been found south of Angmagssalik in which place it is rare and found as far north as 66° 19′ (Kruuse). Between this place and Scoresby Sound it has not been seen as far as we know. In Scoresby Sound and Eirik Raude's Land it is rather common particularly in the inner parts, and it attains its northern limit at Revet at the head of Tyrolerfjorden at about 74° 33′ (Seidenfaden, Vaage).

Our specimens from Tingmiarmiut have fruits in abundance and reach a height of 25 cm.

Betulaceae.

100. *Betula glandulosa* Michx.

Pl. III.

Umanak[1]: Claradalen (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, I, S), Persvatnet (D, S), Møretun (D, S), Møretind 700 m (D, S), Narsak (D, S).

Previously found:

Auarket: Karra (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V), Narsak (E).

Very common in the southernmost part of Southeast Greenland growing as a small shrub frequently trained to rocks in espalier fashion.

In the investigated area of Kangerdlugsuatsiak only this species was found, not *B. nana*. Our specimens from this area closely conform with the diagnosis of this species as given by Winkler (1904, p. 73), the only deviation being that the young shoots are minutely pubescent, which, however, is frequently obscured by a layer of resin. This type of pubescence is also present on specimens of *B. glandulosa* seen from North America, West Greenland and Siberia. Some pubescence, therefore, seems to be characteristic also of *B. glandulosa* and should in our opinion be included in the diagnosis of this species.

On Møretind it was found at an altitude of 700 m.

101. *Betula nana* L.

Pl. III.

Akorninarmiut: Devoldlia (D, S), Finnsbu (B), Eskimoneset (D, S), Dronning Marias dal (B, D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).

Our specimens of *Betula* from the Skjoldungen region are in habit typical *B. nana*. The only character that might indicate an admixture of *B. glandulosa* is the more numerous resin glands observed in most of the specimens. With this reservation we refer our *Betula* from Akorninarmiut to *B. nana*. However, the presence or absence of resin glands is not in itself a distinguishing feature of *B. nana* and *B. glandulosa*. Practically all young, pubescent shoots of *B. nana* have normally resin glands. This statement is based on material examined at the Botanical

[1] The specimens from Rudiøya (Bjørlykke, 1932, p. 5) are hardly pure *B. glandulosa*. We have referred them to the hybrid with *B. nana*.

Museum in Oslo from Eirik Raude's Land, Spitsbergen, Novaya Zemlya, Scandinavia and Northeast Greenland.

Our impression is that the centre of the transition zone in Southeast Greenland between the two species of *Betula* apparently lies south of Umanak, if there is a distinct transition zone at all. On the basis of the present fragmentary collections it is hardly possible to draw a clear picture of the extent of such a zone on the east coast, and our material is likewise insufficient to demonstrate the entire width of morphological transitions between the two species.

B. nana has not been found south of Akorninarmiut where it is rather common, but usually perhaps not quite pure. In Angmagssalik it is not common, found only in the interior. North of Kangerdlugsuatsiakfjord at about 66° 20′ it is not recorded below Kap Dalton at 69° 25′ right south of Scoresby Sound. In Scoresby Sound it is common, rather common also in Eirik Raude's Land reaching its northern limit at Revet in Tyrolerfjorden at 74° 25′ (Seidenfaden, Vaage).

102. *Betula glandulosa* Michx. × *nana* L.

Pl. III.

Umanak: Innfjorden (D), Rudiøya (B).

From the region between Kangerdlugsuatsiak and all the way to Umanak we have unfortunately not seen any *Betula*, and in the same region *B. nana* seems not yet to have been found. From Umanak we have two sterile but otherwise unmistakable specimens of *B. glandulosa*, while the other specimens from this place are habitually more closely related to *B. nana* with their small, broad leaves and bushy growth. However, they are only slightly pubescent, strongly glandular even on older twigs, and the leaves and aments are stalked. They are here referred to hybrids of *B. glandulosa* and *B. nana* in accordance with the general opinion on such intermediate forms of *Betula*.

Betula glandulosa Michx. × *odorata* Bechst?.

From Mortensberg (T) and Narsak (D, S), both in the Kangerdlugsuatsiak district, we have some sterile twigs of a not quite typical *Betula glandulosa* characterized by their relatively large, long-petiolate and ± acutely dentate and acute leaves, features possibly indicating a hybridization with *B. odorata* Bechst. nearest growing in Southwest Greenland not so far off (Lid 1932, p. 6).

On the other hand we can hardly from the material deny the possibility of these twigs being only locally developed gigas shoots on otherwise normal plants, as was surely the case in the Narsak specimen. Such single, enlarged shoots are not very rarely seen in *Betula*, *Salix* a. o. and we have examples of this also from Eirik Raude's Land, where

single twigs of *B. nana*, without any possible hybridization, occasionally may develop shoots with leaves up to 3 cm wide.

We have not seen Eberlin's *B. alpestris* from Kap Tordenskjold (Consp. Fl. Groenl. p. 281, 709) but probably this also may belong to the same group as our specimens from Narsak and Mortensberg. In cases like these it is very difficult to arrive at any definite opinion whatever as to the genetic nature of such dried fragments without having studied the complete plants, preferably in the field.

Fig. 15. Long, straight and forward pointing hairs on the lower side of a *Salix* leave which might be interpreted as an admixture of *S. arctica*. Specimen from Umanak. Magn. 5/1.

Salicaceae.

103. *Salix arctia* (Pall.) × *arctophila* Cock. × *glauca* (L.).

Fig. 15.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Elvefaret (T), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Otto Sverdrupfjorden (B).
Akorninarmiut: Trollfjordeid (B), Finnsbu (D, S).
Umanak: Vogtsbu (B).

The *Salix arctica* admixture in these specimens is much less prominent than in plants seen from Eirik Raude's Land in which region the greater part of the specimens of this triple hybrid (Floderus) may be said to be nearly pure *Salix arctica*. However, in our specimens the *arctica* element is distinctly present particularly in the hairs of the lower leaf surface which are long and straight, pointing forwards (Fig. 15), and in the more or less distinctly radial venation of the pyriform leaves, whereas in the sexual parts the *arctica* element is very indistinct. These plants in which the *arctica* element, in our opinion, may be traced are in other characters and in their habits identical with the hybrid *S. arctophila* × *S. glauca* which is the dominant *Salix* in Southeast Greenland.

104. *Salix arctophila* Cock. × *glauca* (L.).

Kangerdlugsuak: Skardet (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).

Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, I, S), Persvatnet (D, S), Møretind 700 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found (sub *S. glauca* L.)[1]:
Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).
Akorninarmiut: Dronning Marias dal (Graah).
Iluilek: Kutek (E).
Kangerdlugsuatsiak: Nenese (E).
Ikerasarsuak: Kekertatsiak (E).

The hybrid *S. arctophila* × *S. glauca* has in Southeast Greenland a strong *glauca* element. Specimens from localities as far south as Narsak in Lindenowfjorden and from some localities further north have a characteristic pubescence of long hairs pointing forward on the lower surface of the younger leaves. This is characteristic also of *S. arctica* and may possibly be referred to a slight admixture of this species.

Specimens in which the *S. glauca* element is very indistinct are rare. We have such specimens from:

Kangerdlugsuak: Storfjord Radio (S).
Akorninarmiut: Kikut (B), Finnsbu (B).
Tingmiarmiut: Lomvatnet (B).
Kangerdlugsuatsiak: Fossheim (I).

The *S. arctophila* element seems to be particularly distinct in the specimen from Storfjord Radio with its green almost transparent glabrous twigs at acute angles and its leaves with sparse but distinct marginal teeth and no dots (Floderus "opunkterad") on the lower surface. The almost glabrous specimens from Finnsbu have small dentate stipules like *S. arctophila*, whereas its pyriform leaves might indicate an admixture of *S. arctica*. Some other specimens are characterized only by their rudimentary pubescence. Pure *S. arctophila* has never been observed on the east coast of Greenland.

105. *Salix glauca* L.

Kangerdlugsuak: Brandal (T).
Umanak: Vogtsbu (B).
Kangerdlugsuatsiak: Narsak (D, S).

Phenotypically pure *S. glauca* is undoubtedly very rare in Southeast Greenland. From the 3 localities mentioned above we have specimens with no distinguishable admixture of *S. arctophila* or *S. arctica*.

[1] We have not seen the material here cited.

Our collection of *Salix* from Southeast Greenland confirms the observations of B. Floderus that forms of *S. arctophila* × *S. glauca* with a strong *glauca* element are the dominant willows of this region.

It appears to us that the hybrid admixture of *S. arctica* extends much further south on the east coast than previously known. Floderus (1923, p. 192, note) has indicated the possibility of this fact. We are of opinion that distinct *arctica* characters are present in specimens at least as far south as from Umanak. However, we want to point out that the triple hybrid in our material in habit is identical with the common *S. arctophila* × *S. glauca* with its ± dominant *glauca* element. On the other hand, most specimens of this triple hybrid in Eirik Raude's Land (Vaage 1932, p. 44) are of a different type being quite dominated by the *S. arctica* element. *S. arctica* appears to us to occur in an almost pure state in that region.

106. *Salix herbacea* L.

Kangerdlugsuak: Skardet (S, T), Elvefaret (T), Brandal (S, T), Storfjord Radio (S), Amdrupnesec (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Trollfjord-eid (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Møretind 1 200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Puisortok: Kap Rantzau (E).
Anoritok: Anoritok (V).
Iluilek: Kangerdluluk (V), Serketnua (V).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).
Ikerasarsuak: Kekertatsiak (E), Nunatsuk (E), (Chr. IV Ø (Sylow)).

Very common on the southeast coast and further north at least to Scoresby Sound. In Eirik Raude's Land it occurs more sparsely, found only in the outer parts, and rare in the northernmost part to Sabine Island (H, K). North of this place it is known from one locality only, Danmarks Havn in Germania Land at 76° 46′ (Lundager), the northern limit of *S. herbacea* on the east coast and probably also in all Greenland.

Plumbaginaceae.

107. *Armeria vulgaris* Willd.

var. *maritima* (Willd.) Rosenv.

Not seen by us. Previously found:

Ikerasarsuak: Tunua (E).

Apparently very rare on the southeast coast.

var *sibirica* (Turcz.) Rosenv.

Not seen by us. Previously found:

Ikerasarsuak: Umanarsuak (Sylow).

Besides this locality var. *sibirica* is previously known on the east coast from 3 localities in Angmagssalik, from Kap Warming at 67° 1—2′ (Kruuse) and is rather common in the coastal areas of Scoresby Sound and Eirik Raude's Land. In Germania Land it is common at Danmarks Havn (Lundager), and further north it has been collected at the head of Independence Bay in Valmuedalen (Freuchen). This is its northern limit on the east coast. It has not been found on the north coast.

Pyrolaceae.

Pyrola grandiflora (DC.) Rad.

Not seen by us.

South of Scoresby Sound this plant is known only from one locality in Angmagssalik: in Kingorsuak on the west side at 66° 8′ (Kruuse). Otherwise its area of distribution on the east coast is from Scoresby Sound to its northern limit in Eirik Raude's Land at the east coast of Tyroler fjord, inner part, at 74° 33′ (Seidenfaden). Within this area it is rather common in the interior districts. In Southwest Greenland it is very rare, the locality nearest to our region being Ujarasarsuk in the western end of Prins Christians Sund (Vahl).

108. *Pyrola minor* L.

Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Anoritok: Kanajorkat (E).
Iluilek: Kangerdluluk (E, V), Ivimiut (V).

Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow).

Rather common in willow scrub and with ericaceous plants in the inner parts of the fjords of Southeast Greenland. It has been found in several localities in Angmagssalik to the northern limit on Kap Wandel at 66° 18′ (Kruuse). Our specimens rarely exceed a height of 17 cm.

Ericaceae.

109. *Bryanthus coeruleus* (L.) Dipp.

Kangerdlugsuak: Skardet (S), Amdrupneset (S).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Møretind (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Anoritok: Anoritok (V).
Iluilek: Serketnua (E).
Kangerdlugsuatsiak: Kangerdluarak (E), Nenese (V).
Ikerasarsuak: Kangerajak (Sylow), Aluk (V), Nunatsuk (Sylow).

Common along with other ericaceous plants and often on bluffs; in most places in Southeast Greenland north to Scoresby Sound where it is known from a few localities in the inner parts. Its northern limit is in Eirik Raude's Land at Antarctic Hamn at about 73° (Vaage).

110. *Cassiope hypnoides* (L.) Don.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Møretind 1 200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Kangerdlugsuak: N. Aputitek (A).
Umanak: Umanak (E).
Puisortok: Puisortok (E).
Anoritok: Anoritok (E).
Iluilek: Kangerdluluk (V), Serketnua (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (Sylow), (Chr. IV Ø (Sylow), Ikerasarsuk (V)).

On the southeast coast this species is common in all localities visited by us. It is also common in Angmagssalik and it has been found in several places on the coast north to Scoresby Sound. In Eirik Raude's Land it is known from one locality only: 5 km west of Husbukta on the south side of Geographical Society Island at about 72° 50′ (S). This is its northern limit.

111. *Cassiope tetragona* (L.) Don.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandalfjell 1 000 m (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).

This species, widely distributed in the Arctic, has its southern limit in East Greenland in Angmagssalik where it has been found in one locality only, Cassiope Fjæld in Kingorsuak at 66° 5′—66° 9′. Here it ascends to an altitude of at least 800 m (Kruuse). North of this place it was previously not known below 69° 30′ (H, K). However, it is common in Kangerdlugsuak at about 68° 15′ where it ascends to an altitude of at least 1 000 m.

It is very common in Scoresby Sound and Eirik Raude's Land. It is common in Germania Land, and further north it has been found at Cape Marie Valdemar at 77° 20′ (J. P. Koch), in several places in Danmark's fjord and Independence Bay (Freuchen), and on the north coast (Wulff).

It is worthy of note that this and several other plants elsewere common in the Arctic, such as *Papaver*, *Draba alpina*, *Potentilla emarginata*, do not seem to thrive in Southeast Greenland. When the alpine flora of this region is made better known some of these species may possibly be discovered to grow considerably further south of their present known area of distribution.

112. *Loiseleuria procumbens* (L.) Desv.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B).
Umanak: Pilerkit (B), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Igdlormiut (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretind 600 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Puisortok: Puisortok (E).
Anoritok: Anoritok (V).
Iluilek: Serketnua (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), Kangerdlup Pava (E), (Chr. IV Ø (Sylow)).

In dry places as in *Empetrum* heaths and on mountain sides with southern exposure this species was found in most localities of the area investigated but nowhere in great quantities. It is commonly distributed in Angmagssalik, extending further north to Nualik at 67° 16′ (Kruuse) where it reaches its northern limit.

Loiseleuria appears to flower early in the season. The only locality where we found specimens still in flower was Møretind at an altitude of 600 m. This was also the only place where we observed butterflies (2 specimens of *Argynis*).

113. *Rhododendron lapponicum* Wahlenb.

Pl. III.

Kangerdlugsuak: Brandal (S).
Akorninarmiut: Kikut (B), Devoldlia (D, S), Finnsbu (B), Dronning Marias dal (D, S), Kornok (D).
Umanak: Claradalen (D), Vogtsbu (B).

Previously found:

Umanak: Umanak (E).
Anoritok: Anoritok (V).

This rather conspicuous species seems to be rare in Southeast Greenland, at least south of Umanak and Akorninarmiut in which places it was found rather sparingly in dry places of the mountain slopes. South of Umanak it is known only from Anoritok (V) but according to Porsild (1930) it is common in Southwest Greenland.

It is rare in Angmagssalik, found only in the interior parts (Kruuse). It was previously not known between Nigertusok at 66° 18′ and Henry Land at 69° 35′. In Kangerdlugsuak it seemed to be rare, found in one place only namely at Brandal at about 68° 17′.

In Scoresby Sound and Eirik Raude's Land it occurs sparingly in the interior parts. This is likewise the case in Germania Land where it has been found in several places north to Fuglenæbs Fjæld (Lundager) at about 77°, its northern limit on the east coast.

114. *Vaccinium uliginosum* L.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Elvefaret (T), Brandal (S,T), Storfjord Radio (S), Brandalfjell (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S), Midterhuset (D).

Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (D).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Straumen (T), Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Møretind (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: N. Aputitek (A), Skærgaards Halvø (A), Mikisfjord (A).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (Graah 1832 p. 89).
Anoritok: =Okkiosorbik (Graah 1832 p. 153).
Iluilek: Kangerdluluk (V).

All of our specimens from Kangerdlugsuak and Umivik as well as some specimens from Kikut and Trollfjordeid in Akorninarmiut and Lomvatnet in Tingmiarmiut belong to var. *alpinum* (Big.) (=subsp. *microphyllum* Lge.).

The other specimens are in part glabrous and in part minutely pubescent (var. *pubescens* (Horn.) Lge.) with all intermediate stages. This minute pubescence is rarely seen in var. *alpinum* but is present even in some of our few specimens from Southeast Greenland. It occurs not rarely in specimens of *V. uliginosum* from Norway but in these the pubescence on the lower leaf surfaces is rarely so prominent as in some of the specimens from Greenland.

Judging from the summers of 1931 and 1932 it appears to us that *V. uliginosum* is much less fertile in East Greenland than it usually is in Scandinavia. The berries are sweeter but are rarely found in great quantities. They were found most abundantly in Dronning Marias dal, where we, however, should not have been able to pick more than half a liter in an hour. Many of the non-botanists we have met who have travelled along the coasts of Greenland maintain that they have seen and eaten true blueberries (*V. myrtillus*) and that they — of course — are well aquainted with the difference between that species and *V. uliginosum*. Nevertheless, true blueberries have not yet been found in Greenland.

V. ulginosum is common along the entire east coast at least as far north as Eirik Raude's Land. The northern limit is in Germania Land where it is rather common between Danmarks Havn and Dove Bay at about 76° 46′ (Lundager). Var. *pubescens* (Horn.) Lge. has not been found north of Scoresby Sound.

Empetraceae.

115. *Empetrum hermaphroditum* (Lge.) Hagerup.

Fig. 42.

Kangerdlugsuak: Skardet (S, T), Spekkpynten (S), Elvefaret (T), Brandal (S, T), Brandalfjell (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Husøya (D), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Kutekfjorden (T), Straumen (T), Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: N. Aputitek (A), Skærgaards Halvø (A), Mikisfjord (A).
Umivik: Putulik (Gabeløya) (Graah 1832 p. 100).
Akorninarmiut: Dronning Marias dal (Graah 1832 p. 108), Nukarbik = Imarsivik (Graah 1832 p. 135).
Umanak: The Sound between Griffenfeldts Isl. and the mainland (Graah 1832 p. 90), Griffenfeldts Isl. = Umanak (Graah 1832 p. 89).
Anoritok: = Okkiosorbik (Graah 1832 p. 153).
Ikerasarsuak: Aluk (V) and (Graah 1832 p. 70).

Empetrum is one of the most common plants found everywhere in great numbers, and it is nearly always abundantly fertile.

We have examined every single specimen in our collection and we have found all of them to be bisexual at least in some flowers. Accordingly, the entire material should belong to the tetraploid Arctic species *E. hermaphroditum* (Lge.) Hagerup. If it had not been for the apparently more Arctic distribution of this tetraploid form as compared with the more southern diploid form we should have considered it very dangerous in its consequences to base a new species on almost purely cytological characters. The future will show if the method in this case will hold good in a practical morphologic-systematic treatment.

Empetrum is very common in East Greenland at least as far north as the southern part of Eirik Raude's Land. In the northern part it occurs here more sparingly (Vaage). The northern limit is at Stormkap at about 76° 50′ in Germania Land in which area it has been found also at Danmarks Havn (Lundager).

Diapensiaceae.

116. *Diapensia lapponica* L.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Finnsbu (B, D, S), Skjoldungen, inner north side (B).
Umanak: Vogtsbu (B).
Tingmiarmiut: Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretind 600 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Anoritok: Anoritok (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertatsiak (E), Aluk (V), Kekertak (V).

Rather common on the southeast coast at least as far north as Angmagssalik. Further north to Scoresby Sound it is known from a few localities. It is common in Kangerdlugsuak. Hartz states that it is common everywhere in Scoresby Sound, but it has not yet been found north of this area.

Boraginaceae.

Mertensia maritima (L.) Don.

Not seen by us. On the east coast it is still known only from Grønlænderpynt near the trading station Tasiusak at 65° 37′ in Angmagssalik (Kruuse).

Scrophulariaceae.

117. *Bartschia alpina* L.

Kangerdlugsuak: Brandal (S), Polarisbreen (S).
Akorninarmiut: Kikut (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Iluilek: Kangerdluluk (V), Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kangerajak (Sylow), Aluk (V), Tunua (Sylow).

Rather common in most of the places visited by us in Southeast Greenland south of Angmagssalik. It grows commonly on slopes, where it may reach a height of almost 30 cm. It is commonly distributed in Angmagssalik but is, according to Kruuse, very rare north of 66° 20′ where it has been found in 4 places up to Kangerdlugsuak where the previous northern limit is to be moved a trifle further north: from Skærgaards Halvø at 68° 8′ to Brandal at about 68° 16′.

118. *Euphrasia latifolia* Pursh.

Kangerdlugsuak: Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S),
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Kangerdlugsuatsiak: Narsak (E).
(*Ikerasarsuak*: Ikerasarsuk (V)).

Common on dry slopes everywhere in the area investigated. In all of our specimens we have found few to many glandular tipped hairs and it appears that it is particularly this character that unites the otherwise rather polymorphic forms to one species. Fully developed specimens in flower and fruit vary in height from 2 cm to 26 cm. The taller specimens are not rarely branched from the base. A critical revision of the Greenland forms of this difficult genus is needed.

This species is rather rare in Angmagssalik where it is found to Nigertusok fjord at 66° 18′ (Kruuse). It was previously not known between this place and Turner Sund at 69° 20′ (H, K), but was found by us in Kangerdlugsuak.

In Scoresby Sound and Eirik Raude's Land it is rather rare, in the latter area found only in the interior southern part as far north as the south side of Jordanhill at 74° 07′ at the head of Clavering fjord (Seidenfaden).

119. *Limosella aquatica* L. f. *tenuifolia* Hoffm.

Pl. III.

Akorninarmiut: Myrodden (Th. Vogt).

This very inconspicuous plant was found at a small fresh water pool on Myrodden by Professor Th. Vogt, whose keen eyes detected many other interesting plants which escaped our attention. *Limosella* is new to East Greenland.

We have only two small specimens with narrow linear leaves only slightly expanded towards the apex. On the basis of these specimens and without any knowledge of the material of this species from West Greenland we are unable to decide whether our plants possibly may belong to the very closely related American saline form *L. subulata* Ives (vide Fernald: "Validity of Limosella subulata", Rhodora, 1918, p. 160). The somewhat thickened edge of the capsule ("wire-edged") and its fresh water habitat indicate that it belongs to the European *L. aquatica* f. *tenuifolia* Hoffm. which form by some authors is considered a distinct species.

120. *Pedicularis flammea* L.

Kangerdlugsuak: Brandal (S, T), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Dronning Marias dal (D, S), Skjoldungen, inner north side (B),
Kangerdlugsuatsiak: Møretind 600 m (D, S), Narsak (D, S).

Previously found:

Anoritok: Kap Tordenskjold (E).
Iluilek: Kangerdluluk (V), Kasingertok (E).

This is the only species of *Pedicularis* hitherto found south of Angmagssalik on the east coast. It is rare also in the southernmost parts of the west coast. In Angmagssalik it is rather rare, found to Kap Wandel at 66° 18′ (Kruuse). The next finding place northwards is our localities in Kangerdlugsuak where it seemed to be rather common on moist mountain sides. Further north it is found at Kap Dalton at 69° 25′, and Turner Sund, and it is rather common in Scoresby Sound and Eirik Raude's Land to Sabine Island (H, K). The next locality north of this is in Germania Land on Rypefjæld at about 77° (P. Freuchen), its northern limit.

121. *Pedicularis hirsuta* L.

Kangerdlugsuak: Brandal (S, T), Storfjord Radio (S), Polarisbreen (S).

Previously known from Angmagssalik (its southern limit) where it is common, and from several places along the coast to Scoresby Sound, but it has not formerly been observed in Kangerdlugsuak, where it is rather common and often grows in association with *P. flammea*.

It is common in Scoresby Sound and Eirik Raude's Land and likewise in Germania Land. Further north it is collected at Bjørneskær at 77° 30′, in Valmuedalen at the head of Independence Bay (Freuchen) and as far north as Fr. E. Hyde fjord on the northeast side of Peary Land (J. P. Koch) at 83° 15′, which probably is the northernmost botanical locality on the earth. It is common on the north coast (Th. Wulff).

(*Pedicularis lanata* (Willd.) Cham. et Schlecht.)
(Kruuse 1906, p. 249).

"Not found in East Greenland, the record from 66° 5′ by Kruuse is erroneous (P)" (M. Porsild 1926, p. 143)

122. *Rhinanthus groenlandicus* Chab., Stern.
(*Alectorolophus groenlandicus* (Chab.) Ostenf.)

Pl. III.

Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (V), Narsak (E).
Ikerasarsuak: Nunatsuk (Sylow).

Found only in the southernmost parts of the southeast coast where it is rather common on fertile slopes to its northern limit at Straumen (T).

Like many other *Scrophulariaceae* this species is very variable in size. Our largest specimens from Narsak are profusely branched, reaching a height of 45 cm. With these large forms were found all intermediates to small, unbranched but fertile forms only 10 cm in height. Both the large and small specimens of our material have two-septated hairs on the upper side of the leaves and bracts and also on the nerves of the capsules, and accordingly it seems to us that the var. *Drummond-Hayi* (B. White) Ostenf. has only little taxonomic significance (vide Ostenfeld 1901, Bot. of the Færöes, I, p. 55).

Veronica.

Fig. 16, 17, 18 and Pl. III.

F. W. Pennel, in an excellent small monograph: "Veronica" in North and South America (Rhodora 1921, vol. 23, no. 265) points out that in Europe (including Greenland) authors have under the name *V. alpina* L. long included 3 distinct species namely *V. alpina* L. s. str., *V. pumila* All. (emend. Pennel) and *V. Wormskjoldii* Roem. et Schult. Of these only *V. alpina* and *V. Wormskjoldii* are definitely known from Greenland. In order to give a reasonably clear picture of these two Veronicas in Greenland it appears to us necessary at the same time to treat the third member of this complex, namely *V. pumila*, which species, in a way, occupies an intermediate position between *V. alpina* and *V. Wormskjoldii*.

Pennel, in the paper mentioned above, points out the noteworthy fact that *V. alpina* var. *lasiocarpa* Hartm. (with pubescent capsules), which is very rare in Scandinavia, is the dominant form in Central Europe while the true *V. alpina* with glabrous capsules and with sepals only ciliated at the margins is distributed in Scandinavia, the Highlands of Scotland, and East Greenland. In the larger floras of Central Europe *V. alpina* is also always described and pictured with pubescent capsules.

Distinguished from *V. alpina* s. lat. in some quite unimportant characters with regard to the dentation of the leaves, Allioni (1785, p. 75, t. 22, fig. 5) describes a new species *V. pumila*. In the description and

figure no information as to the pubescence of the ovary or capsule is given. Nevertheless, Pennell regards this as the earliest valid name for the southern lasiocarpous species (= *V. alpina* v. *lasiocarpa* Hartm.).

Pennel contrasts the two species in the following way:

"Capsule glabrous. Sepals glabrous on back, ciliate on margins, apparently but little shorter than the corolla. Plant usually 1—2 dm. tall, usually little branched at base ..... *V. alpina.*

Capsule pubescent with glandless hairs. Sepals pilose on back as well as margins, much shorter than the corolla. Plant usually .5—1 dm. tall, usually much branched at base ..... *V. pumila*".

The quite extensive material Scholander has seen from Scandinavia and Central Europe has absolutely convinced him that these two species are distinct. He has never seen intermediate forms and the geographical distribution is likewise convincing.

It should be noted that even very young specimens in bud may be distinguished with certainty from *V. alpina* s. str. as the ovary already at this stage is distinctly hairy in *V. pumila* and glabrous in *V. alpina*. *V. alpina* has, as a rule, lustrous, bluish black to brownish black capsules surrounded by beautiful, lustrous, bluish green sepals which are only ciliated at the margins with long septate hairs. The pedicels and the uppermost part of the stem are slightly pubescent while the thin, lustrous lower leaves usually are hairless or with a few marginal hairs. In *V. pumila* the capsules and the entire uppermost part of the plant are ± whitish or greyish pubescent. The leaves are thicker than in *V. alpina* and usually evidently hirsute, which character, coupled with the pubescent inflorescence makes the plants look dusty. The tendency to darken when dried seems to be more pronounced in *V. alpina* than in *V. pumila*.

It is not as yet possible to have an opinion on the exact geographical distribution of these species so completely overlooked by European taxonomists. In the Botanical Museum in Oslo there are specimens of *V. pumila* as far north as from Tromsø in Northern Norway and at the same time there are specimens of true *V. alpina* from localities as far south as Mt. Cenis in the Swiss Alps. Even if it should be shown that *V. alpina* and *V. pumila* are distributed over approximately the same area, which however, is highly improbable, there must still be a very distinct difference in their relative frequency in North and South Europe.

The case of *V. Wormskjoldii* (= *V. alpina* var. *villosa* Lge.) is less clear. In the paper mentioned above, Pennel gives a key description of *V. Wormskjoldii,* the most important dates of which in this connection, may be compiled as follows:

Capsule and sepals with hairs which have rounded glandular tips, the sepals densely pilose on back. Pedicles mostly 2—5 mm long. Plant usually 1.5—3 dm tall. Leafblades mostly oblong ovate, rarely evidently serrate ..... *V. Wormskjoldii.*

It appears from this diagnosis that the only qualitative and absolutely specific character in which it differs from *V. pumila* is the glandular tipped hairs being always very distinct in fully developed and fertile specimens. Young specimens in which the glandular hairs are not yet developed may, on the other hand, not with certainty be distinguished from *V. pumila*. There is a possibility that *V. pumila* may occur in East Greenland and we had at first referred some of our specimens to this species. However, upon re-examining the material we find that the specimens are too young to form the basis for any definite conclusions.

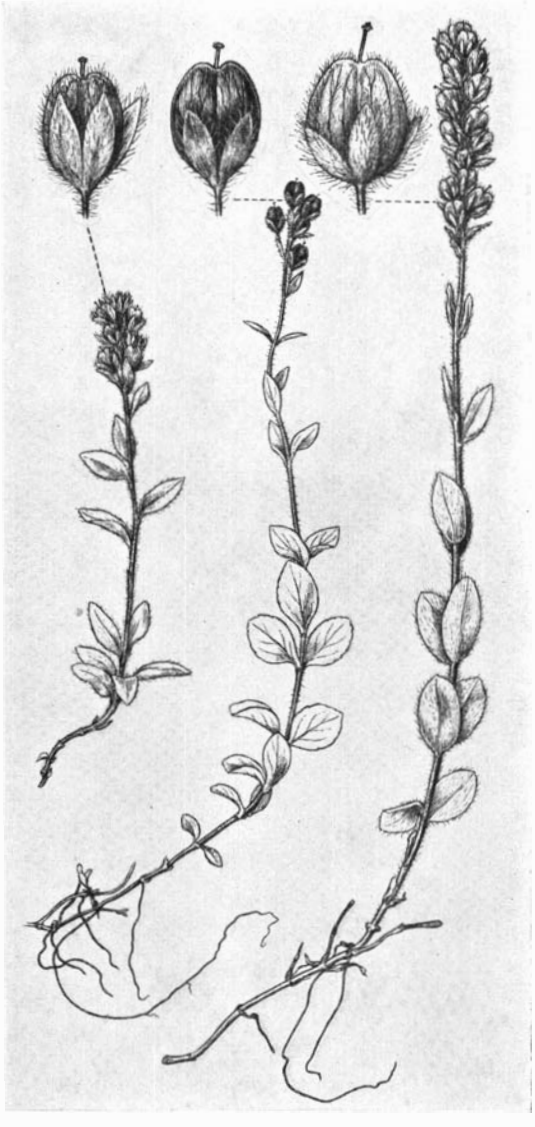

Fig. 16. From left to right: *Veronica pumila*, *V. alpina*, *V. Wormskjoldii*. *V. pumila* from Norway, the others from Tingmiarmiut in Southeast Greenland. Size 2/3, the single capsules 8/3.

In our material from East Greenland as well as in West Greenland and Canada *V. Wormskjoldii* is characterized by its straigth and rigid habit of growth and its tall size. Our specimens from Tingmiarmiut are usually from 15 to 19 cm in height with relatively long spikes, the stem is rigid and straight and the plant is in the upper half light greyish green in contrast to *V. alpina* which usually has a dark bluish top. The capsule, in particular, is densely furnished with glandular hairs.

In "Flore de la France" by L'abbé H. Coste the following quotations are found in the description of *V. alpina* (= *V. pumila*): "Plante vivace de 5—15—cm., poilue-glanduleuse dans le haut, ... celle-ci (the capsule) bien plus longue que le calice poilue-glanduleuse, ..."

The localities are given as follows: "Haut-Jura; Alpes; Auvergne; Pyrenées; Corse. — Hautes montagnes de l'Europe jusq'en Laponie". This statement that all *V. alpina* s. lat. in this region is glandular is certainly due to a mistake. But it is not impossible that it is based on some glandular specimens of *V. Wormskjoldii* from Europe, so much the more as we have seen two specimens from the Pyrenées which are densely glandular pubescent, and which, accordingly, cannot with certainty be distinguished from *V. Wormskjoldii*. It clearly shows the importance of getting the European *V. pumila* carefully revised. Without an exact knowledge of the distribution we cannot form any definite opinion as to the systematic value of the glandular pubescence in the complex *V. pumila-Wormskjoldii*, and much the less so in *V. fruticans-fruticulosa* (see p. 86).

In this connection it is worthy of note that we have never seen any glandular hairy specimens of *V. alpina* s. str. in spite of careful examination of a large amount of material.

As far as we presently know *V. pumila* is chiefly a species of Central Europe while *V. Wormskjoldii* is a western type chiefly growing in northern North America and West Greenland. This largely supports the view that these two also must be treated as separate species especially if we consider that *V. Wormskjoldii* is a tall, rigid, glandular-pubescent plant which may reach a height of 30 cm (in the herbarium of the Bot. Museum in Oslo most specimens from Canada and West Greenland measure from 20—25 cm), whereas *V. pumila* is a little plant without any glandular hairs, rarely surpassing 10 or 12 cm in height.

V. alpina s. str. is at present known from West Greenland, East Greenland, Jan Mayen (leg. Lid 1930), Iceland, Scotland, is common in the mountains of northern Europe (Scandinavia, Kola), and we have also seen specimens from Mt. Cenis in Switzerland.

123. *Veronica alpina* L. sens. str.

Fig. 16, 17 and Pl. III.

Kangerdlugsuak: Amdrupneset (S).
Akorninarmiut: Kikut (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Møretun (D, S), Narsak. (D, S), Persvatnet (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).

Anoritok: Kap Tordenskjold (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (E), Serketnua (E), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (E), Nunatsuk (Sylow), Tunua (E).

Common on the southeast coast at least as far north as Angmagssalik. It is known in several localities further north to Scoresby Sound but it was very rare in Kangerdlugsuak. It is rare in Scoresby Sound and Eirik Raude's Land where it reaches its northern limit in Antarctichamna at about 72° growing at an altitude of 400 m (Orvin).

124. *Veronica fruticans* Jacq.

Pl. III.

Kangerdlugsuak: Amdrupneset (S).
Akorninarmiut: Kikut (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Møretun (D, S).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Puisortok: Karra Akungnak (E).
Iluilek: Kangerdluluk (V), Iluilek (E), Kutek (E).

Usually found growing on dry, gravelly slopes, and is rather common on the southeast coast at least as far north as to Kap Warming in Angmagssalik at 67° 1—2′ (Kruuse). Further north it is found in a few places only: our locality in Kangerdlugsuak at about 68° 10′, in Turner Sund at 69° 45′ (H, K), and in Gaaseland in Scoresby Sound (H), its northern limit.

In the Alps of southern Europe, the Pyrennées, Jura and Corsica there is a species *V. fruticulosa* L., closely allied to *V. fruticans*. It differs, however, from *V. fruticans* mainly in its glandular-pubescent bracts, sepals, pedicels and capsules which latter are slightly emarginate, further in the pink flowers with darker veins, and by its larger size. The leaves are also at times dentate.

In Hegi "Illustr. Flora von Mittel-Europa" *V. fruticulosa* is said to be 10—30 cm tall whereas *V. fruticans* is said to be only 5—10 cm, which latter figure, however, may be too small.

Of these morphological characters it is, as far as we can judge, the presence or absence of glands which in the last instance determines

Fig. 17. *Veronica alpina.* Capsule glabrous, sepals ciliate only on margins.

Fig. 18. *Veronica Wormskjoldii.* Capsule pubescent, sepals pilose on back and margins.

Specimens from Tingmiarmiut. Magn. 5/1.

the identification. Pink-flowered *V. fruticans* and all transitions to blue-flowered forms are not rarely seen in Scandinavia and Greenland, and it seems to us that the colour of the flower in this case is of very limited taxonomic value.

By a careful examination of our Arctic material of *V. fruticans* Scholander has found a specimen from West Greenland which is densely glandular pubescent, carrying the label: "*Veronica saxatilis* Grønl. Wormskj. 24 juli". According to Lange (1887, p. XLIV) this specimen was collected at Nerutusok in Frederikshaab in 1813. The single specimen is 8 cm in height, the inflorescence being covered by long glandular hairs with 1—3 septa. Morphologically this plant can not be distinguished from *V. fruticulosa* of southern Europe. To refer this plant to a new variety, for instance var. *glandulosa* based solely on geographical distribution, would only lead to confusion.

This specimen of *V. fruticulosa* from West Greenland clearly shows the necessity for a complete revision of the entire European material of the complex *V. fruticans—V. fruticulosa*. Then we shall be able to judge as to the taxonomic value of the glandulosity which apparently is the only absolutely specific character in these species of *Veronica*. In Scandinavia and the Arctic a glandular pubescent *V. fruticans* seems to be very rare as this specimen from West Greenland is the only one we have seen in going through a large amount of material.

V. fruticans—fruticulosa and *V. pumila—Wormskjoldii* are apparently parallel cases.

125. *Veronica Wormskjoldii* Roem. et Schult.

Fig. 16, 18 and Pl. III.

Akorninarmiut: Imarsivikøya (B), Trollfjordeid (B), Finnsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D).

Rather rare in all the places stated. The most typical specimens are all from the Tingmiarmiut localities. Some of the specimens from Akorninarmiut, which are in bud only, have no glands and may therefore belong to *V. pumila*. But we can draw no definite conclusions as to the presence of this species in Greenland until typical, fertile specimens have been found.

The only previous find of *V. Wormskjoldii* on the east coast is the one of Kruuse who found this species together with *V. alpina* at Tasiusarsik in Angmagssalik fjord at 65° 47′ which is its northern limit in East Greenland. On the west coast *V. Wormskjoldii* seems to be the dominant species.

Lentibulariaceae.

126. *Pinguicula vulgaris* L.

Akorninarmiut: Kikut (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: Ekalungmiut (E).
Puisortok: Puisortok (E), Karra Akungnak (E).
Iluilek: Kutek (E),
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kangerajak (Sylow), (Ikitok (V)).

Rather common in Southeast Greenland particularly in grassy places, along brooks in willow scrub.

It is rare in Angmagssalik but is found in several places north to Nigertusokfjorden at 66° 18′. It is not found between this place and Scoresby Sound on Røde Ø (Hartz) which was its northern limit until it was found by Miss Boyd's expedition in 1931 as far north as in Franz Josefs fjord (R. H. Menzies) at about 73° 30′. The definite locality is not known to us.

Fig. 19. *Thymus arcticus.*

Fig. 20. *Thymus neglectus.*

Specimens from Southeast Greenland. Magn. 5/1.

Labiatae.

127. *Thymus Serpyllum* L. sens. lat.

Fig. 19 and 20.

Akorninarmiut: Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Igdloluarsuk: Kemisak (Graah).
Umanak: Umanak (E).
Kangerdlugsuatsiak: Narsak (E).
Ikerasarsuak: Nunatsuk (V).

All of our specimens of this species are more or less — but always distinctly — goniotrichous (alternately glabrous on two sides) on the flowering shoots. Ronniger (1923 p. 230) has divided the British *Thymus* forms belonging to the 7-veined, small-leaved and goniotrichous section into two micro-species: *Thymus neglectus* which is glabrous on the leaf surfaces and *Thymus britannicus* which is hirsute.

According to Ronniger the Greenland *Thymus* belongs to a third species *Th. arcticus* (Durand) Ronn. (= *Th. Serpyllum* var. *prostratus* Horn.) which is a circumpolar race closely related to *Th. britannicus*. "It differs, however, in its always very small elliptical to broadly elliptical leaves, which have only 5 nerves."

In all the specimens which Scholander has seen from Greenland, the Faeroes, Iceland, Norway and Scotland belonging to the small-leaved

goniotrichous section (including both *Th. neglectus* and *Th. britannicus*) he finds leaves with both 5—6 and 7 veins. The statement that the Greenland species always has 5-veined leaves is based on incorrect observation as the young leaves of the flowering shoots practically always are 7-veined (Fig. 19 and 20), even so in some poorly developed specimens where the leaves on the sterile, creeping stolons may be 5-veined. The first proximal pair of veins is sometimes marginal, and may have escaped notice for this reason. In our opinion, the number of veins is of no systematic importance in this case.

Until other characters of real diagnostic value may be demonstrated in the Greenland specimens we have to regard *Th. britannicus* Ronn. and *Th. arcticus* (Durand) Ronn., both of which are hirsute and goniotrichous, as belonging to a single species. The name of this species is *Th. arcticus* (Durand) Ronn.

Lange, in Consp. Fl. Groenl. p. 80, describes *Thymus Serpyllum* var. *prostratus* as follows: "pagina superiore, margine petioloque longe albopilosis." Another form equally common, at least in Southeast Greenland, has glabrous leaf surfaces whereas the leaf margin is ciliated at the base, in other words corresponding to *Th. neglectus* Ronniger (Fig. 20). Intermediate forms between *Th. arcticus* and *Th. neglectus* with only a few scattered hairs, are relatively rare in East Greenland. This seems to us to be an indication that this goniotrichous complex may be divided into the hirsute and glabrous microspecies mentioned. The future will show if this division has any support in the geographical distribution. In East Greenland they are about equally common.

The localities are as follows:

Thymus arcticus (Durand) Ronniger.

Akorninarmiut: Kvanndalen (D), Trollfjordeid (B), Finnsbu (B), Dronning Marias dal (D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Møretun (D, S).

Thymus neglectus Ronniger.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Trollfjordeid (B), Dronning Marias dal (B, D, S), Finnsbu (B), Imarsivikøya (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Møretun (D, S).

A few less certain forms are found at Dronning Marias dal, Innfjorden and Grønlia.

Th. Serpyllum sens. lat. is common in dry, rocky places to Angmagssalik where it reaches its northern limit at Kap Wandel at 66° 20′ (Kruuse).

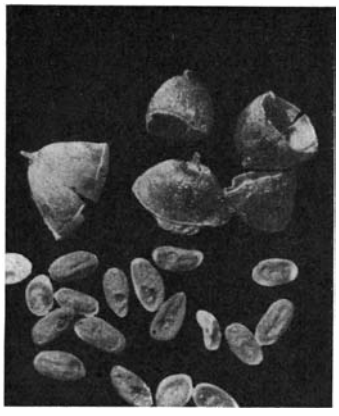

Fig. 21. *Plantago juncoides* var. *glauca*.

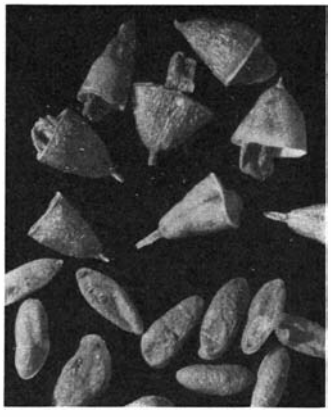

Fig. 22. *Plantago maritima* var. *borealis*.

Seeds, and lids of capsules. *P. juncoides* from Utermiut in Umivik, *P. maritima* from Norway. Magn. 5/1.

Plantaginaceae.

128. *Plantago juncoides* Lam., var. *glauca* (Hornem.) Fern.

Fig. 21 and Pl IV.

Umivik: Utermiut (B).

Previously found:
Auarket: Karra (E).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Umanarsuak (Sylow).

That this plant was only once found by our expeditions may be partly for the reason that we have practically no maritime localities. Vahl and Eberlin travelled along the coast in umiaks collecting almost entirely in the outermost parts where they found plants as this one, *Armeria*, *Cochlearia*, and others which we have observed only rarely or not at all.

Our Greenland specimens are in habit much like the small form of *P. maritima*, occurring particularly in northern Norway, called **borealis* Lge. However, Fernald has pointed out (1925, p. 93) that the Greenland plantain is a variety of the American *P. juncoides* which also is said to be distributed in northernmost Scandinavia.

With the exception of the calyx segments, which have hairy keel, our specimens from Utermiut correspond to Fernald's description of *P. juncoides*. The lid of the capsule in our specimens is hemispherical in accordance with *P. juncoides* whereas it is more or less conically elongated in *P. maritima* and its forms. The seeds of our Greenland specimens are considerably smaller than those measured in Norwegian

material. Whether this latter character is constant is impossible to decide from a collection of only 10 specimens all of which are gathered in one locality. However, it agrees well with the small seeds in some specimens Scholander has seen from Canada. The seeds of *P. maritima* and its forms are on an average 1.8 × 0.7 mm (1.5—2.5 × 0.6—1.0 mm), the seeds of *P. juncoides* var. *glauca* are 1.1—1.4 × 0.5—0.7 mm (Fig. 21, 22).

In our specimens from Umivik the leaves exceed the inflorescense, a character which is very rarely seen in Norwegian specimens of *P. maritima* var. *borealis*.

In looking over the Norwegian material of *P. maritima* var. *borealis* it is apparent that *P. juncoides* must be very rare in Norway, if it is to be found here at all. Special investigations are necessary to determine whether it is practically possible to distinguish between these two species also in Scandinavia.

The leaf sheaths of some of our specimens from Umivik are invested with a dense tuft of woolly hairs, about 1 cm long, just as one may observe it in *Luzula spicata*. However, this is not rarely seen also in Norwegian specimens of *P. maritima*.

The northernmost locality for *Plantago* on the east coast is in Angmagssalik where it is very rare, found only in one place: Grønlænderpynt near Tasiusak at 65° 33′ (Berlin, Kruuse).

Gentianaceae.

129. *Gentiana aurea* L.

Akorninarmiut: Dronning Marias dal (S).

This species was found along with other rare plants below some ledges at an altitude of 300 m straight above the Norwegian station. *G. aurea* was previously known only from one locality in Angmagssalik, viz. Kingorsuak (Kruuse). As it appears from Ostenfeld's list (1926) Kruuse incorrectly determined this plant as *G. tenella*, which latter species therefore is to be excluded from the flora of Southeast Greenland.

Dronning Marias dal and Kingorsuak are the only localities for *G. aurea* on the east coast. Our specimens were collected Aug. 11th, most of them having mature seeds.

130. *Gentiana nivalis* L.

Akorninarmiut: Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).

Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Kangerdluarak (E).

Occurs sparingly in the localities mentioned. Our specimens rarely reach a height of 10 cm and are, as a rule, only slightly branched. Unbranched, single-flowered dwarf-forms only a few centimetres in length are frequently seen.

Its northern limit is in Angmagssalik where it is rare and found as far north as Kap Wandel at 66° 18′ (Kruuse).

Rubiaceae.

Galium Brandegei Gray.

Not seen by us. Known on the east coast from one locality only, viz. in Angmagssalik at the Subularia Dam in Elvebakker at Tasiusak at about 65° 37′ (Kruuse).

131. *Galium triflorum* Michx.

Pl. IV.

Tingmiarmiut: Brattneset (D).
Kangerdlugsuatsiak: Nordpollen (D), Grønlia (D).

From its northern limit at Brattneset we have only one single specimen. It was, however, found in abundance at Grønlia on the fertile talus slopes, growing often together with *Stellaria calycantha* and like this interwoven in the luxuriant vegetation here.

Previously not known from the east coast.

Caprifoliaceae.

132. *Linnaea borealis* L.

Akorninarmiut: Dronning Marias dal (B, D, S, Vogt).

Found only in one locality a few hundred metres from the Station towards Dronning Marias dal growing in a slight depression not far from the shore precipice.

Previously not known from the east coast.

Campanulaceae.

133. *Campanula rotundifolia* L.

Kangerdlugsuak: Elvefaret (T), Brandal (S, T), Brandalfjell 900 m (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretind 900 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Igdloluarsuk: Kemisak (Graah).

A variety *stricta* has been recorded for Ikerasarsuk (V), the variety *arctica* is said to be "commonly distributed in West and East Greenland", but accurate locality records are missing in Consp. Fl. Groenl.

This species is very common along the entire east coast as far north as its northern limit at Kap Herschel in Eirik Raude's Land. Its vertical distribution is extensive also in Eirik Raude's Land where it was found at an altitude of 800 m at Kap Humboldt (Vaage). In Kangerdlugsuak it was found at an altitude of 800 m and at the same altitude on Møretind in Lindenowfjord.

All the varieties described seem to be united by intermediate forms.

At Møretun was found a fasciation with a thick, twisted, leafy stem ending in a large flower with 14 sepals and 14 teeth of the corolla. This is a well known monstrosity in *Campanula rotundifolia*, also previously described from East Greenland (Kruuse).

134. *Campanula uniflora* L.

Kangerdlugsuak: Brandalfjell 900 m (S), Storfjord Radio (S).

The southernmost locality for this species in East Greenland is in Angmagssalik where it has been found in 3 places only at high altitudes, and being very rare (Kruuse). North of this it is not found below our localities in Kangerdlugsuak where it seems to be rare. It has been recorded from Kap Dalton at 69° 25′, and is more or less common in Scoresby Sound and Eirik Raude's land in which latter region it was observed at an altitude of 800 m at Kap Humboldt (Vaage). It is found in several places in Germania Land, being its northern limit.

It grows to high altitudes. On Brandalfjell, at an altitude of 900 m, the pods were rattling from ripe seeds which are hurled out when the autumn winds are shaking the dry and stiff stems: a typical ballistic plant.

Compositae.

135. *Antennaria alpina* (L.) Gaertn.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandalfjell 1000 m (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Møretind 1200 m (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Akorninarmiut: Dronning Marias dal (Graah).

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Anoritok: Kanajorkat (E), Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Narsak (E).

Very common in Southeast Greenland where it is found to high altitudes: Møretind 1200 m, Brandalfjell 1000 m. In Angmagssalik it is common, and it is known from several places along the coast to Scoresby Sound, where it is common also (Hartz). In Eirik Raude's Land it is rare, growing as far north as the northwest coast of Loch Fyne at 73° 55′ (Seidenfaden). Right south of this place, at Hoelsbu on the north side of Moskusoksefjorden, it was found at an altitude of 700 m so that it probably extends considerably further north.

Our specimens from Møretind approach much to *A. intermedia* (Rosenv.) Porsild, but we are unable with certainty to refer them to this species.

136. *Antennaria groenlandica* Porsild.

(*A. dioica* (L.) Gaertn. var. *hyperborea* Don.).

Pl. IV.

Akorninarmiut: Dronning Marias dal (B, D, S).
Tingmiarmiut: Brattneset (D, S).

Previously found:
Iluilek: Kangerdluluk (V).

This species is very conspicuous with its pink to opaquely white phyllaries, its usually long-peduncled and numerous heads (as many as 21! on one stem in a specimen from Brattneset), as well as its greater size, the plants reaching a height of 15—20 cm. It seems to grow only in the most fertile places.

Its northern limit is at Akiliarisek at 66° 19′ in Angmagssalik where it is very rare known only from one other locality: Kordlortok Sø (Kruuse).

Antennaria Porsildii E. Ekman.

(Kruuse: *A. alpina* (L.) Gaertn. var. *glabrata* J. Vahl.)

Not seen by us. The southernmost locality for this plant is in Angmagssalik where it has been found in one place: Cassiope Fjæld near Kingorsuak (Kruuse). Further north it is known from Kap Warming at 67° 1—2′ (Kruuse), Kap Dalton at 69° 25′, Turner Sund at 69° 45′ (H, K), and from a few localities in Scoresby Sound and Eirik Raude's land as far north as Vassdalen in Moskusoksefjorden at about 73° 35′ (Vaage).

137. *Arnica alpina* (L.) Olin.

Kangerdlugsuak: Brandal (S, T), Storfjord Radio (S).

Seems to be rare in Kangerdlugsuak. The plants seen here on August 21, 1932 were all withered and with seeds gone, whereas Tornøe the year before on August 22 found the plants flowering.

The southernmost locality for this species on the east coast is in Angmagssalik where it is very rare, found only in one place: the west side of Kingorsuak at 66° 7′ (Kruuse). It was previously not known between this place and Kap Dalton at 69° 25′. Further north it is common in Scoresby Sound and Eirik Raude's Land and continues north into Germania Land where it is rare, reaching its northern limit at Fuglenæbsfjæld at about 77° (Lundager).

138. *Erigeron borealis* (Vierh.) Simm.

Akorninarmiut: Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Claradalen (D), Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Svartvika (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
(*Umanak*: Umanak (E)).[1]
Puisortok: Kap Rantzau (E).
Anoritok: Kap Tordenskjold (E).
Iluilek: Iluilek (E).
Kangerdlugsuatsiak: Narsak (E), (Ikerasarsuak (V)).

The line of demarcation between *Erigeron borealis* and *Erigeron uniflorus* in East Greenland is very indefinite so that the classification of the numerous transition forms is always a case of subjective judgment. Any such basic difference between the two species here that would justify the transfer of *E. borealis* to the genus *Trimorpha*, characterized by its tubular female discous flowers, we have in no case been able to discover in our extensive material of habitually typical *Erigeron borealis* profusely branching, with many heads, and with acute hairy leaves. For this reason it appears to us untenable to refer *E. borealis* and *E. uniflorus* in East Greenland to different genera. Vierhapper is himself aware of these facts as he writes on p. 451 of his "Monographie der alpinen Erigeron-Arten Europas etc.": "Von besonderem Interesse ist es, daß es in Grönland Formen der *T. borealis* ohne zungenlose weibliche Blüten gibt". As a result of an examination of a few specimens of typical *E. borealis* habit from Norway it appears that also in this material the *Trimorpha* character is not always associated with the *borealis* habit.

Kruuse (1906) records this species as rather common in Angmagssalik and bases his determination, among other characters, on "The marginal flowers pink or light purple, the outer tubular discous flowers ♀ ".

[1] By Vierhapper apparently transferred to *E. uniflorus* as this species is recorded for Umanak by Vierhapper, but not by Lange.

However, Ostenfeld in his list of 1926 does not record this species from Angmagssalik which only demonstrates the great part played by the subjective judgement in the determination of these closely related, overlapping forms in Greenland.

It appears that we do not consider our own determination to be of any permanent value. If it should be demonstrated that the *Trimorpha* character is a conditio sine qua non for the *borealis* form — which seems to be desirable if we want to arrive at safe determinations — all our rather polymorphic material must be referred to *E. uniflorus*, whereas *T. borealis*, according to Kruuse's diagnosis, is then with certainty only known from Angmagssalik.

139. *Erigeron compositus* Pursh.

Pl. IV.

Akorninarmiut: Moreneneset (Vogt).

Only a single specimen of this high-Arctic composit was found. Th. Vogt informs us that it was found growing in loose gravel on an almost naked, relatively recent moraine. The specimen is 8 cm in height and past flowering. On the east coast it has previously not been observed south of Scoresby Sound, but on the west coast it is found, though rarely, in the southernmost parts. In Scoresby Sound and Eirik Raude's Land it is rather rare, found in localities similar to the one described above. In Germania Land it is rather common growing north to Cape Amelie at 77° 32′. North of this place it is found at the head of Independence Bay on Cape Schmelck at about 81° 50′ (Freuchen), and on the north coast where it is rare but known from several localities (Wulff).

140. *Erigeron eriocephalus* J. Vahl.

Akorninarmiut: Skjoldungen, inner north side (B).
Umanak: Pilerkit (B).

From earlier observations in Eirik Raude's Land where this plant and *E. unalaschkensis* are rather common we are of opinion that *E. eriocephalus* in this region appears as a rather distinct type which only in rare cases is subject to doubt. Like most other botanists who have worked in East Greenland we therefore consider this a distinct species, at the same time realizing the fact that in other areas as e. g. Novaya Zemlya this species may approach so much *Erigeron unalaschkensis* as well as *E. uniflorus* that it may be impossible to treat it as a separate species (see Lynge, 1923: "Vascular Plants from Novaya Zemlya" p. 82—83).

E. eriocephalus is previously not known with certainty south of Eirik Raude's Land, it is just as decidedly a northern species as *E. uni-*

florus is a southern species on the east coast. Northwards from Kap Herschel at about 74° 16′ there are no records south of J. P. Koch's Fjord on the north coast at 82° 48′ from which place Ostenfeld has seen an incomplete specimen which cannot, however, be determined with certainty, and is referred to this species per exclutionem[1].

141. *Erigeron unalaschkensis* (DC.) Vierh.
(*E. uniflorus* L. var. *pulchellus* Fries)

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Amdrupneset (S).
Akorninarmiut: Finnsbu (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Anoritok: Kap Tordenskjold (E) (Vierhapper 1906 p. 493).

South of Angmagssalik *E. unalaschkensis* is certainly very rare as it is known only from the two localities mentioned. In Angmagssalik it is said to be common (Kruuse) and it is known from several places northwards to Scoresby Sound and Eirik Raude's Land where it is the most common species of *Erigeron*. The northern limit[1] is Sabineøya (Sabine, Nathorst, Hartz and Kruuse).

Like *E. borealis*, the main area of distribution of *E. uniflorus* is certainly South Greenland. Northwards *E. unalaschkensis* and *E. eriocephalus* take their place.

142. *Erigeron uniflorus* L.

Kangerdlugsuak: Amdrupneset (S).
Akorninarmiut: Imarsivikøya (B), Trollfjordeid (B), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B).
Kangerdlugsuatsiak: Grønlia (B), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E), (see *E. borealis*).
Anoritok: Kap Tordenskjold (E).
Kangerdlugsuatsiak: Kangerdluarak (E).

In Kangerdlugsuak, where *E. unalaschkensis* is common, only one single specimen of *E. uniflorus* was found. Ostenfeld (1926) states that its northern limit is in Angmagssalik. However, Vierhapper in his Monograph (p. 507) says that it was collected in Clavering Isl. by the 2.

[1] An incomplete specimen from J. P. Koch's Fjord in North Greenland (Ostenfeld, 1923, p. 242) was in a later paper (1925, p. 20) transferred to *E. eriocephalus* because this is the only species found in the northernmost part of Northwest Greenland.

German Northpole Exp. 1869—70. This latter is also confirmed by Mr. J. Lid who has found it in the collections of Vaage and Aandstad from Eirik Raude's Land. The line of demarkation between *E. uniflorus* and *E. unalaschkensis* in East Greenland seems not to be quite as indistinct as between *E. uniflorus* and *E. borealis*, but critical transition forms are, of course, present.

143. *Gnaphalium norvegicum* Gunn.

Fig. 23.

Akorninarmiut: Eidsfjorddalen (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (I), Persvatnet (D), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Kangerdlugsuatsiak: Sagdlia (E), Nenese (V).

Fig. 23. Fasciation of *Gnaphalium norvegicum* from Grønlia in Southeast Greenland. Size 1/2.

Grows on fertile talus and grassy slopes, usually in small, dense stands and is probably rather common along the entire coast as far north as Akorninarmiut. It was not found in Umivik, but it is known from several localities in Angmagssalik where it reaches its northern limit.

On an average our specimens are 20—25 cm in height, the maximum height being 29 cm.

In Grønlia was found a beautiful fasciation of this species with a 9 mm broad, strap-shaped stem covered with numerous, normal leaves, ending in a 2,5 cm broad, thick, dense-flowered spike (Fig. 23).

It is of considerable interest that the abnormal growth in a great many fasciations seems exclusively to be associated with the main axes itself including the apex, whereas all lateral organs derived from it such as branches, leaves, lateral flowers appear to be of a normal structure.

Also each individual flower or floral organ derived from the terminal fasciated receptacle (e. g. in *Composits*, *Ranunculus*) seems likewise often not to be involved in the pathological growth of their matrix but only to be produced in abnormal numbers and arrangement. Some irregularities in their structure may probably often be due to the lack of sufficient space.

144. *Gnaphalium supinum* L.

Kangerdlugsuak: Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (I), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Puisortok: Puisortok (E).
Anoritok: Anoritok (E).
Auarket: Taterait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow).

Very common as far north as Angmagssalik which previously was its northernmost locality on the east coast. It is, however, rather common also in Kangerdlugsuak and probably it extends still further north. The northern limit is Storfjord Radio.

145. *Hieracium alpinum* (L.) Backh. [1]

(*H. alpinum* (L.) Backh. Elfstrand: *Hier. alpina* aus mittl. Skand. (1893), p. 10).

Kangerdlugsuak: Brandal (T), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Kangerdlugsuatsiak: Møretun (D, S), Narsak (D, S).

[1] Our entire collection of *Hieracium* from the east coast was determined by Lektor S. O. F. Omang. Detailed accounts are given in two papers: "Beiträge zur Hieraciumflora Ost-Grönlands" (Omang 1932), and "Übersicht über die Hieraciumflora Ost-Grönlands" (Omang 1933).

Previously found:
Kangerdlugsuak: Skærgaards Halvø (A).
Igdloluarsuk: Kemisak (Graah).
Akorninarmiut: Dronning Marias dal (Graah).
Umanak: Umanak (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow), Umanarsuak (Sylow), (Chr. IV Ø (Sylow)).

Rather common in dry places as far north as Scoresby Sound where it reaches its northern limit in Greenland in Hurry Inlet at 70° 50′ (H, K).

In Finnsbu was found a fasciation with twisted, rifled stem which is copiously furnished with narrow leaves. The inflorescence consists of many small heads. As far as we know no fasciation has previously been described for this species. In Amdrupneset in Kangerdlugsuak a specimen was found with an abnormal development of leaves below the head which also in this case shows indications of fission. Either of these monstrosities was treated in detail by Omang (v. Omang, 1933, p. 14).

146. *Hieracium amitsokense* (Almqu.) Dahlst.

(*H. dovrense* Fr. **amitsokense* (Almqu.) Dahlstedt in Kolderup Rosenvinge: Andet Tillæg (1892), p. 696).

Kangerdlugsuatsiak: Grønlia (D), Møretun (D).

Previously not found on the east coast where it seems to be rare, occurring only in the southernmost parts.

147. *Hieracium Devoldii* Omang.

(Omang: Übersicht über die Hieraciumflora Ost-Grönlands, 1933, p. 13).

Kangerdlugsuatsiak: Møretun (D).

Only four specimens were collected of this species which so closely resembles *H. rigorosum*. The frequency of this and other species of *Hieracium* in Southeast Greenland is only subject to speculation until the *Hieracium*-flora of this region has been studied by a specialist in the field.

148. *Hieracium groenlandicum* (A. T.) Almqu.

(*H. dovrense* Fr. **groenlandicum* 2. Huvudformen. Almquist in Aug. Berlin: Kärlväxter (1884), p. 47).

Akorninarmiut: Trollfjordeidet (B), Kvanndalen (D), Finnsbu (B, D), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B), Innfjorden (D).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S, T), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak fj. = Pilerkit (E).

To judge from these localities and our extensive material of this species it seems to be well distributed in Southeast Greenland. It continues further north to Angmagssalik where it is very rare, found only in two places, of which Akiliarisek at 66° 18′ (Kruuse) is its northern limit. Not rarely it exceeds a height of 1/2 metre, and is then often more copiously branching.

149. *Hieracium hyparcticum* Almqu.

(*H. nigrescens* **hyparcticum* Almqu. in Aug. Berlin: Kärlväxter (1884), p. 46).

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Kvanndalen (D), Dronning Marias dal (D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Anoritok: Kanajorkat (E).
Iluilek: Kutek (E).
Kangerdlugsuatsiak: Nenese (V).

This species also seems to be rather common on the southeast coast as far north as Angmagssalik where it is known from several places, reaching its northern limit at Nigertusokfjorden at 66° 18′ (Kruuse). Our specimens not rarely exceed a height of 50 cm.

150. *Hieracium ivigtutense* (Almqu.) Omang.

(*H. dovrense* Fr. **groenlandicum* 1. v. *ivigtutense* Almquist in Aug. Berlin: Kärlväxter (1884), p. 47. *H. ivigtutense* (Almqu.) nov. comb. Omang: Übersicht über die Hieraciumflora Ost-Grönlands, 1933 p. 9).

Not seen by us. Previously found:

Iluilek: Kangerdluluk (V).

151. *Hieracium lividorubens* Almqu.

(*H. nigrescens* **lividorubens* Almquist in Aug. Berlin: Kärlväxter (1884), p. 45).

Not seen by us. Previously found:

Ikerasarsuak: Nunatsuk (E).

152. *Hieracium rigorosum* (Laest.) Almqu.

(*H. prenanthoides* Vill. **rigorosum* Laest., Almquist in Aug. Berlin: Kärlväxter (1884), p. 49).

var. *nanusekense* Omang.

(Omang: Übersicht über die Hieraciumflora Ost-Grönlands, 1933 p. 12).

Kangerdlugsuatsiak: Grønlia (D).

This robust *Hieracium* reaching a height of 89 cm was found only on the steep, fertile talus slopes at Grønlia.

var. *umanakense* Omang.

(Omang: Übersicht über die Hieraciumflora Ost-Grönlands, 1933 p. 12).

Akorninarmiut: Eskimoneset (D, S).
Umanak: Claradalen (D).

H. rigorosum is previously not recorded for East Greenland.

153. *Hieracium Scholanderi* Omang.

(Omang: Übersicht über die Hieraciumflora Ost-Grönlands, 1933 p. 9).

Kangerdlugsuatsiak: Møretun (D, S).

In addition to this locality specimens referred to this species by Omang have been found in one other locality only, namely Augpilagtok at Iluafjorden (60° 7′), on the southwest coast (leg. Rich. Bøgvad 1932). The material so far known is sparse. It consists of one complete specimen and 3 sterile leaf-rosettes from Møretun and a small, poorly preserved specimen from the locality on the southwest coast. That the species for the present should be considered only of temporary value seems to appear from the following quotation (Omang, 1933, p. 10): "Die Pflanze weist zwar eine Ähnlichkeit mit *H. ivigtutense* auf, aber nach der sehr unvollständigen Beschreibung dieser Art — vom Verfasser nicht gesehen — zu urteilen, besitzt sie auch abweichende Eigenschaften und wird daher hier als eine — jedenfalls bis auf weiteres — neue Art dargestellt".[1]

154. *Hieracium stelechodes* Omang.

(Omang: Beiträge zur Hieraciumflora Ost-Grönlands, 1932 p. 4).

Akorninarmiut: Dronning Marias dal (B).

Not re-discovered in 1932.

[1] Since this was written Omang has seen additional material of this hawkweed in Danish collections from South Greenland which has confirmed his assumption that it is a good species of *Hieracium*.

Key to the *Hieracia* of East Greenland.

By S. O. F. Omang.

a. Stem unbranched with a single big, densely longhaired terminal head (*phyllopodous*[1]) *H. alpinum* (L.) Backh.

a. Stem in the upper part ± branched with many (rarely 1) smaller heads.

b. Stem *phyllopodous* with (0—·) 1—3 cauline leaves. Phyllaries with ± narrow apex.

c. Middle and inner phyllaries ± densely stellately pubescent on the margins.

d. Teeth of the corollas slightly ciliate. Hairs on involucres and upper part of peduncles few.

e. Involucres and upper part of peduncles with numerous ± long, black glands and few (or sometimes no) black hairs with short white tips *H. hyparcticum* Almqu.

e. Involucres and upper part of peduncles with few, smaller glands and few brighter hairs ..... *H. stelechodes* Om.

d. Teeth of the corollas strongly ciliate. Involucres and upper part of peduncles densely greyhaired with few delicate glands. ..... *H. lividorubens* Almqu.

c. Middle and inner phyllaries not stellately pubescent on the margins. Involucres and upper part of peduncles with numerous long, grey hairs and a few, very delicate, inconspicuous glands. Teeth of the corollas ciliate.

f. Phyllaries narrower, elongated. Cauline leaf 1 ..... *H. Scholanderi* Om.

f. Phyllaries shorter and broader. Cauline leaves 2—3 *H. ivigtutense* (Almqu.) Om.

b. Stem *hypophyllopodous* or *aphyllopodous* with numerous cauline leaves. Apex of the phyllaries broad, rounded obtuse (by *H. groenlandicum* somewhat narrower).

g. Style ± dark. Stem *hypophyllopodous*. Cauline leaves few (to 10), ± broad, like the stem ± copiously hairy. Involucres and peduncles densely hairy with few delicate glands between the hairs. Teeth of the corollas ciliate.

h. Heads narrower; middle and inner phyllaries stellately pubescent on the margins. Cauline leaves 3—5 ..... *H. groenlandicum* (A. T.) Almqu.

h. Heads broader; middle and inner phyllaries not stellately pubescent on the margin. Cauline leaves 8—10 ..... *H. amitsokense* (Almqu.) Dahlst.

g. Style yellow. Stem *aphyllopodous* with many, narrow cauline leaves, like the stem glabrous or glabrate. Involucres and peduncles sparingly hairy — almost glabrous, with ± numerous small glands. Teeth of the corollas glabrous.

i. Peduncles rather densely hairy.

k. Heads very big (height of involucre 12—14 mm), sparingly glandular hairy and hairy. Upper surface of leaves sparingly stellately hairy *H. rigorosum* (Laest.) Almqu. var. *nanusekense* Om.

k. Heads smaller (height of involucre 10—12 mm) more copiously hairy. Upper surface of leaves not stellately hairy *H. rigorosum* (Laest.) Almqu. var. *umanakense* Om.

i. Upper part of peduncles sparingly glandular hairy, almost glabrous. Heads smaller (height of involucres 11—12 mm) with small dark glands, almost without hairs ..... *H. Devoldii* Om.

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[1] The stem is *phyllopodous* when it has a radical rosette usually consisting of many, densely crowded leaves; *hypophyllopodous* when the radical leaves are few, somewhat distant and fading during the flowering period, (sometimes enduring as in *H. groenlandicum*); and *aphyllopodous* when it is entirely lacking radical leaves during the flowering period.

155. *Matricaria inodora* L.
var. *grandiflora* (Hook.) Ostenf.

Not seen by us. Previously found:

Ikerasarsuak: Tunua (E).

Besides this locality it is known on the east coast only from three places in Eirik Raude's Land, the northernmost being among the Eskimo ruins at Daudmannsøyra on the south side of Claveringøya (Vaage). At the Eskimo ruins in Kjerulffjorden it has been found repeatedly (Nathorst, Hartz and Kruuse, Vaage). The third place is on the coast of Hold with Hope south of Cape James at 73° 46′ (Seidenfaden). It is noteworthy that in this place the plant was not found at old Eskimo sites. Nevertheless, it seems probable that this species is distributed by the Eskimos, and that it is able to persist for decades after their departure.

156. *Taraxacum croceum* Dahlst.
(Det. Dr. H. Dahlstedt, Stockholm).

Kangerdlugsuak: Polarisbreen (S), Amdrupneset (S).
Umivik: Utermiut (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Brattneset (D, S, T), Langholmen (B).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Fossheim (I), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A).
Ikerasarsuak: Kapiarfik (Sylow) det. Dahlst.

In Conspectus Florae Groenlandicae 1880 with Appendix 1887 and 1892 *T. officinale* Web. is recorded from:

Igdloluarsuk: Kemisak (Graah).
Umanak: Umanak (E).
Puisortok: Karra Akungnak (E).
Anoritok: Kap Tordenskjold (E), Anoritok (V).
Iluilek: Ivimiut (E).
Ikerasarsuak: Kangerajak (Sylow), Kapiarfik (Sylow), (Chr. IV Ø (Sylow)).

A large part of this old material most probably belongs to *T. croceum*. We have not seen any recent treatments of this material so that we are unable to specify it in detail.

T. croceum is common along the east coast to its northern limit in Scoresby Sound.

157. *Taraxacum maurostylum* Dahlst.
(Det. Dr. H. Dahlstedt, Stockholm).

Umanak: Innfjorden (D).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Narsak (D, S), and a somewhat defective specimen from Persvatnet which probably belongs to this species "tillhör med all sannolikhet *T. maurostylum* Dt." (Dahlstedt).

Not previously recorded for the east coast.

158. *Taraxacum purpuridens* Dahlst.
(Det. Dr. H. Dahlstedt, Stockholm).

Akorninarmiut: Finnsbu (B), Skjoldungen, inner north side (B).

At Storfjord Radio in Kangerdlugsuak some specimens were found which, according to Dahlstedt, most probably belong to *T. purpuridens* Dahlst. ("Sannolikt *T. purpuridens* Dt.").

Not previously recorded for the east coast.

159. *Taraxum rhodolepis* Dahlst.
(Det. Dr. H. Dahlstedt, Stockholm).

Umanak: Pilerkit (B).

New to East Greenland.

In Grønlia in Kangerdlugsuatsiak Devold collected some rather defective specimens about which Dahlstedt states that they probably belong to this species ("Tillhör sannolikt *T. rhodolepis* Dt.").

From this list it appears that *Taraxaca,* particularly *T. croceum*, are very common on the southeast coast, found especially on old Eskimo sites where they almost always are growing in masses. However, they are not exclusively associated with these places. In the willow scrub at Dronning Marias dal *T. croceum* not rarely exceeds a height of 1/2 metre. In the month of August the seeds were either ripening or already distributed.

Monocotyledones.

Juncaginaceae.

160. *Triglochin palustris* L.
Pl. IV.

Umanak: The head of Innfjorden (Vogt and Bjørlykke).

From the east coast it was previously only known from Kong Oscars Havn in Angmagssalik (Berlin). In 1932, however, it was found by the Norwegian botanist Aandstad in Eirik Raude's Land — at the head of Geologfjorden in lat. abt. 73° 50′ — being its northern limit in East Greenland (and West Greenland).

Potamogetonaceae.

Potamogeton filiformis Pers.

Not seen by us. On the east coast only found at Amaka 65° 39′ in Angmagssalik (Kruuse).

Liliaceae.

161. *Tofieldia coccinea* Richards.

Kangerdlugsuak: Storfjord Radio (S).

Only two small tufts nearly past flowering were found just at the back of the station. Previously not known south of Scoresby Sound where it is common in the inner part. Also common in Eirik Raude's Land. The northernmost finding place is at Dovebukta in Germania Land between 76° and 77°, where Lundager in 1908 discovered a small colony of the plant between Lille Snenæs and Trekroner.

162. *Tofieldia palustris* Huds.

Kangerdlugsuak: Brandal (S).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Nordpollen (D), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Narsak (D, S).

Previously found:
Umanak: Umanak (E).
Puisortok: Karra Akungnak (E).
Iluilek: Kangerdluluk (V), Serketnua (V), Kutek (E).
Kangerdlugsuatsiak: Nenese (V).

Rather common in the fjords of Southeast Greenland, at least as far north as Angmagssalik where it has been found up to Itivsalik in lat. 66° 47′ (K). The next locality north of this is our locality in Kangerdlugsuak where it probably is rare, and then Scoresby Sound where it is rather rare found especially in the inner tracts, being also the case in Eirik Raude's Land where it has been found up to its northern limit in Soppbukta, on the south side of Claveringøya in lat. 74° 10′ (Vaage).

Juncaceae.

163. *Juncus arcticus* Willd.

Pl. IV.

Akorninarmiut: Dronning Marias dal (B, D. S).
Umanak: Rudiøya (B).

It was quite common on the sandy river beach in Dronning Marias dal, where it grew in long characteristic rows. Our tallest speci-

mens from that valley and Rudiøya are respectively 47 and 40 cm. *Juncus arcticus* has previously not been found south of Angmagssalik, where, however, it is very rare and only found at Kingorsuak in lat. 66° 16′ (K). In Scoresby Sound and Eirik Raude's Land it is not particularly rare. In the latter area its present northern limit is at Revet (Vaage) in Copeland fjord in lat. 74° 20′.

164. *Juncus biglumis* L.

Kangerdlugsuak: Brandal (S).
Akorninarmiut: Finnsbu (B, S), Dronning Marias dal (B, S), Skjoldungen, inner north side (B).
Umanak: Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Narsak (D, S).

Previously not found south of Angmagssalik where it is very rare. In the dense vegetation of Southeast Greenland it is more difficult to discover our plant, than in Eirik Raude's Land where it is easily detected on the naked ground. However, it is probably considerably rarer in the south where the competition with *Sphagnum* a. o. makes itself strongly felt.

North of Angmagssalik it has not been found below Turner Sund in lat. 69° 45′ N. and is common in Scoresby Sound and in Eirik Raude's Land. In Germania Land it is rather common and has been found a little to the north of this area, viz. at Ymers Nunatak in lat. 77° 24′ (J. P. Koch). North of this place it has not been recorded below the north coast where it is known from a number of points (Wulff) and is rather common.

Juncus castaneus Smith.

Not seen by us. On the east coast it is not known south of Angmagssalik, where it has been found in a single locality by Kruuse (Kingorsuak, lat. 66° 16′). North of this place it has not been found below Scoresby Sound, where it, as in Eirik Raude's Land up to Kap Herschel, occurs rather sparsely. It is also found at a point in Germania Land: Termometerfjæld at Danmarks Havn in lat. 76° 46′ (Lundager), where it reaches its northern limit.

165. *Juncus filiformis* L.

Pl. IV.

Anoritok: Inugsuit (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Ikerasarsuak: Nunatsuk (E).

At its present northern limit at Tennøya on the mainland in Anoritok, Devold discovered *Juncus filiformis* in large quantities along a small glacier river. In brooks and other marshy places dense stands of this *Juncus*, unknown in other Arctic regions are very common throughout that part of Kangerdlugsuatsiak known to us. The stands may often attain a height of 35 cm or even more. As elsewhere, the plant is in Southeast Greenland often found associated with *Sphagnum*.

166. *Juncus squarrosus* L.

Pl. IV.

Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (E).
Ikerasarsuak: Aluk (V), (Ikerasarsuk (V)).

Rare and only found in the most southerly area. It grows in small, dense colonies, often in mats of *Nardus* and *Scirpus*. At Narsak it was found abundantly in a small *Carex rigida-Sphagnum* bog at an altitude of 100 metres. Our specimens are fully as luxuriant as those which we are accustomed to see in West Norway, reaching a height of nearly 40 cm.

Juncus supinus Moench.
(*J. bulbosus* L.)

Not seen by us.

On the east coast it is only known from 3 points in Angmagssalik (Berlin and Kruuse) where it is very rare.

167. *Juncus trifidus* L.

Kangerdlugsuak: Skardet (S), Brandal (S), Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B. D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Grønlia (D), Fossheim (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Puisortok: Karra Akungnak (E).

Anoritok: Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Kajartalik (V), Serketnua (E).
Ikerasarsuak: Nunatsuk (Sylow), Kekertak (V).

Quite rare in Kangerdlugsuak, otherwise common in dry places, especially in the dry lichen heaths. In Southeast Greenland, as in Norway, it grows to a considerable altitude (Møretind 1200 metres). It is common in Angmagssalik, this being probably also the case at most places of the coast as far as its northern limit in Scoresby Sound where it is known from several points in the innermost tracts. Undoubtedly, the conditions in the southern parts of Eirik Raude's Land should also be favourable for this plant.

168. *Juncus triglumis* L.

Pl. IV.

Akorninarmiut: Skjoldungen, inner north side (B).

Very rare in Southeast Greenland where it was previously only known from one place in Angmagssalik: Elvebakker near Tasiusak in lat. 65° 35′ (Kruuse). Farther north it has not been found below the inner part of Scoresby Sound, where it is not common (Hartz). Has a wide distribution in Eirik Raude's Land, but occurs sparsely at each point (Vaage). The northern limit is in Germania Land, where it is only known from 2 localities near Danmarks Havn 76° 40′ (Lundager). Our 2 specimens from Akorninarmiut are not more than 3 cm in height.

In Rhodora (1924, p. 201) Fernald has attempted to show that the American representative of *Juncus triglumis* as well as the Greenland one (based upon only 4 specimens from the west coast) should be regarded as being a distinct species: *J. albescens* (Lge.) Fernald separated from the Eurasian species. How far he has based his statements on actual European material does not appear from his paper. The differential diagnosis is given thus:

"The Eurasian plant, *J. triglumis* L., has, as accurately described by Buchenau, the *bracts* of the inflorescence usually *obtuse* or the lower mucronate, and ordinarily *conspicuously* shorter than the flowers. In all the American material (including that from Greenland) seen the *lower bract* is *long-acuminate* or *long-awned* and *equal to or overtopping the lowest flower*. In *J. triglumis* the mature *capsule* is *6—7 mm. long,* conspicuously *exserted* from the perianth, firm, castaneous and conic to rounded below the short beak. In the American plant the thinner and usually paler capsule is included or barely exserted, *3—4 mm. long*, and rounded to subtruncate at summit. In *J. triglumis* the mature seeds (including the long white tails) are 2,3—3 mm. long, in the American plant 1.3—2 mm. long.

Besides these fundamental characters which clearly mark the two plants as distinct species there are tendencies which, though not constant are worth noting: . . . . .".

The properties here ascribed to the Eurasian plant do not, however, correspond to the facts, as long-acuminate or long-awned bracts overtopping the lowest flower by more than 1 cm are very common in our large Scandinavian material (whence described by Norman as var. *acutiusculus* which variety is also given in Buchenau's Juncus monograph 1906, p. 224) and also in the material from Spitsbergen, East Greenland, West Greenland and Ellesmere Land. In these areas are also found — even in the same tufts — forms with more or less obtuse lower bract which does not overtop the lower flower.

The size of the capsules is — as is the whole plant — subject to variations apparently being due to the habitat. Throughout the mentioned material the length of the capsule is from 3—4 (ralely 5 mm), and we have only seen a single specimen with a capsule of 6 mm.

The length of the capsule relative to the perianth is to a large extent dependent upon the degree of ripening, and from all localities specimens are found with both projecting and non-projecting capsules. The size of the seeds is also subject to some variation, without being, as far as we can make out, inseparately coupled with some other characters.

More or less pronounced albino forms are very frequent from all the mentioned tracts and may almost be said to represent normalcy by young individuals, and have, apparently, no important systematic value.

In the light of the amplitude of variation of this plant throughout an area extending westwards at least to Greenland and a part of Ellesmere Land it seems difficult within this area to maintain the *J. albescens* of Fernald, and it seems to us that it still remains to be proved whether the American plant after all is distinct from the entire range of variation of the Eurasian-Greenland plant.

169. *Luzula confusa* Lindeb.

Kangerdlugsuak: Skardet (S, T), Elvefaret (T), Spekkpynten (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Trollfjordeid (B), Devoldlia (D, S), Finnsbu (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).
Kangerdlugsuatsiak: Grønlia (D), Fossheim (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D, S).

We have not been able to refer any of our numerous specimens to the closely related species *L. arcuata* which likewise is not mentioned

by Ostenfeld (1926) from our area. Although we have not seen the material it seems to be justified to include the previous records of *L. arcuata* in *L. confusa.*

Previously found:

Kangerdlugsuak: Skærgaards Halvø (A), N. Aputitek (A) (sub *L. confusa*).
Umanak: Umanak (E) (sub *L. arcuata*).
Tingmiarmiut: Ekalungmiut (E) (sub *L. arcuata*).
Puisortok: Kap Rantzau (E) (sub *L. confusa*).
Anoritok: Kanajorkat (E) (sub *L. arcuata*).
Auarket: Ingitait (E) (sub *L. arcuata*).
Iluilek: Kangerdluluk (V) (sub *L. arcuata*), Iluilek (E) (sub *L. confusa*).
(*Ikerasarsuak*: Chr. IV Ø (Sylow) (sub *L. arcuata*), Ikitok (V) (sub *L. arcuata*)).

Luzula confusa becomes more frequent on going north. In the most southerly district is was mostly found in the mountains.

It is one of the plants most frequently met with in the high mountains of the Arctic regions. It was frequent on Møretind (1200 metres) and also on Brandalfjellet (1000 metres), where it grew in large tufts on the edge of a precipice.

The plant is commonly distributed throughout the Arctic, and is found wherever there is ice-free land; no matter, how far to the north that may be.

170. *Luzula frigida* (Buchen.) Sam.

Akorninarmiut: Finnsbu (D, S), Dronning Marias dal (B, D, S), Kornok (D), Midterhuset (D).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Kangerdlugsuatsiak: Mortensberg (D, S), Nordpollen (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Vahl found it on the east coast (no locality stated), otherwise it has been overlooked south of Angmagssalik. It is apparently rather rare along the southeast coast as far as Akaliarisek in lat. 66° 20′ (District of Angmagssalik). North of this point we have no localities below its northern limit in Scoresby Sound, where it is rare.

From Møretun and Grønlia we have specimens which by their size (40—50 cm), comparatively large (abt. 1,5 mm) and obtuse seeds very much approach *L. multiflora* Lej.

Whether it is possible in Greenland to distinguish between the very critical *L. multiflora*, *L. frigida* and *L. sudetica* we dare not, based on our material, to form any opinion.

171. *Luzula parviflora* Desv.

Pl. IV.

Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (V), Narsak (E).

Ikerasarsuak: Tunua (Sylow), (Ikerasarsuk (V)).

Not rare in the mentioned localities. Grows in protected places on the edge of brooks, ravines etc. Attains usually a height of 1/2—3/4 metre.

Fig. 24. *Luzula spicata*. Narsak in Lindenowfjord, 29/7 1932.

The northern limit is at present in the Kangerdluarak Fjord, where it is quite common. It should be found farther north in the Iluilek district when this becomes better known botanically.

172. *Luzula spicata* Lam.

Fig. 24.

Kangerdlugsuak: Skardet (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).

Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).

Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).

Tingmiarmiut: Lomvatnet (B), Framneshytta (D), Tvihamna (D), Igdlormiut (B), Brattneset (D, S. T).

Anoritok: Tennøya (D).

Auarket: Pilskoghytta (D).

Kangerdlugsuatsiak: Mortensberg (D, S), Nordpollen (D), Grønlia (D), Fossheim (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A). Otherwise it is said to be commonly distributed, without accurate localities being stated.

Very common on the east coast as far north as Scoresby Sound where it is rather common. In Eirik Raude's Land it is rare, and has its northern limit at Kap Humboldt (Vaage).

Specimens having a length of 30 to 40 cm are not unusual in our collections.

Cyperaceae.

173. *Carex atrata* L.

Akorninarmiut: Imarsivikøya (B), Devoldlia (D, S), Finnsbu (B, D, S), Eskimoneset (D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D).
Tingmiarmiut: Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Umanak: Umanaks fjord = Pilerkit (E).

Rather rare and only found in places where there is tall vegetation, as in the willow slopes and overgrown rockfalls, but here it is in return a rather regular component of the vegetation.

Carex atrata was not found in Umivik, but reaches Angmagssalik where it is very rare and has at present its northern limit (Kruuse).

Specimens between 50 and 85 cm in height of this beautiful sedge are not rare in our east coast collections. It vies with *Agrostis canina*, *Calamagrostis purpurascens*, *hyperborea* and *Langsdorfii*, and *Elymus* as to which is the tallest monocotyledon in East Greenland.

174. *Carex bicolor* All.

Not seen by us. Previously found:
Kangerdlugsuak: N. Aputitek (A).

Except in this place it is on the east coast only known from "a pool in Jameson Land at the Nordostbugt" (H, K) in Scoresby Sound, and further in Vassdalen at Moskusoksefjord in Eirik Raude's Land (Vaage), its present northern limit.

175. *Carex brunnescens* (Pers.) Poir.

Pl. IV.

Akorninarmiut: Devoldlia (D, S), Finnsbu (D, S), Dronning Marias dal (D, S).
Umanak: Claradalen (D), Innfjorden (D).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Straumen (T), Mortensberg (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found by Vahl at Ikitok which probably is a point within the east coast as defined by us, but we have not been able to locate it.

C. brunnescens is probably not rare along the east coast from and including Akorninarmiut and southwards, where it is — as loose tufts — a rather regular component of the dry lichen heaths. It may also grow

on more moist ground and has then often somewhat bigger spikelets and a richer development of the sterile leaves. Frequently there are also abnormities like a more or less total sterility and other factors contributing their share towards making it even very difficult to interpret some of the material correctly, especially as against the closely related species *C. canescens*. In order to get an impartial determination of these forms, our entire material has been handed over to our expert on *Carex*, Mr. Axel Arrhenius, who has been kind enough to go trough it, and revise our determinations.

In Angmagssalik *C. brunnescens* is very rare, only found at a single point, viz. Tunok in lat. 65° 56′ (Kruuse), this being its northern limit.

176. *Carex canescens* L.

Pl. IV.

Akorninarmiut: Floneset (D), Myrodden (D).
Umanak: Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S).
Kangerdlugsuatsiak: Narsak (D, S).

Previously found:

Anoritok: Anoritok (V).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertak (V).

From Innfjorden (D) and Møretun (D, S) we have also specimens which in all probability belong to *C. canescens*, but it is not possible to decide this with certainty.

Our impression is that *C. canescens* is rare on the southeast coast and considerably rarer than the preceding species. It is remarkable that Vahl, who apparently was very interested in the monocotyledonous flora, has not found *C. brunnescens* in more than one locality, whereas he found the much rarer *C. canescens* at several points.

Our most typical specimens were found on Myrodden, Brattneset and Narsak. They grew in dense, yellow tufts at the edge of small ponds, where they during rainy weather not rarely became inundated.

It has not yet been found in Angmagssalik, and has its northern limit at Myrodden in Akorninarmiut.

Carex helvola Blytt.

Kangerdlugsuatsiak: Møretun (D, S), Narsak (D, S).

In a boggy little lagoon in Narsak — between the Danish house and the Eskimo ruins — was found, next to tufts of *C. Lachenalii* and *C. canescens*, quite a number of remarkable tufts, distinctive by their strong development of the vegetative parts, whereas the spikelets were more or less sterile and anomalous. Some of these tufts were

quite in agreement with what is termed *C. helvola,* being commonly regarded as a hybrid: *C. canescens* × *Lachenalii.* It was also found at Møretun some few kilometres east of Narsak. Other forms from the same locality reminded us of *C. Zahnii* Kneucker (the supposed hybrid *C. brunnescens* × *Lachenalii*). According to Arrhenius it is more reasonable to interpret these latter forms as hybrids between *C. brunnescens* and *C. canescens*, as positive indications of *C. Lachenalii* could not be ascertained.

By the nature of the case it follows that it is very difficult to say anything with certainty about the genealogy of the forms, only from morphological characters. Sterility and consequent anomalous spikelets, or vice versa, may be due to so many factors which cannot be checked, as frost, disease etc., that we for this reason prefer to classify these forms under the more neutral, purely morphological headings, *C. helvola*, *C. Zahnii* etc., instead of the hybrid nomenclature, saying more than one can positively know.

177. *Carex capillaris* L.

Kangerdlugsuak: Skardet (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Dronning Marias dal (S).
Tingmiarmiut: Brattneset (S).

Previously found:

Umanak: Umanaks fjord = Pilerkit (E).

Apparently rare on the southeast coast. However, nearly all the specimens found by us were past flowering, with utricles fallen off, and were consequently difficult to see. The species is very rare in Angmagssalik, and has, in addition to Kangerdlugsuak, only been found at a few points south of Scoresby Sound where it is common, as it is in Eirik Raude's Land. That the almost boreal *C. capillaris* is so rare on the southeast coast, whereas it is very common north of lat. 70°, may possibly be due to the fact that it does not find sufficient lime in the eruptives of Southeast Greenland. In Norway it is typically calcicolous. The northern limit is at Revet in lat. 74° 25′ N., innermost in the Copeland fjord (Vaage).

178. *Carex capitata* Soland.

Fig. 25.

Kangerdlugsuak: Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Dronning Marias dal (D), Kornok (D).
Tingmiarmiut: Tvihamna (D).
Kangerdlugsuatsiak: Grytvika (D).

Fig. 25. *Carex capitata.*
Specimen from Southeast Greenland.
Magn. 5/1.

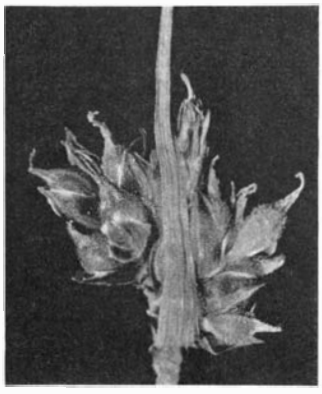

Fig. 26. *Carex deflexa.*
Specimen from Southeast Greenland.
Magn. 5/1.

Previously found:

Puisortok: Kangek between Anoritok and Puisortok (V) (= probably Kap Rantzau).
(*Ikerasarsuak:* Ivigtok = Ikitok (V)).

At each point were only found some single tufts, as a rule in the vicinity of smal ponds, and along with *Eriophorum*, *Scirpus* etc. In Grytvika it was collected at an altitude of 200 metres above sea-level.

It is very rare in Angmagssalik, and was previously found as far north as Lille Ø 66° 58′ (K). In Kangerdlugsuak was found a single specimen on the south side of Amdrupneset, its present northern limit.

179. *Carex deflexa* Hornem.

Fig. 26 and Pl. IV.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Finnsbu (B).
Tingmiarmiut: Brattneset (S).
Kangerdlugsuatsiak: Mortensberg (S), Møretun (S).

Previously found:

Puisortok: Puisortok (E).
Iluilek: Serketnua (V).
Kangerdlugsuatsiak: Nenese (V).

Rather rare as far north as Umivik, where Nordenskiölds Nunatak is the northernmost finding point on the east coast.

Grows frequently below steep rocks in tufts which may attain 20 cm in diameter. It is easily recognized by its light green colour, red base, and gracefully curved, thin culm like a *C. glareosa.*

Fig. 27. *Carex glareosa.*

Fig. 28. *Carex Lachenalii.*

Narsak in Lindenowfjord, 29/7 1932.

180. *Carex glareosa* Wahlenb.

Fig. 27.

Umivik: Utermiut (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D).
Tingmiarmiut: Framneshytta (D) Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Nordpollen (D), Grønlia (D) Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A).
Umanak: Umanak (E).
Tingmiarmiut: Ekalungmiut (E).
Anoritok: Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Serketnua (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertak (V).

A characteristic beach plant commonly distributed on the south-east coast, at any rate as far north as Angmagssalik. Hartz and Kruuse found it on the coast up to Scoresby Sound, from which latter place, however, we have not been able to find any published localities. It is very rare in Eirik Raude's Land, only known from 3 points here. The locality of Hartz and Kruuse on Sabineøya is, so far, its northern limit.

181. *Carex Halleri* Gunn.

Fig. 29 and Pl. V.

Akorninarmiut: Devoldlia (D, S), Skjoldungen, inner north side (B).
Umanak: Claradalen (D), Innfjorden (D), Rudiøya (B).
Tingmiarmiut: Brattneset (D, S).

Fig. 29. *Carex Halleri.* Specimen from Southeast Greenland. Magn. 5/1.

Carex Halleri was previously only known from Scoresby Sound and Eirik Raude's Land with its northern limit at Revet in Claveringøya, Vaage 1930. In both areas it is very rare.

In Umanak and Akorninarmiut it was found in several places often growing in rather rich stands along with *Sphagnum*. In due course it should also be found in Angmagssalik.

In our collection specimens having a length of 35 to 40 cm are common.

182. *Carex incurva* Lightf.

Kangerdlugsuak: Polarisbreen (S), Brandal (S).

Was previously only known from Scoresby Sound, from Eirik Raude's Land (here common) and northwards to Rypefjæld in Germania Land (P. Freuchen) where it has its northern limit. In Kangerdlugsuak, its southern limit, it was very rare, and was only found in two small colonies growing on morainic gravel.

183. *Carex Lachenalii* Schkuhr.

Fig. 28.

Kangerdlugsuak: Skardet (S), Brandalfjell 900 m (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Husøya (B), Imarsivik (B), Imarsivikøya (B), Eidsfjorddalen (B), Floneset (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjorden (A), Skærgaards Halvø (A). N. Aputitek (A).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), (Ikerasarsuak (V)).

On the southeast coast *Carex Lachenalii* is, next to *C. rigida*, the most common sedge and is found nearly in every moist place.

It has its northern limit on Lille Pendulum Isl. in Eirik Raude's Land in lat. 74° 30′ (Dusén). Here, according to Vaage, it is of frequent occurrence near the coast. In Kangerdlugsuak it was found on Brandalfjellet at an altitude of 900 metres above sea-level. In Southeast Greenland *C. Lachenalii* has, as sometimes also elsewhere, not rarely distinctly dentate utricles.

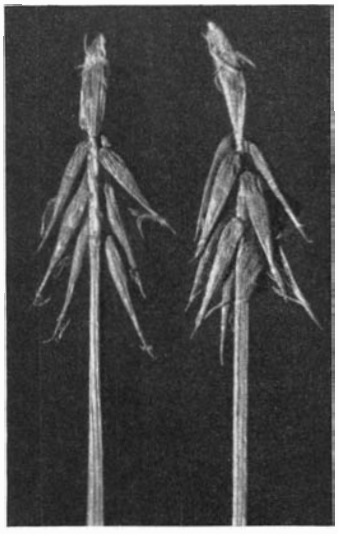

Fig. 30. *Carex microglochin.* Specimens from Kangerdlugsuak. Magn. 4,5/1.

184. *Carex Macloviana* D'Urv.

Pl. V.

Akorninarmiut[1]: Trollfjordeidet (B), Kvanndalen (D), Finnsbu (B, D, S), Myrodden (D, Vogt), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D).
Tingmiarmiut: Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Nordpollen (D), Persvatnet (D).

Previously known only from a few points in Angmagssalik and Scoresby Sound. We have not been able to find any published locality from the coast between the mentioned areas.

Carex Macloviana is quite common in the Skjoldungen region where it occurs in dry, sandy places, frequently in dense growths. Above the Norwegian station at Dronning Marias dal it was found in abundant numbers at an altitude of 500 metres.

It often attained a height of 30 to 40 cm, which also according to Scandinavian standard is quite exceptional.

185. *Carex microglochin* R. Br.

Fig. 30.

Kangerdlugsuak: Storfjord Radio (S).

Apparently very rare on the east coast, even considering the fact that it is very inconspicuous. Was previously known from only a few points in Angmagssalik and Scoresby Sound. Vahl discovered it at

[1] *C. Macloviana* from Eidsdalen Aug. 25th and Imarsivikøya at Flosundet Aug. 24th (Bjørlykke 1932, p. 6) should be cancelled as they come under other species.

the western entrance of Prins Christians Sund at Ujarasarsuk (= Ujararsoit). In Kangerdlugsuak it was found in a small *Carex rigida* swamp just above the radio mast. Here it formed a dense growth covering an area of about 8 sq. metres.

The usual height of our specimens is between 5 and 8 cm.

186. *Carex misandra* R. Br.

Kangerdlugsuak: Storfjord Radio (S).

Only a single specimen was found of this *Carex*, otherwise so common in the Arctic. It was a withered tuft with all the utricles fallen off, but at once easy to spot on account of its characteristic base. The plant was collected at about 200 metres above sea-level at the back of the radio station towards Brandalfjellet. This is the most southerly growing place known for this plant in East Greenland. From the coast between 67° and 70° we have not found any locality previously published. *Carex misandra* is common in Scoresby Sound, Eirik Raude's Land and farther north up to Bjørneskær in lat. abt. 77° 30′ (J. P. Koch) where it has its present northern limit on the east coast. However, on the north coast it is common (Wulff).

187. *Carex nardina* Fr. var. *Hepburnii* (Boott) Kükenthal.

Fig. 31 and Pl. V.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Trollfjordeidet (B), Trollfjordbotn (Vogt), Dronning Marias dal (B, S), Bjørlykkeneset (Vogt).

This chiefly Arctic sedge was previously not known from south of Angmagssalik where, however, it is very common. From Angmagssalik and northwards to and including the north coast, *Carex nardina* has been recorded from most places investigated and is most probably common here everywhere. It is one of the mountain plants most regularly met with in the Arctic. In Kangerdlugsuak it was found 1000 metres above sea-level, and at the same altitude it was found on several mountains in Eirik Raude's Land 1930. In the following year it was collected on mountain summits of the northernmost part of Spitsbergen. The southernmost finding place on the east coast is in Akorninarmiut.

With regard to the nomenclature we may refer to the paper by Ostenfeld: "Critical notes on the Taxonomy etc." (1923, p. 164).

From his own observations and collections, especially in North Spitsbergen 1931, Scholander became suspicious about *C. Hepburnii* as a separate species. The incurvate leaves of *Carex nardina* seemed to be of little systematic value and was especially to be seen at exposed places where the *Hepburnii* tufts were weathered and with straws

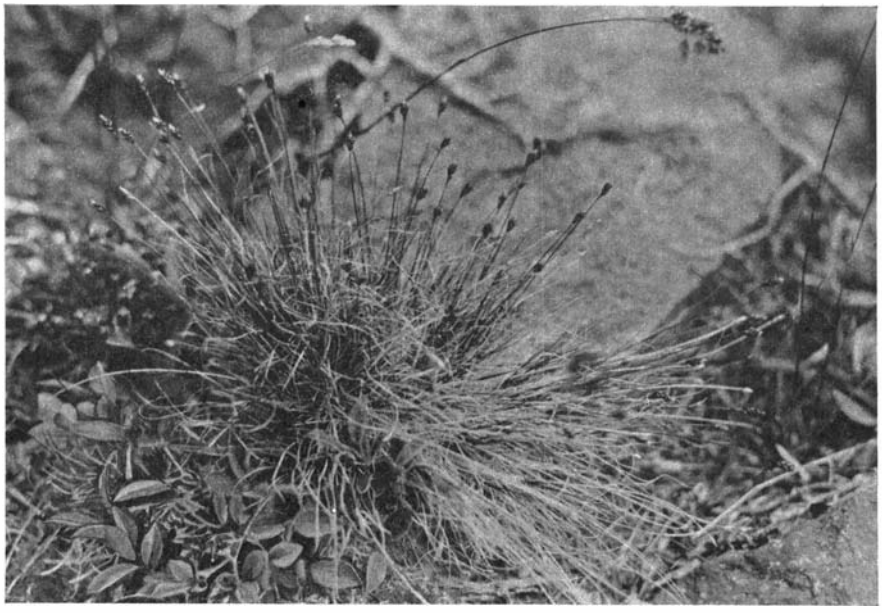

Fig. 31. *Carex nardina* var. *Hepburnii*. 21/8 1932. Kangerdlugsuak.

developed only at the edge of the otherwise flat and dead tuft[1] (a familiar phenomenon in other tufted plants of the Arctic). Straws from tufts in that way artifically dwarfed are nearly always more ore less curved and short. The quantitative differences in utricles and nuts as stated in descriptions appear to us to be proposed only to serve purposes of definition, being of very doubtful systematic value, every intermediate form being present. Without any qualitative differences it seems hardly justified to us on these characters alone to distinguish between species, the more so as authorities like Kükenthal, Ostenfeld and others have been reluctant to do so.

As is also the case with our collections from Eirik Raude's Land and Spitsbergen the greater part of our material from the southeast coast of Greenland belongs to the var. *Hepburnii*. Forms which habitually more or less coalesce with its weathered and dwarfed form (= *C. nardina*) are not rare on exposed points in any of these regions.

188. *Carex pedata* Wahlenb.

Kangerdlugsuak: Amdrupneset (S).

From the east coast *Carex pedata* is previously only known from Langø in lat. 67° 5′ (H, K), Turner Sund (K) lat. 69° 44′, Scoresby Sound where it is not rare, and from a single locality in Eirik Raude's Land:

[1] See N. Hartz 1895, p. 311 where an excellent illustration of such a tuft is given.

Kap Stosch in 74° (S) where it has its northern limit. From Angmagssalik we have not found any locality published.

On the south side of Amdrupneset (abt. 68° 10′) a few tufts of *C. pedata*, 8—10 cm in height, were found on a rocky ledge, about 50 metres above sea-level.

189. *Carex rariflora* Sm.

Akorninarmiut: Eidsfjorddalen (B), Devoldlia (D, S), Finnsbu (B, D, S), Myrodden (D), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Brattneset (D, S).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Nordpollen (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: Brattneset (E).
Puisortok: Ingerkajarfik (E).
Anoritok: Anoritok (V).
Iluilek: Serketnua (E), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertak (V), (Ikerasarsuk (V)).

Very common in bogs, swampy river beds etc., occasionally also forming part of the beach vegetation as dense mats, along with *C. glareosa*, *Pucc. phryganodes*, *Potentilla anserina* var., *Stellaria humifusa* a. o., especially to be seen in Dronning Marias dal. In Angmagssalik, too, it is very common. From the stretch thence and as far as Scoresby Sound no localities have been published, nor was it found in Kangerdlugsuak in 1932. It is rare in Scoresby Sound and Eirik Raude's Land. The northern limit is on the south side of Claveringøya at Soppbukta in lat. 74° 06′ (Vaage).

190. *Carex rigida* Good. sens. lat.

Kangerdlugsuak: Skardet (S), Spekkpynten (S), Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Husøya (D), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeid (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Myrodden (D, Vogt), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B), Kornok (B).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D, Vogt), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).

Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretind 1200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found (*C. rigida* and *C. hyperborea*):

Kangerdlugsuak: Skærgaards Halvø (A).
Tingmiarmiut = Brattneset (E).
Puisortok: Ingerkajarfik (E), Puisortok (E).
Anoritok: Anoritok (V).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Serketnua (E), Iluilek (E), Kutek (E).
Kangerdlugsuatsiak: Nenese (V), Lindenowfj. (= Narsak) (E).
Ikerasarsuak: Aluk (E), Nunatsuk (E), Tunua (E), (Ikerasarsuk (V)). (*Carex Warmingi*: Nunatsuk (E), *C. Drejeriana*: Ikitok (V)).

Carex rigida in Southeast Greenland constiutes a very wide, but still continuous morphological series of variations, in contradistinction to the quite homogeneous material from Eirik Raude's Land.

We picture a typical *C. rigida* as a rather low plant rarely more than 10 cm in height, with broad, relatively short leaves, shorter than the rigid and thick stem which in the uppermost part carries a nearly pitch-black inflorescence. The spikes are rather short, cylindrical and proximate, distinctly unisexual, dense-flowered, with green utricles and black scales. Stigmas 2.

This typical *C. rigida* grows preferably on slightly moist, stony ground in the high mountains of temperate regions, and in the Arctic where the upper layers of vegetation are lacking. It is quite rare in Southeast Greenland. We have some good specimens from Akorninarmiut where it was found up in the mountains. Common in Kangerdlugsuak and dominates in Eirik Raude's Land where the *C. rigida* material as a whole is much more uniform than on the southeast coast, probably due to the much less varying environment in the former region.

In the wet *Sphagnum* bogs of Southeast Greenland, along with *Salix*-scrub and other high vegetation, *C. rigida* occurs almost exclusively as a more or less typical var. *concolor* (R. Br.) Kükenth. (= *C. Bigelowii* Torr., var. *inferalpina* Laest., *C. hyperbora* Drejer, *C. saxatilis* Dew., *C. Warmingi* Th. Holm, *C. Drejeriana* Lange). This is a tall form (in our material to 75 cm high) with numerous, long and narrow leaves which often equal or exceed the inflorescence. The stem is long and slender. The spikes are very long, open-flowered, distant, the terminal one frequently being androgynous. Stigmas not rarely 3.

Still more common than this tall, more or less typical var. *concolor* are found smaller forms with very irregular, reduced, and open-flowered spikes looking like ± defective specimens of var. *concolor*.

On river sand at Narsak and Møretun in Lindenowfjorden dense stands of a very characteristic *rigida* form are found growing in several

places. This form is characterized by its conspicuous coarseness. The leaves are more or less olive-green, 6—8 mm broad, frequently exceeding the inflorescence as does also the broad bract. The stem is heavy, rarely exceeding 25—30 cm in length. The spikes are long, thick, somewhat open-flowerd below, with reddish brown, white-margined scales (f. *lutosa* Drejer). The terminal spike is frequently androgynous. It has typical *rigida*-stolons with reddish brown scales, and our plants seem to correspond to *C. haematolepis* Drejer. We are inclined to regard also this form mainly as a habitat form (the river sand).

Smut is very common on the *Carices* of Southeast Greenland particularly on all the *rigida* forms which makes it still more difficult to distinguish between them.

In examining all these aberrations from the typical *C. rigida* one is struck by the many irregularities of the sexual parts, such as reduction, sterility, incomplete differentiation in ♀ and ♂ spikes, etc., the vegetative parts being normal or frequently luxurious. These irregularities seem to occur absolutely without any system and by their appearance they give the impression of being pathologic rather than normal biologic differentiations into distinct forms.

We have philosophized on the causes of this peculiar case and we have arrived at an explanation somewhat as follows. In its stolons *Carex rigida* possesses a very effective means of vegetative reproduction so that it may spread to and keep alive even in places (e. g. swamps) where the conditions are not congenial for the development of normal sexual organs. Here we find the series of defective forms as described. It seems to us that a great many of the *rigida* forms of the investigated area may be explained in this way, but hardly all of them as it is very improbable that *C. rigida* in Southeast Greenland is genotypically homogeneous.

Carex rigida in a broad sense is very common on the east coast as far north as to Eirik Raude's Land. The northernmost locality in East Greenland is at Rype Fjæld in Germania Land (76° 43′—77°). It is not particularly high-arctic, being not known from North Greenland, very rare on Spitsbergen, and not found in Franz Josef Land.

191. *Carex rotundata* Wahlenb.

Pl. V.

Akorninarmiut: Devoldlia (D, S), Finnsbu (B, D), Myrodden (D, Vogt), Kornok (D).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Brattneset (D, S).
Kangerdlugsuatsiak: Møretun (D, S), Narsak (D, S).

Previously found:
Ikerasarsuak: Nunatsuk (M. Porsild).

Apart from this latter locality, it was previously on the east coast only known from Angmagssalik and Scoresby Sound, and is apparently rare in both places. It is possible that *C. saxatilis* from Karra in Auarket (E) should be referred to this species. *Carex rotundata* is not particularly rare in Southeast Greenland. It is found in dense growths in water holes in swampy ground, frequently along with *Eriophorum*.

In South Greenland it is a very characteristic plant, conspicuous by its olive-green colour, straight habitus, smooth, rounded triangular culm, and rounded concave leaves, by the 2 dark-brown, glossy, and sessile female spikelets with the lower bract usually overtopping the male spikelet.

Equally characteristic is *C. saxatilis* in Eirik Raude's Land. It is lower, ascending in a curve, with keeled leaves of a greyish-green colour, often exceeding the inflorescense. The culm is sharply triangular or semicircular with pitch-black, glossy female spikelets. The lowermost of these is frequently more or less nutant on account of its capillary peduncle, a character which should not be underestimated, and has further a bract which only rarely exceeds the male spikelet.

It is quite remarkable to find that these in the south and the north, respectively, so different forms should be so thoroughly mixed with regard to morphological characters, where the two areas of distribution meet.

Bjørlykke (1932) reports *C. saxatilis* from Finnsbu in Akorninarmiut and Vogtsbu together with Rudiøya in Umanak. In our opinion these should be referred to *C. rotundata*. Those specimens which are available from Rudiøya are transition forms, having caused us considerable doubts, and it is also for this reason that we have referred them to *C. rotundata*, as typical *C. saxatilis* is otherwise lacking in our material from south of Angmagssalik. The final decision of this question will have to be postponed until the locality can be re-visited and the living plants studied.

C. rotundata attains in Southeast Greenland not rarely a height of $\frac{1}{2}$ metre and more.

192. *Carex rufina* Drej.

Pl. V.

Kangerdlugsuak: Storfjord Radio (S).
Umivik: Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Innfjorden (D).
Tingmiarmiut: Lomvatnet (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Møretun (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (V).
(*Ikerasarsuak*: Ikerasarsuk (V)).

To judge from the localities, *C. rufina* has quite a wide distribution on the east coast. It occurred as low tufts in places inundated in rainy weather, and sometimes at the shore of small lakes. It is hardly particularly rare. In due course it should be found in Angmagssalik, as it has been found as far north as Storfjord Radio in Kangerdlugsuak, where it has its northern limit.

193. *Carex rupestris* All.

Kangerdlugsuak: Spekkpynten (S), Brandal (S), Storfjord Radio (S).

The southern limit of *Carex rupestris* is in Angmagssalik where it is rare. We have seen no locality previously published from the area between Angmagssalik and Scoresby Sound. It is very common in Scoresby Sound and Eirik Raude's Land, but near its northern limit in Germania Land: Danmarks Havn, Snenæs (Lundager), it is no longer common. It has not been found on the north coast. Some specimens from Storfjord Radio attained the remarkable height of nearly 22 cm.

Carex salina Wahlenb.?

Ikerasarsuak: Nunatsuk (M. Porsild). The find is stated as being doubtful (Porsild 1930, p. 13).

Carex saxatilis L.?

Not seen by us, previously recorded from *Auarket:* Karra (E). This locality has not been included by Ostenfeld in his list of 1926, and it is possible that this plant from Karra is *C. rotundata* which he gives from the east coast between 61° and 65° (see also under *C. rotundata*). *Carex saxatilis* was not found by us, and is with certainty only known from Scoresby Sound and northwards to its northern limit in Germania Land (76°43′—77°), where it is very common.

194. *Carex scirpoidea* Michx.

Kangerdlugsuak: Skardet (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Kangerdlugsuatsiak: Nagtoralik (= Walløehytta) (E), Nenese (V).
(*Ikerasarsuak*: Chr. IV Ø (Sylow)).

Very common all along the coast as far as to its northern limit in Soppbukta on Claveringøya in Eirik Raude's Land at 74° 10′ (Vaage).

We have in our collection some specimens of a remarkable length, up to 57 cm. In these, and others as well, is not infrequently seen a small extra ♀ spikelet, below the terminal one.

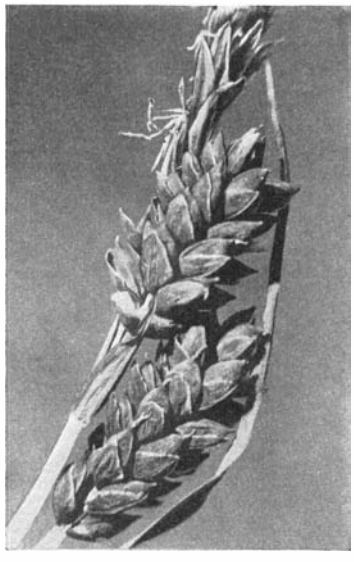

Fig. 32. *Carex stylosa.* Specimen from Southeast Greenland. Magn. 3,5/1.

195. *Carex stylosa* C. A. Mey.

Fig. 32 and Pl. V.

Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Nordpollen (D), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), (Ikerasarsuk (V), Ikitok (V)).

Carex stylosa is common in Southeast Greenland, and in the southernmost parts it is quite a characteristic plant of the dry slopes with ericaceous plants. It grows in loose tufts or singly. It is very uniform and easy to distinguish from all the other *Carices*.

The colour of the leaf is a characteristic olive-green. The utricles have, as is the case in *C. Halleri*, very large cells giving them a regular verrucose or checked appearance, a distinctive character making it always possible to distinguish this species from *C. rigida* forms, which sometimes may resemble it. Usually it attains a height of 30—40 cm, only a few specimens in our collection having a height of 50 cm.

It is rather common in Tingmiarmiut, whereas it is less common in Umanak (here its northern limit). It should certainly also be found in the Skjoldungen district.

196. *Carex subspathacea* Wormskj.

Akorninarmiut: Dronning Marias dal (D, S).
Umanak: Vogtsbu (Vogt).

Previously found:

Kangerdlugsuatsiak: Nenese (V).

Apart from these localities, where it is very rare, it has been found at several places in Angmagssalik and also in lat. 69° 55′ at Dunholm (K, H) just south of Scoresby Sound where it occurs in several places.

In Eirik Raude's Land it has also been found at several points, northernmost in Sabineøya by Dusén, Hartz and Kruuse. Farther north it has not been seen below Germania Land: Danmarks Havn at Basisskær in lat. 76° 47′ (Lundager), its present northern limit.

Carex subspathacea prefers low sandy beaches, but may also be found a good distance from the sea, on river sand and in swamps.

Fig. 33. *Carex supina*. Specimen from Kangerdlugsuak. Magn. 3,5/1.

197. *Carex supina* Wahlenb.

Fig. 33.

Kangerdlugsuak: Storfjord Radio (S).

On the east coast the southernmost find is at present Angmagssalik where it is rare. Ostenfeld (1926) records it for the stretch 67°—70°, a statement which cannot be based on published material. From Scoresby Sound to its northern limit at Daudmannsøyra in lat. 74° 6′ in Claveringøya (Vaage) it is quite common.

The finding point in Kangerdlugsuak was on the dry, rocky northern slope of the little valley close by the radio station. In the same place were found some other interesting plants, such as *Potentilla nivea*, *Campanula uniflora*, *Saxifraga Aizoon* and *Carex rupestris*.

The world distribution of *Carex supina* is quite peculiar. In the western hemisphere (America—Greenland) it is found only in the Arctic regions, whereas in the eastern hemisphere (Europe—Asia) it only occurs in the central and southern regions, its distribution thus being markedly excentric in relation to the pole.

198. *Cobresia scirpina* Willd.

(*Elyna Bellardi* (All.) C. Koch.)

Pl. V.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Eskimoneset (S), Dronning Marias dal (S), Bjørlykkeneset (Vogt).

Previously not found south of Angmagssalik where it is rare. From the area between 67° and 70° we cannot find in the literature any localities given for this plant. It was, however, found to be common in

Kangerdlugsuak. In Scoresby Sound and Eirik Raude's Land it is likewise common, and also at its northern limit at Danmarks Havn in Germania Land in lat. 76° 46′ (Lundager).

It is probable that it extends farther north on the east coast, as it is known from several points on the north coast.

Like *Carex nardina*, *Cobr. scirpina* is very variable as to size. Thus we may find fruiting tufts having a height of 10 cm, rarely 30 cm or even more.

199. *Eriophorum polystachyum* L.

Pl. V.

Kangerdlugsuatsiak: Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Anoritok: Kanajorkat (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Dronning Louises Ø (E), Nunatsuk (Sylow), Kekertak (V), Kapiarfik (Sylow), (Ikitok (V), Chr. IV Ø (Sylow)).

Between Kanajorkat in lat. 61° 37′ and Scoresby Sound, we cannot discover any localities from the literature. Thus it was not observed by Amdrup, Hartz or Kruuse on this immense coastal stretch, and we have not succeeded in finding it here, either. If it does occur, it is certain to be rare within this area.

Very common from Scoresby Sound to Germania Land. It has also been reported from Vildtland at the head of Independence Bay, and is common on the north coast.

200. *Eriophorum Scheuchzeri* Hoppe.

Fig. 37.

Akorninarmiut: Eidsfjorddalen (B), Imarsivik (B), Floneset (D), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B), Kornok (D).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Fossheim (D, S), Møretind 200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Tingmiarmiut: = Brattneset (E).
Puisortok: Rudøya (E).

Anoritok: Anoritok (V), Kap Tordenskjold (E).
Auarket: Ingitait (E).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow).

Eriophorum Scheuchzeri is very common as far north as and including Angmagssalik. It was not discovered in Kangerdlugsuak, and we have no previous localities from the coast between Angmagssalik and Scoresby Sound. From Scoresby Sound and up to Germania Land it is common, and it is further known from Independence Bay, and a few points on the north coast.

201. *Scirpus cespitosus* L. var. *callosus* Bigelow.

Pl. V.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S, T).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S. T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Tingmiarmiut: = Brattneset (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow), Kekertak (V), (Chr. IV Ø (Sylow), Ikitok (V)).

Very common, especially in the southernmost part of its area of distribution, where it may form large and dense, pure stands between the low, ice-polished rock surfaces. Frequently it also forms part of the *Nardus* carpets, and when *Juncus squarrosus* is added we have a well-known association.

In Angmagssalik it is common, and goes still some distance farther northwards, to Itivdlsalik in lat. 66° 47′ (Kruuse), where it has its northern limit.

In Rhodora (1921, p. 24) Fernald has elucidated the nomenclature of this circumpolar plant as follows: *Scirpus cespitosus* L., var. *callosus*, Bigelow, Fl. Bost. ed. 2, 21 (1824). *S. obtusus* and *S. bracteatus* Bigel., N. E. Journ. Med. v. 335 (1816). *Aplostemon bracteatum* (Bigel.) Raf., Am. Mo. Mag. i. 441 (1817). *Trichophorum austriacum* Palla, Berichte Deutsch. Bot. Gesellsch. XV. 468 (1897). *S. cespitosus*, B. *austriacus* (Palla) Aschers. et Graebn. Syn. Mitteleurop. Fl. ii. Ab. 2, 300 (1904).

Gramineae.

202. *Agropyrum violaceum* J. Gaertn.

Pl. VI.

Akorninarmiut: Dronning Marias dal (D, S).

Grows abundantly at an altitude of 200—500 metres above sea-level near the Norwegian station, along with *Rubus saxatilis*, *Thymus*, *Carex Macloviana*, *Woodsia ilvensis*, and other xerophilous plants. It was previously unknown from the east coast.

Our plants are 30 to 60 cm in height, the leaves have a width of 4—6,5 mm, and the spikes a length of 6—9 cm. The length of the glumes is 7—11 mm, with an addition of (0—) 2—4 mm for the awn. The hyaline margin is narrow, 0,2—0,3 mm. and the number of ribs on the back of the glume is 5—7. The spikelets are from 9 to 13 mm long, and usually contain 3, occasionally 4, flowers.

In other words, we have here a mixture of characters from both the new species which *A. violaceum* has been divided into, viz. *A. mutabile* Drobov. and *A. latiglume* Rydb. It is therefore not surprising that our plants fit best in with *A. latiglume* Rydb. subsp. *subalpinum* Vestergr., which, according to the description, in every respect appears to occupy an intermediate position between the two species (see descriptions in Holmberg 1926 p. 271, 272). The division of *A. violaceum* into 2 species and one sub-species seems in our opinion to be based too much on purely biometric characters, the fundamental qualitative characters being very vague and hardly constant.

203. *Agrostis borealis* Hartm.

Pl. VI.

Kangerdlugsuak: Storfjord Radio (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Pilerkit (B), Claradalen (D), Vogtsbu (B).
Tingmiarmiut: Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Nordpollen (D), Grønlia (D), Fossheim (D, S), Møretind 1 200 m (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Puisortok: Ingerkajarfik (E).
Anoritok: Kanajorkat (E).
Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V).
Ikerasarsuak: Aluk (V), Nunatsuk (Sylow), (Ikitok (V)).

As a rule easy to distinguish from *Agr. canina*, but one will always, especially in the southernmost districts, come across specimens which may be difficult to interpret, especially in herbarium material. If the spikelets are still closed, the anthers are easily squeezed out with the nail, or is still easier seen if the panicle is observed on a dark background in transmitted light and with the light-source not visible, for example by keeping the object in front of the lower edge of the shade of the reading lamp.

Agrostis borealis ordinarily attains a height of 20—30 cm. Specimens of 1/2 metre are rare.

Very common as far north as Angmagssalik. It has previously not been known from the coast between this tract and Scoresby Sound, but it was quite common in Kangerdlugsuak. It is only known from the inner part of Scoresby Sound, and its northern limit is here.

204. *Agrostis canina* L.

Pl. VI.

Akorninarmiut: Eidsfjorddalen (B), Trollfjordeidet (B).
Umanak: Claradalen (D), Innfjorden (D), Vogtsbu, (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S), Igdlormiut (B).
Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

The only previous locality given in the literature is Angmagssalik where it is, apparently, not particularly rare, and where it still has its northern limit. The usual length of our specimens is 30—50 cm. Culms having a length of more than 1 metre are exceptional (103 cm in Grønlia).

The f. *mutica* Gaud., where the awn is missing, is rather common in our material.

In two specimens from Nordpollen we have found abnormalities in the spikelets. Among the usual normal one-flowered spikelets were found some, 2—3 times as large as the others, and sterile. Further, they had not seldom supernumerary glumes and pales, which were all more or less green.

Alopecurus aristulatus Michx.

Not seen by us. On the east coast it is only known from 4 places in Angmagssalik (Berlin, Kruuse), being here very rare.

205. *Anthoxanthum odoratum* L.

Pl. VI.

Akorninarmiut: Midterhuset (D).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Møretun (D).

Previously unknown from the east coast, where it is especially found on stony and dry slopes. It occurs scattered right up to its northern limit at Midterhuset on the south side of Skjoldungen, but everywhere sparsely, and with a local distribution.

Attains usually a height of 20—50 cm.

206. *Calamagrostis hyperborea* Lange. (*C. confinis* (Willd.) Nutt.)

Fig. 34 and Pl. VI.

Umanak: Claradalen (D), Innfjorden (D).
Tingmiarmiut: Tvihamna (D).
Kangerdlugsuatsiak: Persvatnet (D).

Previously not known from the east coast where it apparently occurs very sparsely.

Our specimens, having a height of abt. 60 cm (max. 73 cm), were collected in talus slopes. Habitually, they much resemble our Scandinavian *C. lapponica* Wahlenb. from which they are conspicuously different by their short hairs, having only half the length of the paleas. In *C. lapponica* the hairs can be seen projecting everywhere in the spikelet, whereas it is necessary to stir the spikelet of *C. hyperporea* in order to see the hairs (Fig. 34). The northern limit is in Umanak.

207. *Calamagrostis Langsdorfii* (Link.) Trin.

Fig. 34 and Pl. VI.

Akorninarmiut: Floneset (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Nordpollen (D), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Iluilek: Kangerdluluk (V).

In the most southerly district investigated by us, this beautiful grass was found to be commonly distributed, particularly associated with the old Eskimo sites. Some of the old Eskimo houses in Narsak and at Møretun were thus almost covered by a dense, swaying growth of *C. Langsdorfii*. Outside the Eskimo sites, it does not seem to form these dense "meadows", but grows more scattered on the slopes of the hills. At Møretun it was noted as occurring 200 metres above sea-level.

Further along the coast to its northern limit at Floneset in Akorninarmiut, where large and typical specimens grew on an old Eskimo site, it is apparently rather rare, being a conspicuous plant easily detected.

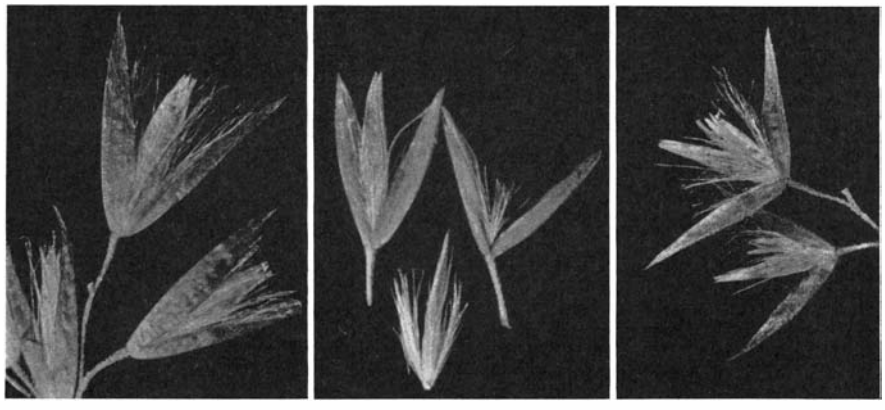

Fig. 34. *Calamagrostis lapponica* *Calamagrostis hyperborea* *Calamagrostis Langsdorfii*
The first from Norway, the two others from Southeast Greenland. Note the short hairs in *C. hyperborea*. Magn. 5/1.

The systematic position of *C. Langsdorfii* is not yet settled as its relation to the North American species *C. canadensis* (Michx.) Nutt. on the one hand, and to the Eurasian *C. purpurea* Trin. on the other is interpreted differently by various authors (see Stebbins 1930 p. 44). Personally we dare not express an opinion upon this difficult matter, and we use the name under which this grass is most commonly known in recent Greenland literature.

Our specimens seldom attain a height of 1 metre or a little more.

208. *Calamagrostis neglecta* (Ehrh.) Gaertn.

Pl. VI.

Akorninarmiut: Floneset (D), Devoldlia (D, S), Finnsbu (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).

From south of Angmagssalik we have seen no localities of this plant previously published. It is rather common in Angmagssalik, but north of this district it has not been found below Scoresby Sound, where it is known from several places. Very rare in Eirik Raude's Land where it reaches its northern limit at Holmvika, on the north side of Kong Oscars Fjord in lat. 72° 30′ (Vaage).

Our specimens are usually not more than 25—30 (rarely up to 60) cm in height, and should mostly be referred to var. *borealis* Laest. which variety has been separated chiefly on account of its smaller size and short panicle.

209. *Calamagrostis purpurascens* R. Br.

Pl. VI.

Akorninarmiut: Myrodden (D), Dronning Marias dal (S).

Grows in tufts in dry, sandy places. In Dronning Marias dal it was found on a crag at an altitude of 300 metres, above the Norwegian station.

Previously not known from south of Turner Sund in lat. 69° 35′ (H, K). In Scoresby Sound a little farther north it is common, as it is also in Eirik Raude's Land, particularly in the inner tracts. The northern limit is at Revet on Claveringøya (Vaage), which point is only a trifle more northerly than the previous northern limit at Kap Mary (Dusén). Being so common in Eirik Raude's Land it is not unreasonable that it should be found further north. On the southeast coast it is apparently very rare.

Our plants are of medium height, abt. 60 cm.

210. *Deschampsia alpina* Roem. et Schult.

Akorninarmiut: Kikut (B), Finnsbu (D, S).
Umanak: Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Nordpollen (D), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Auarket: Ingitait (E).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Kekertak (V), Kapiarfik (Sylow).

Deschampsia alpina is very common in moist places, especially in the southernmost part of the investigated area. It is known from many points in Angmagssalik in which district it has its northern limit, viz. at Kangerdlugsuatsiak in lat. 66° 18′. All our specimens have the large glumes, characteristic of *D. alpina*, a more or less rudimentary awn, fixed at or near the apex of the lower palea, if not the awn has already turned green forming a lasting leaf-blade on the bulblet. Around the base of the almost sessile, single flowers is a small whorl of short radial hairs, usually only to be seen when the flowers are dissected. In contradistinction to *D. alpina* the spikelets of *D. caespitosa* (L.) PB. are smaller and the awn is fixed to or at the base of the lower palea.

The single flowers have a definite longhaired pedicel, and at the base long, radial, conspicuous hairs much like those seen in *Calamagrostis*.

All our plants are viviparous, a feature also very common in many other grasses, also in *Scirpus*, *Juncus* a. o., and which in itself does not warrant a division into species, at any rate as long as we do not know anything about the true nature of vivipary.

211. *Deschampsia atropurpurea* (Wahlenb.) Scheele. (*Vahlodea atropurpurea* Fr.)

Pl. VI.

Akorninarmiut[1]: Eidsfjorddalen (B), Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Innfjorden (D).
Tingmiarmiut[1]: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Narsak (D, S).

This beautiful grass has previously not been found on the east coast where it apparently is not very rare in the areas investigated by us. It grows in more or less dense tufts in moist places, not rarely in *Sphagnum* bogs. We have the impression that it is one of the grasses of Southeast Greenland to develop last in the season.

Our specimens are usually between 25 and 30 cm in height, and may occasionally reach 1/2 metre.

The northern limit is at Eidsfjorddalen in Akorninarmiut.

212. *Deschampsia flexuosa* (L.) Trin.

Akorninarmiut: Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S, T).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Møretind (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V).

Common as far north as Akorninarmiut, where it is especially found in the inner tracts. It is rare in Angmagssalik, and has its northern limit in this district, viz. at Kordlortok in lat. 65° 37′ (Kruuse).

Our plants belong to the larger and often more strongly coloured — but in our opinion rather unimportant — var. *montana* L. which,

[1] The localities Imarsivik 27/8 1931 and Lomvatnet 2/8 1931 (Bjørlykke 1932, p. 8) should be cancelled as they come under other species.

in fact, late in the summer develops the same spreading panicle as has the main form. Noticeable in Southeast Greenland is the pale, straw-coloured variant which Berlin named var. *pallida*. It grows most often in dense, small scattered stands and is occasionally seen within the area of distribution of the main form. We collected it in a few places in the Skjoldungen district, Tingmiarmiut, and at Lindenowfjorden.

Sometimes *D. flexuosa* in pure stands forms dense, small meadows, especially near old Eskimo sites in the southern part of the southeast coast. The culms are usually between 30 and 40 cm in height, they rarely exceed 60 cm.

213. *Elymus arenarius* L. var. *villosus* E. Mey.

Pl. VI.

Akorninarmiut: Kvanndalen (D), Eskimoneset (D, S), Dronning Marias dal (B, D, S), Kornok (D).
Tingmiarmiut: Lomvatnet (B).
Anoritok: Tennøya (D).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Akorninarmiut: Dronning Marias dal (Graah).
Tingmiarmiut: Narksak (Graah) (Graah 1832 p. 149).
Puisortok: Karra Akungnak (E).
Iluilek: Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), Itivdlek (V).

Elymus seems not to be a very common strand plant in Southeast Greenland where it was found especially in the inner fjord tracts and as far north as Akorninarmiut. Particularly near the old Eskimo sites it was seen to form knee-high stands. Not as yet found north of Akorninarmiut. The northern limit is Kvanndalen.

All our plants belong to the var. *villosus*, characterized by the strong pubescence of the spike, and also the stem for some distance below the spike, which latter property we have only seen in one single specimen from Norway. Our largest specimen measures 85 cm, a length which in Southeast Greenland is probably not rarely exceeded.

214. *Festuca brevifolia* R. Br.

Kangerdlugsuak: Brandal (S), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Tingmiarmiut: Brattneset (D, S).

Previously found:

Anoritok: Anoritok (V).
Iluilek: Ivimiut (V), (Ikitok (V)).

Our forms of non-viviparous *Festucae* (excl. of *F. rubra*) from Southeast Greenland and Kangerdlugsuak as well as all the material which Scholander has seen from other parts of Greenland, from Ellesmereland, Arctic America, Spitsbergen and Novaya Zemlya are clearly distinct from all North-European forms of *F. ovina* particularly in their very short anthers 0.6—1 (1.4) mm, whereas the anthers of *F. ovina* are about 2 mm (1.8—2.5 mm) long. These short and nearly cubical anthers serve as one of the safest distinguishing characters of *F. brevifolia*, and is in other allied species found only in the Central-European alpine plant *F. alpina* Suter which in other characters, however, is far removed from *F. brevifolia*.

Just as *F. ovina* in Scandinavia varies a great deal with regard to its vegetative parts so does the Arctic *F. brevifolia*. In favorable places, e. g. Akorninarmiut, but also elsewhere sporadically throughout its area of distribution *F. brevifolia* may acquire a habit quite different from the original description by Robert Brown, with culms more than 30 cm in length, considerably longer than the usually somewhat flattened leaves, and an inflorescence of varying density and length. However, the short anthers and some other characters unite these forms with the very distinct species *F. brevifolia* R. Br. which has not been found in material from Norway by Scholander, who likewise has not seen specimens of *F. ovina* in the Norwegian material from South, East, and West Greenland, a region where it might possibly occur even if only as a ruderal[1].

A more detailed treatment of the morphology of these two species will appear in a later publication on the northernmost part of Spitsbergen (Scholander).

Festuca brevifolia in this somewhat enlarged sense seems to be very rare in the southernmost parts of Southeast Greenland, the southern limit being in Ivimiut. It is rather common in Akorninarmiut and common in Angmagssalik. North of this area it is more or less common all the way to Germania Land. It is known from several places on the north coast, but has not yet been seen on the intervening coast.

215. *Festuca vivipara* (L.) Sm.

Kangerdlugsuak; Skardet (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), *Umivik*: Nordenskiölds Nunatak (B).

Until more detailed investigations are made, we refer (in accordance with Lange in Consp. Fl. Groenl.) only the glabrous form to *F. vivipara* sens. str., whereas we refer the pubescent form to:

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[1] When the MS was already in proof we received by the courtesy of the Director of the Botanical Museum in Copenhagen the entire Danish material of *Festuca "ovina"* and *F. vivipara* from Greenland. It appears that no *F. ovina* is present, only *F. brevifolia* and *F. vivipara*. *F. ovina* is therefore to be excluded from the flora of Greenland (and probably the Arctic as a whole).

Festuca vivipara (L.) Sm. var. *hirsuta* (Lge.) Schol. nov. comb.

(*F. ovina* L. ε, *hirsuta* (Lange 1880; p. 179), *F. duriuscula* L. β, *hirsuta* (Lange 1880, p. 180); *F. ovina* L. var. *duriuscula* (L.) f. villosa vivipara (Kolderup Rosenvinge 1892, p. 735))

Akorninarmiut: Eidsfjorddalen (B), Devoldlia (D, S), Kornok (D).
Umanak: Innfjorden.
Tingmiarmiut: Framneshytta (D), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

In Consp. Fl. Groenl. δ, *vivipara* is recorded from the following localities in Southeast Greenland:
Umanak: Umanak (E).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertak (V).

It is very probable that the specimens from these previous localities should be referred to var. *hirsuta* as all the original specimens in Herb. Bot. Mus. Oslo which in Consp. Fl. Groenl. are recorded as δ *vivipara*, belong to this pubescent variety[1].

Scholander finds it impossible to unite *F. vivipara* with any of the forms of *F. ovina* or *F. brevifolia*. In somewhat more southern latitudes as in south Greenland and Scandinavia semi-viviparous forms of *F. vivipara* are not rarely met with, and they are also sometimes seen in the high Arctic. In comparing the lower, flowering, non-viviparous spikelets of such a semi-viviparous panicle with a spikelet of *F. brevifolia* or *F. ovina* a distinct difference is to be seen. The very problematic, viviparous form of *F. brevifolia*, which has never been seen by us, may at once be excluded on account of the long anthers of *F. vivipara* (more than 2 mm long). Further it is distinguished from both *F. ovina* and *F. brevifolia* by the pales, which are always — also in a semi-viviparous *F. vivipara* — entirely without awn, whereas those of twe two other species practically always have a distinct, long awn. Specimens of *F. ovina* entirely lacking awns are exceedingly rare, not being found in the herbarium of the Botanical Museum in Oslo. Awnless specimens of *F. brevifolia* have never been described as far as we know.

Another noteworthy difference between *F. ovina* and *F. vivipara* is that a pubescent form of the latter is of rather common occurrence,

[1] In the Danish material of *F. vivipara* lately seen we have found none of the specimens cited above under δ *vivipara*, so that we have no confirmation of Lange's record of the glabrous form from South Greenland. We do not know how far south on the west coast the glabrous main form is to be found, as the Danish material from this region contains only the var. *hirsuta* having its northern limit on Sukkertoppen at 65° 25′ (Warming, Th. Holm 1884).

whereas such a form of *F. ovina* seems to be entirely lacking in northern representatives of this species. *F. vivipara* var. *hirsuta* is quite common, particularly in West Norway, whereas hirsute forms of *F. ovina* are not to be found in our large collections from Norway. A few specimens with pubescent panicle labelled *F. ovina* appeared unmistakably to belong to *F. rubra.*

Not considering the viviparity, of which we know too little about its nature to consider it as of specific importance, there seem to be strong arguments for regarding *F. vivipara* as a distinct species. The missing awn in *F. vivipara*, and furthermore the hirsute form of *F. vivipara*, lacking in *F. ovina* are hardly to be explained only as due to a recently developed viviparity. The more or less rudimentary sexual parts, especially the anthers, which in high Arctic specimens apparently are even absent, may be interpreted as a phylogenetic reduction of the once efficient organ. This in connection with the wide distribution in spite of the inconvenient viviparous spreading by bulblets may indicate the high age of this species. As compared with the main form the var. *hirsuta* is distinctly southern, and it seems to us not impossible that future work will demonstrate this variety to be a separate species distinct from the genetic complex represented by the *F. vivipara* clones.

All our specimens from localities south of Umivik are without exception to be referred to var. *hirsuta*, which probably extends as far north as Angmagssalik. The glabrous main form was not found south of Umivik. *Festuca vivipara* sens. str. is common in Kangerdlugsuak and probably also in Scoresby Sound. It is very common in Eirik Raude's Land and it is found in Germania Land, but has not been noted between this area and Sommerdalen on the north coast at 82° 29′ (Th. Wulff). In these high Arctic regions it seems to be considerably rarer than *F. brevifolia.*

216. *Festuca rubra* L.

Umivik: Nordenskiölds Nunatak (B).
Akorninarmiut: Imarsivik (B), Floneset (D), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Nordpollen (D), Grønlia (D), Persvatnet (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Iluilek: Ivimiut (V).
Ikerasarsuak: Kekertak (V).

Throughout the area south of Angmagssalik *F. rubra* was found to be very common. It prefers sandy shore precipices, and may form dense, small growths near old habitation sites, e. g. at Narsak.

The hairy var. *arenaria* (Osb.) Fr., otherwise dominating in the Arctic, was only found at Narsak and Møretun. In our material there seems to be all transitions to the main form.

Festuca rubra — the main form — has not been found north of Angmagssalik, nor is the var. *arenaria* known between this district and Scoresby Sound. Here, as well as in Eirik Raude's Land, var. *arenaria* is rather common. The northern limit is at Revet in Claveringøya (Vaage). It is not likely that this plant, which a little to the south, at Kap Humboldt, has been found at an altitude of 1000 metres (Vaage), and which is quite common in northernmost Spitsbergen, should not be found quite a distance farther north on the coast of East Greenland.

217. *Hierochloe alpina* Roem. et Schult.

Pl. VII.

Kangerdlugsuak: Brandal (S), Brandalfjell 1000 m (S), Storfjord Radio (S), Polarisbreen (S).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (D, S), Myrodden (D), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).

Previously found:
Anoritok: Anoritok (V).
Auarket: Ingitait (E).

Appears to be rare in the southernmost part of Southeast Greenland, where it so far has not been found south of Ingitait (E).

In Akorninarmiut it is very common in dry places among ericaceous plants, on dry ledges etc. Strange to say it has not been found in Angmagssalik, and was previously not known from the coast towards Scoresby Sound. However, it was found to be quite common in Kangerdlugsuak, where it ascends to an altitude of at least 1000 metres, a fact very often indicating that it is distributed farther north.

In Scoresby Sound and Eirik Raude's Land, and also in Germania Land it is very common. It is further known from Independence Bay and from a locality on the north coast, viz. Low Point in Nansen Land in lat. 83°,6 (Th. Wulff). Our plants rarely attain a height of as much as 50 cm.

218. *Nardus stricta* L.

Pl. VII.

Akorninarmiut: Kikut (B), Trollfjordeidet (B), Finnsbu (B), Midterhuset (D).
Umanak: Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:
Ikerasarsuak: Nunatsuk (M. Porsild).

Nardus is very common in the southernmost part of Southeast Greenland. Considerable areas are frequently covered with its dense carpets, which seem capable of choking the growth of nearly all other vegetation. In more moist spots, *Scirpus*, and occasionally *Juncus squarrosus* may be seen in the dense carpets, and in drier places sometimes a single *Potentilla tridentata* or *Alchemilla alpina.*

On going north, *Nardus* becomes more rare. The northern limit is at Trollfjordeid (B). The specimens in our material attain a maximum height of 40 cm and are abundantly fertile.

219. *Phippsia algida* (Soland.) R. Br.

Pl. VII.

Kangerdlugsuak: Skardet (S), Brandalfjell 1000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Otto Sverdrupfjorden (B).
Akorninarmiut: Finnsbu (B), Hestmannøyane (Th. Vogt).
Umanak: Pilerkit (B, Th. Vogt).

Previously found:
Kangerdlugsuak: N. Aputitek (A).
Kangerdlugsuatsiak: Nenese (V).

We were surprised to find this plant, otherwise common in the Arctic, so rare on the southeast coast. It seems to be rather rare also in Angmagssalik, but is then more or less common as far north as Nordostrundingen, and is known from several places on the north coast.

Phippsia algida grows high up in the mountains; in Kangerdlugsuak it was found at an altitude of 1000 metres, and Vaage collected it at 800 metres in Eirik Raude's Land.

220. *Phleum alpinum* L.

Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B). Tvihamna (D), Brattneset (D, S, T), Langholmen (B).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Walløehytta (T), Grønlia (D), Fossheim (D, S), Persvatnet (D, S), Møretun (D, S) Narsak (D, S).

Previously found:
Iluilek: Kangerdluluk (V), Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow), Kekertak (V).

Common all along the southeast coast to and including Angmagssalik where it reaches its northern limit at Kangerdlugsuatsiak-fjord in lat. abt. 66° 20′ (Kruuse).

On stony river beaches, at Eskimo sites, and in similar places it may form quite dense growths. It rarely attains a height of more than 1/2 metre.

221. *Poa alpigena* (Fr.) Lindm.

Akorninarmiut: Imarsivik (B), Floneset (D), Dronning Marias dal (B, D, S), Finnsbu (D, S).
Umanak: Pilerkit (B).
Tingmiarmiut: Brattneset (D, S), Framneshytta (D).
Kangerdlugsuatsiak: Mortensberg (D, S), Grønlia (D), Møretun (D, S), Narsak (D, S).

Without having seen the original material from the previous collections on the coast south of Angmagssalik, it is not possible to give an accurate list of the finding points of the two species *Poa alpigena* and *P. rigens*, as these have not previously with sufficient clearness and in accordance with modern treatment (v. Lindman 1926, p. 91) been separated from the old collective species *Poa pratensis* L.

Poa pratensis coll. is previously found:

Anoritok: Anoritok (V).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Kekertak (V).

The classification of the Southeast Greenland *Poas* is rendered easier by the apparent absence of viviparous forms. We have not seen a single viviparous straw, and neither have we seen forms which might be interpreted as *Poa pratensis* s. str. with the minute spikelets, intravaginal shoots and true tuft formation. It may, however, occasionally be very difficult in our material to distinguish between *Poa alpigena* and *P. rigens*. Such, in our opinion more or less perfect transitions, are rare, but we know them from Framneshytta, Brattneset, Møretun and Narsak, from which localities we also have an abundance of the typical species. Our *alpigena* material shows the usual variations: from the var. *iantha* Laest. to the large typical var. *domestica* Laest. f. *pyramidata* Lindm. Var. *domestica* is rather remarkable and was found at the following points: Floneset, Dronning Marias dal, Brattneset, Mortensberg and Narsak, especially near the Eskimo sites and on talus slopes. The height of this form may in our material reach 70 cm with a panicle width of up to 12 cm (f. *pyramidata*).

222. *Poa alpina* L.

Fig. 35.

Kangerdlugsuak: Brandal (S, T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Eidsfjorddalen (B), Husøya (D), Floneset (D), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Claradalen (D), Innfjorden (D), Vogtsbu (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Svartvika (D), Walløehytta (T), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Anoritok: Anoritok (V).
Iluilek: Kangerdluluk (V), Ivimiut (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Nunatsuk (Sylow).

Fig. 35. Monstrous *Poa alpina* from Kangerdlugsuak. Size 1/2.

Very common all along the east coast up to Eirik Raude's Land, where it occurs more sparsely. The northern limit is at Little Pendulumøya in lat. 74° 30′ (Dusén).

In the area investigated by us, we never saw any viviparous specimens. The vivipary seems only to be common from Scoresby Sound and northwards.

A quite peculiar anomaly in *Poa alpina* was discovered at Storfjord Radio. The culm has 4 nodes and from each arise 1 or 2 bracts, as well as a lateral culm which uppermost has a small, but otherwise normal panicle, supported by a well developed bract (Fig. 35).

According to O. Penzig, a similar branching from a joint has in this genus previously been observed in *Poa compressa* L., whereas in *Poa alpina* it is quite usual to see bracts at the base of the panicle-branches. If some of these branches and bracts of the panicle should attain an anomalous prolific development, the panicle would in a way become split up and a similar monstrosity as ours would be the result. Against this theory of origin we have the fact that from each joint arises in our grass only 1 branch, whereas a *Poa alpina* normally has several branches from each node of the panicle.

223. *Poa annua* L.

Kangerdlugsuatsiak: Narsak (D, S).

Grows abundantly in front of the old Danish winter house at Narsak. This hut has not been occupied since 1925—26, when the grass probably was introduced. During all these 6 years it has been able to ripen its seeds. Some tufts reached a height of 30 cm.

Poa annua was previously unknown from East Greenland.

224. *Poa glauca* Vahl.

Kangerdlugsuak: Skardet (S), Brandalfjell 1 000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Kikut (B), Trollfjordeidet (B), Kvanndalen (D), Finnsbu (B, D, S), Myrodden (D).
Tingmiarmiut: Framneshytta (D).
Kangerdlugsuatsiak: Grytvika (D), Nordpollen (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A).

From south of Angmagssalik we have no accurate localities given as regards this species, only a remark about it being common throughout Greenland. It is assumed, however, that *Poa laxiuscula* (Blytt) Lge. from Ingitaitfjord in Auarket (E) belongs to *P. glauca* in the wider sense. The same is in all probability the case with Kruuse's record (1906 p. 279) of *Poa laxa* Haenke from Angmagssalik. Ostenfeld 1926 omits it in his list and we have ourselves never seen a *Poa laxa* Haenke either from Greenland or elsewhere in the Arctic.

The great majority of our specimens, especially the northern ones, belongs to the subspecies *conferta* (Bl.), recognisable, inter alia, by the big spikelets, and coarse and stiff culms; it grows often in tufts on morainic gravel. We have the impression that this species is rather rare in the southern part of the investigated area, whereas it is very common to the north.

In Angmagssalik, and further northwards along the entire coast as far as Ymer's Nunatak in lat. 77° 24′ (J. P. Koch), *Poa glauca* is known from a number of points, and appears everywhere to be more or less common. It is also known from Independence Bay, and from many places on the north coast. In Kangerdlugsuak it was found at 1 000 metres above sea-level.

We are not able to find in our material any definite distinction between *Poa glauca* and *Poa nemoralis*, and transition forms leading from the one into the other have also been described in either species.

We consider it to be of minor value to attempt a further subdivision of our material into varieties and forms, until the problem *Poa glauca — nemoralis* in East Greenland has been dealt with by a specialist. In order to avoid — as far as possible — uncertain determinations in our lists, we have felt compelled to put aside the most critical part of the material of these grasses.

225. *Poa nemoralis* L.

Akorninarmiut: Kikut (B), Trollfjordeidet (B), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Claradalen (D).
Tingmiarmiut: Framneshytta (D), Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Narsak (D, S).

From south of Angmagssalik no previous accurate localities could be found for this species. It occurred preferably in fertile places, on talus slopes, below steep rocks etc., especially common at Brattneset in Tingmiarmiut. The culms are long and thin (abt. 1/2 metre), and the small spikelets as well as the whole plant are characterized by a shiny, olive-green colour in contradistinction to the pruinose, bluish grey colour of *Poa glauca*.

In our lists we have only included those specimens of otherwise fairly typical *Poa nemoralis* having a ligula of less than 0,7 mm.

In our opinion *Poa nemoralis — glauca* is in East Greenland a very critical form series strongly in need of monographic treatment. *Poa nemoralis* has been recorded from many places in Angmagssalik (Kruuse), but it has not been found north of this district.

226. *Poa rigens* Hartm.

(*P. flexuosa* Wahlenb., *P. arctica* R. Br., *P. cenisea* Hartm.)

Pl. VII.

Kangerdlugsuak: Skardet (S), Brandalfjell 1 000 m (S), Brandal (S), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Akorninarmiut: Kikut (B), Eidsfjorddalen (B), Imarsivik (B), Imarsivikøya (B), Floneset (D), Finnsbu (D, S), Dronning Marias dal (B, D, S).
Umanak: Pilerkit (B), Innfjorden (D, Th. Vogt).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S).
Auarket: Pilskoghytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Nordpollen (D), Grønlia (D), Møretun (D, S), Narsak (D, S).

Previously found:
Kangerdlugsuatsiak: Nenese (V).
(*Ikerasarsuak*: Ikerasarsuak (V)).

Common on the coast south of Angmagssalik visited by us. Here it was found especially on sandy shore precipices, frequently along with *Festuca rubra*, forming rather dense growths of single individuals. More or less distinct tuft formations (*Poa filipes* Lge.) are rarely met with and is then not due to intravaginal shoots. It seems to be favorized by moist habitats, as wet mosses and the like. When *Poa rigens* grows in shady places or amongst other high vegetation, it is frequently tall and thin, up to 1/2 metre, and loses some of its otherwise so typical dark-purple colour.

It is common to and including Angmagssalik and probably also on the coast up to Scoresby Sound as it was very common in Kangerdlugsuak. In Scoresby Sound and Eirik Raude's Land it is very common and grows to high altitudes, Kap Humboldt 1000 m (Vaage). Farther northwards it is known from many points as far as Cape Saint Jacques in lat. 77° 36′ (Koefoed), and is rather common on the north coast (Wulff).

Puccinellia angustata (R. Br.) Rond. et Redf.

Bjørlykke (1932, p. 7) records *P. angustata* from Utermiut Aug. 20th in Umivik We find no marked differences between our own *P. retroflexa* and the specimens from Utermiut which were also quite typical of *P. retroflexa* found at the beach in front of some old Eskimo huts. The southernmost finding place given for *P. angustata* on the east coast is Angmagssalik where it is very rare, only found twice. Farther north it has not been seen below Scoresby Sound and Eirik Raude's Land where it is known from several places. In Germania Land it is common (Lundager), and it is further known from Kulhøj in lat. 77° (J. P. Koch), Mallemuk Fjæld in lat. 80° 10′ (J. P. Koch) and Hyde Fjord lat. 83° 15′ in Peary Land (J. P. Koch). It was, however, not found by the First Thule expedition in Danmark Fjord and Independence Bay. It is known from several points on the north coast (Wulff).

227. *Puccinellia phryganodes* (Trin.) Scribn. et Merr.

Pl. VII.

Umivik: Utermiut (B).
Akorninarmiut: Eidsfjorddalen (B), Imarsivik (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Innfjorden (D, Vogt).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Brattneset (D, S).
Anoritok: Tennøya (D).
Kangerdlugsuatsiak: Straumen (T), Nordpollen (D), Møretun (D, S).

Previously not reported from the coast south of Angmagssalik. In this district it is rather common as far north as Kangerdlugsuatsiakfjord, in abt. 66° 18′ lat. Next locality is Turner Sund (69° 45′), just south of Scoresby Sound. From here and up to and including Germania Land it is rather common and it is also known from a point on

the north coast, viz. on the S.W. coast of Hendrik Island in lat. 82° 3′ (Th. Wulff).

On the southeast coast it is rather common in the fjord branches where it grows on the beach along with *Stellaria humifusa*, *Carex glareosa*, *Potentilla anserina* v. *groenlandica* a. o. In this southern latitude flowering specimens are common.

228. *Puccinellia retroflexa* (Curt.) Holmberg subsp. *borealis* Holmberg.

Pl. VII.

Umivik: Utermiut (B) (sub *P. angustata* (Bjørlykke 1932, p. 7)).
Akorninarmiut: Finnsbu (B).
Tingmiarmiut: Brattneset (D, S).

At Umanarsuak (Kap Farvel) Sylow found a *Glyceria maritima* (Gort.) Wahlb. f. *minor*, probably belonging to *P. retroflexa*. Otherwise it is not known south of Angmagssalik and seems to be very rare in Southeast Greenland. At Brattneset in Tingmiarmiut it was growing on the stony beach in front of the old Eskimo huts in large numbers and in dense hemisphaerical tufts, formed by the radial straws.

A feature of our specimens is their comparatively long anthers, 0,7—1 mm which brings them closer to subsp. *borealis*. The pales are usually about 3,5 mm and the panicle-branches distinctly scabrous.

North of Angmagssalik *Glyceria distans* (L.) Wbg. has been recorded from Scoresby Sound and Eirik Raude's Land (Kruuse). Ostenfeld omits these statements in his report of 1926, perhaps because he has referred the specimens to *Gl. angustata*.

Where the distribution areas of these two species — *P. angustata* and *P. retroflexa* — join, great systematic difficulties will undoubtedly arise. Until the relation between them has been worked out by a specialist, it is not possible to say anything about their distribution in East Greenland or the Arctic as a whole.

229. *Trisetum spicatum* (L.) Richt.

Fig. 36.

Kangerdlugsuak: Skardet (S), Elvefaret (T), Brandalfjell (S), Brandal (S,T), Storfjord Radio (S), Polarisbreen (S), Amdrupneset (S).
Umivik: Nordenskiölds Nunatak (B), Otto Sverdrupfjorden (B).
Akorninarmiut: Kikut (B). Eidsfjorddalen (B), Husøya (D), Imarsivikøya (B), Trollfjordeidet (B), Devoldlia (D, S), Kvanndalen (D), Finnsbu (B, D, S), Dronning Marias dal (B, D, S), Skjoldungen, inner north side (B).
Umanak: Pilerkit (B), Innfjorden (D), Vogtsbu (B), Rudiøya (B).
Tingmiarmiut: Framneshytta (D), Lomvatnet (B), Tvihamna (D), Igdlormiut (B), Brattneset (D, S, T), Langholmen (B).
Anoritok: Tennøya (D).
Auarket: Pilskoghytta (D).

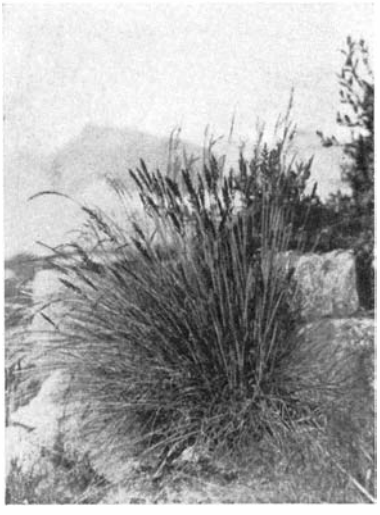

Fig. 36. *Trisetum spicatum.* Large tuft on ruins at Narsak in Lindenowfjord, 27/7 1932.

Fig. 37. *Habenaria hyperborea.* Narsak in Lindenowfjord, 29/7 1932.

Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S, T), Grønlia (D), Fossheim (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Kangerdlugsuak: Mikisfjord (A), Skærgaards Halvø (A), N. Aputitek (A).
Umanak: Umanak (E).
Puisortok: Ingerkajarfik (E).
Auarket: Ingitait (E).
Iluilek: Iluilek (E).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V).

Common as far as Eirik Raude's Land where it ascends to high altitudes, at least 1 200 metres. In Germania Land it is more rare, and has also been observed at the head of Independence Bay as well as on the north coast where it is rare. *Trisetum spicatum* is a somewhat variable species and a number of forms have been described which, however, we think may be disregarded in this connection.

Orchidaceae.

230. *Habenaria hyperborea* (L.) R. Br.

Fig. 37 and Pl. VII.

Akorninarmiut: Trollfjordeidet (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Mortensberg (D, S), Møretun (D, S), Narsak (D, S).

Previously found:

Umanak: Umanak (E).
Kangerdlugsuatsiak: Kangerdluarak (E).

Rather rare on the southeast coast as far north as Angmagssalik where it is known only from two points (Kruuse), and has here its northern limit. Our plants may attain a height of 30 cm. Grows frequently along with the following species in the *Salix* scrubs.

231. *Habenaria straminea* Fern.

Pl. VII.

Akorninarmiut: Kvanndalen (D), Finnsbu (D, S), Dronning Marias dal (D, S)
Umanak: Vogtsbu (B).
Tingmiarmiut: Brattneset (D, S).
Kangerdlugsuatsiak: Grønlia (D), Narsak (D, S).

Previously found:

Puisortok: Karra Akungnak (E).
Iluilek: Kangerdluluk (V).

Fernald (1926, p. 174) has shown that under the old name of *Habenaria albida* (L.) R. Br. has been included 2 different species: a western one, which he describes as *H. straminea*, with distribution in Newfoundland, Greenland, Iceland, and the Faeroes, and the true *H. albida* in Central Europe and the remaining part of Northern Europe.

The *H. straminea* of our material is different from *H. albida* in several respects. It is thus in its entirety larger, more robust, and has more and larger leaves than has *H. albida*. The raceme is rather thick, with long projecting bracts about twice as long as the ovary. The parts of the flowers are thin and transparent (in the dried specimens they look like thin, brown tissue paper) with distinct brown veins. Characteristic of the fresh *H. straminea* is the yellowish-green colour of the inflorescence. Even when alive and in full flower the drooping, trifidous lip was distinctly brownish, a feature which together with the yellowish-green colour of the inflorescence just described, and the thin sepals and petals gives *H. straminea* an appearance of being withered. *H. albida* has white opaque flowers, with a distinct middle vein usually only on the sepals. The veins of the thick white-opaque lip are only seldom seen. The bracts are short, the raceme narrow, and the whole plant smaller in size.

H. straminea was found in moist fertile places, frequently along with *Angelica*, in *Salix* scrub, ravines etc. In Angmagssalik it has been found at many points, and has here its present northern limit.

Whether *H. albida* should also possibly occur on the east coast cannot be decided until all of the previous collections have been revised. We have not found it in our material. The usual size of our specimens is between 25 and 30 cm, a few reaching 34 cm.

232. *Listera cordata* R. Br.

Pl. VII.

Akorninarmiut: Trollfjordeidet (B), Devoldlia (D, S), Finnsbu (B, D, S), Dronning Marias dal (B, D, S).
Umanak: Vogtsbu (B).
Tingmiarmiut: Framneshytta (D).
Kangerdlugsuatsiak: Grytvika (D), Mortensberg (D, S), Grønlia (D), Persvatnet (D, S), Narsak (D, S).

Previously found:

Auarket: Ingitait (E).
Iluilek: Kangerdluluk (V).
Kangerdlugsuatsiak: Nenese (V).
Ikerasarsuak: Aluk (V), (Ikerasarsuk (V).

It was nearly only found among ericaceous plants and is likely to be more common than indicated by the finding points. The two stem-leaves are usually entirely hidden by other vegetation, so that only the little inconspicuous raceme is projecting. *Listera cordata* belongs to those plants usually found when one is having a rest on the ground, or especially when picking blue-berries.

Listera cordata has not yet been found in Angmagssalik. The northern limit is at Trollfjordeidet in Akorninarmiut.

Our specimens attain a height of up to 14 cm.

Sparganiacae.

233. *Sparganium* sp.

Fig. 38.

Akorninarmiut: Myrodden (D).

When sorting our pressed material after coming home, we were shocked to find, pasted to a *Hippuris* and some *Callitriche* from the little pond on Myrodden, the most beautiful 11,5 cm long and 2 mm broad, leaf of a *Sparganium*, which plant, so extremely rare on the east coast, we had then overlooked in the field. The determination of the genus is easy enough on account of the characteristic histological structure of the *Sparganium* leaf, so entirely different from all similar leaves of *Potamogeton*, grasses, and sedges which otherwise might have been considered (Fig. 38). But it is not possible to get any further, as those species which should reasonably come into question, viz. *S. hyperboreum* and *S. affine*, cannot be identified from a leaf fragment only, even if the histological examination has been ever so thorough.

Per exclutionem our leaf is supposed to belong to *S. affine* Schnizl. (see Ostenf. 1926), being the only *Sparganium* known from the east coast where it is very rare and only known from two points in Angmagssalik viz., Amaka (K), and Sparganium-Dam in Elvbakker near Tasiusak (Nathorst, Kruuse).

A definite determination of the *Sparganium* species growing in the pond on Myrodden, must be postponed until the spot has been reexamined.

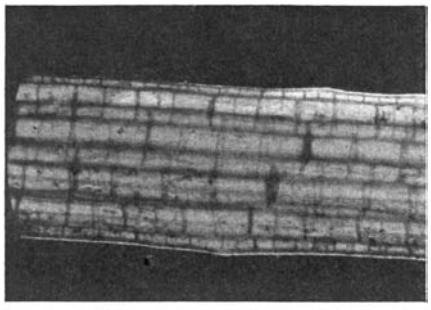

Fig. 38. Fragment of a *Sparganium* leaf from a pond on Myrodden in Akornarmiut. Transmitted light. Magn. 10/1.

Short summary of some of the more important finds

and an enumeration of plants not known outside of or south of Angmagssalik:

The following plants are new to Greenland:

Polygala serpyllaceum.
Hieracium Devoldii
Hieracium Scholanderi
Hieracium stelechodes

In addition to the 4 preceding species the following are new to East Greenland:

Selaginella selaginoides
Dryopteris Filix mas
Alchemilla minor
Viola labradorica
Limosella aquatica
Galium triflorum
Linnaea borealis
Hieracium amitsokense
Hieracium rigorosum
Taraxacum maurostylum
Taraxacum purpuridens
Taraxacum rhodolepis
Agropyrum violaceum
Anthoxanthum odoratum
Calamagrostis hyperborea
Deschampsia atropurpurea
Poa annua

In addition to the 21 preceding species the following are previously not recorded for the east coast south of Angmagssalik:

Equisetum variegatum
Botrychium lanceolatum
Asplenium viride
Woodsia alpina
Ranunculus trichophyllus
Saxifraga aizoides
Arabis Holboellii
Cardamine pratensis
Callitriche verna
Minuartia rubella
Stellaria longipes
Rumex acetosella
Veronica Wormskjoldii
Gentiana aurea
Erigeron compositus
Erigeron eriocephalus
Triglochin palustre
Juncus arcticus
Juncus biglumis
Juncus triglumis
Luzula frigida
Carex brunnescens (?)
Carex nardina v.
Carex Macloviana
Cobresia scirpina
Agrostis canina
Calamagrostis neglecta
Calamagrostis purpurascens
Puccinellia phryganodes

This gives a total of 49 species of vascular plants new to Southeast Greenland south of Angmagssalik. The total number known south of this district and down to the boundary line as defined through Kap Farvel is thereby increased to 217.

There is every reason to belive that this number will be considerably exceeded, perhaps particularly when the Ikerasarsuak district is more thoroughly explored.

According to Kruuse the total number of species of vascular plants in the Angmagssalik district amounts to about 184. Some plants are as yet on the east coast known only from this district:

Lycopodium complanatum var.
Ranunculus acer
Ranunculus reptans
Sedum acre
Sedum villosum
Saxifraga tricuspidata
Alchemilla acutidens
Subularia aquatica
Sagina caespitosa?
Mertensia maritima
Galium Brandegei
Potamogeton filiformis
Juncus supinus
Alopecurus aristulatus

The following species have in Angmagssalik still their southern limit on the east coast:

Ranunculus glacialis
Potentilla emarginata
Potentilla nivea
Draba crassifolia
Pedicularis hirsuta
Campanula uniflora
Juncus castaneus
Carex microglochin
Carex rupestris
Carex supina
Puccinellia angustata

It is very probable that some of these last mentioned 25 species in the future will be found farther to the south.

IV. Remarks on the Vegetation in Southeast Greenland and Kangerdlugsuak

with lists showing the known distribution of vascular plants within these areas.

A. Southeast Greenland.

between 60° 30′ and 64° 30′ lat. N.

During our short stay in this part of Greenland situated as far south as between the 60th and the 65th degree of latitude North, and which in a botanical sense is an almost terra incognita we had to lay main stress on obtaining as complete collections as possible in each locality. This is in our opinion a necessary and fundamental piece of work which has to be continued for several years yet before our know-

ledge of the flora here may serve as a basis for tenable theories. Everybody who personally has visited this country has experienced how very erratic the flora is here. It is impossible from the flora of one fjord to draw any conclusions as to the flora of the next one. The greatest surprise is waiting in places where one should expect it least. Furthermore, many unsolved taxonomic problems remain, so that it is hardly wasted time first of all to pay attention to these elementary things, treating and publishing in detail the material brought home and doing monographic work on the more critical groups. In the following we are, therefore, going to give only a short, purely descriptive account of the various types of vegetation which were observed in Southeast Greenland, and which we think we may be permitted to abstract from the luxuriant, subarctic-boreal vegetation of this region without violating nature too much.

The most common types of vegetation observed by us are the following:

1. The halophilous beach vegetation and the vegetation of the shore precipices.
2. The vegetation of the old Eskimo sites.
3. The dry, sandy, lichen heath.
4. The ericaceous dwarf scrub on rugged, stony ground.
5. The grassy slopes.
6. The vegetation of the talus slopes.
7. The vegetation of the steep cliffs and the rock ledges.
8. The Salix scrub.
9. Swamps.
10. The vegetation of the river banks.
11. The aquatic vegetation.

(12. Fresh moraines, not investigated by us.)

To these will be added some notes on the vegetation in high altitudes. This division is quite rough, and the various groups are with regard to frequency, extent, purity, and justification not at all evenly balanced and must be subject to discussion as long as a uniform principle of division has not been arrived at.

It is, of course, not necessary to point out that a few or many types may occur together, and will, as a rule, pass into each other without any distinct boundary.

1. The halophilous beach vegetation and the vegetation of the shore precipices.

The strongly halophilous flora of the beach proper is in Southeast Greenland very poor in species and monotonous. The species regularly met with here, everywhere appearing to be common, are *Carex glareosa*, *Puccinellia phryganodes* and *Stellaria humifusa*. The last two are usually

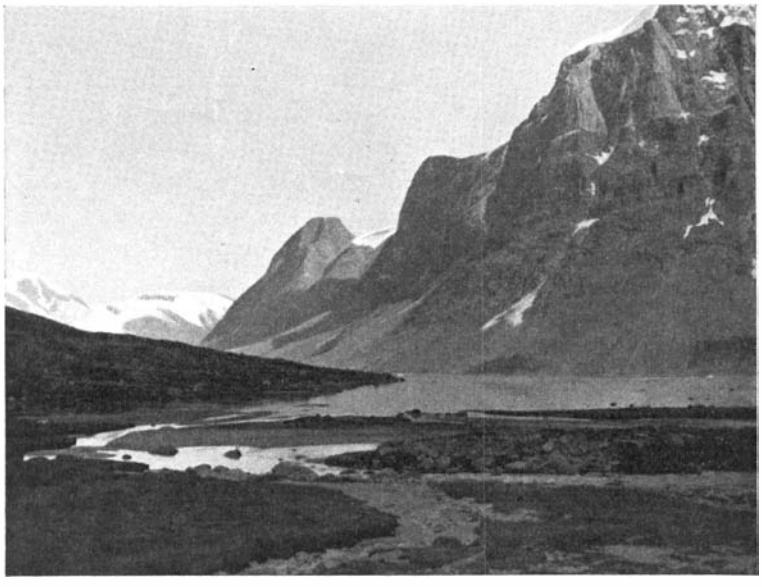

Fig. 39. Marsh vegetation on the delta in Dronning Marias dal with mats of *Carex glareosa*, *rariflora*, *Pucc. phryganodes*, *Stellaria humifusa*, *Potentilla anserina* a. o. Phot. Dr. Gunnar Horn 15/9 1932.

found twined together on the beach itself, whereas *C. glareosa* is often found between the washed stones, just were the turf ends and the beach begins (fig. 27, p. 118).

The pink-coloured *Puccinellia phryganodes* with its long runners is not rarely fertile, and the brown *Stellaria humifusa* is nearly always abundantly flowering and fruiting in these places. The other beach plants *Honckenya*, *Potentilla anserina* var. *groenlandica* and *Puccinellia retroflexa* subsp. *borealis* are much more rare. The only place where *Honckenya* was found in larger quantities was on the beach gravel of a river delta in Devoldlia, where it formed carpets up to a metre in diameter with the characteristic yellow-green colour. *Potentilla anserina* var. *groenlandica* prefers clayey ground, and was found to occur abundantly in the large carpets of *C. glareosa*, *C. rariflora*, *Pucc. phryganodes*, *Stellaria humifusa* and scattered *C. rigida*, covering parts of the delta in Dronning Marias dal (Fig. 39).

At points where the shore-line is cut into sandy, loose morainic material, a shore-precipice is often developed, forming a slope from the plateau down to the beach, and being, according to its age, more or less covered with vegetation. In this shore area in a wider sense, is frequently found a rich vegetation having certain characteristic features.

We have found the following plants to be the most common here:

Sedum roseum	*Antennaria alpina*
Saxifraga nivalis	*Erigeron uniflorus*
Lathyrus maritimus	*Luzula spicata*
Chamaenerium angustifolium	*Carex Lachenalii*
Cerastium alpinum	*Carex rariflora*
Sagina intermedia	*Deschampsia alpina*
Sagina Linnaei	*Elymus arenarius*
Sagina procumbens	*Festuca rubra*
Stellaria calycantha	*Poa rigens*
Campanula rotundifolia	*Trisetum spicatum*

Amongst the lichens is to be mentioned *Peltigera venosa*, frequently found on the bare earth, in the shadow of the overhanging turf uppermost on the shore precipice.

Elymus is particularly noticeable amongst the mentioned phanerogams although it is, on the whole, not very common. It is mostly found at the Eskimo sites, where it may form a knee-deep growth with admixtures of tussocks of *Festuca rubra*. In such places it is not infrequently found to grow amongst the houses, even at a considerable distance inland and above the shore-line.

Poa rigens should also be mentioned. In Southeast Greenland we found this plant to be quite characteristic of the edge of the sandy shore-precipices, where it formed dense stands. Otherwise it is rare so far to the south. *Carex Macloviana* is not rarely found in the same way.

At those points where *Lathyrus* once occurs, it is likely to dominate the entire shore vegetation. Large stands of this plant were found along the shore precipice at Narsak and also at a point near Møretun, and particularly at Grønlia where the entire talus slope to an altitude of several hundred metres was covered with *Lathyrus*, which imparted to it a colour of verdigris. Interwoven in this growth occurred *Stellaria calycantha, Galium triflorum* a. o.

2. The vegetation of the old Eskimo sites.

The vegetation at the old — now abandoned — Eskimo habitations is chiefly determined by the type of vegetation in which these were originally built. A great many of the particular features of this vegetation are due only to a luxuriant development of the plants previously growing in the place, conditioned by the manured soil, however, with a certain displacement of their mutual frequency. As the sites, as a rule, are situated in a vegetation type corresponding to the one just described, it is natural to say someting about it here.

We have only seen one special habitation plant in Southeast Greenland, viz. *Poa annua*, growing in front of the Danish winter house at Narsak. It is evident that each year since 1925/1926 — when this house was inhabited — the climatic conditions have allowed the development of seeds capable of germinating.

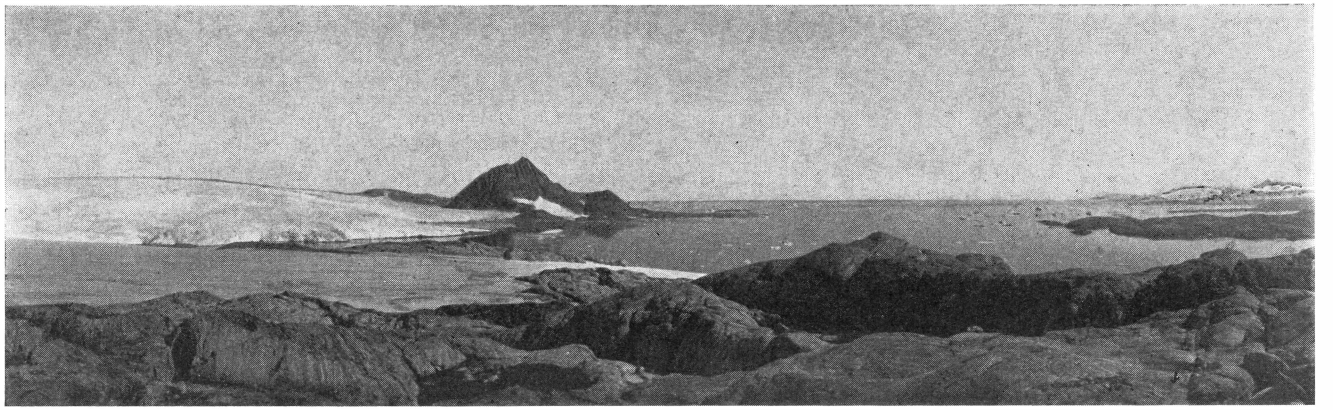

Fig. 40. *Umivik.* View eastwards from the summit of Nordenskiölds Nunatak. In the background the mountain Kiatak. Pot. Th. Vogt, Aug. 20. 1931.

1 2

Fig. 41. *Akorniarmiut.* Looking westwards from a valley (Breiskardet) close sout of Myrodden. (1 = Skjoldungen, inner north side. 2 = Eskimoneset). Phot. Th. Vogt, Aug. 11. 1931.

Having seen in part the great distribution which several of Ostenfeld's "old Norse-plants" (Ostenfeld 1926) have in Southeast Greenland far away from places were the Norsemen once lived, it seems to us that his theory of the great and lasting influence of these people on the vegetation of South Greenland should be considerably reduced. This so much the more as we can hardly see any reason for supposing that the vegetation of South Greenland at that time, 900 years ago, was less luxuriant than it is now, or in other words that the ruderal flora of the Norsemen found no competition, just spreading unlimited over the unoccupied ground.

As regards most of the "Norse plants" it seems to be difficult to understand the motives for raising the problem at all, as a great many of these species have a wide distribution in other regions, outside of Greenland with a climate just as "hard" as that of South Greenland between 60° and 65° N. lat. There should be no more reason to suppose that these plants have been introduced by man in Greenland than in other places — where, however, one dare not raise the same question again, in view of its further consequences.

The connection undoubtedly present between the luxuriant flora and the old Norsemen settlements in South Greenland finds its simplest explanation in the assumption that the Norsemen did not settle down until they had explored the coast and found the best grazing ground for their sheep and cattle.

The plants most frequently found at the habitations were the following:

Sedum roseum
Saxifraga rivularis
Potentilla alpestris
Cerastium alpinum
Cerastium hyperboreum
Stellaria calycantha
Oxyria digyna
Polygonum viviparum
Taraxaca
Carex rigida
Calamagrostis Langsdorfii
Deschampsia alpina
Deschampsia flexuosa
Elymus arenarius
Festuca rubra
Phleum alpinum
Poa alpigena
Trisetum spicatum
(*Stellaria media*, not seen by us).

Usually the grasses dominate. At Møretun and particularly at Narsak these grasses, more especially *C. Langsdorfii*, formed waving and dense meadows which might completely hide the old ruins and the surrounding ground. Even at the northernmost finding point at Floneset in Akorninarmiut *C. Langsdorfii* formed a luxuriant little meadow. It is reasonable to assume that this grass may occasionally be spread by the Eskimos as it was found to have been used, along with *Empetrum*, as bottom cover of the bedsteads in the old huts at Møretun. Here it had remained for 100 years, and was found to be remarkably little affected by the tooth of time.

Luxuriant forms of *Poa alpigena* (see p. 144) are not rarely found at the habitation sites, but is perhaps just as often found on the talus slopes.

The lichen vegetation of the Eskimo ruins is characterized by the abundant occurrence of certain *Cladonias* of which especially should be noted the prolific and often fertile forms of *Cl. chlorophaea*, whose compact growth may cover the upper parts of the walls and the collapsed roof. Further should be noted the here abundantly fruiting *Cl. coccifera* and *bellidiflora* and last — but not least — the sporadic occurrence in such places of *Cl. deformis*, which otherwise seems to be very rare.

Occasionally, e. g. at Eskimoneset the old habitation sites may be wholly overgrown by a luxurious vegetation of *Salix* (often *arctophila* strong), along with *Angelica*, *Cham. angustifolium*, *Elymus* a. o. which growth may sometimes nearly reach the shoulders of a man.

3. The dry, sandy lichen heath.

Lichen heaths proper with a considerable part of the ground completely covered with carpets of fruticose lichens, and with ericaceous shrubs and other shadowing vegetation very much in the background, seem to be rare in Southeast Greenland. The only places of some extent observed by us in this part of Greenland which correctly should be termed lichen heaths, were situated on the dry and sandy shore plain between Narsak and the river from the great lake near by, and, particularly, at Dronning Marias dal between the valley and the Norwegian station.

The composition of the dense lichen carpets, frequently completely covering the underlying dry sand, was chiefly the following:

Stereocaulon paschale (often continuous pure stands), *Cladonia mitis*, *rangiferina*, *uncialis*, *elongata*, *crispata*, *coccifera*, *Cetraria crispa* and genuine *islandica*, and in the dried-up rainwater furrows: *Cetraria Delisei*, *Cladonia cervicornis*, *Solorina crocea* and fertile *Peltigera rufescens*, a composition which is very striking by the total absence of *Alectoriae* (*ochroleuca*, *divergens, nigricans* etc.). In this dominant lichen society the following phanerogams should be noted, all more or less xerophilous:

Alchemilla alpina
Potentilla tridentata
Draba aurea
Viscaria alpina
Cerastium alpinum
Polygonum viviparum
Salix glauca (×)
Empetrum
Diapensia
Gentiana nivalis
Campanula rotundifolia
Antennaria groenlandica
Hieracium alpinum
Juncus trifidus
Luzula spicata
Carex brunnescens
Carex Macloviana
Deschampsia flexuosa
Festuca brevifolia
Festuca rubra
Festuca vivipara
Hierochloe alpina
Poa glauca (single culms)
Trisetum spicatum

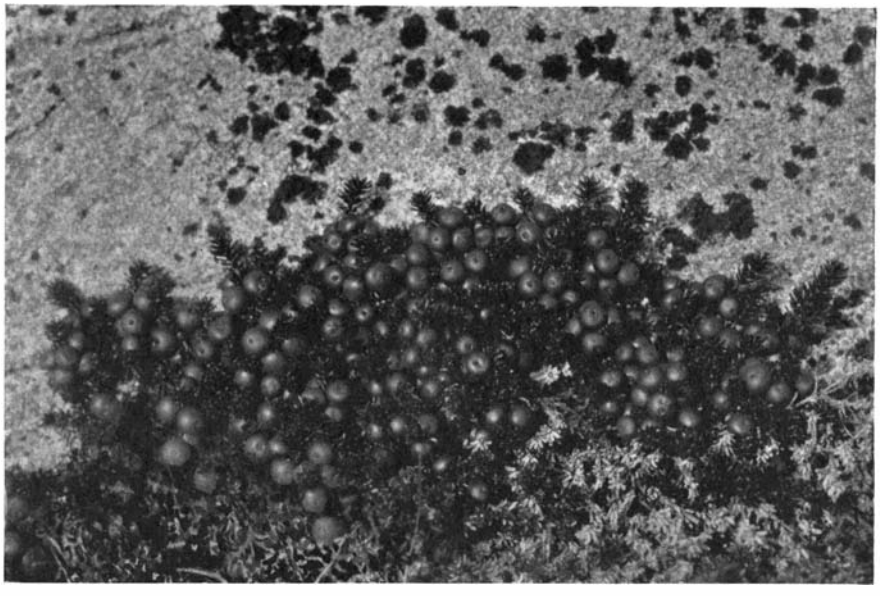

Fig. 42. *Empetrum hermaphroditum* trained in espalier fasion to a rock on the dry shore plain at Narsak in Lindenowfjord, 29/7 1932.

The occurrence of lichen heaths in Southeast Greenland — although on a rather small scale — is another sign of the strongly southern touch of the vegetation here.

Kruuse (1912, p. 258) describes some poorly developed lichen heaths from Angmagssalik, and farther north it seems unlikely that they will be found. In Kangerdlugsuak and Eirik Raude's Land, and everywhere in the extreme Arctic, they are missing. The luxuriant development of *Cetraria nivalis*, *cucullata* and the *crispa* tussocks, occasionally seen in the manured fowling cliffs or islets in these tracts, is a phenomenon which seems to be wholly unconnected with the real lichen heaths.

In addition to the described localities at Narsak and Dronning Marias dal, more or less pure patches of this vegetation type is occasionally met with in the next, highly polymorphous, and in Southeast Greenland dominating formation to be characterized as:

4. The ericaceous dwarf scrub on rugged, stony ground.

No other formation is so widely distributed and characteristic of Southeast Greenland as is this formation. Nearly everywhere on the old, stony, morainic ground, and on the low crags scoured by the ice, this dwarf scrub vegetation is found: *Empetrum*, *Ericaceae*, *Betula*, and others with an admixture of a rather uniform growth of other phanerogams and lichens, most of which are ± xerophilous. The vascular plants most frequently met with here are the following:

Lycopodium alpinum
Lycopodium annotinum
Lycopodium Selago
Cystopteris fragilis
Woodsia ilvensis
Juniperus communis
Alchemilla alpina
Potentilla tridentata
Sibbaldia procumbens
Draba rupestris
Draba nivalis
Cerastium alpinum
Silene acaulis
Viscaria alpina
Oxyria digyna
Polygonum viviparum
Betula glandulosa
Betula nana
Salix glauca (×)
Salix herbacea
Pyrola minor
Bryanthus coeruleus
Cassiope hypnoides
Loiseleuria procumbens
Vaccinium uliginosum
Empetrum hermaphroditum
Diapensia lapponica
Veronica fruticans
Thymus Serpyllum
Campanula rotundifolia
Juncus trifidus
Luzula confusa
Luzula parviflora
Luzula spicata
Carex brunnescens
Carex Halleri
Carex rigida
Carex stylosa
Cobresia scirpina
Scirpus cespitosus
Agrostis borealis
Deschampsia alpina
Deschampsia flexuosa
Festuca brevifolia
Festuca vivipara
Hierochloe alpina
Nardus stricta
Poa glauca
Trisetum spicatum
Listera cordata

The lichens included here are chiefly the same as those mentioned under the lichen heaths with some additions, such as *Sphaerophorus globosus*, *Peltigera malacea*, *Nephroma arctica* (rare).

According to the degree of moisture, inclination, and exposure this basic type will be modified in various directions:

5. The grassy slopes.

These are especially met with on gravelly and sandy slopes. The grass growth here is chiefly composed of the following species:

Carex rigida
Carex stylosa
Scirpus cespitosus
Luzula spicata
Agrostis borealis
Agrostis canina
Calamagrostis Langsdorfii
Deschampsia flexuosa
Nardus stricta
Phleum alpinum
Poa alpina
Poa alpigena

Of other plants usually found along with the above, should be noted:

Lycopodium alpinum
Sedum roseum
Alchemilla alpina
Alchemilla glomerulans
Potentilla tridentata
Sibbaldia procumbens
Viola palustris
Salix herbacea
Bartschia alpina
Rhinanthus groenlandicus

Euphrasia latifolia
Campanula rotundifolia
Erigeron borealis
Erigeron uniflorus
Gnaphalium norvegicum
Hieracia
Gymnadenia hyperborea
Gymnadenia straminea

A special kind, and very characteristic form of the grassy slopes frequently seen in the southernmost part of Southeast Greenland is the light *Nardus* or *Nardus-Scirpus* carpets, which may attain a considerable size, and are usually almost devoid of other vegetation. One of the few plants — perhaps the only one — which really thrive in this company, but only in moist spots, is *Juncus squarrosus*. However, its small, dense and stiff colonies were rather rare.

Fig. 43. *Chamaenerium angustifolium* from the fertile talus slope at Brattneset in Tingmiarmiut, 8/8 1932.

6. The vegetation of the talus slopes.

The talus slopes (= rock débris at the base of a cliff or slope) in Southeast Greenland, and in Arctic countries generally, often present the most prolific finding points for plants. They are usually quite dry at the base, and have here often a grassy-slope vegetation, whereas in the upper part the talus is more or less moist or wet by the dripping of water from the cliffs. The best examples of these luxuriant talus slopes were those on the point at Grønlia in Kangerdlugsuatsiak, at Brattneset in Tingmiarmiut, and above the Norwegian station near Dronning Marias dal in Akorninarmiut. The plants preferably growing here are the following:

Lycopodium annotinum
Selaginella
Botrychium lunaria
Botrychium borealis
Dryopteris Filix mas
Dryopteris spinulosa
Polystichum Lonchitis
Sedum annuum
Sedum roseum
*Alchemilla *filicaulis*
Alchemilla glomerulans
Potentilla alpestris
Rubus saxatilis
Sibbaldia procumbens
Chamaenerium angustifolium
Arabis alpina
Viola labradorica
Viola palustris

Stellaria calycantha
Oxyria digyna
Rhododendron lapponicum
Bartschia alpina
Euphrasia latifolia
Veronica alpina
Veronica fruticans
Veronica Wormskjoldii
Thymus Serpyllum
Gentiana aurea
Gentiana nivalis
Galium triflorum
Antennaria alpina
Antennaria groenlandica
Erigeron borealis
Erigeron uniflorus
Gnaphalium norvegicum
Gnaphalium supinum
Hieracia (excl. *alpinum)*
Taraxaca
Carex atrata
Carex deflexa
Carex Macloviana
Luzula spicata
Agropyrum violaceum
Anthoxanthum odoratum
Calamagrostis hyperborea
Phleum alpinum
Poa alpigena
Poa alpina
Poa glauca
Gymnadenia hyperborea
Gymnadenia straminea

To these should be added the plants chiefly found in the water dripping from the steep cliff:

Dryopteris Linnaeana
Dryopteris phegopteris
Coptis groenlandica
Ranunculus pygmaeus
Thalictrum alpinum
Epilobium anagallidifolium
Epilobium Hornemanni
Epilobium lactiflorum
Angelica archangelica
Salix arctophila (×)
Poa nemoralis

The vegetation in this uppermost part of the talus slopes leads without any sharp boundary to the next group.

7. The vegetation of the steep cliffs and the rock ledges.

The more or less moist rock ledges and cracks in the cliffs above the talus slopes, in the canyons and similar places have not rarely a luxuriant vegetation, often including plants which otherwise are rare. The plants especially noted by us from these localities are the following:

Asplenium viride
Cystopteris fragilis
Woodsia ilvensis
Coptis groenlandica
Sedum roseum
Sedum annuum
Saxifraga Aizoon
Saxifraga groenlandica
Saxifraga nivalis
Saxifraga oppositifolia
Saxifraga rivularis
Saxifraga stellaris
Cardamine bellidifolia
Cerastium alpinum
Minuartia biflora
Minuartia verna
Bryanthus coeruleus
Cassiope hypnoides
Diapensia lapponica
Pinguicula vulgaris
Campanula rotundifolia
Tofieldia palustris
Luzula confusa
Carex capillaris

Carex nardina v.
Carex rigida
Carex scirpoidea
Cobresia scirpina
Scirpus cespitosus
Poa nemoralis
Poa rigens

On the ledges constantly wet from running water, the lichen flora forms a not unimportant feature of the plant assembly. The mosses are frequently covered by large sheets of fertile *Peltigera canina*, *malacea*, and *aphthosa*, and on the bare ground, where pieces of turf have been broken off and fallen down, is seen *Peltigera venosa*, *erumpens*, *lepidophora*, *Solorina spongiosa*, *bispora*, and *crocea*. Amongst the *Cladonias* should be noted *elongata* and forms of the *pyxidata* group, and not rarely *cervicornis*.

8. The Salix scrub.

The *Salix* scrubs were nowhere observed to be so large and dominating in the vegetation as in Umanak and Akorninarmiut, within which areas the mountain sides with their numerous small streams were often of a distinct verdigris colour from the *Salix*, almost halfway to the summit, that is to an altitude of about 1000 metres. In the large U-shaped valleys eroded by the glaciers (e. g. Dronning Marias dal and Claradalen) the *Salix* scrub covers the ground, kilometre after kilometre. The normal height of this scrub is usually exaggerated as the maximum height is only given. As a rule they are not more than knee-high. Each shrub grows, however, frequently on the top of a small hill of earth, which may be more than a foot high.

An interesting feature of this *Salix* scrub is the rich and frequently rather specific sub-vegetation. Plants especially met with here, preferably near the streams, are the following:

Equisetum arvense
Dryopteris Linnaeana
Dryopteris phegopteris
Coptis groenlandica
Thalictrum alpinum
Sedum roseum
Saxifraga rivularis
*Alchemilla *filicaulis*
Alchemilla glomerulans
Potentilla alpestris
Potentilla Ranunculus
Epilobium anagallidifolium
Epilobium Hornemanni
Epilobium lactiflorum
Angelica archangelica
Viola palustris
Oxyria digyna
Polygonum viviparum
Pyrola minor
Bartschia alpina
Veronica alpina
Pinguicula vulgaris
Gentiana nivalis
Linnaea borealis
Gnaphalium norvegicum
Hieracia (excl. *alpina)*
Taraxaca
Tofieldia palustris
Luzula frigida
Luzula parviflora
Carex atrata
Carex rariflora

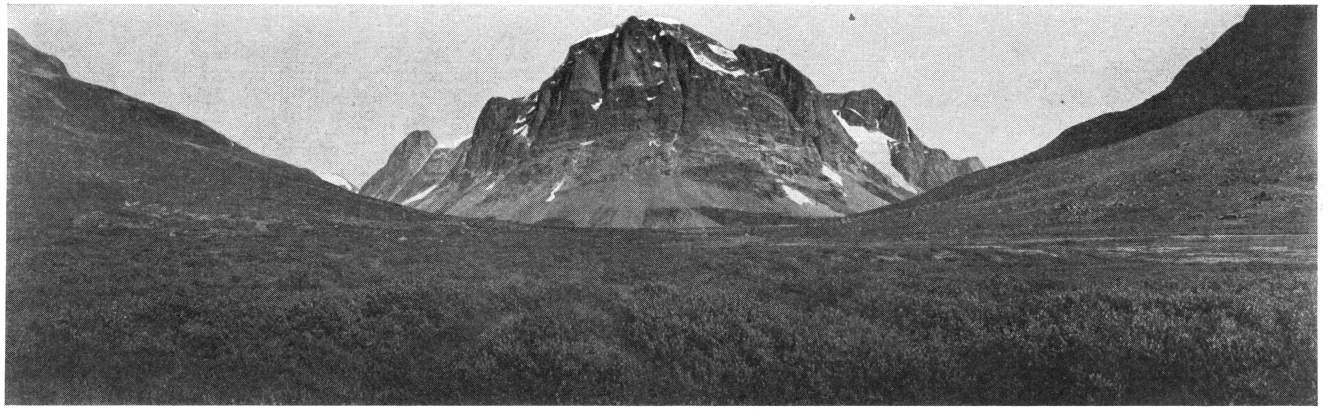

Fig. 44. *Akorninarmiut.* Willov scrub in Dronning Marias dal, looking down the valley. In the background Tempelfjellet on Skjoldungen. Phot. Th. Vogt Aug. 4, 1931.

Fig. 45. *Umanak.* View from the summit of Rudiøya. Middle part of Umanakfjord to the left, to the right is seen the outer part of Innfjorden with Vogtsbu (1). Phot. Th. Vogt Aug. 16, 1931.

Carex rigida v. *Bigelowii*
Carex scirpoidea
Festuca rubra
Phleum alpinum
Poa alpina
Gymnadenia hyperborea
Gymnadenia straminea
Listera cordata

The ferns *D. Linnaeana* and *D. phegopteris* were frequently growing so densely in the rivulet beds, that the leaves formed a continuous cover, by their characteristic, light green colour visible at a long distance.

The lichen vegetation of the *Salix* scrub is very poor. Apart from some *Nephroma parile* and *laevigatum*, the *Salix* stems in Southeast Greenland are totally free from lichens, in contradistinction to Scandinavia where they usually are abundantly overgrown with *Cetraria juniperina*, *caperata*, *Parmeliopsis* and others. Large green sheets of partly fertile *Peltigera aphthosa*, and *Cladonias* of the *pyxidata* group are quite common amongst the other sub-vegetation.

The *Salix* scrub apparently favours the development of swamps which vegetation element is frequently developed in them.

9. Swamps.

The *Sphagnum-Carex rigida* swamps are the most common in the *Salix* scrub, but they rarely attain any considerable extent. They are always very wet, and have usually a water trickle in the middle, but give never rise to pure *Sphagnum* bogs or raised bogs so common in the Scandinavian mountain regions. In these small and wet Southeast Greenland swamps, sedges are found to a very great extent, and the following should be noted: first of all the *Carex rigida* forms, especially var. *Bigelowii*, all the forms with pronounced anomalous spikes (see p. 125) and *Carex rariflora* which latter here has its most typical locality, often occurring in abundance. In these places are also commonly found *Carex Lachenalii*, *Halleri* and *Deschampsia atropurpurea*, one or other *Equisetum arvense* and *Saxifraga rivularis*, and — as an exception — *Poa rigens* in single, loose tussocks.

Swamps of another type than these thick *Sphagnum* swamps of the *Salix* scrub are the swampy lake beaches poor in *Sphagnum*, and the small, swampy ponds more particularly to be seen in little depressions on the flat ice-scoured rocks at the coast. The vegetation in these places is very poor in species, but in return rather specific:

Cerastium lapponicum
Juncus filiformis
Carex capitata
Carex Lachenalii
Carex rariflora
Carex rigida
Carex rotundata
Eriophorum polystachyum
Eriophorum Scheuchzeri
Scirpus cespitosus
Deschampsia alpina
(Potentilla palustris)

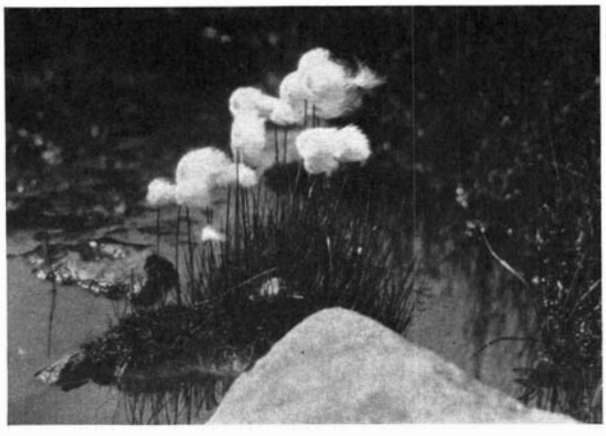

Fig. 46. *Eriophorum Scheuchzeri*.
Narsak in Lindenowfjord, 27/7 1932.

These muddy *Eriophorum*(*polystachyum*)-*Carex rigida* swamps, poor in *Sphagnum*, covered quite large areas on the south side of Persvatnet, and also at some small lakes south of Møretind in Kangerdlugsuatsiak.

In connection with the swampy localities it would be useful to say something about the vegetation in the shallow, small depressions where water occasionally collects during rainy weather. These are usually covered with a growth of *Carex rigida*, *Lachenalii*, and *Cerastium lapponicum*, as well as *Cetraria hiascens*, here having its favourite place, but they may also be almost bare and more or less stony and may then be the growing place for some plants which otherwise are rare, or do not occur at all, viz.: *Callitriche verna* f. *minima*, *Koenigia islandica*, *Carex rufina*, *Phippsia algida* and *Carex canescens*, the last of which, however, seems preferably to grow along the border of more permanent collections of water.

10. The vegetation of the river banks.

When streams and rivers flow through gently sloping country, the ground is likely to become swampy, and to have a vegetation which to a large extent roughly coincides with the vegetation type just described but with a certain modification, the more one approaches the running water. At the more or less sandy stretches near the stream, where there is also some circulation of the ground water, we find the following plants, part of which are nearly specific in these places:

Equisetum variegatum
Saxifraga stellaris
Cardamine pratensis
Cerastium lapponicum
Minuartia groenlandica
Koenigia islandica
Oxyria digyna
Juncus arcticus

Juncus biglumis
Juncus filiformis
Carex Lachenalii
Carex rigida
Carex subspathacea
Eriophorum Scheuchzeri
Calamagrostis neglecta
Deschampsia alpina

On stony river banks is frequently seen a luxuriant vegetation, especially noticeable by its often large and dense growth of the beautiful *Chamaenerium latifolium*, with its radiant, violet-red flowers and bluish-green leaves. The growth may often be seen from the fjord at a distance of several kilometres on account of the strong red colour and the considerable size of the stands. The plants mostly found on river banks were the following:

Sedum roseum
*Alchemilla *filicaulis*
Alchemilla glomerulans
Chamaenerium latifolium
Chamaenerium angustifolium
Cerastium lapponicum
Stellaria calycantha
Oxyria digyna
Polygonum viviparum
Salix arctophila (×)
Carex rigida
Festuca rubra
Phleum alpinum
Poa alpina

The luxuriant herbaceous vegetation often found along the streams on more sloping grounds is described under the *Salix* scrub.

11. The aquatic vegetation.

The phanerogamic flora of the lakes in Southeast Greenland is very poor, and seems to be entirely absent in several of those examined by us. In the Kangerdlugsuatsiak area we did not succeed in finding other aquatic plants than a few specimens of *Callitriche hamulata* growing in running water at a depth of abt. 1,5 metre, on the bottom of the outlet of a small lake above Møretun. We also found some specimens of the otherwise in Southeast Greenland very rare *Ranunculus hyperboreus* floating in a water hole in a moor on the point with the Eskimo huts at Narsak. The *Nostoc* vegetation so common in Eirik Raude's Land in small lakes, where their plum-like thallus often were seen lying densely packed on the bottom, seems to be entirely absent in the south.

In the pond on the small headland in front of the big talus slope at Brattneset in Tingmiarmiut, there was a rich growth of flowering *Ranunculus trichophyllus*, floating about in the water, but the pond was otherwise free from other phanerogamic water plants. Of strand plants here should especially be noted a very fine growth — halfway in the water — of typical *Carex canescens* tussocks.

In some places in Tingmiarmiut, Umanak, and Akorninarmiut lakes and ponds were found containing in parts an abundance of *Hippuris* and *Callitriche verna* and at a locality in Innfjorden also *Callitriche hamulata*. A small pond on Myrodden was visited very hurriedly and was later found to contain *Sparganium*. Unfortunately we did not realise this until we came home when we found that, together with some specimens of *Hippuris* and *Callitriche* from this locality, was also a leaf of a *Sparganium* which, we regret to say, in the hurry had been overlooked when we were at Myrodden. When to these species is added *Potamogeton filiformis* — found in Angmagssalik — we have enumerated all the known aquatic plants from Southeast Greenland. Southeast Greenland with its, at many points, narrow rim of bare land is undoubtedly much poorer in lakes than Southwest Greenland. This must partly be the reason why the phanerogamic aquatic flora of the southeast coast is so poor compared with that of the southwest coast.

The high mountain flora.

Only one mountain in Southeast Greenland was climbed namely Møretind (1200 m), mainly for the purpose of studying the lichen flora. On this mountain, the highest one between Lindenowfjorden and Nanusekfjorden, the following phanerogams were noted and collected (maximum elevations in metres):

1200 m:	*Lycopodium Selago*	1200 m:	*Luzula spicata*
—	*Cardamine bellidifolia*	—	*Carex rigida*
—	*Silene acaulis*	—	*Agrostis borealis*
—	*Salix herbacea*	900 m:	*Saxifraga nivalis*
—	*Cassiope hypnoides*	—	*Campanula rotundifolia*
—	*Antennaria alpina*	800 m:	*Cerastium alpinum*
—	*Juncus trifidus*	700 m:	*Betula glandulosa*
—	*Luzula confusa*	—	*Salix arctophila* × *glauca*

On a larger plateau at an elevation of 600 m the vegetation had already acquired the aspect of the ericaceous dwarf scrub vegetation previously described. Here were found flowering *Diapensia* and *Loiseleuria*, *Potentilla tridendata*, *Bryanthus* and also most of the other species belonging to this formation. With the exception of *Cardamine bellidifolia* and *Luzula confusa* all of the plants found on the top of this mountain at an altitude of 1200 m are very common in the surrounding lowlands from where they most certainly have come, the seeds being carried with the current of warm air which blows upwards along the steep mountain sides or precipices every day with sunshine. Particularly in the autumn the effectiveness of this agency of distribution is clearly demonstrated, a continuous stream of *Salix* seeds passing upwards.

It is easy to demonstrate that also heavier objects (grains of sand and similar things) are being carried up by the warm wind. If a rock is pushed out over a precipice on which the sun is shining a cloud of dust will very soon come up settling down on the edge of the precipice just in that place where the richest vegetation of these altitudes is to be found. Many species grow only in these exceptional places which are protected by the warm air and regularly supplied with fresh seeds, whereas they are entirely missing on the inner parts of the mountain plateau far away from the luxuriant vegetation of the lowlands. The purest expression of the flora characteristic of the high mountains should therefore be looked for on the large massives or on the nunataks of the inland ice where the disturbing, sporadic occurrence of lowland plants in favourable localities does not appear.

List of Distribution I

Umivik—Anoritok

		Umivik				Igdl.	Akorninarmiut												
		1. Gabeløya	2. Nordensk. Nunatak	3. Utermiut	4. Otto Sverdrupfjorden	5. Kemisak + Ikatamiut	6. Kikut	7. Eidsfjorddalen	8. Husøya	9. Imarsivik	10. Imarsivikøya	11. Floneset	12. Trollfjordeidet	13. Trollfjordbotnen	14. Devoldlia	15. Kvanndalen	16. Finnsbu	17. Myrodden
1	Lycopodium alpinum		×				×	×		×	×		×		×	×	×	
2	— annotinum						×	×					×		×	×	×	
3	— Selago		×				×	×			×		×		×	×	×	
4	Selaginella selaginoides												×		×	×	×	
5	Equisetum arvense														×	×	×	
6	— variegatum																	
7	Botrychium boreale															×	×	
8	— lanceolatum																	
9	— lunaria																×	
10	Asplenium viride										×						×	
11	Athyrium alpestre						×	×			×						×	
12	Cystopteris fragilis		×				×	×		×	×						×	
14	— Linnaeana	.	×	.	.	.	×	×	.	.	×	.	.	.	×	×	×	.
15	— phegopteris												×					
16	— spinulosa																	
17	Polystichum Lonchitis	.	.	.	.	.	.	×	.	×	.	.	×	.	×	×	×	.
18	Woodsia alpina																	
19	— glabella																	
20	— ilvensis		×				×	×		×	×		×		×	×	×	
21	Juniperus communis		×				×	×		×	×		×		×	×	×	
22	Coptis groenlandica						×	×			×				×	×		
25	Ranunculus hyperboreus					×												×
26	— pygmaeus					×	×										×	
27	— trichophyllus																	
28	Thalictrum alpinum												×		×	×	×	
29	Sedum annuum														×	×		
30	— roseum		×				×	×		×	×		×		×	×	×	
32	Saxifraga Aizoon												×		×	×	×	
33	— cernua	.	.	.	.	.	.	.	.	.	.	.	.	.	.	×	.	.
34	— groenlandica					×				×	×		×		×	×	×	
35	— nivalis										×					×	×	
36	— *tenuis	.	.	.	.	×	.	.	.	.	.	.	.	.	.	.	×	.
37	— oppositifolia												×				×	
38	— rivularis									×						×	×	
39	— stellaris					×	×	×					×		×		×	
40	Alchemilla alpina		×			×	×	×		×	×		×		×	×	×	
41	— glomerulans												×			×	×	
42	— *filicaulis														×	×	×	
44	Potentilla alpestris	.	.	.	.	.	.	.	.	.	.	.	×	.	.	×	×	.
45	— anserina v. groenl.																×	
48	— palustris															×		
49	— Ranunculus												×					
50	— tridentata		×				×	×		×	×				×	×	×	

Akorninarmiut								Umanak						Tingmiarmiut								Puisortok					Anoritok			
18. Eskimoneset	19. Dronning Marias dal	20. Skjoldungen, inn. N. s.	21. Moreneneset	22. Bjørlykkeneset	23. Kornok	24. Hestmannøyane	25. Midterhuset	26. Pilerkit	27. Claradalen	28. Innfjorden	29. Vogtsbu	30. Rudiøya	31. Umanak	32. Framneshytta	33. Lomvatnet	34. Tvihamna	35. Igdlormiut	36. Brattneset	37. Langholmen	38. Ekalungmiut	39. Narksak	40. Ingerkajarfik	41. Rudøya	42. Puisortok	43. Karra Akungnak	44. Kap Rantzau	45. Tennøya	46. Kanajorkat	47. Anoritok	48. Kap Tordenskjold
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List of Distribution I (cont.)

Umivik—Anoritok

		Umivik					Igdl.	Akorninarmiut												
		1. Gabeløya	2. Nordensk. Nunatak	3. Utermiut	4. Otto Sverdrupfjorden	5. Kemisak + Ikatamiut	6. Kikut	7. Eidsfjorddalen	8. Husøya	9. Imarsivik	10. Imarsivikøya	11. Floneset	12. Trollfjordeidet	13. Trollfjordbotnen	14. Devoldlia	15. Kvanndalen	16. Finnsbu	17. Myrodden
51	Rubus saxatilis																	
52	Sibbaldia procumbens		×				×	×		×	×		×		×	×	×	
54	Chamaenerium angustifol.						×	×	×	×	×		×		×	×	×	
55	— latifolium					×		×			×		×		×	×	×	
56	Epilobium anagallidifol.							×			×		×		×	×	×	
57	— Hornemanni	.	.	.	.	.	.	.	.	.	×	×	×	.	.	×	×	.
58	— lactiflorum						×				×	×				×	×	
59	Hippuris vulgaris																	×
60	Papaver radicatum																	
61	Arabis alpina										×		×			×	×	
62	— Holboellii																	
63	Cardamine bellidifolia		×														×	
64	— pratensis																	
65	Cochlearia officinalis v.	×	.	×	×	.	.	.	.	.	.	.	.	.	.	.	.	.
66	Draba aurea															×	×	
68	— incana																	×
70	— nivalis					×							×					
71	— rupestris																×	
72	Callitriche hamulata																	
73	— verna																	×
74	Polygala serpyllaceum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
75	Cornus suecica																	
76	Angelica archangelica									×			×			×	×	
78	Viola palustris										×		×		×		×	
79	Cerastium alpinum		×		×	×	×	×	×	×	×		×		×	×	×	×
80	— lapponicum			×	×	×	×	×		×	×	×	×		×	×	×	
81	Honckenya peploides														×	×		
82	Minuartia biflora		×												×		×	
83	— groenlandica	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
84	— rubella																×	
85	Sagina intermedia				×												×	
86	— Linnaei										×						×	
88	Silene acaulis		×	×	×		×	×							×	×	×	
89	Stellaria calycantha	.	.	.	.	.	.	×	×	×	.	×	.	.	.	×	.	.
90	— humifusa			×		×				×	×						×	
91	— longipes																	
92	— media																	
93	Viscaria alpina		×			×	×	×	×	×	×		×		×	×	×	
94	Montia lamprosperma																	×
95	Koenigia islandica						×											
96	Oxyria digyna	×	×	×	×		×	×		×	×	×	×		×	×	×	
98	Polygonum viviparum		×			×	×	×		×	×		×			×	×	×
99	Rumex acetosella																	

Akorninarmiut								Umanak						Tingmiarmiut								Puisortok					Anoritok			
18. Eskimoneset	19. Dronning Marias dal	20. Skjoldungen, inn. N. s.	21. Moreneneset	22. Bjørlykkeneset	23. Kornok	24. Hestmannøyane	25. Midterhuset	26. Pilerkit	27. Claradalen	28. Innfjorden	29. Vogtsbu	30. Rudiøya	31. Umanak	32. Framneshytta	33. Lomvatnet	34. Tvihamna	35. Igdlormiut	36. Brattneset	37. Langholmen	38. Ekalungmiut	39. Narksak	40. Ingerkajarfik	41. Rudøya	42. Puisortok	43. Karra Akungnak	44. Kap Rantzau	45. Tennøya	46. Kanajorkat	47. Anoritok	48. Kap Tordenskjold
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List of Distribution I (cont.)

Umivik—Anoritok

		Umivik				Igdl.	Akorninarmiut												
		1. Gabeløya	2. Nordensk. Nunatak	3. Utermiut	4. Otto Sverdrupfjorden	5. Kemisak + Ikatamiut	6. Kikut	7. Eidsfjorddalen	8. Husøya	9. Imarsivik	10. Imarsivikøya	11. Floneset	12. Trollfjordeidet	13. Trollfjordbotnen	14. Devoldlia	15. Kvanndalen	16. Finnsbu	17. Myrodden
100	Betula glandulosa																	
101	— nana														×		×	
102	B. gland × nana																	
103	Salix arctica × arctoph. × glauca	.	.	.	×	.	.	.	.	.	.	.	.	.	.	.	×	.
104	— arctoph. × glauca		×					×			×	×	×			×	×	
105	— glauca																	
106	— herbacea		×				×	×			×		×			×	×	
108	Pyrola minor							×			×				×	×	×	
109	Bryanthus coeruleus						×	×		×	×		×		×	×	×	
110	Cassiope hypnoides		×				×	×			×				×	×	×	
112	Loiseleuria procumbens	.	×	.	.	.	×	×	.	.	×	.	.	.	×	×	×	.
113	Rhododendron lapponicum						×								×			
114	Vaccinium uliginosum		×				×	×			×		×		×	×	×	
115	Empetrum hermaphroditum	×	×		×		×	×	×	×	×	×	×		×	×	×	
116	Diapensia lapponica		×				×	×									×	
117	Bartschia alpina					×	×				×		×		×	×	×	
118	Euphrasia latifolia												×		×	×	×	
119	Limosella aquatica f.																	×
120	Pedicularis flammea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
123	Veronica alpina														×	×	×	
124	— fruticans					×	×								×	×	×	
125	— Wormskjoldii										×		×				×	
126	Pinguicula vulgaris						×								×	×	×	
127	Thymus serpyllum					×					×		×		×	×	×	
128	Plantago juncoides v.			×														
129	Gentiana aurea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
130	— nivalis														×	×	×	
131	Galium triflorum																	
132	Linnaea borealis																	
133	Campanula rotundifolia		×			×	×				×		×		×	×	×	
135	Antennaria alpina		×				×	×			×				×	×	×	
136	— groenlandica																	
138	Erigeron borealis												×		×	×	×	
139	— compositus																	
140	— eriocephalus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
141	— unalaschkensis																×	
142	— uniflorus										×		×				×	
143	Gnaphalium norvegicum							×			×		×		×	×	×	
144	— supinum		×				×	×		×	×		×		×	×	×	
145	Hieracium alpinum		×			×	×	×		×					×	×	×	
148	— groenlandicum						×						×			×	×	
149	— hyparcticum							×								×		
152	— rigorosum v.																	

Akorninarmiut								Umanak						Tingmiarmiut								Puisortok					Anoritok			
18. Eskimoneset	19. Dronning Marias dal	20. Skjoldungen, inn. N. s.	21. Moreneneset	22. Bjørlykkeneset	23. Kornok	24. Hestmannøyane	25. Midterhuset	26. Pilerkit	27. Claradalen	28. Innfjorden	29. Vogtsbu	30. Rudiøya	31. Umanak	32. Framneshytta	33. Lomvatnet	34. Tvihamna	35. Igdlormiut	36. Brattneset	37. Langholmen	38. Ekalungmiut	39. Narksak	40. Ingerkajarfik	41. Rudøya	42. Puisortok	43. Karra Akungnak	44. Kap Rantzau	45. Tennøya	46. Kanajorkat	47. Anoritok	48. Kap Tordenskjold
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List of Distribution I (cont.)

Umivik—Anoritok

		Umivik				Igdl.	Akorninarmiut												
		1. Gabeløya	2. Nordensk. Nunatak	3. Utermiut	4. Otto Sverdrupfjorden	5. Kemisak + Ikatamiut	6. Kikut	7. Eidsfjorddalen	8. Husøya	9. Imarsivik	10. Imarsivikøya	11. Floneset	12. Trollfjordeidet	13. Trollfjordbotnen	14. Devoldlia	15. Kvanndalen	16. Finnsbu	17. Myrodden
154	Hieracium stelechodes					o												
156	Taraxacum croceum			×			×	×		×	×	×				×	×	
157	— maurostylum																	
158	— purpuridens																×	
159	— rhodolepis																	
160	Triglochin palustris																	
162	Tofieldia palustris						×	×					×		×	×	×	
163	Juncus arcticus																	
164	— biglumis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
165	— filiformis																	
167	— trifidus		×				×	×		×	×	×	×		×	×	×	
168	— triglumis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
169	Luzula confusa		×				×	.		.	.	.	×		×	×	×	
170	— frigida																	
172	— spicata		×		×		×	×		×	×		×		×	×	×	
173	Carex atrata																	
175	— brunnescens										×							
176	— canescens											×						×
177	— capillaris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
178	— capitata		×				×											
179	— deflexa		×															
180	— glareosa			×	×						×							
181	— Halleri																	
183	— Lachenalii	.	×	.	×	.	×	×	×	×	×	×	×		×	×	×	
184	— Macloviana																	
187	— nardina v.																	
189	— rariflora																	
190	— rigida	.	×	.	.	.	×	×	×	×	×	×	×	×	×	×	×	×
191	— rotundata																	
192	— rufina				×		×											
194	— scirpoidea		×								×		×		×	×	×	
195	— stylosa																	
196	— subspathacea																	
198	Cobresia scirpina																	
199	Eriophorum polystachyum																	
200	— Scheuchzeri									×								
201	Scirpus cespitosus v.		×				×	×				×	×		×	×	×	
202	Agropyrum violaceum																	
203	Agrostis borealis		×		×		×	×		×	×	×	×		×	×	×	
204	— canina							×					×					
205	Anthoxanthum odoratum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
206	Calamagrostis hyperborea											×			×			
207	— Langsdorfii																	
208	— neglecta											×			×		×	

Akorninarmiut								Umanak						Tingmiarmiut								Puisortok					Anoritok			
18. Eskimoneset	19. Dronning Marias dal	20. Skjoldungen, inn. N. s.	21. Moreneneset	22. Bjørlykkeneset	23. Kornok	24. Hestmannøyane	25. Midterhuset	26. Pilerkit	27. Claradalen	28. Innfjorden	29. Vogtsbu	30. Rudiøya	31. Umanak	32. Framneshytta	33. Lomvatnet	34. Tvihamna	35. Igdlorniut	36. Brattneset	37. Langholmen	38. Ekalungmiut	39. Narksak	40. Ingerkajarfik	41. Rudøya	42. Puisortok	43. Karra Akungnak	44. Kap Rantzau	45. Tennøya	46. Kanajorkat	47. Anoritok	48. Kap Tordenskjold
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List of Distribution I (cont.)

Umivik—Anoritok

		Umivik				Igdl.	Akorninarmiut												
		1. Gabeløya	2. Nordensk. Nunatak	3. Utermiut	4. Otto Sverdrupfjorden	5. Kemisak + Ikatamiut	6. Kikut	7. Eidsfjorddalen	8. Husøya	9. Imarsivik	10. Imarsivikøya	11. Floneset	12. Trollfjordeidet	13. Trollfjordbotnen	14. Devoldlia	15. Kvanndalen	16. Finnsbu	17. Myrodden
209	Calamagrostis purpurascens																	×
210	Deschampsia alpina						×											
211	— atropurpurea							×							×		×	
212	— flexuosa	.	.	.		.	.	×	.	×	×	.	.	.	×	×	×	.
213	Elymus arenarius v.															×		
214	Festuca brevifolia														×		×	
215	— vivipara		×					×							×	×		
216	— rubra		×							×		×			×	×	×	
217	Hierochloe alpina						×	×		×	×	×	×			×		×
218	Nardus stricta						×						×					
219	Phippsia algida				×													
220	Phleum alpinum	.	.	.	.	.	×	×	.	×	×	.	×	.	×	×	×	.
221	Poa alpigena							×				×						
222	— alpina						×	×	×	×	×	×	×		×	×	×	
224	— glauca						×											×
225	— nemoralis	.	.	.	.	.	×	.	.	×	.	.	×	.	.	×	×	.
226	— rigens						×	×		×	×	×				×	×	
227	Puccinellia phryganodes			×											×	×		
228	— retroflexa			×														
229	Trisetum spicatum		×		×		×	×	×		×		×		×	×	×	
230	Habenaria hyperborea																	
231	— straminea												×					
232	Listera cordata														×	×	×	
233	Sparganium sp.																	×
Numbers of species known from each locality		3	41	10	15	18	59	60	9	38	58	22	71	1	80	83	127	17
Numbers of species known from each district		53				18	173											

Akorninarmiut								Umanak						Tingmiarmiut								Puisortok					Anoritok			
18. Eskimoneset	19. Dronning Marias dal	20. Skjoldungen, inn. N. s.	21. Moreneneset	22. Bjørlykkeneset	23. Kornok	24. Hestmannøyane	25. Midterhuset	26. Pilerkit	27. Claradalen	28. Innfjorden	29. Vogtsbu	30. Rudiøya	31. Umanak	32. Framneshytta	33. Lomvatnet	34. Tvihamna	35. Igdlormiut	36. Brattneset	37. Langholmen	38. Ekalungmiut	39. Narksak	40. Ingerkajarfik	41. Rudøya	42. Puisortok	43. Karra Akungnak	44. Kap Rantzau	45. Tennøya	46. Kanajorkat	47. Anoritok	47. Kap Tordenskjold
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18	136	29	1	2	9	1	5	65	41	101	103	25	59	81	74	80	52	123	32	4	1	5	1	10	12	5	23	11	35	14
173								148						138								30					66			

	List of Distribution II **Auarket—Ikerasarsuak**	Auarket					Iluilek								Kangerd-			
		49. Koremiut	50. Pilskoghytta	51. Karra	52. Taterait	53. Ingitait	54. Kangerdluluk	55. Kajartalik	56. Serketnua	57. Kangek	58. Iluilek	59. Ivimiut	60. Kasingertok	61. Kutek	62. Kutekfjorden	63. Straumen	64. Grytvika	65. Mortensberg
1	Lycopodium alpinum		×				×		×					×				×
2	— annotinum						×											×
3	— Selago		×			×	×		×		×							×
5	Equisetum arvense																	
9	Botrychium lunaria						×											
11	Athyrium alpestre		×				×							×				×
12	Cystopteris fragilis		×				×				×						×	
13	Dryopteris Filix mas																	
14	— Linnaeana						×									×		×
15	— phegopteris	.	.	.	.	.	×	.	.	.	.	.	.	.	.	.	×	×
16	— spinulosa																	×
17	Polystichum Lonchitis								×					×			×	×
20	Woodsia ilvensis		×				×							×			×	
21	Juniperus communis		×				×			×								×
22	Coptis groenlandica		×			×	×											×
23	Ranunculus acris																	
25	— hyperboreus											×						
26	— pygmaeus																	
28	Thalictrum alpinum																	
29	Sedum annuum																	
30	— roseum		×		×													×
31	Saxifraga aizoides																	
32	— Aizoon	.	.	.	.	.	.	.	.	.	.	.	.	.	.		×	.
33	— cernua						×											
34	— groenlandica		×												×		×	
35	— nivalis	.	.	.	.	×	×	.	.	.	.	.	.	.	.	.	.	.
37	— oppositifolia																×	
38	— rivularis					×	×		×			×		×			×	
39	— stellaris		×			×	×					×						×
40	Alchemilla alpina		×						×									×
41	— glomerulans		×								×						×	×
42	— *filicaulis																×	
43	— minor																	
44	Potentilla alpestris	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
45	— anserina v.			×										×		×		
48	— palustris																	
50	— tridentata		×				×		×			×		×				×
52	Sibbaldia procumbens		×				×				×							×
53	Lathyrus maritimus																	
54	Chamaenerium angustifol.		×				×											×
55	— latifolium		×													×		
56	Epilobium anagallidifol	.	×	.	.	×	×	.	.	.	.	.	.	.	.	.	×	×
57	— Hornemanni						×										×	
58	— lactiflorum					×	×											×
59	Hippuris vulgaris											×						

lugsuatsiak														Ikerasarsuak														
66. Svartvika	67. Walløehytta	68. Kangerdluarak	69. Nordpollen	70. Grønlia	71. Nanusek	72. Fossheim	73. Sagdlia	74. Nenese	75. Persvatnet	76. Møretind	77. Møretun	78. Narsak	79. Drg. Louises Ø	80. Kangerajak	81. Kekertatsiak	82. Aluk	83. Nunatsuk	84. Kekertak	85. Kapiarfik	86. Kapingajak	87. Akajaruanek	88. Tunua	89. Kang. lup Pava	90. Itivdlek	91. Umanarsuak	92. (Ikerasarsuk)	93. (Chr. IV Ø)	94. (Ikitok)
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List of Distribution II (cont.) **Auarket—Ikerasarsuak**		Auarket					Iluilek								Kangerd-			
		49. Koremiut	50. Pilskoghytta	51. Karra	52. Taterait	53. Ingitait	54. Kangerdluluk	55. Kajartalik	56. Serketnua	57. Kangek	58. Iluilek	59. Ivimiut	60. Kasingertok	61. Kutek	62. Kutekfjorden	63. Straumen	64. Grytvika	65. Mortensberg
61	Arabis alpina						×					×				×		
63	Cardamine bellidifolia					×												
64	— pratensis																	
65	Cochlearia officin. v.											×						
66	Draba aurea	.	.	×	.	.	.	.	.	.	.	.	.	.	.	.	.	.
68	— incana									×								
70	— nivalis						×											
71	— rupestris						×											
72	Callitriche hamulata																	
75	Cornus suecica					×	×							×			×	×
76	Angelica archangelica															×	×	×
77	Viola labradorica																	
78	— palustris		×				×				×						×	
79	Cerastium alpinum	×				×	×					×					×	
80	— lapponicum		×		×							×		×	×		×	×
81	Honckenya peploides														×	×		×
82	Minuartia biflora					×												
83	— groenlandica	.	.	.	.	.	.	.	.	.	.	×	.	.	.	.	.	.
85	Sagina intermedia									×		×						
86	— Linnaei																	
87	— procumbens											×						×
88	Silene acaulis	.	.	.	.	×	.	.	.	.	.	×	.	.	.	.	×	.
89	Stellaria calycantha				×		×										×	
90	— humifusa																	
92	— media											×						
93	Viscaria alpina	×	×	×	×		×		×		×			×				×
94	Montia lamprosperma											×						
95	Koenigia islandica											×						
96	Oxyria digyna		×												×			×
97	Polygonum aviculare																	
98	— viviparum															×		×
100	Betula glandulosa			×			×											×
104	Salix arctoph. × glauca		×											×				×
105	— glauca																	
106	— herbacea		×				×		×									×
107	Armeria vulgaris																	
108	Pyrola minor						×					×						×
109	Bryanthus coeruleus		×						×									×
110	Cassiope hypnoides		×				×		×							×		×
112	Loiseleuria procumbens	.	×	.	.	.	.	.	×	.	.	.	.	.	.	×	.	×
114	Vaccinium uliginosum		×				×									×	×	×
115	Empetrum hermaphrod.		×												×	×	×	×
116	Diapensia lapponica																×	
117	Bartschia alpina		×				×				×							×

lugsuatsiak														Ikerasarsuak														
66. Svartvika	67. Walløehytta	68. Kangerdluarak	69. Nordpollen	70. Grønlia	71. Nanusek	72. Fossheim	73. Sagdlia	74. Nenese	75. Persvatnet	76. Møretind	77. Møretun	78. Narsak	79. Drg. Louises Ø	80. Kangerajak	81. Kekertatsiak	82. Aluk	83. Nunatsuk	84. Kekertak	85. Kapiarfik	86. Kapingajak	87. Akajaruanek	88. Tunua	89. Kang lup Pava	90. Itivdlek	91. Umanarsuak	92 (Ikerasarsuk)	93. (Chr. IV Ø)	94. (Ikitok)
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List of Distribution II (cont.) **Auarket—Ikerasarsuak**		Auarket					Iluilek								Kangerd-			
		49. Koremiut	50. Pilskoghytta	51. Karra	52. Taterait	53. Ingitait	54. Kangerdluluk	55. Kajartalik	56. Serketnua	57. Kangek	58. Iluilek	59. Ivimiut	60. Kasingertok	61. Kutek	62. Kutekfjorden	63. Straumen	64. Grytvika	65. Mortensberg
118	Euphrasia latifolia																	
120	Pedicularis flammea						×						×				×	
122	Rhinanthus groenlandicus															×		×
123	Veronica alpina	.	×	.	.	×	×	.	×	.	.	.	.	×	.	.	.	×
124	— fruticans						×				×			×				
125	— Wormskjoldii																	
126	Pinguicula vulgaris													×		×		×
127	Thymus Serpyllum																×	
128	Plantago juncoides v.			×														
130	Gentiana nivalis						×					×						×
131	Galium triflorum																	
133	Campanula rotundifolia																	×
135	Antennaria alpina					×	×											
136	— groenlandica						×											
138	Erigeron borealis										×							
142	— uniflorus																	
143	Gnaphalium norvegicum		×															×
144	— supinum		×		×		×											×
145	Hieracium alpinum																	
146	— amitsokense																	
147	— Devoldii																	
148	— groenlandicum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	×
149	— hyparctcium													×				×
150	— ivigtutense						×											
151	— lividorubens																	
152	— rigorosum v.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
153	— Scholanderi																	
155	Matricaria inodora v.																	
156	Taraxacum croceum																	×
157	— maurostylum																	
162	Tofieldia palustris						×		×					×			×	×
164	Juncus biglumis																	
165	— filiformis		×														×	×
166	— squarrosus																×	
167	— trifidus	.	×	.	.	×	.	×	×	.	.	.	.	.	.	.	×	.
169	Luzula confusa					×	×				×							
170	— frigida																	
171	— parviflora																×	×
172	— spicata		×															×
173	Carex atrata																	
175	— brunnescens															×		×
176	— canescens											×						
178	— capitata																×	
179	— deflexa								×									×
180	— glareosa					×	×		×									×

lugsuatsiak														Ikerasarsuak														
66. Svartvika	67. Walløehytta	68. Kangerdluarak	69. Nordpollen	70. Grønlia	71. Nanusek	72. Fossheim	73. Sagdlia	74. Nenese	75. Persvatnet	76. Møretind	77. Møretun	78. Narsak	79. Drg. Louises Ø	80. Kangerajak	81. Kekertatsiak	82. Aluk	83. Nunatsuk	84. Kekertak	85. Kapiarfik	86. Kapingajak	87. Akajaruanek	88. Tunua	89. Kang. lup Pava	90. Itivdlek	91. Umanarsuak	92. (Ikerasarsuk)	93. (Chr. IV Ø)	94. (Ikitok)
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	List of Distribution II (cont.) **Auarket—Ikerasarsuak**	Auarket					Iluilek								Kangerd-			
		49. Koremiut	50. Pilskoghytta	51. Karra	52. Taterait	53. Ingitait	54. Kangerdluluk	55. Kajartalik	56. Serketnua	57. Kangek	58. Iluilek	59. Ivimiut	60. Kasingertok	61. Kutek	62. Kutekfjorden	63. Straumen	64. Grytvika	65. Mortensberg
183	Carex Lachenalii		×				×					×						×
184	— Macloviana																	
189	— rariflora		×						×			×					×	×
190	— rigida		×			×	×		×		×			×			×	×
191	— rotundata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
192	— rufina		×															
194	— scirpoidea																	×
195	— stylosa		×														×	×
196	— subspathacea																	
199	Eriophorum polystachyum					×	×					×						×
200	— Scheuchzeri		×			×						×					×	
201	Scirpus cespitosus v.		×														×	×
203	Agrostis borealis		×			×	×											×
204	— canina																×	
205	Anthoxanthum odoratum																	
206	Calamagrostis hyperborea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
207	— Langsdorfii		×	×			×										×	×
210	Deschampsia alpina		×	×								×					×	×
211	— atropurpurea																×	×
212	— flexuosa		×														×	×
213	Elymus arenarius v.	.	.	.	.	.	.	.	.	.	.	×	.	.	.	.	×	×
214	Festuca brevifolia											×						
215	— vivipara						×					×					×	×
216	— rubra											×					×	×
217	Hierochloe alpina					×												
218	Nardus stricta		×														×	×
219	Phippsia algida																	
220	Phleum alpinum		×				×				×						×	×
221	Poa alpigena	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	×
222	— alpina		×				×					×					×	×
223	— annua																	
224	— glauca																×	
225	— nemoralis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
226	— rigens		×														×	×
227	Puccinellia phryganodes															×		
228	— retroflexa																	
229	Trisetum spicatum		×			×					×						×	×
230	Habenaria hyperborea						×											×
231	— straminea						×											
232	Listera cordata					×	×										×	×
	Numbers of species known from each locality	2	51	5	5	25	56	1	18	3	13	29	1	16	4	15	50	78
	Numbers of species known from each district	70					89								155			

lugsuatsiak														Ikerasarsuak														
66. Svartvika	67. Walløehytta	68. Kangerdluarak	69. Nordpollen	70. Grønlia	71. Nanusek	72. Fossheim	73. Sagdlia	74. Nenese	75. Persvatnet	76. Møretind	77. Møretun	78. Narsak	79. Drg. Louises Ø	80. Kangerajak	81. Kekertatsiak	82. Aluk	83. Nunatsuk	84. Kekertak	85. Kapiarfik	86. Kapingajak	87. Akajaruanek	88. Tunua	89. Kang.lup Pava	90. Itivdlek	91. Umanarsuak	92. (Ikerasarsuk)	93. (Chr. IV Ø)	94. (Ikitok)
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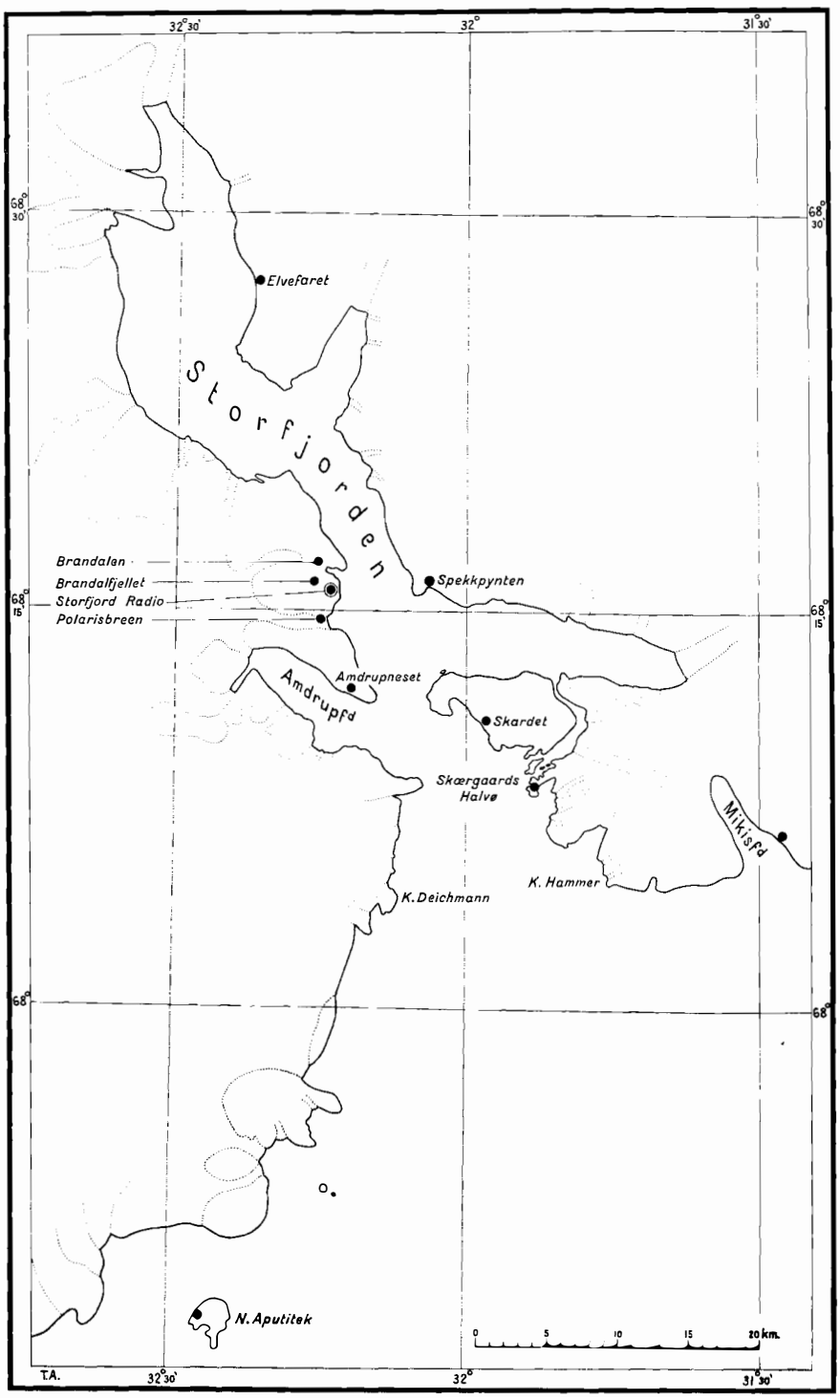
6	20	11	32	107	1	48	1	70	35	25	114	123	1	5	3	36	45	17	8	1	1	16	3	1	5	25	10	10
155														85														



Map of Botanical Localities in Kangerdlugsuak.

B. **Kangerdlugsuak about 68° 15′ lat N.**

The vegetation of the large, sterile, ice-filled fjord Kangerdlugsuak, situated about half way between Angmagssalik and Scoresby Sound is of a considerably more Arctic type than that of Southeast Greenland. This is partly caused by the qualitative composition of the flora many of the southern elements lacking north of Angmagssalik at the same time northern elements coming in, and partly, not in the least, caused by the quantitatively extremely sparse growth only rarely, in small areas forming a continuous vegetation cover. The greater part of the fjord borders on mountains ascending steeply from the water and is not very congenial to botanical excursions. By the nature of the case, it is obvious that we have only acquired a superficial knowledge of the entire Kangerdlugsuak flora, based as it is on a few localities all of which are situated within a rather limited area.

Some of the main types of vegetation described from Southeast Greenland are found also here, but less extensively developed and interrupted by ± large areas of bare ground. The halophilous beach vegetation was not observed by us, the only plant of this zone known from Kangerdlugsuak being *Carex glareosa* from Skærgaards Halvø. A sandy shore precipice was observed only on the north side in front of Polarisbreen. *Chamaenerium latifolium* was characteristic here, but otherwise the vegetation was not distinctive, gradually running into the sandy plain above. No Eskimo sites were investigated in this region. Corresponding to the dry and sandy lichen heath of the south we found similar habitats in this region (Brandal, Polarisbreen, Amdrupneset) almost quite sterile or with a sparse vegetation of the following species:

Saxifraga cernua
Saxifraga groenlandica
Saxifraga oppositifolia
Cerastium alpinum
Cerastium lapponicum
Vaccinium v. *microphyllum*
Empetrum hermaphroditum
Antennaria alpina
Gnaphalium supinum
Hieracium alpinum
Silene acaulis
Oxyria digyna
Polygonum viviparum
Salix glauca (×)
Salix herbacea
Cassiope tetragona
Luzula confusa
Luzula spicata
Carex rigida
Carex incurva (rare)
Poa glauca
Trisetum spicatum

The lichen cover was totally lacking except for some tussocks of *Stereocaulon denudatum* and single *Ster. alpinum*, and in rain water furrows was seen a vigorous growth of *Cetraria hiascens*. The ericaceous dwarf scrub on rugged, stony ground was here characterized by a sparse plant cover, by the occurrence of *Cassiope tetragona*

(specially at some altitude), and by the absence of *Betula*. The large, dense stands of *Cassiope tetragona* so common in Eirik Raude's Land and other Arctic regions, were not observed, only small stands between the rocks preferably on the mountain slopes. The following species were found in this formation:

Lycopodium Selago
Cystopteris fragilis
Woodsia ilvensis
Saxifraga oppositifolia
Draba crassifolia
Draba nivalis
Draba rupestris
Silene acaulis
Viscaria alpina
Oxyria digyna
Polygonum viviparum
Salix arctica × *arctophila* × *glauca*
Salix herbacea
Cassiope tetragona
Cassiope hypnoides
Vaccinium v. *microphyllum*
Empetrum hermaphroditum
Pedicularis flammea
Pedicularis hirsuta
Campanula rotundifolia
Hieracium alpinum
Arnica alpina
Juncus trifidus
Luzula confusa
Carex nardina v.
Carex rigida
Cobresia scirpina
Festuca vivipara
Hierochloe alpina
Trisetum spicatum

The following fruticose and foliose lichens were found in most places, however, very sparingly: *Cladonia mitis*, *elongata*, *lepidota*, *Peltigera rufescens, malacea*, *aphtosa* and some few *lepidophora*, further *Cetraria nivalis*, *hiascens*, *crispa*, *Stereocaulon alpinum* and *denudatum*.

Grassy slopes were seen in several places at Storfjord Radio and also on the north side in front of Polarisbreen. The more or less steep and moist, sandy slopes were at times quite covered by vegetation, mainly composed of the following species:

Potentilla alpestris
Sibbaldia procumbens
Draba crassifolia
Draba nivalis
Cerastium alpinum
Minuartia biflora
Antennaria alpina
Erigeron unalaschkensis
Gnaphalium supinum
Luzula spicata
Carex nardina v.
Carex rigida
Minuartia rubella
Viscaria alpina
Polygonum viviparum
Salix herbacea
Bartschia alpina
Euphrasia latifolia
Pedicularis flammea
Pedicularis hirsuta
Campanula rotundifolia
Carex rupestris
Carex supina
Cobresia scirpina
Agrostis borealis
Festuca brevifolia
Festuca vivipara
Poa alpina
Poa rigens

No luxuriant talus slopes were seen in the lowlands. A great many of the good botanical localities of Kangerdlugsuak were those of

the steep cliffs and ledges. The following species were found preferably in these places:

Cystopteris fragilis
Woodsia ilvensis
Ranunculus pygmaeus
Sedum roseum
Saxifraga Aizoon
Saxifraga cernua
Saxifraga groenlandica
Saxifraga nivalis
Saxifraga v. *tenuis*
Saxifraga oppositifolia
Saxifraga rivularis
Potentilla alpestris
Potentilla nivea
Arabis alpina
Cardamine bellidifolia
Cerastium alpinum
Bryanthus coeruleus
Cassiope hypnoides
Cassiope tetragona
Vaccinium v. *microphyllum*
Empetrum hermaphroditum
Diapensia lapponica
Pedicularis flammea
Pedicularis hirsuta
Campanula rotundifolia
Campanula uniflora
Antennaria alpina
Erigeron unalaschkensis
Luzula confusa
Carex capillaris
Carex capitata
Carex misandra
Carex nardina v.
Carex pedata
Carex rigida
Carex rupestris
Carex scirpoidea
Carex supina
Cobresia scirpina
Poa rigens

Of the larger species of lichens we noted here *Cladonia elongata*, *lepidota*, *coccifera*, *pyxidata*, *chlorophaea*, *mitis*, *Cetraria nivalis* and *crispa*, single specimens of *Peltigera rufescens* and *erumpens*, and *Solornia crocea*, *Stereocaulon alpinum* and *denudatum*.

Willow scrub of any greater extent is hardly present thus far north. At any rate, none was seen by us. Of swamps only a few, small depressions were seen, in rainy weather frequently inundated by rainwater or water from melting snow and ice. In these places the following species were noted:

Callitriche verna f. *minor*
Cerastium lapponicum
Koenigia islandica
Carex Lachenalii
Carex microglochin
Carex rigida
Carex rufina
Phippsia algida

Dense stands of *Cetraria hiascens* were typical for these localities, and fertile specimens of *Stereocaulon rivulare* were not rarely seen.

The vegetation of the very few stony riverbanks observed, was usually very poor and with no definite, characteristic element. The following species were found in these places:

Ranunculus glacialis
Sedum roseum
Saxifraga cernua
Saxifraga groenlandica
Saxifraga oppositifolia
Saxifraga rivularis
Chamaenerium latifolium
Cerastium lapponicum

Sagina intermedia	*Carex Lachenalii*
Oxyria digyna	*Carex rigida*
Pedicularis flammea	*Phippsia algida*

Lichens usually found here are: *Solorina crocea* and *Cetraria hiascens.*

The only lakes observed in this region were a few, small ponds on the terminal moraine in front of Polarisbreen supplied with water from melting snow and ice. None of them had any higher aquatic vegetation.

The hilly and rugged surface of the relatively recent terminal moraine in front of Polarisbreen consists mainly of sand and glaciated pebbles with a few ponds in the depressions. The vegetation of this mostly bare and sterile, sandy ground was characterized especially by the large, and in many localities numerous tufts of *Poa glauca* (subsp. *conferta*). In a few places were seen open mats of *Carex incurva* along with *Sagina intermedia.* Bushes of *Salix* (with a dominant *S. glauca* element) were growing scattered. On one occasion the root system of such a small bush was partly uncovered exposing the enormous development of the roots in this meager soil. These grew stellately in all directions, the longest, but yet not quite complete of them measuring 5.75 m in length. This means that they were here covering an area of almost 12 m in diameter. Scattered were found *Draba rupestris*, *Oxyria digyna*, *Trisetum spicatum*, and *Festuca vivipara.* In some small, moist depressions was found a vigorous vegetation of *Taraxacum croceum*, *Erigeron unalaschkensis*, *Cerastium lapponicum*, and small tufts of *Phippsia algida.* The only fruticose lichen found was *Stereocaulon rivulare* occurring scattered, usually sterile. On a short visit to the terminal moraine in Brandal no phanerogams, with the exception of *Chamaenerium latifolium*, and no lichens were found on the moraine proper.

In Kangerdlugsuak only one excursion was undertaken to get an impression of the high mountain vegetation. This was to Brandalfjell, which rises from southwest of the Radio station to a large plateau at an altitude of somewhat above 1000 m. During the ascent to this plateau we noticed the common phenomenon of arctic regions that when the sun is shining the air is much warmer up above than down by the fjord, and also warmer than the air on the plateau. Thus late in the season (Aug. 23) a continuous stream of *Salix* seeds was carried with the ascending warm air up along the mountain slopes. The vegetation of the rocky mountain-plateau at an altitude of 1060 m was exceedingly sparse consisting of scattered specimens of *Luzula confusa*, *Papaver radicatum*, *Silene acaulis*, *Saxifraga rivularis*, and *Poa glauca*, whereas the edge of a precipice carried a luxuriant vegetation of large *Salix glauca* (×) shrubs in espalier, large tufts of *Hierochloe*, *Poa glauca*, *Poa rigens*, *Luzula spicata*, *Potentilla emarginata Phippsia algida* and *Empetrum.* Here on the edge we also found some species

of lichens which we looked for in vain further back on the plateau: *Solorina crocea*, *Peltigera erumpens*, *P. lepidophora*, *Cetraria nivalis*, *C. crispa*, *Cladonia coccifera*, *C. chlorophaea* a. o.

On the steep talus slope shortly below the plateau the following species were found at an altitude of 1000 m:

Cystopteris fragilis
Saxifraga groenlandica
Saxifraga nivalis
Saxifraga v. *tenuis*
Saxifraga rivularis
Potentilla emarginata
Silene acaulis
Salix glauca (×)
Cassiope tetragona
Antennaria alpina
Luzula confusa
Luzula spicata
Carex nardina v.
Hierochloe alpina
Poa glauca
Poa rigens

At an altitude of 900 m the following additional species were found:

Woodsia ilvensis
Minuartia rubella
Campanula rotundifolia
Campanula uniflora
Carex Lachenalii

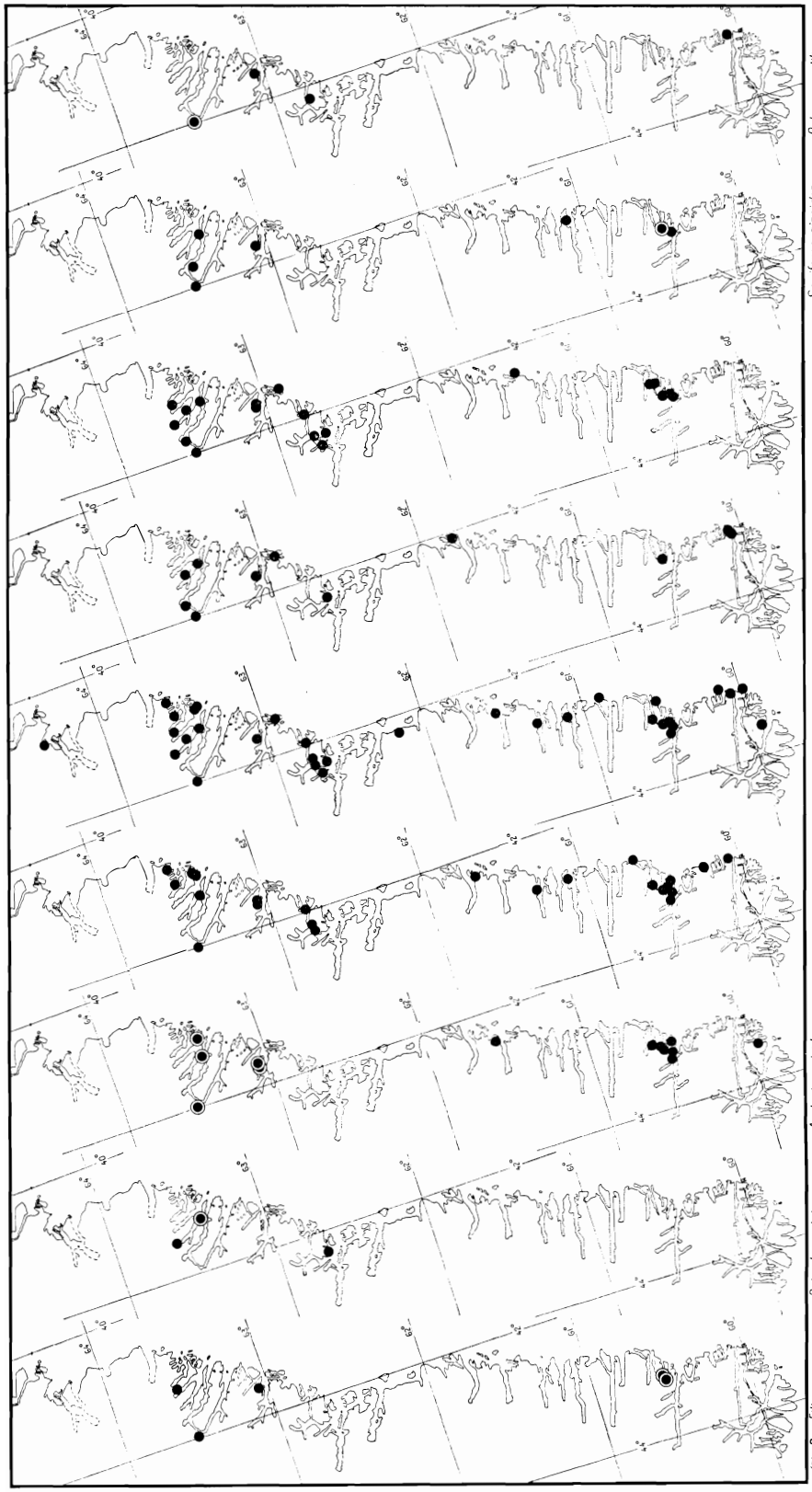
Down at an altitude of 500 m there was in suitable places found a flora and vegetation which in no important characters differed from corresponding types of vegetation in the low land.

List of Distribution III
Kangerdlugsuak.
(Mikisfjord—N. Aputitek).

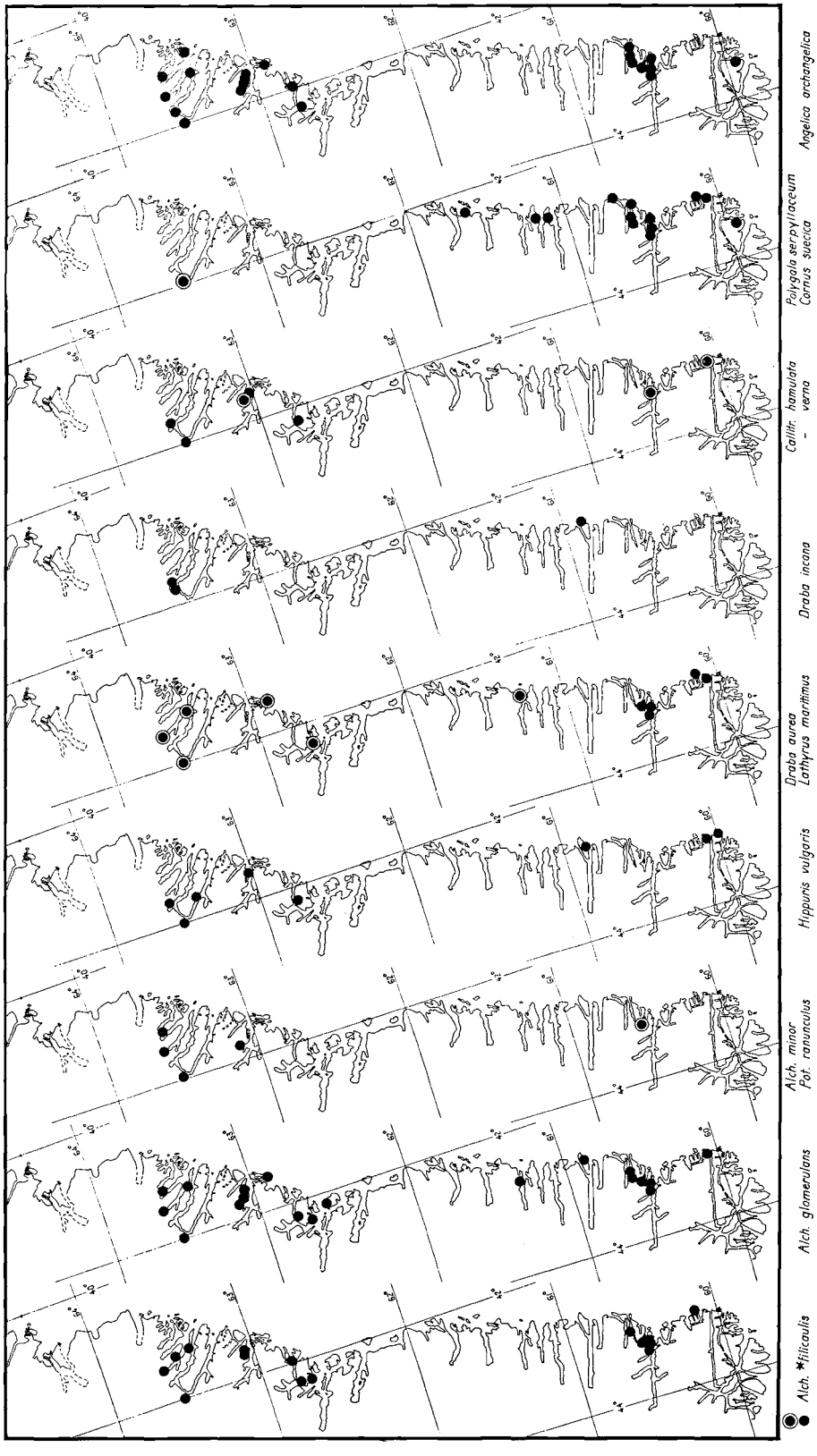
		1. Mikisfjord	Kangerdlugsuak									11. N. Aputitek
			2. Skærgaards Halvø	3. Skardet	4. Spekkpynten	5. Elvefaret	6. Brandal	7. Storfjord Radio	8. Brandalfjell	9. Polarisbreen	10. Amdrupneset	
3	Lycopodium Selago			×				×	×		×	
12	Cystopteris fragilis						×	×	×		×	
20	Woodsia ilvensis							×	×		×	
24	Ranunculus glacialis	×	×	×	×		×	×		×	×	×
26	— pygmaeus		×	×			×	×		×	×	×
29	Sedum annuum										×	
30	— roseum		×			×	×	×		×	×	
32	Saxifraga Aizoon						×	×				
33	— cernua	×					×	×		×		
34	— groenlandica		×	×	×		×	×	×	×	×	×
35	— nivalis	×		×			×	×	×	×	×	
36	— v. tenuis			×			×	×	×		×	
37	— oppositifolia		×	×	×	×	×	×	×	×	×	×
38	— rivularis	×		×			×	×	×	×	×	×
44	Potentilla alpestris							×		×		
46	— emarginata								×			
47	— nivea							×				
52	Sibbaldia procumbens	×	×	×				×		×	×	×
55	Chamaenerium latifolium		×	×		×	×	×		×	×	
60	Papaver radicatum								×			
61	Arabis alpina	×						×			×	
63	Cardamine bellidifolia			×							×	×
67	Draba crassifolia							×				
69	— fladnizensis?											×
70	— nivalis						×	×				
71	— rupestris							×		×	×	
73	Callitriche verna f.							×				
79	Cerastium alpinum		×	×		×	×	×	×	×	×	
80	— lapponicum	×	×	×			×	×		×	×	×
82	Minuartia biflora						×	×		×	×	×
84	— rubella							×	×			
85	Sagina intermedia				×		×	×		×		×
86	— Linnaei		×									
88	Silene acaulis		×	×	×	×	×	×	×	×	×	
93	Viscaria alpina		×					×		×	×	
95	Koenigia islandica						×					
96	Oxyria digyna	×	×	×	×	×	×	×	×	×	×	×
98	Polygonum viviparum	×	×		×	×	×	×			×	×
103	Salix arctica × arctophila × glauca		×	×	×	×	×	×	×	×	×	×
104	— arctophila × glauca	×	×	×								
105	— glauca						×					
106	— herbacea	×	×	×		×	×	×	×	×	×	×
109	Bryanthus coeruleus			×								
110	Cassiope hypnoides			×			×	×		×	×	×
111	— tetragona			×		×	×	×	×	×	×	
113	Rhododendron lapponicum											
114	Vaccinium v. microphyllum	×	×	×	×	×	×	×	×	×	×	×
115	Empetrum hermaphroditum	×	×	×	×	×	×	×	×	×	×	×

List of Distribution III (continued).

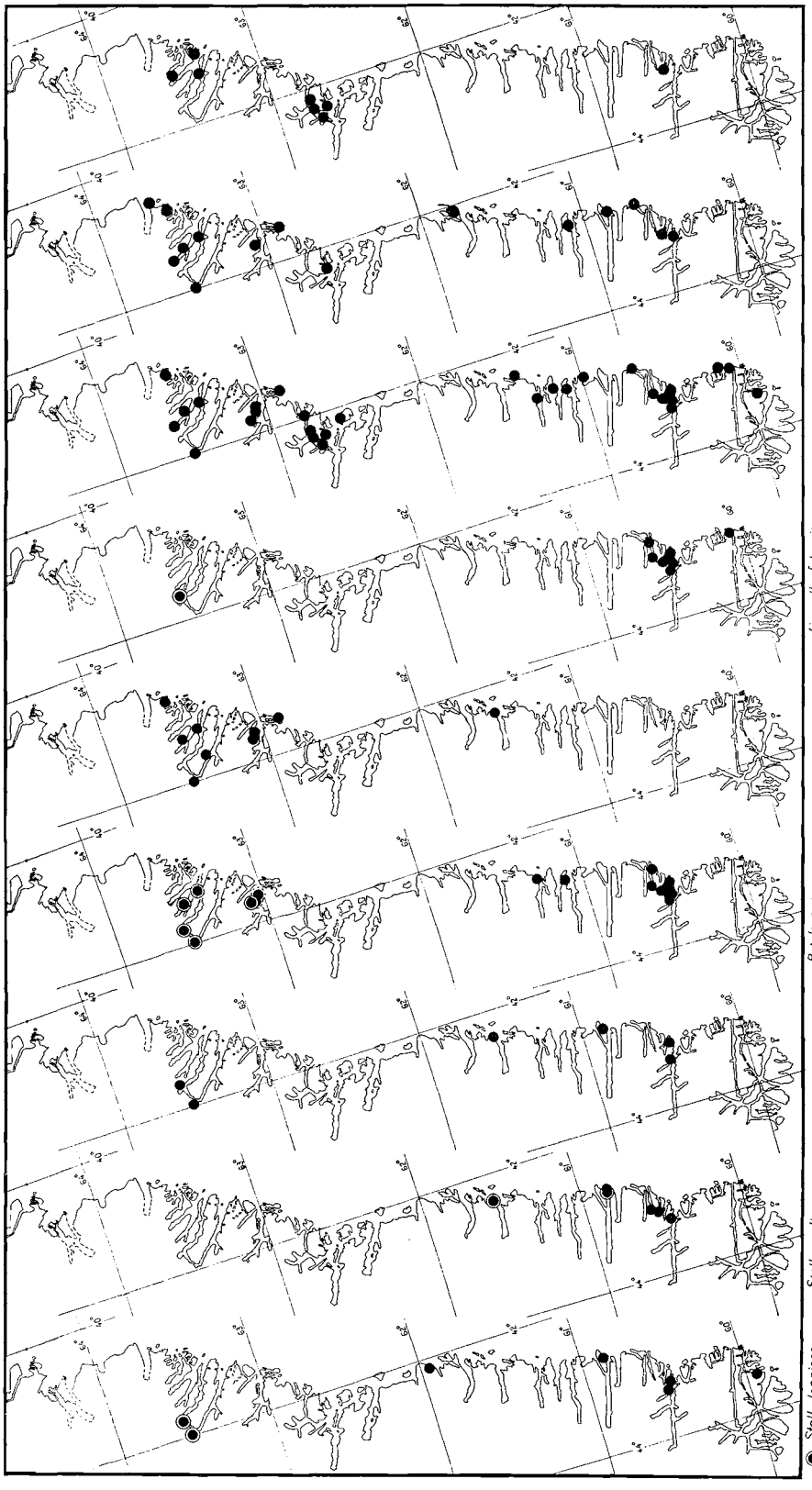
		1. Mikisfjord	Kangerdlugsuak										11. N. Aputitek
			2. Skærgaards Halvø	3. Skardet	4. Spekkpynten	5. Elvefaret	6. Brandal	7. Storfjord Radio	8. Brandalfjell	9. Polarisbreen	10. Amdrupneset	
116	Diapensia lapponica			×		×	×	×				
117	Bartschia alpina		×				×	×		×		
118	Euphrasia latifolia							×		×		
120	Pedicularis flammea						×	×		×		
121	— hirsuta		×				×	×		×	×	
123	Veronica alpina										×	
124	— fruticans										×	
133	Campanula rotundifolia					×	×	×	×	×	×	
134	— uniflora							×				
135	Antennaria alpina		×	×		×	×	×	×	×	×	
137	Arnica alpina						×	×				
141	Erigeron unalaschkensis		×				×	×			×	
142	— uniflorus										×	
144	Gnaphalium supinum							×		×	×	
145	Hieracium alpinum		×				×			×	×	
156	Taraxacum croceum		×							×	×	
161	Tofieldia coccinea							×				
162	— palustris						×					
164	Juncus biglumis						×					
167	— trifidus			×			×	×			×	
169	Luzula confusa		×	×		×	×	×	×	×	×	×
172	— spicata	×		×	×		×	×	×	×	×	
174	Carex bicolor											×
177	— capillaris			×			×	×		×		
178	— capitata										×	
180	— glareosa	×	×									
182	— incurva						×			×		
183	— Lachenalii	×	×	×				×	×	×	×	×
185	— microglochin							×				
186	— misandra							×				
187	— nardina v.			×		×	×	×	×	×	×	
188	— pedata										×	
190	— rigida		×	×	×		×	×		×	×	
192	— rufina							×				
193	— rupestris				×		×	×				
194	— scirpoidea			×			×	×		×	×	
197	— supina							×				
198	Cobresia scirpina						×	×		×		
203	Agrostis borealis							×			×	
214	Festuca brevifolia						×	×		×		
215	— vivipara			×			×	×		×		
217	Hierochloe alpina						×	×	×	×		
219	Phippsia algida			×			×	×	×	×	×	×
222	Poa alpina						×	×		×	×	
224	— glauca	×	×	×			×	×	×	×	×	
226	— rigens			×			×	×	×	×	×	
229	Trisetum spicatum	×	×	×		×	×	×	×	×	×	×
Numbers of species known from each locality		18	30	38	13	19	58	71	30	51	57	23
Number of species known from Kangerdlugsuak			93									


Rubus saxatilis
Potentilla palustris
Saxifraga oizoides
cernua
Saxifraga aizoon
Sedum annuum
Junip communis
Athyrium alpestre
Asplenium viride
Dryopt spinulosa
Botr. lanceolatum
boreale
Dr. Filix mas
Selaginella

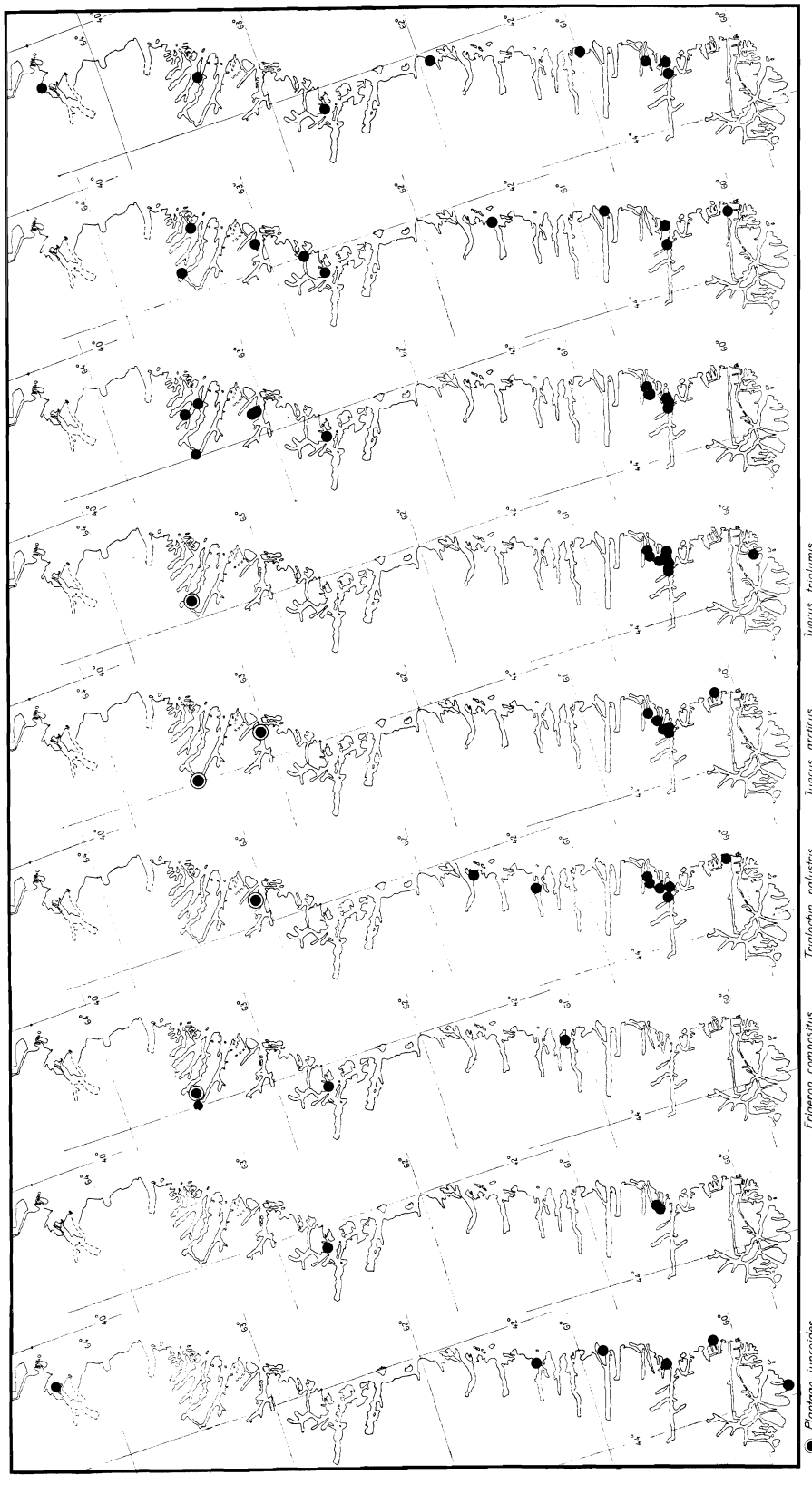
Pl. I.


Angelica archangelica
Polygala serpyllaceum
Cornus suecica
Callitr. hamulata
- verna
Draba incana
Draba aurea
Lathyrus maritimus
Hippuris vulgaris
Alch. minor
Pot. ranunculus
Alch. glomerulens
Alch. *filicaulis

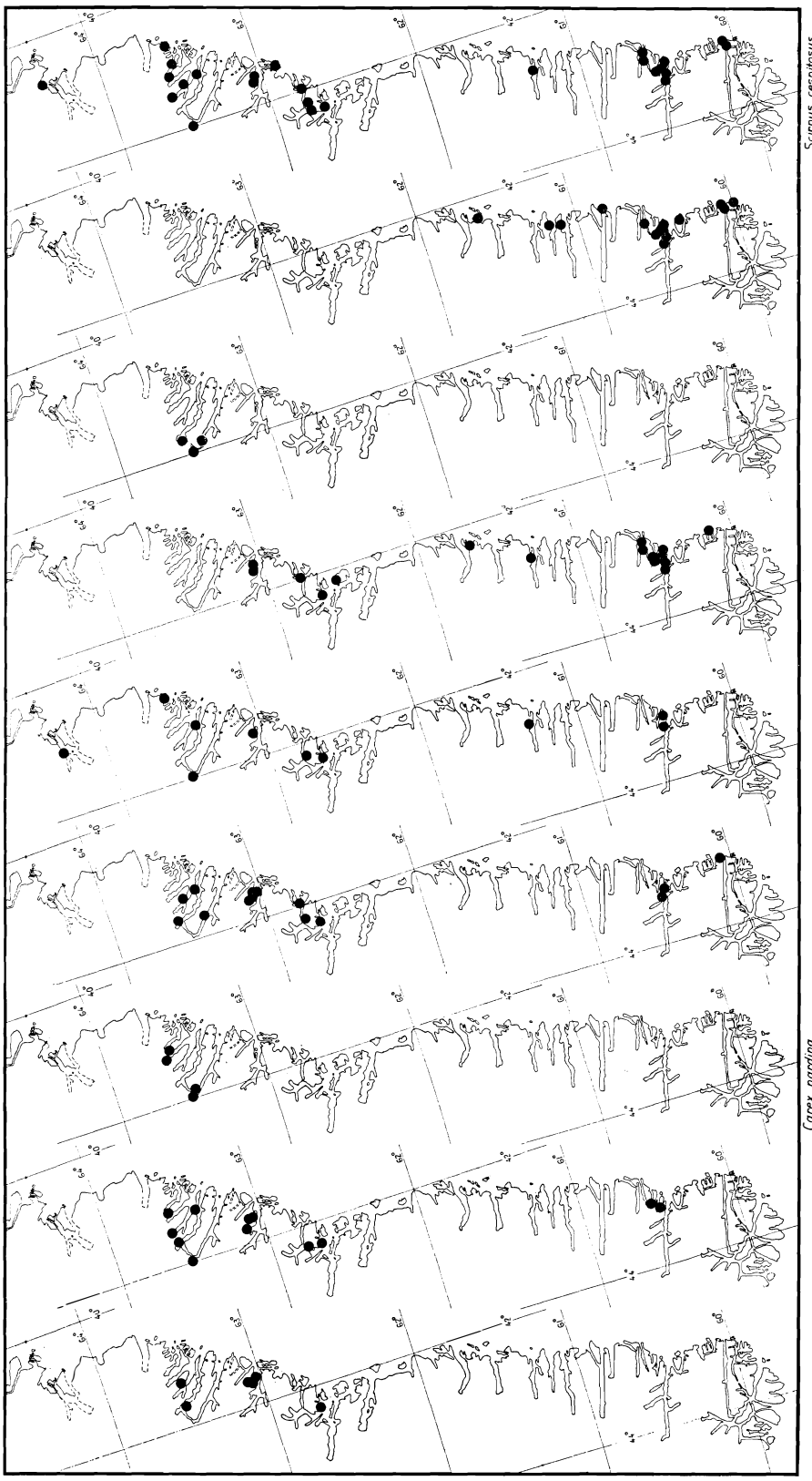
Pl. II.


Veronica Wormskioldii
Veronica fruticans
Veronica alpina
Limosella f. tenuis
Alert. groenlandicus
Rhododendron lapponicum
Betula nana
- glandulosa
Montia lamprosperma
Stell. media
Sag. procumbens
Stell. longipes
Min. groenlandica

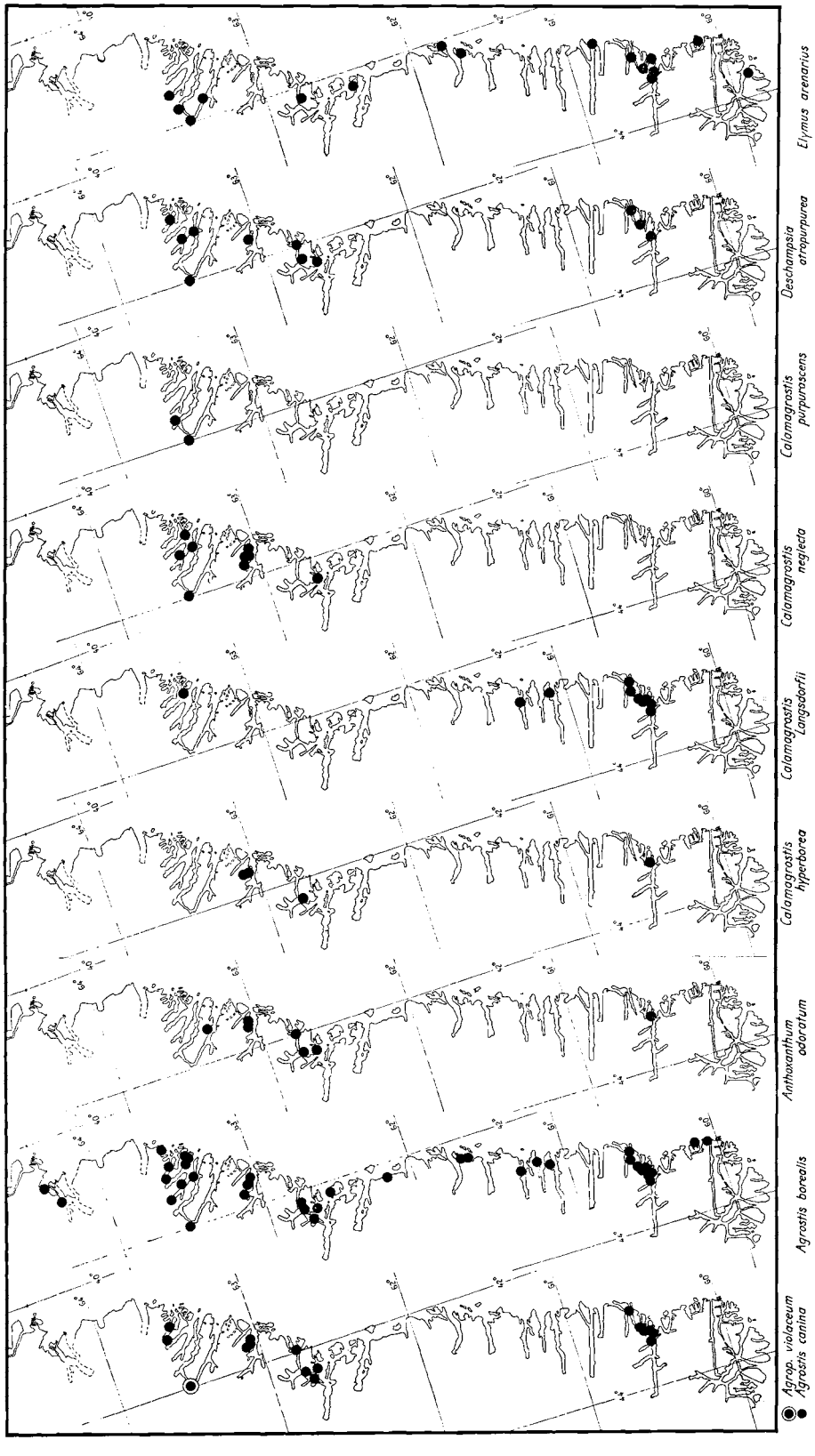
Pl. III.


Carex deflexa
Carex canescens
Carex brunnescens
Juncus triglumis
Luzula parviflora
Juncus arcticus
– squarrosus
Triglochin palustris
Juncus filiformis
Erigeron compositus
Ant. groenlandica
Galium triflorum
Plantago juncoides
var. glauca

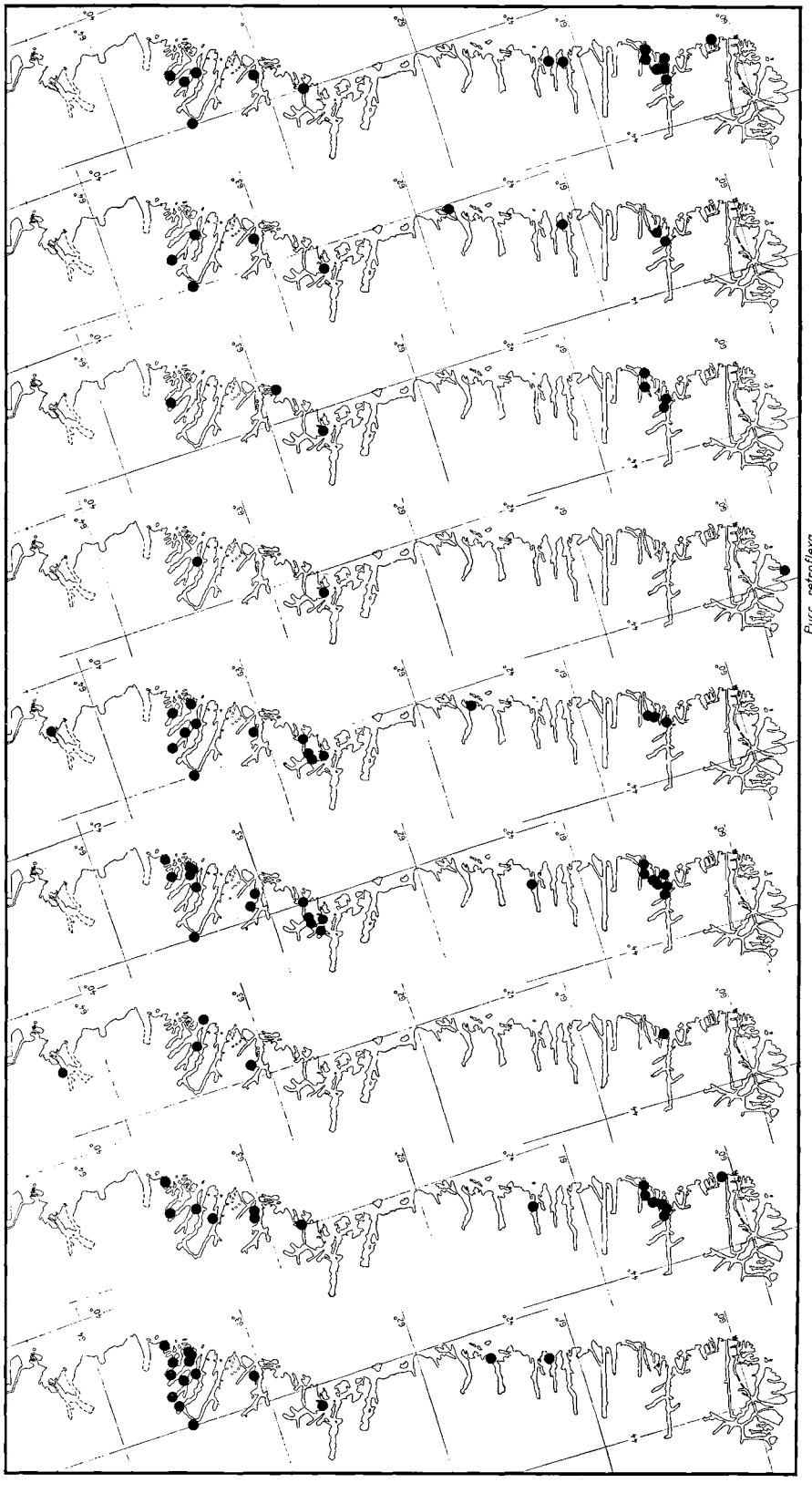
PI IV.


Scirpus cespitosus v. collosus
Eriophorum polystachyum
Cobresia scirpina
Carex stylosa
Carex rufina
Carex rotundata
Carex nardina v. Hepburnii
Carex macloviana
Carex Halleri

Pl. V.


Elymus arenarius
Deschampsia atropurpurea
Calamagrostis purpurascens
Calamagrostis neglecta
Calamagrostis Langsdorfii
Calamagrostis hyperborea
Anthoxanthum odoratum
Agrostis borealis
Agrop. violaceum
Agrostis canina

Pl. VI.


Listera cordata
Habenaria straminea
Habenaria hyperborea
Pucc. retroflexa subsp. borealis
Pucc. phrygianades
Poa rigens
Phippsia algida
Nardus stricta
Hierochloe alpina

Pl. VII.

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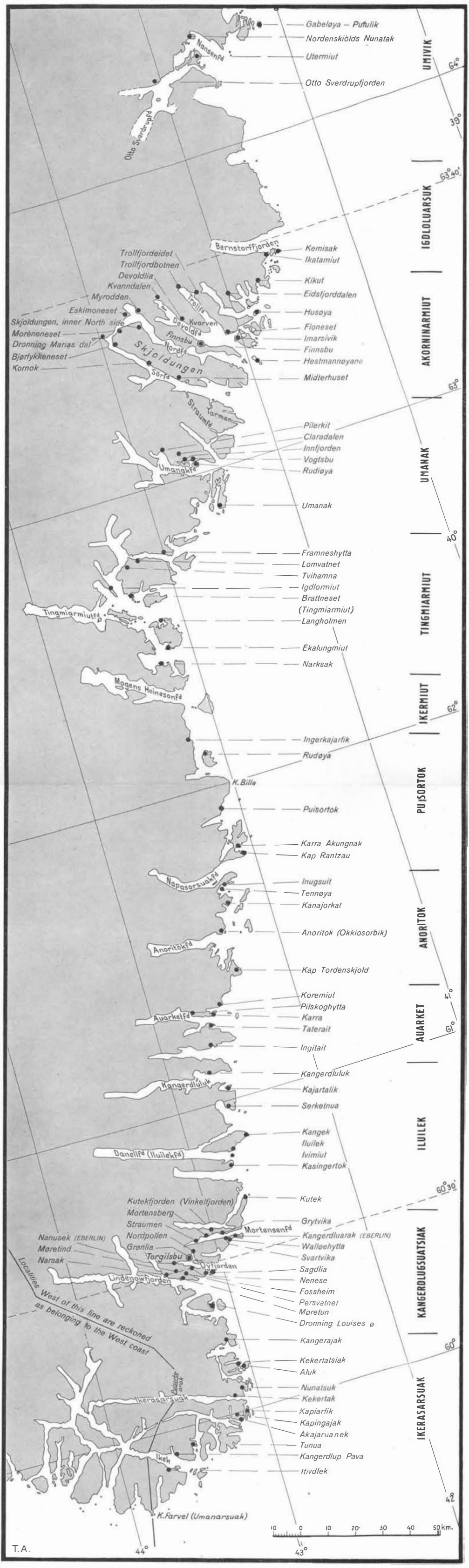
Porsild, M. P. Alien Plants and Apophytes of Greenland. (Medd. om Grønland 92. Nr. 1). København 1932.

Seidenfaden, G. The Vascular Plants of South- East Greenland 60° 04′ to 64° 30′ N. Lat. (Medd. om Grønland 106. Nr. 3). København 1933.

Index of the Genera.

(In the text the Species are arranged alphabetically under the Genus.)

Printed August 5. 1933.



Map of Botanical Localities in Southeast Greenland.

SKRIFTER
OM SVALBARD OG ISHAVET

Nr. 1. HOEL, ADOLF, *The Norwegian Svalbard Expeditions 1906—1926.* 1929. Kr. 10,00.
„ 2. RAVN, J. P. J., *On the Mollusca of the Tertiary of Spitsbergen.* 1922. Kr. 1,60.
„ 3. WERENSKIOLD, W. and IVAR OFTEDAL, *A burning Coal Seam at Mt. Pyramide, Spitsbergen.* 1922. Kr. 1,20.
„ 4. WOLLEBÆK, ALF, *The Spitsbergen Reindeer.* 1926. Kr. 10,00.
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„ 6. HOEL, ADOLF, *The Coal Deposits and Coal Mining of Svalbard (Spitsbergen and Bear Island).* 1925. Kr. 10,00.
„ 7. DAHL, KNUT, *Contributions to the Biology of the Spitsbergen Char.* 1926. Kr. 1,00.
„ 8. HOLTEDAHL, OLAF, *Notes on the Geology of Northwestern Spitsbergen.* 1926. Kr. 5,50.
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From Nr. 12 the papers will not be collected into volumes, but only numbered consecutively.

Nr. 12. STENSIÖ, ERIK A:SON, *The Downtonian and Devonian Vertebrates of Spitsbergen.* Part I. *Cephalaspidae.* A. Text, and B. Plates. 1927. Kr. 60,00.
„ 13. LIND, J., *The Micromycetes of Svalbard.* 1928. Kr. 6,00.
„ 14. *A paper on the topographical survey of Bear Island.* (In preparation.)
„ 15. HORN, GUNNAR and ANDERS K. ORVIN, *Geology of Bear Island.* 1928. Kr. 15,00.
„ 16. JELSTRUP, HANS S., *Déterminations astronomiques.* 1928. Kr. 2,00.
„ 17. HORN, GUNNAR, *Beiträge zur Kenntnis der Kohle von Svalbard (Spitzbergen und der Bäreninsel).* 1928. Kr. 5,50.
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„ 19. FREBOLD, HANS, *Das Festungsprofil auf Spitzbergen. Jura und Kreide.* II. Die Stratigraphie. 1928. Kr. 3,00.
„ 20. FREBOLD, HANS, *Oberer Lias und unteres Callovien in Spitzbergen.* 1929. Kr. 2,50.
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