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THE NATURAL HISTORY
EXPEDITION TO NORTHWEST GREENLAND 1936
Leader: Finn Salomonsen

THE FLORA OF MELVILLE BUGT

BY

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WITH 1 MAP

KØBENHAVN
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BIANCO LUNOS BOGTRYKKERI A/S
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1. Introduction.

Unquestionably the regions forming the itinerary of the expedition known as "The Natural History Expedition to Northwest Greenland" in 1936 are among those that have been least explored on the extensive coast of Greenland as a whole. It was therefore most commendable that Dr. SALOMONSEN devoted part of his precious time to botany in addition to the zoological studies that formed the principal object of his expedition. Dr. SALOMONSEN's botanical collections, comprising 331 specimens, representing 87 species, were made in 16 localities along the stretch of coast from lat. 72°45′ to 77°48′ N. He also made notes of the vegetation there and a little to the south.

The herbarium material has been included in the Arctic Collection of the Botanical Museum, and, at the suggestion of the collector, I have been entrusted with the task of writing a description of the expedition's botanical results.

While engaged on these collections I became interested in taking stock of our present knowledge of the whole flora of this particular part of the coast, to be exact the flora of Melville Bugt, so much the more as it appears that Melville Bugt seems to represent the greatest hiatus as regards the range of vegetation on the whole of the long coast of Greenland. This fact, however, is only little discernible from a perusal of OSTENFELD's specification district by district of the distribution of species in Greenland (OSTENFELD 1926). Although valuable collections have been made since that specification appeared, a careful examination today will often reveal a gap in the distributions of the species, even where OSTENFELD's list gives the impression of a continuous distribution all along the coast of Northwest Greenland. Even if the study of the flora here cannot yet be said to be complete, any more than it is in many other parts of Greenland, there is no doubt that the absence of species already established is actually based on fact. One possible reason is the very small amount of land on this length of the coast, more correctly describable as a chain of islands and semi-nunataks along the margin of the ice cap.

After a brief description of the area covered by the expedition and its botanical exploration, the following pages will first enumerate the collections made, arranged according to localities, of which a few of the northernmost lie outside of the coastal area of Melville Bugt, whereas the most southerly lie south of the 73rd degree of latitude. Next, a collective survey of the flora of Melville Bugt and the principal types of vegetation of the region in so far as these can be gained from Dr. SALOMONSEN's notes, compared with the distribution of certain characteristic species.

2. Investigated Area: Melville Bugt.

In 1912 PORSILD published a survey of "Vascular Plants of West Greenland between 71° and 73° N. lat." Although PORSILD does not indicate the localities in detail for the species north of Laksefjord (72°30′ N.), I have thought it best to place the southern boundary of the present region investigated at 73° in order to avoid useless repetition of PORSILD's localities.

Some of Dr. SALOMONSEN's collections are from the Thule District. Nevertheless, I have laid the border of the region to be discussed here south of the deep fjords of that district. My reasons are that the natural conditions there become so markedly changed as a consequence of the configuration of the coastline, and that botanical studies are at present being made in the Thule District, so that it is to be anticipated that a separate publication will appear sooner or later on the flora and vegetation of these parts.

Accordingly, the stretch of the west coast of Greenland whose flora is the subject of this work comprises roughly Melville Bugt, which on the north is naturally limited by Kap York peninsula, from where the coastline as a whole bends northwards. There is no similar natural limit on the south.

The coast of Melville Bugt proper from Wilcox Head (lat. 74°30′ N.) on the south was first mapped definitely by LAUGE KOCH in 1916 (KOCH 1922). On this long stretch the ice cap falls direct into the sea for the most part, the ice margin often being broken only by small semi-nunataks. Otherwise there are only small rocky islands and skerries, scattered at varying distances from the edge of the ice. The most southerly part of this region, from 73° to 74°30′, was mapped already by the Ryder expedition in 1886—87 (RYDER 1889). Here the skerries are wider. The land consists of a large number of islands and peninsulas, the latter separated by glaciers of a more local character than those more to the north. It is not until we get south of the colony of

Upernavik that between the ice cap and the sea we find any large stretch of ice-free land, in whose sheltered fjords the vegetation has better conditions than to the north on the more exposed islands and peninsulas. The most northerly of the inland fjords proper is Laksefjord, circa lat. 72°30′ N., where the most northerly willow scrub on the west coast of Greenland grows. The luxuriant vegetation there was examined by Porsild (1912). Quite a number of species have their northern limit there.

North of Melville Bugt in the Thule District there are other fjords that cut deep into the ice-free mainland.

It will be seen that Melville Bugt, within the limits shown in map I, and whose flora is dealt with in the following, in contrast to the coastal regions to the south and north is characterized by the small extent of the ice-free areas of land as a whole and by the absence of actual fjord localities. For botanical purposes it may thus be called an open skerry along the margin of the ice cap. The climate is harsh and more insular than in the fjord regions.—The isolated Carey Öer in the northern part of Baffin Bay are naturally included in this "Melville Bugt region". Plant-climatically this island group may undoubtedly be associated with the islands in Melville Bugt itself.

Thus as a consequence of its attenuated land areas Melville Bugt plant-climatically is a unity in contrast to the fjord regions to the south and north of it.

Besides the climate, there is another factor of equal importance in determining the "monotonous" floristic character of the region, viz. its geological structure. The islands and coastland of Melville Bugt consist almost exclusively of non-calcareous Archean formations, mainly gneiss, and, more locally, post-Archean eruptive rocks, granite, cyenite and other acid rocks (Koch 1920). To the north and south, however, there are also sedimentary rocks that often are rich in chalk. At Cape York itself and the stretch of coast to the west (Crimson Cliffs) there are sediments (Rasmussen 1921, p. 530). On the small island of Ûmánap timilia there is basalt (Ryder 1889, p. 248), and probably on Tasiussaq island too, judging from the list of its flora. On the more calcareous sedimentary rocks and on the basalt we usually find a number of species which, other things being equal, are lacking on the crystalline.

It will be seen that both climate and soil conditions do their share in giving the Melville Bugt flora its own, monotonous character; it must be called very poor, even compared with Greenland conditions. As will be observed from the list below, quite a number of plants occur both south and north of Melville Bugt but are lacking on the more than 500 kilometres of coast from Upernavik to Kap York.

It is not impossible, however, that the poverty of the flora may be due partly to historical causes, as the skerries of Melville Bugt have been free of ice for only a relatively short time (TARR 1897). Melville Bugt is thus characterized not merely by the narrowest but also the youngest of the coastal stretches around the Greenland ice shield.

3. The Botanical Exploration of Melville Bugt.

SIMMONS (1909) has dealt exhaustively with the botanical exploration of Northwest Greenland, i. e. the Thule District and the regions north of there. For the northernmost part of Melville Bugt I shall therefore refer to that work and mention briefly the collections from localities (Kap York and district) that are common to both SIMMONS' and the present investigation.

As regards the regions north of Kap York very considerable botanical collections have been brought to Denmark since SIMMONS' time, e. g. PETER FREUCHEN's, LAUGE KOCH's and J. NOE NYGAARD's, published by OSTENFELD (1915, 1923 b, 1923 c, 1925), and particularly TH. WULFF's collections from the north coast of Greenland during the Second Thule Expedition 1916—17, which were also published by OSTENFELD (1923 a, 1923 d).

The first collections from Melville Bugt as defined above seem to have been made by the Ross expedition in 1818, published by R. BROWN (1819), but the records of the voyages make it possible to fix the growth localities of only one or two plants. This has reference to Bushnan Ö in the most northerly part of Melville Bugt (cf. SIMMONS 1909). In that same locality Dr. SUTHERLAND collected plants in 1850 on the British Franklin Search Expedition under Captain PENNY. They were classified by W. J. HOOKER (SUTHERLAND 1852). During his expeditions in 1850—55 in search of John Franklin Dr. KANE (KANE 1854, 1856) made collections of plants in West Greenland. These rich collections were published by DURAND (1856), but the latter's list mentions no locality within our present region. From the First Grinnel Expedition (KANE 1854), however, we have sporadic notes of plants "between Cape York and Cape Dudley Digges", though as regards the identification of the species they seem to be of but little value in point of accuracy (cf. NATHORST 1886). Another Franklin expedition, that of Sir E. BELCHER in 1852—54, brought plants from Greenland collected by Dr. LYALL and published by J. D. HOOKER (1857). The greater part however are from Disko and Whale Fish Islands south of Upernavik, though two were taken at Kap York.

The next publication of plants in the Melville Bugt region is from its more southerly part and came from the pen of JAMES TAYLOR, who as ship's doctor took part in five whaling expeditions to Davis Strait and Baffin Bay, 1856—61. TAYLOR collected plants on both the American and the Greenland side. His list of plants (1862) refers—as far as Greenland is concerned—to localities from Disko to Wilcox Head (74°30′ N.) and includes a very considerable number of species. In some cases it would seem that there has been confusion with plants from the American side of Davis Strait, for the list comprises certain species not since found in Greenland (cf. SIMMONS 1904). On the whole TAYLOR's localities seem often to be rather collectively construed.

At about the same time, 1860—61, HAYES started out on his expedition to Kane Basin, during which he collected plants both on the way out and home, including the island of Tasiussaq. The incorrect labelling of HAYES' plants was exposed by SIMMONS (1909). For this reason the lists from Tasiussaq, published by DURAND (DURAND, JAMES & ASHMEAD 1863) are useless. Apparently the plants in question might just as well have come from Disko.

In 1875—76 HART, as a member of the Nares expedition (NARES 1878) made botanical collections in both southwest and northwest Greenland (HART 1880), but only little came from the Melville Bugt region, as the only localities visited there were Kap York and Carey Öer.

The next to make a contribution to the flora of Melville Bugt—a very considerable contribution — was NATHORST, who on a brief summer excursion in 1883 with NORDENSKJÖLD's ship "Sofia" went to Ivssugigsoq (Parker Snow Bay) west of Kap York and Tasiussaq island north of Upernivik (NATHORST 1884, 1885).

The principal collections from the south part of Melville Bugt—indeed the only more comprehensive ones until a few years ago—were made by the various members of the Ryder expedition (BLOCH, USSING, RYDER) while mapping the stretch from lat. 72° to 74°35′ N. in 1886—87 (RYDER 1889). From this we have "Sjældnere Arter eller Afarter, fundne paa nye Lokaliteter", published by JOH. LANGE (1889). Somewhat more complete indications of the localities are contained in ROSENVINGE's "2. Tillæg til Grønlands Fanerogamer og Karsporeplanter" (1892). However, no complete list comprising the more common species, including those from the Ryder expedition, was ever published. Isolated references to common plant species, especially the moorland shrubs, are to be found here and there in RYDER's account of his journey (1889).

In 1891 the young Swede BJÖRLING made a boat expedition to the same regions[1]) and collected plants at several localities from Tasiussaq to Holms Ö. BJÖRLING's collections are now in the Riksmuseet in Stockholm and apparently have never been published[2]).

In the 'nineties collections were made in the course of several of PEARY's expeditions. For example, in 1891—92 by Dr. BURK and W. E. MEEHAN. The latter (1894) states that plants were collected e. g. on Duck Islands and Kap York. Unfortunately, these localities are not mentioned in his plant list, some of whose determinations, by the way, were corrected by HOLM (1896). We are not told which plants were taken in these localities. During the Peary expedition of 1894 (BRYANT 1895) Dr. WETHERILL collected plants at Kap York and in fact also in the more northerly parts of Greenland's coast as well as on Carey Öer, in the course of the search for the Björling expedition. WETHERILL's plants were identified by M. L. FERNALD et al. on the botanical staff of Harvard University (WETHERILL 1895). WETHERILL's collection from Kap York includes many very interesting finds whose credibility has been doubted. More recent finds in the Thule District, however, in some cases have argued strongly in favour of WETHERILL's statements and it is probable that future research will give him full satisfaction. The geological "Cornell Party", likewise in association with PEARY's polar journeys, collected plants on the Nûgssuaq peninsula and one or two nunataks lying inside it (1896). The collections were published by ROWLEE & WIEGAND (1897). Finally, on Hoyt Island north of Nûgssuaq the geologist ROBERT STEIN made collections in 1897. The list of plants was published by HOLM (1900). Later (1899—1901), STEIN also collected at Kap York, Inglefield Gulf and Foulke Fjord (see SIMMONS 1909).

The first plants to come from the islands in the central part of Melville Bugt were collected by MYLIUS ERICHSEN in 1903 on the so-called Danish Literary Greenland Expedition, i. e. from J. A. D. Jensens Ö and Gardes Öer. These, however, were confined to two species in all, published by OSTENFELD (1905). Likewise from the central part, i. e. from Thom Ö, lying some distance away from the coast, the

[1]) The most important geographical result of BJÖRLING's journey was the correct placing of Wilcox Head and Devil's Thumb, known from the Scottish whaling expeditions, which RYDER had erroneously localised to Nûgssuaq and the mainland north of there, about $^1/_2°$ more south. The American expedition to Nûgssuaq in 1896 was aware of RYDER's mistake but nevertheless used RYDER's map and place-names (TARR 1897).

[2]) Unfortunately I have been unable to make any close acquaintance with BJÖRLING's collection. Apart from certain localities for *Draba*, published by EKMAN, and *Salix*, published by FLODERUS, I have therefore had to relinquish the idea of taking regard to these collections in the present survey.

Arctic Collection in the Copenhagen Botanical Museum contains a relatively rich collection made by EMMY LANGBERG and KNUD RASMUSSEN, who were on the island while on a journey in the summer of 1918. So far it has not been published. Another unpublished collection is one from Tasiussaq island, made by the Swedish botanist THORILD WULFF in 1916 when on the way to Thule, where he joined the Second Thule Expedition north about Greenland.

In 1928 G. SEIDENFADEN as a member of the Danish hydrographical "Godthaab" expedition to the waters of Northwest Greenland was ashore at certain places in Northwest Greenland and Baffin Land. The only locality of his that comes within our region is Carey Öer (Björlings Ö), from which he has published a plant list (1932).

A large collection of plants in the regions north of Upernavik in recent years was made by the Danish-American FRITZ JOHANSEN, who in 1931 travelled from Upernavik northwards as far as Devil's Thumb. JOHANSEN's plants, collected on twelve different islands and peninsulas, have not previously been published but were gone through and identified by M. P. PORSILD. I wish to thank Mr. FRITZ JOHANSEN for permission to make use of the collection, which has been presented to the Arctic Herbarium of the University Botanical Museum for publication; also for his kindness with regard to information as to the situation of the localities. Some of the plants were, however, collected south of the 73rd parallel (at Upernavik colony and the adjacent small islands). These will not be published here.

The former Danish collections, all in the Copenhagen Botanical Museum and referred to above, as well as the literature on the foreign collections, together with Dr. SALOMONSEN's collection form the basis of the following survey of the flora of Melville Bugt.

4. List of Plants Collected by Dr. SALOMONSEN in 1936, Grouped by Locality.

Itugdlalik (circa lat. 72°45′ N.).

Carex rupestris
Carex subspathacea
Alopecurus alpinus
Phippsia algida
Poa pratensis
Potamogeton groenlandicus
Stellaria humifusa
Cochlearia groenlandica
Saxifraga rivularis

Kingigtuarssuk (lat. 73°15′ N.).

Alopecurus alpinus
**Poa arctica*
Luzula confusa
**Cerastium alpinum*

Stellaria humifusa
**Cochlearia groenlandica*
**Draba nivalis*
Polygonum viviparum
**Potentilla emarginata*
**Salix herbacea*
**Salix glauca*
Saxifraga foliolosa

* Species from puffin breeding-grounds.

Tasiussaq (lat. 73°22′ N.).

Lycopodium Selago
Carex nardina
Carex rigida
Carex scirpoidea
Eriophorum polystachyum
Eriophorum Scheuchzeri
Alopecurus alpinus
Trisetum spicatum
Luzula confusa
Silene acaulis
Draba nivalis
Chamaenerium latifolium
Papaver radicatum
Polygonum viviparum
Dryas integrifolia
Saxifraga foliolosa
Saxifraga nivalis tenuis
Saxifraga rivularis
Saxifraga tricuspidata
Campanula uniflora
Antennaria labradorica
Empetrum hermaphroditum
Cassiope hypnoides
Cassiope tetragona
Loiseleuria procumbens
Vaccinium uliginosum
Pedicularis hirsuta

Kípako (lat. 73°41′ N.).

Phippsia algida

Kangerdlugssuaq (lat. 73°40′ N.).

Lycopodium Selago
Carex nardina
Carex rigida
Festuca brachyphylla
Hierochloe alpina
Poa arctica
Juncus castaneus
Luzula confusa
Tofieldia palustris
Betula nana
Silene acaulis
Polygonum viviparum
Salix glauca
Antennaria labradorica
Diapensia lapponica
Empetrum hermaphroditum
Cassiope hypnoides
Cassiope tetragona
Loiseleuria procumbens
Phyllodoce coerulea
Rhododendron lapponicum
Vaccinium uliginosum
Pyrola grandiflora
Pedicularis hirsuta

Kitsigsorssuit (lat. 74°02′ N.).

Deschampsia brevifolia pumila
Luzula confusa
Cerastium alpinum
Silene acaulis

Cochlearia groenlandica
Draba lactea
Papaver radicatum
Oxyria digyna
Salix glauca
Salix herbacea
Saxifraga oppositifolia
Saxifraga rivularis
Cassiope tetragona

Kraulshavn (lat. 74°08′ N.).

Carex rigida
Eriophorum Scheuchzeri
Phippsia algida
Poa pratensis
Luzula confusa
Silene acaulis
Saxifraga cernua
Saxifraga rivularis
Cassiope tetragona
Vaccinium uliginosum

Upernaviarssuk (lat. 74°15′ N.).

Carex glareosa
Alopecurus alpinus
Hierochloe alpina
Phippsia algida
Luzula confusa
Cerastium alpinum
Melandryum triflorum
Stellaria humifusa
Cochlearia groenlandica
Polygonum viviparum
Potentilla emarginata
Salix herbacea
Saxifraga cernua
Saxifraga rivularis

Kangerdluarssuk (lat. 74°20′ N.).

Equisetum arvense
Lycopodium Selago
Carex rigida
Eriophorum Scheuchzeri
Alopecurus alpinus
Hierochloe alpina
Poa arctica
Luzula confusa
Betula nana
Silene acaulis
Stellaria humifusa
Chamaenerium latifolium
Papaver radicatum
Polygonum viviparum
Potentilla emarginata
Salix glauca
Saxifraga cernua
Saxifraga nivalis
Antennaria labradorica
Diapensia lapponica
Empetrum hermaphroditum
Cassiope tetragona
Vaccinium uliginosum
Pedicularis hirsuta

Devils Thumb (lat. 74°36′ N.).

Lycopodium Selago
Carex rigida
Eriophorum Scheuchzeri
Alopecurus alpinus
Festuca brachyphylla
Hierochloe alpina

Poa arctica
Luzula confusa
Cerastium alpinum
Melandryum triflorum
Silene acaulis
Cardamine bellidifolia
Draba daurica
Draba nivalis
Papaver radicatum
Polygonum viviparum
Dryas integrifolia
Potentilla emarginata
Salix glauca
Saxifraga foliolosa
Saxifraga rivularis
Saxifraga tricuspidata
Campanula rotundifolia
Antennaria labradorica
Arnica alpina
Empetrum hermaphroditum
Cassiope tetragona
Vaccinium uliginosum
Pyrola grandiflora
Pedicularis hirsuta

Björlings Ö (lat. 74°39′ N.).

Carex glareosa
Carex rigida
Alopecurus alpinus
Hierochloe alpina
Phippsia algida
Poa pratensis
Luzula nivalis
Cerastium alpinum
Melandryum triflorum
Potentilla emarginata
Salix arctica
Salix herbacea
Saxifraga rivularis
Empetrum hermaphroditum

Amdrups Ö (lat. 74°43′ N.).

Lycopodium Selago
Hierochloe alpina
Poa pratensis
Luzula confusa
Cerastium alpinum
Silene acaulis
Chamaenerium latifolium
Polygonum viviparum
Dryas integrifolia
Potentilla emarginata
Salix arctica
Saxifraga tricuspidata
Empetrum hermaphroditum
Cassiope tetragona
Vaccinium uliginosum

Savigsivik (lat. 76°00′ N.).

Alopecurus alpinus
Hierochloe alpina
Poa arctica
Luzula confusa
Cerastium alpinum
Cardamine bellidifolia
Oxyria digyna
Potentilla emarginata
Salix chloroclados
Salix herbacea
Saxifraga rivularis
Cassiope tetragona
Vaccinium uliginosum

Breaks, Carey Öer (lat. 76°45′ N.).

Alopecurus alpinus
Phippsia algida
Puccinellia phryganodes
Luzula nivalis
Cerastium alpinum
Melandryum triflorum
Stellaria longipes
Cochlearia groenlandica
Papaver radicatum
Oxyria digyna
Ranunculus pygmaeus
Ranunculus Sabinei
Potentilla emarginata
Salix arctica
Saxifraga foliolosa
Saxifraga rivularis

Thule Station (lat. 76°33′ N.).

Lycopodium Selago
Carex atrofusca
Carex misandra
Carex nardina
Carex rigida
Carex stans
Eriophorum polystachyum
Alopecurus alpinus
Arctagrostis latifolia
Deschampsia brevifolia arctica
Dupontia Fisheri
Hierochloe alpina
Phippsia algida
Pleuropogon Sabinei
Poa arctica
Poa glauca
Puccinellia angustata
Luzula confusa
Luzula nivalis
Tofieldia coccinea
Cerastium alpinum
Melandryum affine
Melandryum apetalum
Silene acaulis
Stellaria humifusa
Stellaria longipes
Cochlearia groenlandica
Draba lactea
Draba micropetala
Chamaenerium latifolium
Papaver radicatum
Oxyria digyna
Polygonum viviparum
Ranunculus hyperboreus
Ranunculus sulphureus
Dryas integrifolia
Potentilla emarginata
Potentilla Vahliana
Salix arctica
Saxifraga caespitosa
Saxifraga cernua
Saxifraga foliolosa
Saxifraga nivalis
Saxifraga oppositifolia
Saxifraga rivularis
Saxifraga tricuspidata
Cassiope tetragona
Vaccinium uliginosum
Armeria labradorica
Pyrola grandiflora
Pedicularis hirsuta

Siorapaluk (lat. 77°48′ N.).

Equisetum arvense
Carex misandra
Carex rigida
Eriophorum polystachyum

Eriophorum Scheuchzeri
**Alopecurus alpinus*
Hierochloe alpina
**Poa arctica*
**Poa glauca*
Puccinellia phryganodes
Luzula confusa
**Cerastium alpinum*
Melandryum triflorum
Silene acaulis
Stellaria humifusa
**Stellaria longipes*
Draba lactea
Draba nivalis
Chamaenerium latifolium
Papaver radicatum
Oxyria digyna
Polygonum viviparum
Ranunculus hyperboreus
Ranunculus pygmaeus
Dryas integrifolia
Potentilla emarginata
Potentilla nivea
Potentilla Vahliana
Salix chloroclados
Salix herbacea
Saxifraga cernua
Saxifraga foliolosa
Saxifraga nivalis tenuis
Saxifraga oppositifolia
Saxifraga tricuspidata
Arnica alpina
Taraxacum arctogenum
Empetrum hermaphroditum
Cassiope tetragona
Vaccinium uliginosum
Pyrola grandiflora
Pedicularis hirsuta

* Dominant species on little auk breeding grounds.

Special interest attaches to several of the plants found by Dr. SALOMONSEN, for they represent new north and south boundaries. In two cases they are species not previously observed in the explored or adjoining parts of Greenland. In particular the following plants are deserving of attention:

Carex subspathacea Wormskj., found on the little island of Itugdlalik off Upernavik (lat. 72°45′ N.) by a small, shallow lake. The northernmost limit hitherto in Greenland has been Svartenhuk peninsula, Manîtsorqut (lat. 71°30′ N.), where it was collected by PORSILD in 1935.

Potamogeton groenlandicus Hagstr., likewise found on Itugdlalik in the shallow lake. The previous northernmost locality was the south side of Nûgssuaq, Naujat (70°0′ N.), collected there by A. E. PORSILD in 1921. The new locality is about two parallels north of this and represents the most northerly locality of any *Potamogeton* in West Greenland.

Juncus castaneus Sm., found in Kangerdlugssuaq, lat. 73°40′ N., previously unknown north of 72°20′, Amitsuarssuk, where PORSILD found it.

Draba daurica DC. from Devil's Thumb (lat. 74°36′ N.). Previous northernmost find-spot Kangerdluarssuk (lat. 74°20′ N.), where it was again collected by SALOMONSEN.

Campanula rotundifolia L., likewise found at Devil's Thumb (lat. 74°36′ N.). Within our region it had been found only by the American Cornell Party (1896) at Nûgssuaq, circa 74°15′ N.

Deschampsia brevifolia R. Br. *var. pumila* Ledeb. (*D. pumila* (Ledeb.) Ostenf.), collected on Kitsigsorssuit (Duck Islands). The species has not previously been observed on the west coast of Greenland between the Disko-Svartenhuk District, northern limit lat. 72°23′ N., and the Thule District, southerly limit lat. 76°07′ N. (Ivssugigsoq). Thus the new locality lies about two parallels from each of those previously known.

Dupontia Fisheri R. Br., collected at the Thule Station. Actually it is curious that this species has not previously been collected there, for several collectors have worked in the locality. Otherwise in Greenland the species has been observed in the Disko region on the west coast and Clavering Ö on the east coast. It is also stated to have been collected by Bessels (Hall expedition 1871—72) in Polaris bay on the north coast of Greenland, lat. 81°35′ N. However, this locality has been questioned and struck from the plant lists of more recent times (Ostenfeld 1925, 1926). Salomonsen's find has now proved that the plant really has a Northwest-Greenland area.

Ranunculus Sabinei R. Br., found on Breaks, Carey Öer (lat. 76°45′ N.). In Greenland this species has hitherto been known only in a few localities in the north and northwest, most southerly from Northumberland and Hakluyt islands (lat. 77°22′ and 77°24′ N.) in Inglefield Gulf. The new locality thus designates the southern limit of the species in Greenland.

5. List of Localities from which Plants have been Collected or Recorded.

The map (map I) is marked with the localities where plants were collected, or from where reports already exist. It is clear from the distribution of the localities that the exploration of the mainland itself and of the islands nearest it in the south part of the region leaves much to be desired. On the other hand, the islands out to the open sea have been much better studied. There the localities lie so close together that they may be said to cover the area. In the north part of the region exploration is still very defective. Localities from which collections on the whole have been made or from which there are records of plants are only few in number, and as regards some of the localities the plant lists are more or less incomplete, comprising only a casually collected, small number of species. The only stretches from which there is a com-

plete absence of botanical records is the central, inner part of Melville Bugt. The mainland available at all for vegetation there is so extremely scant that the number of species may be assumed to be small, and scarcely one will be found that does not also occur in the other parts of Melville Bugt.

Below is a list of all localities marked on the map. The following abbreviations are employed for the names of collectors or explorers:

Bj: Björling
Corn: Cornell Party
FJ: Fritz Johansen
FS: Finn Salomonsen
H: Hart
Kane: Kane
L&R: Emmy Langberg & Knud Rasmussen
Lyall: Lyall
ME: Mylius Erichsen
N: Nathorst
R: Ryder Expedition
Ross: Ross Expedition
Seidf: Seidenfaden
St: Stein
Suth: Sutherland
T: Taylor
ThW: Thorild Wulff
W: Wetherill

List of Melville Bugt Localities North of lat. 73° N. from which Plants have been Collected or Recorded.

1.	Womens Islands	ca. lat. 73° N.	T
2.	Kingigtortagdlit (Browns Isl.)	lat. 73°02′ -	R
3.	Sârdlorssuaq	- 73°10′ -	R
4.	Erqordleq	- 73°13′ -	FJ
5.	Kingigtuarssuk	- 73°15′ -	FS
6.	Ateqángitsorssuaq	- 73°15′ -	Bj
7.	Upernavik	- 73°20′ -	T
8.	Tasiussaq	- 73°22′ -	N R ThW FJ FS
8a.	Skerries at Tasiussaq	- — — -	N
9.	Uiordleq	- 73°27′ -	R
10.	Upernaviarssuk	- 73°28′ -	R
11.	Sâtoq	- 73°31′ -	FJ
12.	Ikerasârssuk	- 73°32′ -	FJ
13.	Agpalersalik (Horse Head) ...	- 73°38′ -	T
14.	Tugtoqortôq	- 73°40′ -	R
15.	Kangerdlugssuaq	- 73°40′ -	R FS
16.	Kípako	- 73°41′ -	FS
17.	Qeqertaq	- 73°42′ -	R Bj
18.	Kûk	- 73°44′ -	FJ
19.	Agpalisiorfik	- 73°48′ -	R
20.	Qutdlikorssuit	- 73°55′ -	FJ
21.	Kigtorsaq	- 73°56′ -	R

22.	Kitsigsorssuit (Duck Isl.)	lat.	74°02′ N.	T FS
23.	Ûmánap timilia	-	74°02′ -	R
24.	Nûgssuaq, SW point	-	74°06′ -	R Corn
25.	Nûgssuaq, Kraulshavn	-	74°08′ -	FJ FS
26.	Nûgssuaq, Camp 2 "midway between the open sea and the ice front"	-	74°10′ -	Corn
27.	Nûgssuaq, Camp 3 "near the ice front"	-	74°16′ -	Corn
28.	Nûgssuaq, Nunatak I at the ice front	-	74°16′ -	Corn
29.	Mt. Schurman, Nunatak about 7 miles inland from the ice front	-	74°15′ -	Corn
30.	Upernaviarssuk	-	74°15′ -	R FS
31.	Kangerdluarssuk	-	74°20′ -	R Corn FS
32.	Igdlulik	-	74°22′ -	FJ
33.	Hoyt Isl..... ca.	-	74°20′ -	St
34.	Inugsulik.....	-	74°27′ -	R
35.	Wilcox Point (Nûgssuaq ungatdlek).....	-	74°30′ -	T
36.	Holms Ö.....	-	74°30′ -	Bj
37.	Sârdlia.....	-	74°33′ -	FJ
38.	Devils Thumb (Kuvdlerkorssuit)	-	74°36′ -	FJ FS
39.	Björlings Ö.....	-	74°39′ -	FS
40.	Amdrups Ö.....	-	74°43′ -	FS
41.	Gardes Öer.....	-	74°49′ -	ME
42.	J. A. D. Jensens Öer	-	74°53′ -	ME
43.	Thom Ö (Kapiarfigssalik)	-	75°44′ -	L&R
44.	Bushnan Ö	-	75°57′ -	Ross Suth
45.	Savigsivik (Meteorite Ö).....	-	76°00′ -	FS
46.	Kap York.....	-	75°55′ -	Lyall H W St
47.	Agpat?, "between C. York and C. Dudley Digges" ..... ca.	-	76°03′ -	Kane
48.	Ivssugigsoq (Igfigsoq) = Parker Snow Bay.....	-	76°07′ -	N L&R
49.	Björling Ö, Carey Öer	-	76°45′ -	Kane W Seidf
50.	Breaks, Carey Öer.....	-	76°45′ -	FS

6. Plant List.

Equisetaceae.

Equisetum arvense L.

Loc.: 31. Kangerdluarssuk (FS!), 35. Wilcox Point (T), 37. Sârdlia (FJ!), 46. C. York (W).

Common both south and north of Melville Bugt. Apparently sparse within the region.

Equisetum variegatum Schleich.

Occurs both north and south of Melville Bugt, mainly associated with the sediments and the basalt. Probably completely absent from the Archaean in Melville Bugt.

Lycopodiaceae.

Lycopodium Selago L.

Loc.: 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! FJ! FS!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 18. Kûk (FJ!), 20. Qutdlikorssuit (FJ!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FJ!), 31. Kangerdluarssuk (R! FS!), 33. Hoyt Isl. (St), 34. Inugsulik (R), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 46. C. York (W).

As the common companion plant of the *Cassiope* heather generally distributed over the whole of Melville Bugt as well as north and south of it.

Polypodiaceae.

Cystopteris fragilis (L.) Bernh.

Loc.: 1. Womens Isl. (T), 8. Tasiussaq (N), 31. Kangerdluarssuk (R!), 33. Hoyt Isl. (St), 35. Wilcox Point (T).

PORSILD (1912) states that the plant occurs only in particularly favourable places, especially in the inner fjords. TAYLOR's report (Loc. 1) must therefore be taken with all reserve. The species occurs only sparsely north of Melville Bugt.

Dryopteris fragrans (L.) Schott

Not recorded from the region. Known from Thule and Inglefield Land and found by USSING (Ryder Expedition) on Qeqertarssuaq Island in the Upernavik Isfjord lat. 72°53′ N.

Woodsia ilvensis (R. Br.) Bab.
var. *alpina* (Bolt.) Asch. & Gr.

Loc. : 1 Womens Isl. (T), 8. Tasiussaq (R! N), 31. Kangerdluarssuk (R!), 35. Wilcox Point (T).

The species has not been found north of Melville Bugt. The northernmost definitive locality is thus Loc. 31, Kangerdluarssuk.

According to TAYLOR (1862, p. 333), rhizomes of this form brought to England developed into *Woodsia ilvensis* v. *rufidula* or *W. glabella*, "though the fronds brought home correspond with W. hyperborea". However, we cannot dismiss the possibility of error in classifying the original material, as *W. glabella* may be regarded as a good species, whereas *W. ilvensis* var. *rufidula* (Michx.) Koch and var. *alpina* (Bolt.) Asch. & Gr. are scarcely capable of sharp distinction.

Woodsia glabella R. Br.

Within the region the species is reported by TAYLOR from Horse Head and Wilcox Point, but it is doubtful whether it occurs in Melville Bugt at all. The plant everywhere is closely associated mainly with calcareous sedimentary rocks.

South of Melville Bugt it has been found as far as to Laksefjord 72°30′ N. (PORSILD 1912).—North of Melville Bugt it was found on Inglefield Land (OSTENFELD 1923c, 1923d, p. 223, 1925).

Betulaceae.

Betula nana L.

Loc.: 15. Kangerdlugssuaq (FS!), 26. Nûgssuaq Camp 2 (Corn), 31. Kangerdluarssuk (R! FS!), 46. C. York (W).

"Birches" are mentioned by KANE on the Crimson Cliff coast, "between Cape York and Cape Dudley Digges" (cf. NATHORST 1886). This, however, cannot be taken as proof of the occurrence of *Betula nana* there, as the report may just as well refer to *Vaccinium uliginosum* or *Salix*. WETHERILL's report from Kap York must be regarded as more reliable. By the way, as the species has not hitherto been found in the Thule region, whose deep fjords would seem to offer it very favourable conditions, it is remarkable that it should grow at Kap York, but certainly not impossible. In any case, the species is missing over the northern part of Melville Bugt archipelago. SALOMONSEN, who kept a special look-out for it, reports that he saw it only at one place in Kangerdlugssuaq Fjord, 73°40′, where it thus seems to be approaching its northerly limit. In the account of his voyage (1889, p. 254) RYDER reports it at Inugsulik, 74°27′, the expedition's most northerly camping place. Still, one cannot disregard the possibility of a slip of the memory or incorrect identification in the field. The most northerly occurrence that is beyond question is still Kangerdluarssuk (74°20′), where it has been collected by all botanists who have been there. Although the absolute northern limit of the dwarf birch in West Greenland thus still remains to be finally established, HAYES' "find" from Foulke Fjord (78°18′), on which SIMMONS relies (1909, p. 85), must, it seems, be left out of consideration.

Caryophyllaceae.

Arenaria humifusa Wbg. (see NORDHAGEN 1935).

The species has not been observed in the Melville Bugt region. The most northerly occurrence known south of there is Amitsuarssuk, circa 72°30′N. (PORSILD 1912). North of Melville Bugt it is known from Murchison Sound, 77°—78° N. (leg. J. NOE NYGAARD 1921).

Cerastium alpinum L.

Loc.: 2. Kingigtortagdlit (R!), 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! N ThW!), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 19. Agpalisiorfik (R!), 22. Kitsigsorssuit (FS!), 24. Nûgssuaq (R!) Corn), 26. Camp 2 (Corn), 28. Nunatak I (Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (R! Corn), 32. Igdlulik (FJ!), 38. Devils Thumb (FJ! FS!), 39. Björlings Ö (FS!), 40. Amdrups Ö (FS!), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 46. C. York (H W St), 47. Agpat? (Kane), 48. Ivssugigsoq (N), 49. Björlings Ö (W Seidf!), 50. Breaks (FS!).

TAYLOR makes no mention of any particular localities for this species, but records it as being very common to West Greenland from Disko to Wilcox Point.—Undoubtedly it is one of the commonest plants in the region. A polymorphous species, generally distributed all round Greenland.

Honckenya peploides (L.) Ehrh.

Loc.: 46. C. York (W).

Apart from WETHERILL's find the species has not been observed within the region, but it was collected at Upernavik (circa 72°45′) by the Ryder expedition, KOLDERUP ROSENVINGE and FRITZ JOHANSEN. North of Melville Bugt it was found in Foulke fjord by SIMMONS.

Melandryum affine J. Vahl

Loc.: 24. Nûgssuaq (Corn), 28. Nunatak I (Corn), 31. Kangerdluarssuk (R!), 43. Thom Ö (L&R!), 48. Ivssugigsoq (N).

The species seems to be rare in the Melville Bugt region (various localities in LANGE 1889 refer to *M. triflorum*). According to PORSILD (1912) it is common (the commonest *Melandryum* species) in lat. 71°—73° N. It has also been found in the regions north of Melville Bugt.

Melandryum apetalum (L.) Fenzl

This species has not been demonstrated in the region. LANGE's (1889) and ROSENVINGE's (1892) reports from Kangerdluarssuk Qingua were due to wrong determination, their specimens being *M. affine*. Occurs both south and north of the region. It seems to be quite frequent on the north coast of Greenland.

Melandryum triflorum (R. Br.) J. Vahl

Loc.: 8. Tasiussaq (R! ThW!), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 17. Qekertaq (R!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánaq timilia (R!), 24. Nûgssuaq (R! Corn), 26. Camp 2 (Corn), 30. Upernaviarssuk (R! FS!), 32. Igdlulik (FJ!), 38. Devils Thumb (FJ! FS!), 39. Björlings Ö (FS!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Melandryum triflorum seems to be the only common *Melandryum* species in Melville Bugt. It is widespread north and south of there.

Minuartia biflora (L.) Sch. & Thell.

LANGE (1880, p. 23) quotes TAYLOR's locality for *Arenaria arctica* Stev. under *Minuartia biflora*. TAYLOR's record is doubtless more due to accidental changing of labels than a simple error in identification.

The northernmost locality for *Minuartia biflora* known on the west coast of Greenland is Upernavik, 72°45′ N. (leg. FRITZ JOHANSEN 1935).

Minuartia rubella (Wbg.) Gräbn.

Loc.: 8. Tasiussaq (N ThW!), 18. Kûk (FJ!), 31. Kangerdluarssuk (R!). 48. Ivssugigsoq (N).

The few localities seem to suggest that the species is less common in the Melville Bugt region than both north and south of it.

Sagina caespitosa (J. Vahl) Lge.

LANGE (1889) and ROSENVINGE (1892) report this species in Upernaviarssuk, 74°15′, leg. RYDER. However, RYDER's plant is a *Sagina intermedia*. The most northern locality definitely established for *Sagina caespitosa* on the west coast of Greenland seems to be Upernavik (circa 72°45′), where it was already collected by J. VAHL.

Sagina intermedia Fenzl

Loc.: 4. Erqordleq (FJ!), 8a. Skerries at Tasiussaq (N), 19. Agpalisiorfik (R!), 30. Upernaviarssuk (R!).

The species must certainly be more common than the few localities would seem to indicate. This insignificant plant is easy to overlook. Circumgreenlandic species.

Silene acaulis L.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 11. Sâtoq (FJ!), 15. Kangerdlugssuaq (R! FS!), 18. Kûk (FJ!), 20. Qutdlikorssuit (FJ!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FS!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 43. Thom Ö (L&R!), 46. C. York (W), 48. Ivssugigsoq (N).

One of the commonest plants in the region. TAYLOR also records it as common, without giving localities. Circumgreenlandic species.

Stellaria humifusa Rottb.

Loc.: 1. Womens Isl. (T), 2. Kingigtortagdlit (R!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (N), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (FS!), 37. Sârdlia (FJ!), 48. Ivssugigsoq (N).

Generally distributed south of the region. To the north it has been found in the Thule District and in Inglefield Land.

Stellaria longipes Goldie

Loc.: 1. Womens Isl. (T), 11. Sâtoq (FJ!), 22. Kitsigsorssuit (T), 35. Wilcox Point (T), 38. Devils Thumb (FJ!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Judging from the relatively few finds of this species it seems to be much less frequent in Melville Bugt than both south and north of that region.

Cruciferae.

Arabis Hookeri Lge.

Missing in Melville Bugt, but found both to the south (northernmost: Pröven, circa lat. 72°20′ N., leg. HART 1875) and to the north (Foulke Fjord circa 78°20′N., leg. SIMMONS, var. *multicaulis* (SIMMONS 1909, p. 68)).

Braya purpurascens (R. Br.) Bge.

Missing in Melville Bugt. Southwards not found more to the north than on Svartenhuk peninsula, 71°—72° N. Northwards it occurs again in the Thule region and on the north coast of Greenland. It is a calciphilous plant that clearly shuns the non-calcareous Archaean regions.

Cardamine bellidifolia L.

Loc.: 8. Tasiussaq (ThW!), 13. Horse Head (T), 24. Nûgssuaq (R!), 26. Camp 2 (Corn), 29. Mt. Schurman (Corn), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 38. Devils Thumb (FS!), 45. Savigsivik (FS!), 48. Ivssugigsoq (N).

Common both south and north.

Cardamine pratensis L.

Has not been found between Amitsuarssuk, circa 72°30′ (PORSILD 1912) and Thule, where it was collected by LAUGE KOCH (not published!). The most northerly flowering specimens in Herb. Cop. are from Niaqornaq, Umîarfik Fjord, lat. 71°56′N., leg. PORSILD 1934.

As the plant in its non-flowering state, with vegetative propagation through the rooting of the leaflets, and occurring in moist carpets of moss, is very easy to overlook, it is not entirely out of the question that it may be found within the region under discussion.

Cochlearia groenlandica L.

Loc.: 2. Kingigtortagdlit (R!), 5. Kingigtuarssuk (FS!), 7. Upernavik (T), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!). 13. Horse Head (T), 22. Kitsigsorssuit (T FS!), 38. Upernaviarssuk (R! FS!), 35. Wilcox Point (T), 46. C. York (W), 48. Ivssugigsoq (N), 49. Björlings Ö (H), 50. Breaks (FS!).

Common on both sides of the region.

Draba alpina L. (sensu EL. EKMAN 1932).

Loc.: 48. Ivssugigsoq (N).

According to NATHORST's description of the plant (1884, p. 25) it must be placed under *D. alpina* var. *gracilescens* SIMMONS (1906, p. 83) and not to *D. Bellii* Holm or *D. micropetala* Hook. (including *D. oblongata* R. Br.). Judging from Herb. Cop. there is only one known locality for *D. alpina* north of Melville Bugt, viz. Ûmánaq, Wolstenholme Sound, leg. P. FREUCHEN; the specimen from there was likewise var. *gracilescens*. The nearest localities south of Melville Bugt are Ingnerit and Kigataq, both in lat. 72°04′ N.

Draba Bellii Holm

Missing in the Melville Bugt region. The nearest locality to the south is Tartûssaq, Svartenhuk peninsula, lat. 71°25′, leg. PORSILD 1911. To the north the species occurs again in the Thule District and along the north coast of Greenland. Pronouncedly a calciphilous species.

Draba cinerea Adams

Loc.: 48. Ivssugigsoq (N).

The nearest definite occurrence south of the region is Manîtsorqut, Svartenhuk peninsula, leg. M. P. & R. T. PORSILD 1929. It is common in the Thule area. Two West Greenland forms of *D. cinerea* were distinguished by E. EKMAN as separate species: *D. groenlandica*: Disko area, Thule, and north coast of Greenland, and *D. Ostenfeldii*: Thule.

Draba crassifolia Graham

According to BÖCHER (1938, p. 105) *Draba crassifolia* in West Greenland ranges northwards to 75°. E. EKMAN (1933, p. 100) gives it up to 74°30′. The northernmost of EKMAN's records refer, however, to "hybrids", which have very little to do with *D. crassifolia* (see below under *D. fladnizensis*). This being so, the most northerly reliable occurrence of *D. crassifolia* on the west coast of Greenland is Kigatak in lat. 72°4′ N. (leg. Ryder Expedition). PORSILD had previously (1912, p. 377) indicated this northern limit on the basis of the same material as that at EKMAN's disposal (Ryder's collections).

Draba daurica DC. (sensu EL. EKMAN 1930).

Loc.: 8. Tasiussaq (ThW!), 11. Sâtoq (FJ!), 17. Qekertaq (R! Bj), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 28. Nunatak I (Corn), 31. Kangerdluarssuk (R! Corn), 35. Wilcox Point (T), 38. Devils Thumb (FS!).

Devil's Thumb is the most northerly locality for the species known in West Greenland. South of Melville Bugt it is common (PORSILD 1912).

Draba fladnizensis Wulfen (sensu EL. EKMAN 1932).

Loc.: 24. Nûgssuaq (R!).

The Nûgssuaq specimen seems to be of the same type as the East Greenland *D. fladnizensis*. In addition there are two rather doubtful specimens, both identified by E. EKMAN as *D. crassifolia* × *lactea*, from Ûmánap timilia 74°02′ N. (*D. Wahlenbergii* var. *tenuisiliqua* Lge. 1889), and Pröven, 72°20′ N., both collected by the Ryder Expedition. These specimens are very like the Nûgssuaq plant, but do not seem quite identical with it.

It will require a larger material to establish definitively the existence of this species in the West Greenland flora[1]).

Draba lactea Adams (sensu EL. EKMAN 1932).

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 35. Wilcox Point (T), 48. Ivssugigsoq (N).

Common both north and south of the region.

Draba nivalis Liljebl.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (N ThW! FS!), 11. Sâtoq (FJ!), 17. Qeqertaq (R! Bj), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 30. Upernaviarssuk (R!), 31. Kangerdluarssuk (R!), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 36. Holms Ö (Bj), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 44. Bushnan Ö (Suth), 46. C. York (St), 48. Ivssugigsoq (N).

Seems to be the commonest *Draba* species in Melville Bugt. It is widespread on both sides of the region, but does not occur north of Inglefield Land.

Draba subcapitata Simm.

South of Melville Bugt it occurs over a limited area comprising Nûgssuaq and Svartenhuk peninsulas. Thereafter it is missing northwards over the entire Melville Bugt region, but occurs again on the north coast of Greenland.

[1]) SEIDENFADEN & SØRENSEN, 1937, p. 40, state that the species is "absent from W. Greenland". Unfortunately, at the time we had overlooked the only typical specimen, mounted together with a large number of individuals of *D. lactea*.

Eutrema Edwardsii R. Br.

Absent from the Melville Bugt region, and apparently is only sparse north and south of it. Between Thule Station (collected by Lauge Koch 1916) in the north and Umîarfik Fjord in the south, circa 72° N. (collected by Porsild 1934) the species has not been observed hitherto. Distinctly calciphilous plant that shuns the Archaean regions.

Lesquerella arctica (Wormsk.) Wats.

Loc.: 31. Kangerdluarssuk (R!), 35. Wilcox Point (T).

Melville Bugt proper seems to represent a hiatus in the distribution of the species in West Greenland; where it has on the whole been found it seems to be rather scarce and local, both north and south of the region. Calciphilous species.

Hippuridaceae.

Hippuris vulgaris L.

Hitherto not found within the region, but just to the south and north of it; it was collected at Upernavik by Fritz Johansen 1931, and at Thule, where it has its northerly boundary, by Freuchen and Lauge Koch 1916. Thus there is a certain probability that it can be found on the intermediate coastal stretches or islands.

Oenotheraceae.

Chamaenerium latifolium (L.) Sweet

Loc.: 1. Womens Isl. (T), 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 27. Nûgssuaq Camp 3 (Corn), 31. Kangerdluarssuk (R! FS! Corn), 35. Wilcox Point (T), 40. Amdrups Ö (FS!).

Scarcely any plant is so conspicuous as this one in the latter half of the summer, when collections usually take place. This being so, the nine localities in which it was observed out of a total of fifty may be regarded as expressing that it is anything but common in the region. In the northern part is seems to be quite absent. It is much more frequent south of the region (Porsild 1912). To the north it is still to be found, but evidently very sparsely, as far as Inglefield Land.

Papaveraceae.

Papaver radicatum Rottb.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! N! ThW! FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (R!), 18. Kûk (FJ!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 27. Camp 3 (Corn), 29. Mt. Schurman (Corn), 31. Kangerdluarssuk (R! FS! Corn), 33. Hoyt Isl. (St), 37. Sârdlia (FJ!), 38. Devils Thumb

(FJ! FS!), 44. Bushnan Ö (Ross Suth), 46. C. York (H W St), 48. Ivssugigsoq (N), 49. Björlings Ö (H Seidf), 50. Breaks (FS!).

TAYLOR mentions the species as being common, with no particular localities. Most frequently it has yellow flowers. White-flowered specimens have been found on Kûk island, and NATHORST (1884, p. 20) found it at Ivssugigsoq, together with the yellow-flowered plant. Red or reddish-flowered specimens were collected in Loc. 14, Tugtoqortôq and Loc. 37, Sârdlia, at the latter place also together with the yellow variety.

The species (collective species) is generally widespread both north and south of Melville Bugt.

Polygonaceae.

Koenigia islandica L.

Not hitherto observed within the region. As far north as Upernavik (lat. 72°45′N.) it was already collected by J. VAHL in 1834. In 1916 it was found by LAUGE KOCH at Thule, which designates the most northerly locality known on the west coast of Greenland. There can scarcely be any doubt that the species also occurs here and there in the intermediate Melville Bugt region. It is generally overlooked by non-botanists owing to its small size.

Oxyria digyna (L.) Hill

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R!), 22. Kitsigsorssuit (FS!), 24. Nûgssuaq (R! Corn), 33. Hoyt Isl (St), 46. C. York (H), 45. Savigsivik (FS!), 47 Agpat? (Kane), 48. Ivssugigsoq (N!), 50. Breaks (FS!).

TAYLOR records the species as common, but to judge from the number of finds the species is not among the most common plants. It is remarkable that most of the finds have been made in the northernmost localities in the region, whereas it is absent from the more favourable places to the south. Otherwise the species is common both south and north of Melville Bugt.

Polygonum viviparum L.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (N FJ! FS!), 15. Kangerdlugssuaq (FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (R! FS! Corn), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 48. Ivssugigsoq (N).

TAYLOR says the species is common. It is one of the commonest plants in Melville Bugt and the regions north and south of it.

Ranunculaceae.

Ranunculus affinis R. Br.

A rare plant in West Greenland. North of Melville Bugt it has been found only in Foulke Fjord, circa 78°20′ N. (SIMMONS 1909). Apart from this spot Tartûssaq Bugt, Svartenhuk peninsula (71°23′ N.) is the most northerly locality; the species was collected there by M. P. & R. T. PORSILD 1929.

Ranunculus hyperboreus Rottb.

Loc.: 8. Tasiussaq (ThW!), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 35. Wilcox Point (T), 37. Sârdlia (FJ!).

As the list of localities shows, the species has not hitherto been found in the northern part of Melville Bugt. Nevertheless it is hardly absent there. Widespread both north and south of Melville Bugt. (LANGE's (1889, p. 286) report of the species at Upernaviarssuk, lat. 74°15′ N., seems to be the result of confusion with the locality of the same name in lat. 73°28′ N.)

Ranunculus nivalis L.

Loc.: 46. C. York (H), 48. Ivssugigsoq (N).

Hitherto found only in the most northerly part of Melville Bugt. According to PORSILD (1912) the species is common in lat. 71°—73° N., and at Upernavik it was collected already by J. VAHL and recently by FRITZ JOHANSEN. It also occurs north of our region.

Ranunculus pygmaeus Wbg.

Loc.: 35. Wilcox Point (T), 38. Devils Thumb (FJ!), 43. Thom Ö (L&R!), 46. C. York (St), 48. Ivssugigsoq (N), 50 Breaks (FS!).

Like the foregoing species it has not been observed in the southerly part of the region. It has been collected at Upernavik, however, and from there southwards it becomes common (PORSILD 1912). Occurs north of Melville Bugt, but seemingly very sparsely.

Ranunculus Sabinei R. Br.

Loc.: 50. Breaks (FS!).

In Greenland this species hitherto has come only from two localities on the north coast and from Northumberland and Hakluyt islands at the mouth of Inglefield Gulf, about three-fourths of a parallel north of Carey Öer, where it was collected by FINN SALOMONSEN. This locality thus forms the southern boundary of the species in Greenland.

Ranunculus sulphureus Soland.

Loc.: 48. Ivssugigsoq (N).

In distribution it is not at all unlike *R. nivalis*, though north of Melville Bugt it seems to be more frequent than that species; south

of the region it is less common than *R. nivalis* (PORSILD 1912). In the south of the Melville Bugt region it is quite absent. The nearest locality to the south is Store Fladø, lat. 72°16′ N., where it was collected by the Ryder expedition.

Ranunculus trichophyllus Chaix
var. *eradicata* Laest.

The most northerly locality is at Thule, where it was collected by P. FREUCHEN and LAUGE KOCH 1916. The nearest locality to the south of this is Laksefjord Qíngua, lat. 72°30′ N., where it was found by PORSILD 1911. In the north the plant keeps to the sheltered fjord localities and will scarcely be found in the Melville Bugt region, except perhaps in its southernmost part.

Rosaceae.

Dryas integrifolia Vahl

Loc.: 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 11. Sâtoq (FJ!), 14. Tugtoqortôq (R!), 18. Kûk (FJ!), 24. Nûgssuaq (R! Corn), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 31. Kangerdluarssuk (R!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 46. C. York (H W), 48. Ivssugigsoq (N).

TAYLOR considers the species to be common and does not specify any localities.—Generally distributed in West Greenland both north and south of Melville Bugt.

Potentilla emarginata Pursh

Loc.: 2. Kingigtortagdlit (R!), 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! ThW! N), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 17. Qeqertaq (R!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánap timilia (R!), 27. Nûgssuaq Camp 3 (Corn), 29. Mt. Schurman (Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (R! FS!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 39. Björling Ö (FS!), 40. Amdrups Ö (FS!), 41. Gardes Ö (ME!), 43. Thom Ö (L&R!), 45. Savigsivik (FS!), 46. C. York (St), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Seems to be one of Melville Bugt's most common plants. Curiously enough, TAYLOR does not mention it at all on the Greenland side of Davis Strait, but in several localitites on the coast of Baffin Land. It is perhaps not impossible that his many Greenland records of *P. nivea* and *P. Vahliana* refer to occurrences of *P. emarginata*.—Also common north of Melville Bugt, less frequent in the region south of Upernavik, lat. 71°—73° N. (PORSILD 1912).

Potentilla nivea L. *s. l.*

Loc.: 31. Kangerdluarssuk (R!).

TAYLOR's localities must be regarded as uncertain and cannot be accepted (see above under *P. emarginata*).

It is probable that the species does not grow at all in the Melville Bugt region except in the most southerly fjords. ROSENVINGE's record (1892, p. 656) of "f. *prostrata* Upernaviarsuk 73°28′ (Ryd.) teste Lge." is doubtful, as the specimen is missing from Herb. Cop. North of Melville Bugt the species is mainly represented by very hairy forms. These too are found in the Disko-Svartenhuk region. Some of these forms have been separated under the name of *Potentilla Pedersenii* (Rydb.) Rydb. = (?) *Potentilla Pedersenii* (Rydb.) Ostenf. In that case both *P. nivea* and *P. Pedersenii* will each comprise a complex of forms. As the two groups do not seem to be sharply delimitable, it will be advisable to retain the name of *Potentilla nivea s. l.* for all forms for the present. A closer examination of the Greenland *Potentilla nivea* will undoubtedly result in the establishment of a large number of closely related races, kept constant by apomictic propagation.

Potentilla pulchella R. Br.

Loc.: 48. Ivssugigsoq (N).

The locality must be regarded as a southern outpost of the species in its northern area of distribution in Greenland, stretching from Thule around the north coast to Northeast Greenland. In addition, it has a smaller area in the Disko-Svartenhuk region. South of Melville Bugt its most northerly locality is Tartûssak, Svartenhuk peninsula, lat. 71°25′ N. (PORSILD 1912). Undoubtedly a calciphilous species.

Potentilla rubricaulis Lehm.
var. *arctica* Simm. (SIMMONS 1906, p. 50).

Loc.: 48. Ivssugigsoq (N!). Parker Snow Bay (L&R!).

This species, which in Greenland has been observed in Thule and Inglefield Bay in addition to the locality above, seems to come very close to certain *Potentilla nivea* forms (*Potentilla Pedersenii* Rydb.). The West Greenland *P. rubricaulis* is not identical with the East Greenland *Potentilla* published under the same name (TH. SØRENSEN 1933). The East Greenland form seems to come close to the Asian *Potentilla sericea.*

Potentilla Vahliana Lehm.

Loc.: 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 33. Hoyt Isl. (St), 46. C. York (W). 48. Ivssugigsoq (N), 49. Björlings Ö (W).

TAYLOR's records seem to be unreliable (cf. SIMMONS 1904).

Contrary to what is the case with *Potentilla nivea*, this species keeps to the exposed northwest localities. Its distribution in Greenland is confined to the most northwesterly corner and to the Disko-Svartenhuk region. South of Melville Bugt no locality is known before we come to Manitsorqut, Svartenhuk peninsula, lat. 71°30′ (leg. PORSILD 1935).

Salicaceae.

Salix arctica-chloroclados-glauca (sensu FLODERUS 1923).

According to FLODERUS' description of the *Salices* of Greenland (1923), the greater part are hybrids, often triple or quadruple hybrids. For practical reasons, however, I have divided the material into three groups according to the connection of the various specimens to one or another of the three main species. This apparently is the only way if one will not reckon with a single collective species. As regards the earlier herbarium material, all due consideration has naturally been paid to FLODERUS' identifications.

It is scarcely probable that pure *Salix glauca* and *S. chloroclados* occur north of Melville Bugt (cf. SIMMONS 1909, OSTENFELD 1926), whereas they become more common south of our region. *Salix arctica* occurs northwards along the north coast of Greenland, and also—but much more sparsely—south of Melville Bugt. *S. glauca* and *glauca*-like forms undoubtedly represent the great majority of Melville Bugt's *Salix* flora, especially towards the south. They form the most northerly willow scrub proper on the west coast in Laksefjord (lat. 72°30′ N.). Specimens of the scrub-forming willow there, collected by PORSILD, were identified by FLODERUS as *S. chloroclados* × *glauca*. TAYLOR's *Salix arctica* Br., "the tallest plant seen was 4 feet in height" (TAYLOR 1862, p. 330), which is stated to be common, seems to be *S. glauca*. "*S. reticulata* L." (TAYLOR l. c.) is probably *S. arctica* (cf. FLODERUS 1923).

Salix arctica Pall.

Loc.: 2. Kingigtortagdlit (R!), 23. Ûmánap timilia (Bj), 35. Wilcox Point (T), 36. Holms Ö (Bj), 39. Björlings Ö (FS!), (?)44. Bushnan Ö (Suth), (?)46. C. York (H W), (?)47. Agpat (Kane), 48. Ivssugigsoq (N), 49. Björlings Ö (W Seidf), 50. Breaks (FS!).

Salix chloroclados Flod.

Loc.: 24. Nûgssuaq (R! Corn), 26. Camp 2 (Corn), 30. Upernaviarssuk (R!), 32. Igdlulik (FJ!), 38. Devils Thumb (FJ!), 43. Thom Ö (L&R!), 45. Savigsivik (FS!), 48. Ivssugigsoq (N).

Salix glauca L.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 6. Ateqangitsorssuaq (Bj), 8. Tasiussaq (ThW! R! FJ!), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 15. Kangerdlugssuaq (FS!), 18. Kûk (FJ!), 22. Kitsigsorssuit (FS!), 24. Nûgssuaq (R! Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (FS!), 32. Igdlulik (FJ!), 36. Holms Ö (Bj), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!).

Salix herbacea L.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! N FJ!), 8a. Skerries at Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 25. Kraulshavn (FJ!), 30. Upernaviarssuk (R! FS!), 32. Igdlulik (FJ!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ!), 39. Björlings Ö (FS!), 45. Savigsivik (FS!), 47. Agpat? (Kane), 48. Ivssugigsoq (N).

Taylor says the species is common, and this is confirmed by the many more recent localities in Melville Bugt. The species is widespread in Greenland, though it is absent from the north coast proper. According to Ostenfeld (1923b, p. 204) the species "according to verbal information is rather common" at Thule. However, Salomonsen (cf. p. 61) says he was surprised at not finding *S. herbacea* at Thule. This lack of agreement is undoubtedly to be explained by the fact that around Thule there are both acid crystalline and basic sedimentary rocks. It would seem, and the list of plants bears this out (cf. p. 15), that Salomonsen was in a region of calcareous sediments. *S. herbacea* is distinctly a calciphobe plant.

Saxifragaceae.

Saxifraga aizoides L.

Not observed within our region. An earlier record from the Thule District has recently been confirmed, the species there having been collected by Ekblaw (Herb. Cop., Crockerland Expedition 1916). South of Melville Bugt it has not been found more northerly than lat. 71°33′ N., Qeqertarssuaq (inside Svartenhuk peninsula) leg. M. P. & R. T. Porsild 1929. Calciphilous species.

Saxifraga Aizoon L.

Loc.: 31. Kangerdluarssuk (R!).

This locality is the most northerly one known in West Greenland and undoubtedly represents approximately the real northern limit of the species. In the region south of lat. 73° N. too it is only sparse (Porsild 1912).

The record in LANGE (1889, p. 286), Upernaviarssuk lat. 73°28′ N., seems to be the result of a slip of the pen (cf. l. c., p. 288). There is no specimen from this locality in Herb. Cop.

Saxifraga caespitosa L.

Loc.: 2. Kingigtortagdlit (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! ThW!), 10. Upernaviarssuk (R!), 18. Kûk (FJ!), 24. Nûgssuaq (Corn), 43. Thom Ö (L&R!), 46. C. York (H W).

TAYLOR states that the species is common, but it seems by no means to belong to the most common plants. Var. *uniflora* (R. Br.) Simm. alone has been observed. Widespread both north and south of the region. Circumgreenlandic species.

Saxifraga cernua L.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (N), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FS!), 27. Camp 3 (Corn), 28. Nunatak I (Corn), 30. Upernaviarssuk (FS!), 31. Kangerdluarssuk (R! FS!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ!), 46. C. York (St), 48. Ivssugigsoq (N).

Common in the Melville Bugt region and north and south of it. Circumgreenlandic species.

Saxifraga foliolosa R. Br.
(Syn: *S. stellaris comosa* Retz.).

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! N ThW! FJ! FS!), 8a. Skerries at Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 17. Qeqertaq (R!), 18. Kûk (FJ!), 24. Nûgssuaq (R! Corn), 25. Kraulshavn (FJ!), 27. Camp 3 (Corn), 30. Upernaviarssuk (R!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 43. Thom Ö (L&R!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Generally widespread within the region as well as to the south and north of it.

Saxifraga nivalis L. et var. *tenuis* Wbg.

The main species, Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R!), 27. Nûgssuaq Camp 3 (Corn), 31. Kangerdluarssuk (R! FS!), 33. Hoyt Isl. (St). 44. Bushnan Ö (Suth), 49. Ivssugigsoq (N), (as to the two last-named localities cfr. SIMMONS 1909, p. 66).

var. *tenuis*, Loc.: 8. Tasiussaq (FS!), 23. Ûmánap timilia (R!), 31. Kangerdluarssuk (R!).

Both forms widespread both north and south of Melville Bugt.

The small and slender var. *tenuis* seems rare, judging from the localities, both in Melville Bugt and north of it, but without doubt this is mainly due to its being overlooked, or to the circumstance that the collectors have not distinguished between the two forms and therefore in most cases have collected the larger and more impressive plants of the main species. It is presumable that var. *tenuis* is also rather common in our region.

Saxifraga oppositifolia L.

Loc.: 2. Kingigtortagdlit (R!), 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R!), 18. Kûk (FJ!), 22. Kitsigsorsuit (FS!), 24. Nûgssuaq (Corn), 31. Kangerdluarssuk (R!), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 46. C. York (H W), 48. Ivssugigsoq (N), 49. Björlings Ö (W).

This species is spread over the whole of Melville Bugt, but there is scarcely any doubt that it is much less frequent there than in the regions both north and south of it.

Saxifraga rivularis L.

Loc.: 1. Women Isl. (T), 2. Kingigtortagdlit (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FS!), 8a. Skerries at Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 21. Kigtorsaq (R!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FJ! FS!), 28. Nunatak I (Corn), 30. Upernaviarssuk (R! FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 39. Björlings Ö (FS!), 43. Thom Ö (L&R!), 46. C. York (H St), 45. Savigsivik (FS!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

In addition to the main species with runners there is var. *hyperborea* R. Br. (= var. *purpurascens* Lge.) without runners. It is not always possible to keep the two forms apart, especially with sparse herbarium material. To judge from the present material, forms with runners are much the more frequent. Typical var. *hyperborea* occurs, in several cases together with the main species, in the following localities: Nos. 8—23—25—37—38—43—45—50.

Saxifraga rivularis seems to be one of the commonest plants in Melville Bugt. North of the region, where it approaches its northern boundary, it seems to be much less frequent.

Saxifraga tricuspidata Rottb.

Loc.: 1. Women Isl. (T), 8. Tasiussaq (R! N ThW! FJ! FS!), 11. Sâtoq (FJ!), 13. Horse Head (T), 14. Kangerdlugssuaq (R!), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 26. Nûgssuaq Camp 2 (Corn), 27. Camp 3

(Corn), 28. Nunatak I (Corn), 31. Kangerdluarssuk (R!) Corn), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 38. Devils Thumb (FS!), 40. Amdrups Ö (FS!), 43. Thom Ö (L&R!), 46. C. York (W), 48. Ivssugigsoq (N).

Common south of Melville Bugt (PORSILD 1912) and also in the Thule District and northwards as far as about 80° N. (OSTENFELD 1925, p. 33).

Boraginaceae.

Mertensia maritima (L.) Don

Loc.: 46. C. York (W).

Since this species was collected by the Greenlander, the Rev. GUSTAV OLSEN in Inglefield Gulf, lat. 77°28′ N., and by EKBLAW in Sunntag Bay, lat. 78°05′ N. (OSTENFELD 1923c), there can no longer be any doubt about WETHERILL's record from Cape York. South of there the species is missing as far as Orpik in Laksefjord, lat. 72°30′ N. (PORSILD 1912) and Store Fladø (FS), lat. 72°15′ N.

Campanulaceae.

Campanula rotundifolia L.

Loc.: Nûgssuaq between 26. Camp 2 and 27. Camp 3 (Corn). Devil's Thumb (FS!).

The new locality, Devil's Thumb, represents the northern boundary of the species in West Greenland. The species is recorded by HAYES (DURAND et al. 1863) at Tasiussaq. His specimen may, however, just as well have come from Disko, which is so much the more probable as it has never since been found on Tasiussaq, though this island has in fact been more frequented by botanists than any other locality north of Upernavik. The nearest definite locality south of Melville Bugt is Qeqertarssuaq in Upernavik Isfjord, lat. 72°53′ N., leg. Ryder Expedition.

Campanula uniflora L.

Loc.: 8. Tasiussaq (R! N FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 31. Kangerdluarssuk (R!), 35. Wilcox Point (T), 48. Ivssugigsoq (N).

Common south of Melville Bugt (PORSILD 1912), but apparently only sparsely to the north of it, where it approaches its northern limit—it is missing on the north coast of Greenland.

Compositae.

Antennaria angustata Greene

Loc.: 18. Kûk (FJ!).

FRITZ JOHANSEN's collection from Kûk island comprises well-developed specimens, though collected after the flowering stage. There

seems to be no doubt that this plant must be placed to *A. angustata*. Kûk island is the most northerly known locality for the species in Greenland. Otherwise it is known from Nordre Strømfjord, circa lat. 67°30′ N., to Svartenhuk peninsula, circa 72° N.

Antennaria labradorica Nutt.

Loc.: 3. Sârdlorssuaq (R!), 8. Tasiussaq (R! ThW! FS!), 15. Kangerdlugssuaq (FS!), 17. Qeqertaq (R!), 24. Nûgssuaq (R!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 29. Mt. Schurman (Corn), 31. Kangerdluarssuk (R! FS!), 38. Devils Thumb (FJ! FS!), 48. Ivssugigsoq (N).

NATHORST records "*Antennaria alpina*" from Ivssugigsoq. There can hardly be any doubt that it is *A. labradorica*, the only species of the genus north of Melville Bugt. It has been collected up to circa lat. 79° N. —The Cornell Party localities (Loc. 26, 27, 29) are uncertain, in so far as ROWLEE & WIEGAND (1897) report *Antennaria alpina* (L.) Gaertn. The probability is, however, that this is *A. labradorica*.

NB. *Antennaria canescens* (Lge.) Malte has been found as far north as Qeqertarssuaq in Upernavik Isstrøm, lat. 72°53′ N. Thus it is not impossible that this species may be found in the southern part of the Melville Bugt region.

Arnica alpina (L.) Olin

Loc.: 8. Tasiussaq (ThW!), 13. Horse Head (T), 26. Camp 2 (Corn), 31. Kangerdluarssuk (R!), 33. Hoyt Isl. (St), 35. Wilcox Point (T), 38. Devils Thumb (FS!), 46. C. York (St).

Having regard to the fact the species is so conspicuous that it can hardly escape the attention of collectors, the few localities must be taken as valid evidence that the species is among the least frequent of the widespread plants in the Melville Bugt region. North of there, too, it has been found only in certain localities. Even south of Melville Bugt it grows only in localities with favourable growth conditions (PORSILD 1912).

Erigeron compositus Pursh

Missing in this region, but occurs both to the south and to the north. Indeed, it seems to be frequent along the north coast of Greenland. The most northerly locality south of Melville Bugt is Kôrnoq (Umîarfik Fjord) lat. 72°0′ N., leg. PORSILD 1934.

Erigeron eriocephalus J. Vahl

Loc.: 8. Tasiussaq (R!).

This species has a strangely sporadic occurrence in Greenland. North of Melville Bugt there are only two finds on the north coast of Greenland. Between lat. 71° and 73° N. it is stated by PORSILD (1912) to be "very rare".

It seems to be badly differentiated from *E. unalaschkensis*. On the west coast of Greenland transitional forms seem to occur fairly often, so that perhaps it may be justifiable to place the two forms to the same species (cf. PORSILD 1912). The most pronounced *E. eriocephalus* are, however, well separated from *E. unalaschkensis* both ecologically and morphologically (cf. also PORSILD 1920).

I shall not attempt to decide whether TAYLOR's *Erigeron uniflorus* from Wilcox Point should be placed to this or the following species.

Erigeron unalaschkensis (DC.) Vierh.

Loc.: 33. Hoyt Isl. (St).

The species doubtless has its northern limit within the region. South of it the plant was collected by RINK on Nutârmiut, lat. 72°40′ N. On the tracts between lat. 71° and 73° N. it is associated with favourably situated localities (PORSILD 1912).

Taraxacum arctogenum Dt.

Loc.: 48. Ivssugigsoq (N, according to DAHLSTEDT 1906).

DAHLSTEDT (l. c.) places a specimen collected by HARTZ in Nordostbugten, lat. 68°35′ N. to this species. A comparison of this specimen with a larger material of *Taraxacum groenlandicum* Dt. shows that it rather belongs to this latter.—Ivssugigsoq thus represents the southern limit of *T. arctogenum*'s range in Greenland. It seems to be frequent in the Thule area.

Taraxacum phymatocarpum J. Vahl

Loc.: 8. Tasiussaq (R!), 48. Ivssugigsoq (N, according to DAHLSTEDT 1905).

It is presumable that TAYLOR's record of *Taraxacum palustre* from Wilcox Point has reference to *T. phymatocarpum*. It is possible that the species is absent throughout the greater part of Melville Bugt. Just to the south of it, too, it seems to be rare (PORSILD 1912). It is widespread in the Thule area and along the north coast of Greenland.

Diapensiaceae.

Diapensia lapponica L.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ!), 11. Sâtoq (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 17. Qeqertaq (R!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 23. Ûmánap timilia (R!), 24. Nugssuak (R!), 25. Kraulshavn (FJ!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 46. C. York (W).

The last-named locality, the only one on the north side of Melville Bugt and lying more than two parallels north of the verified localities, is omitted from OSTENFELD's list (1926). SIMMONS (1909) gives the locality solely on the authority of WETHERILL, and actually there seems to be no sufficient reason for repudiating WETHERILL. The many localities in the southern part of Melville Bugt suggest that it is common there. TAYLOR also states that it is common from Disko to Wilcox Point.

Empetraceae.

Empetrum hermaphroditum (Lge.) Hagerup

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 8a. Skerries at Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 17. Qeqertaq (R!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (R!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 34. Inugsulik (R), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 39. Björlings Ö (FS!), 40. Amdrups Ö (FS!), 43. Thom Ö (L&R!), 46. C. York (W).

Furthermore, TAYLOR records the species as common without giving any special locality. This common species approaches its northern limit within the region. At Thule and up to Etah, lat. 78°25′ N., it is only very sparse and it is entirely missing farther north.

Ericaceae.

Cassiope hypnoides (L.) Don

Loc.: 8. Tasiussaq (N FJ! FS!), 11. Sâtôq (FJ!), 12. Ikerâsarssuk (FJ!), 15. Kangerdlugssuaq (FS!), 20. Qutdlikorssuit (FJ!), 26. Nûgssuaq Camp 2 (Corn), 27. Camp 3 (Corn), 31. Kangerdluarssuk (R!).

The plant clearly reaches its northern limit within our region. It becomes more common southwards (cf. PORSILD 1912).

Cassiope tetragona (L.) Don.

Loc.: 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 9. Niordleq (R), 11. Sâtoq (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FS!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 29. Mt. Schurman (Corn), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 34. Inugsulik (R), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 43. Thom Ö (L&R!),

46. C. York (H W), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 47. Agpat? (Kane), 48. Ivssugigsoq (N!).

TAYLOR records the species as common, and this has been confirmed by subsequent investigations. Also common both north and south of the region.

Ledum decumbens Ait.

BÖCHER (1938, p. 156) records this species up to circa 74° N. for West Greenland, but it has not been demonstrated north of 73°. Kangerdluarssuk, 72°38′ N., seems to be the most northerly locality for its collection (Ryder expedition). It appears from the date on the label that the plant did not come from the locality of the same name in lat. 74°18′ N. (cf. also LANGE 1889, p. 286). TAYLOR's record from Wilcox Point can hardly be accepted.

Loiseleuria procumbens (L.) Desv.

Loc.: 3. Sârdlorssuaq (R!), 8. Tasiussaq (R! N FJ! FS!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FJ!), 26. Camp 2 (Corn), 31. Kangerdluarssuk (R!), 33. Hoyt Isl. (St), 34. Inugsulik (R), 35. Wilcox Point (T).

As will be seen, the plant distinctly reaches its northern boundary south of Melville Bugt proper (the last two localities lack verification, however, and must be regarded as uncertain). South of our region the species becomes common.

Phyllodoce coerulea (L.) Bab.

Loc.: 8. Tasiussaq (N FJ!), 11. Sâtoq (FJ!), 15. Kangerdlugssuaq (FS!), 26. Nûgssuaq Camp 2 (Corn), 31. Kangerdluarssuk (R!).

Also recorded by TAYLOR from loc. 13, Horse Head and loc. 32, Wilcox Point; furthermore by RYDER in his account of his journey (1889, p. 254) from loc. 34, Inugsulik. These records, however, must be taken with all reserve with regard to the exact placing of the find-spots. According to the definite localities given above and to PORSILD's records (1912) the species south of our region keeps rather exclusively to the more sheltered fjords. It reaches its northern limit already in the south parts of Melville Bugt.

Rhododendron lapponicum (L.) Wbg.

Loc.: 1. Womens Isl. (T), 3. Sârdlorssuaq (R!), 8. Tasiussaq (R!), 13. Horse Head (T), 15. Kangerdlugssuaq (R! FS!), 23. Ûmánap timilia (R!), 27. Nûgssuaq Camp 3 (Corn), 31. Kangerdluarssuk (R!), 35. Wilcox Point (T), 46. C. York (W).

The species seems to occur very sparsely in the region. To the south it becomes more common (cf. PORSILD 1912). To the north it has been found almost to lat. 80° N.

Vaccinium uliginosum L.

Loc.: 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! N FJ! FS!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (R FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 23. Ûmánap timilia (R!), 24. Nôgssuaq (R!), 25. Kraulshavn (FS!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 29. Mt. Schurman (Corn), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 34. Inugsulik (R), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 45. Savigsivik (FS!), 47. Agpat? (Kane), 48. Ivssugigsoq (N).

Widespread in the region, mainly represented by var. *microphylla* Lge.; only from localities 8, 15 and 20 are there specimens that seem to belong to the main species, which thus has its northern limit in the southern part of Melville Bugt. Var. *microphylla* occurs both north and south of the region.

Vaccinium Vitis Idaea L.

Loc.: 44. Bushnan Ö (Suth).

The species is represented by var. *pumila* Hornem. (var. *minor* Lodd.).

Recorded by SUTHERLAND in loc. 41. Bushnan Isl. As the plant was later (1916) collected by EKBLAW at Granville Bay, lat. 76°50′ N., there is scarcely any reason for doubting SUTHERLAND's record. On the other hand, TAYLOR's from Wilcox Point seems to be doubtful (cf. SIMMONS 1904). Otherwise in West Greenland the species has not been found north of Disko.

Plumbaginaceae.

Armeria labradorica Wallr. (cf. IVERSEN 1940, p. 18).

Loc.: 8. Tasiussaq (R!), 15. Kangerdlugssuaq (R!), 46. C. York (W).

The plant seems to be missing in the central parts of Melville Bugt. Apparently more common in the fjord regions both north and south of it.

Pyrolaceae.

Pyrola grandiflora Rad.

Loc.: 15. Kangerdlugssuaq (FS!), 27. Nûgssuaq Camp 3 (Corn), 31. Kangerdluarssuk (R! Corn), 33. Hoyt Isl. (St), 38 Devils Thumb (FJ! FS!), 46. C. York (W), 47. Agpat? (Kane).

The species occurs very sparsely in the region but seems to be more common in the fjords both north and south of it. TAYLOR's record that it is common refers apparently to the southern part (Disko) of the area of his explorations.

Scrophulariaceae.

Bartsia alpina L.

Loc.: 46. C. York (W).

OSTENFELD (1926) does not accept WETHERILL's find of this species at Kap York. Having regard to the fact that *Bartsia* is a calciphilous plant (cf. e. g. NORDHAGEN 1940, p. 595), it is not impossible that it is actually to be found there, even if it is missing in large areas to the south. Until it is affirmed by renewed search that the plant is absent, it will undoubtedly be correct to reckon on WETHERILL's find there as a fact. Apart from Kap York the most northerly locality in West Greenland is Ingnerit Fjord, circa lat. 72° N., where it was collected by the Ryder Expedition.

Pedicularis flammea L.

Loc.: 23. Ûmánap timilia (R!), 46. C. York (W).

OSTENFELD (1926) ignores WETHERILL's report of this species at Kap York, a procedure that does not seem to be well founded. *Pedicularis flammea* often occurs in pecular localities owing to its being associated with calcareous soil. Consequently, it is natural for it to be absent from large areas within the non-calcareous rock of Melville Bugt. PORSILD (1912, p. 382) also states that to judge from its occurrence in lat. 72°30′ N., the plant there is still far from its (climatic) northern limit.—Hitherto, however, it has not been reported from the Thule region north of Kap York.

Pedicularis hirsuta L.

Loc.: 3. Sârdlorssuaq (R!), 4. Erqordleq (FJ!), 8. Tasiussaq (R! FS!), 14. Tugtoqortôq (R!), 13. Horse Head (T), 15. Kangerdlugssuaq (R! FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R!), 31. Kangerdluarssuk (R! FS!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 43. Thom Ö (L&R!), 46. C. York (W), 48. Ivssugigsoq (N).

Widespread over Melville Bugt and to the north and south of that region.

According to SIMMONS (1904, 1906), TAYLOR's *P. hirsuta* is *P. lanata* Cham. et Schlecht., whereas TAYLOR's *P. Kanei* is *P. hirsuta* L. As

TAYLOR is now furthermore operating with more two red-flowered *Pedicularis* species for our region, viz. *P. arctica* and *P. Langsdorfii*, it would seem to be advisable not to make any definite conclusion with regard to the occurrence of *Pedicularia hirsuta* on the basis of TAYLOR's list.—In all probability WETHERILL's record of *P. Langsdorfii* var. *lanata* from Kap York refers to *P. hirsuta* (see below under *P. lanata*).

Pedicularis lanata Cham. et Schlecht.

WETHERILL records *P. Langsdorfii* Fisch. var. *lanata* Gray from Kap York. SIMMONS (1909), mainly on the basis of WETHERILL's plant, identified by FERNALD, records the species for the Thule region. In my opinion, however, there is probably some mistake and the find is one of *P. hirsuta*. It may be argued against this opinion that FERNALD differentiated between the two species, in so far as he also identified *P. hirsuta* in WETHERILL's collection from Kap York. But vigorous specimens of *P. hirsuta*, at any rate in the herbarized state, habitually resemble *P. lanata* so much that even eminent botanists now and then have confused the two species.

For *P. lanata* PORSILD (1912, p. 382) records West Greenland, lat. 71°—73° N. "Frequent in the basalt area in the coastal districts and on the mountains in the interior of the fjords". For Ellesmere Land SIMMONS (1906, p. 31) records: "Outside the archaean district I only found it in one place."

As regards calcium content (and reaction) basalt usually occupies a midway position between the archaean and the younger sediments. Thus *Pedicularis lanata* does not seem to be particularly specialized with regard to its soil requirements, but at any rate it cannot be regarded as a calciphilous plant. In West Greenland it has been found northwards to Upernavik (where it was collected as long ago as in 1834 by JENS VAHL). The border line between the calcareous rocks (sediments and basalt) and the archaean lies much more to the south, and there many basiphilous species halt, to appear again in the sedimentary districts north of Melville Bugt.

In cases like e. g. *Pedicularis lanata*, where the northern limit does not coincide with any geological border line, the distribution must be governed climatically or historically. Therefore an isolated occurrence on Kap York a priori is much less probable for a species like *Pedicularis lanata* than it would be for the calciphilous plants, of which a large number have a discontinuous area in West Greenland.

For these reasons I have disregarded WETHERILL's record from Kap York as far as this one species is concerned, and consider *Pedicularis lanata* as not belonging to the flora of the Melville Bugt region.

Cyperaceae.

Carex atrofusca Schk.

Not demonstrated within the region. South of there it is known as far as Prövenlat. 72°25′ N. (leg. HART, cf. SIMMONS 1904). At Thule the species was collected by LAUGE KOCH and later on by SALOMONSEN 1936.

A decidedly calciphilous plant with little chance of growth in the Melville Bugt region.

Carex capillaris L.

Loc.: 8. Tasiussaq (ThW!).

Common south of the region (PORSILD 1912) and also found northwards to Inglefield Land, circa lat. 79° N.

It will probably be found on favourable slopes in several localities in the southern part of our region.

Carex incurva Lightf.

Hitherto not found in the region, and to the south not found more to the north than lat. 71°22′ N., Tartûssaq, leg. PORSILD.—North of Melville Bugt region it is known from a number of finds in Thule, Inglefield Land and Washington Land.

Carex marina Dew.
(*C. glareosa* Auct. groenl.).

Loc.: 8. Tasiussaq (R! ThW!), 10. Upernaviarssuk (R!), 12. Ikerasârssuk (FJ!), 24. Nûgssuaq (Corn), 30. Upernaviarssuk (R! FS!), 37. Sârdlia (FJ!), 39. Björlings Ö (FS!).

This species seems to be confined especially to the south part of the Melville Bugt region. North of Kap York we have the plant from a single find only, Murchison Sund, lat. 77°45′ N. (leg. J. NOE NYGAARD).

Carex misandra R. Br.

Loc.: 8. Tasiussaq (ThW!), 23. Ûmánap timilia (R!), 35. Wilcox Point (T), 48. Ivssugigsoq (N).

Apparently sparse in Melville Bugt. It seems to be more frequent both north and south of the region. Calciphilous species.

Carex nardina Fr.

Loc.: 8. Tasiussaq (ThW! FS!), 15. Kangerdlugssuaq (FS!), 17. Qeqertaq (R!), 24. Nûgssuaq (Corn), 28. Nunatak I (Corn), 49. Ivssugigsoq (N).

Widespread both and north south of Melville Bugt.

Carex pedata Wbg.

Loc.: 8. Tasiussaq (ThW! FJ!).

The locality quoted is the most northerly one known in West Greenland. It is also sparse south of the region (PORSILD 1912). Calciphilous species.

Carex rigida Good.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (ThW! FJ! FS!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (FS!), 18. Kûk (FJ!), 20. Qutdlikorssuit (FJ!), 24. Nûgssuak (Corn), 25. Kraulshavn (FS!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 29. Mt. Schurman, 31. Kangerdluarssuk (FS!), 32. Igdlulik (FJ!), 35. Wilcox Point (T), 37. Sârdlia (FJ!), 38. Devils Thumb (FS!), 39. Björlings Ö (FS!), 48. Ivssugigsoq (N).

This plant seems to be widespread over the southern part of the region and south of it (PORSILD 1912). The correct identification of NATHORST's plant from Ivssugigsoq was verified by SIMMONS (1909). From the parts north of our region the Botanical Museum in Copenhagen has specimens only from one or two localities in Wolstenholme Fjord, where as far as is known the species has its northern boundary in West Greenland. Calciphobous species.

Carex rupestris All.

This species has hitherto not been found in the region, but there can hardly be any doubt that it does grow there, at any rate in the southern part. In Upernavik it was collected already by J. VAHL, and it is common south of there (PORSILD 1912). North af Melville Bugt it has been found in Thule and as far as circa lat.79°N., Inglefield Land (leg. J. NOE NYGAARD).

Carex saxatilis L.

The only record of this species is TAYLOR's from loc. 30, Wilcox Point. It is possible, however, that there has been some confusion of labels, so much the more as TAYLOR also records the related species, *C. compacta* R. Br., from the same locality. The latter at any rate has not since been found in Greenland.

South of Melville Bugt the most northerly, verified find-spot is Laksefjord, lat. 72°30′ N., whereafter it becomes more common southwards (PORSILD 1912).

North of Melville Bugt it was found once in Wolstenholme Fjord (leg. LAUGE KOCH). The species prefers a calcareous soil, and therefore it may well be absent from the whole of the Melville Bugt region.

Carex scirpoidea Michx.

Loc.: 1. Women Isl. (T), 8. Tasiussaq (FS!), 23. Ûmánap timilia (R!), 27. Nûgssuaq Camp 2 (Corn), 28. Nunatak I (Corn), 31. Kangerdluarssuk (R!), 35. Wilcox Point (T), 46. C. York (W).

This species reaches its northern limit within the region. OSTENFELD (1926) does not recognize WETHERILL's find of the species at Kap York. However, there is scarcely any reason for doubting it, so much the more as *C. scirpoidea* is a calciphilous species. A consideration of the Kap York flora as a whole will show that the chalk plants concentrate about this locality.—Conversely, TAYLOR's record of the plant from Wilcox Point must therefore be regarded as rather uncertain.

Carex stans Drej.

Loc.: 24. Nugssuaq (Corn).

South of Melville Bugt this species occurs in the Disko area, where it has been found northwards as far as lat. 72°25′ N., Amitsuarssûp Qingua (PORSILD 1912). It is also known from Thule and farther north.

A record by TAYLOR of this species from Wilcox Point can hardly be accepted as evidence of its occurrence there, as apparently there may be confusion with forms of *Carex rigida.*

ROWLEE & WIEGAND's record of the species from Nûgssuaq cannot be disregarded at any rate, even if this locality must for the present be taken with a certain reserve.

Carex ursina Dew.

LANGE's (1889) and ROSENVINGE's (1892) records of *C. ursina* at Tasiussaq are due to incorrect identification of specimens of *C. marina*. The error has already been corrected by OSTENFELD. The northernmost locality known in West Greenland is Svartenhuk peninsula, Manîtsorqut, lat. 71°30′ N., where it was collected by M. P. PORSILD 1935.

Elyna Bellardi (All.) Koch

Curiously enough, there is not a single record or find of this species from lat. 71°20′ N. (Upernavik island, leg. A. E. PORSILD, 1921) to lat. 76°30′ N. (Thule), though otherwise it is spread over most of the coast of Greenland, the north coast included (cf. map, SEIDENFADEN 1933, p. 103).

Eriophorum polystachyum L.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (FJ! FS!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 15. Kangerdlugssuaq (R!), 18. Kûk (FJ!), 20. Qutdlikorssuit (FJ!), 24. Nûgssuaq (Corn), 26. Camp 2 (Corn), 32. Igdlulik (FJ!), 48. Ivssugigsoq (N).

TAYLOR says the species is common; see under next species.

In Northeast and North Greenland it is represented by var. *tristis* Th. M. Fries (cf. SØRENSEN, 1933, p. 127) with thickly pubescent peduncles of the spikes. The plants from Melville Bugt region have the same low growth and broad leaves as var. *tristis*, but for the most part they have smooth or slightly rough peduncles. Typical var. *tristis* occur, however, southwards to Umanak, lat. 70°40′ N. In more southerly localities and in South Greenland the species is represented by taller forms with smooth peduncles.

Eriophorum Scheuchzeri Hoppe

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! FJ! FS!), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 20. Qutdlikorssuit (FJ!), 23. Ûmánap timilia (R!), 25. Kraulshavn (FS!), 31. Kangerdluarssuk (R! FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 37. Sârdlia (FJ!), 38. Devils Thumb (FS!), 46. C. York (H), 48. Ivssugigsoq (N).

Seems to be more common in the region than *E. polystachyum*. However, TAYLOR does not record *E. Scheuchzeri* (*E. capitatum* Host) from the Greenland side of Baffin Bay, whereas he says that *E. polystachyum* (*E. angustifolium* Roth) is common. It would thus seem that when making his notes he did not distinguish sufficiently between the two species.

The species is widespread over the whole coast of Greenland.

Gramineae.

Alopecurus alpinus Sm.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! N ThW! FS!), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 27. Camp 3 (Corn), 30. Upernaviarssuk (FS!), 31. Kangerdluarssuk (FS!), 32. Igdlulik (FJ!), 37. Sârdlia (FJ!), 38. Devils Thumb (FS!), 39. Björlings Ö (FS!), 43. Thom Ö (L&R!), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 46. C. York (Lyall H W St), 48. Ivssugigsoq (N), 49. Björlings Ö (Seidf), 50. Breaks (FS!).

It appears from the list of localities that *A. alpinus* is one of the commonest species in the region. TAYLOR has it as common too. Widespread both north and south of Melville Bugt, though it seems to increase in frequency northwards.

Arctagrostis latifolia (R. Br.) Griseb.

Loc.: 48. Ivssugigsoq (N).

Common both south and north of the region; southwards found right down to Upernavik (leg. J. VAHL). TAYLOR says it is common, but this can hardly refer to his localities north of lat. 73° N., as it has not been observed by later collectors. Calciphilous species.

Calamagrostis purpurascens R. Br.

North of Laksefjord, lat. 72°30′ N. (here collected by PORSILD), the species has been observed only in a single locality in Wolstenholme Fjord (leg. LAUGE KOCH); it thus seems to be absent over the whole of Melville Bugt north of lat. 73° N. In Laksefjord and south of there it is found only in the inner ends of the fjords (PORSILD 1912).

Deschampsia brevifolia R. Br.
var. *pumila* Ledeb. (Syn. *D. pumila* (Ledeb.) Ostenf.).

Loc.: 22. Kitsigsorssuit (FS!), 48. Ivssugigsoq (N).

(On the identity of the plant from the last-named locality see OSTENFELD 1923a). This plant has been found only in few localities on the west coast of Greenland, viz. Thule, lat. 76°30′ N. and some localities in the Disko area, northernmost lat. 72°23′ N. SALOMONSEN's discovery of the plant, however, proves that it is not quite absent from the tract in between.

In West Greenland var. *arctica* (Trin.) has not been observed south of Thule.

Dupontia Fisheri R. Br.

Not found in the region. On the west coast of Greenland the species has a limited area in the Disko district, northwards to Svartenhuk lat. 71°30′ N. (Manît-

sorqut, leg. PORSILD 1935). With SALOMONSEN's find of the plant at Thule (cf. p. 17) there cannot be much reason for doubting the earlier record from Polaris Bay, Hall Land, lat. 81°35′ N. (BESSELS 1879, p. 304; ASA GRAY's identification).

Festuca brachyphylla Schult.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (R! N ThW!), 8a. Skerries at Tasiussaq (N), 10. Upernaviarsuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 15. Kangerdlugssuaq (R! FS!), 17. Qeqertaq (R!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 30. Upernaviarssuk (R!), 32. Igdlulik (FJ!), 38. Devils Thumb (FJ! FS!), 43. Thom Ö (L&R!), 48. Ivssugigsoq (N).

Widespread in the region and both north and south of it. A polymorphous species, whose forms have not yet been fully classified.

Festuca rubra L.

According to RYDBERG's identification of GOODSELL's collections (RYDBERG 1912) the species has been found at Etah. This record, however, must be regarded with skepticism, inasmuch as in the rest of West Greenland the plant has not been found more to the north than Ingnerit Fjord, lat. 72°03′ N. (leg. PORSILD).

If there really is a specimen of the species in GOODSELL's collections, the probability is that it was not collected at Etah, unless it was an accidentally introduced specimen.

Hierochloe alpina (Liljebl.) Roem. & Schult.

Loc.: 8a. Skerries at Tasiussaq (N), 15. Kangerdlugssuaq (R!), 18. Kuk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánap timilia (R!), 29. Mt. Schurman (Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk (FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 38. Devils Thumb (FJ! FS!), 39. Björlings Ö (FS!), 40. Amdrups Ö (FS!), 43. Thom Ö (L&R!), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 46. C. York (St), 48. Ivssugigsoq (N).

TAYLOR records it as common. From the distribution of the localities within the region it is clear that *Hierochloe alpina* is one of the few species that increase in frequency northwards. On the other hand it occurs far to the south in Greenland, but often somewhat sporadically. Even between lat. 71° and 73° N. it is not very frequent: recorded as "not rare" by PORSILD (1912).

Phippsia algida (Soland.) R. Br.

Loc.: 8. Tasiussaq (N ThW!), 8a. Skerries at Tasiussaq (N), 16. Kípako (FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 24. Nûgssuaq (Corn), 25. Kraulshavn (FJ! FS!), 30. Upernaviarssuk (R! FS!), 32. Igdlulik (FJ!), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ!), 39. Björlings Ö (FS!), 46. C. York (Lyall H St), 48. Ivssugigsoq (N), 49. Björlings Ö (W), 50. Breaks (FS!).

Having regard to the fact that this plant is so small and insignificant that it is easily overlooked, the long list of localities certainly confirms TAYLOR's record of the plant as "a very common grass". It is widespread all over the coast of Greenland.

Pleuropogon Sabinei R. Br.

Loc.: 48. Ivssugigsoq (N).

This locality is the most southerly one known on the west coast of Greenland. Widespread from Thule along the north coast.

Poa abbreviata R. Br.

The species is common on the north coast of Greenland as far as Thule, whereas from there southwards it is quite absent down to Disko, where its northernmost locality is the north coast of Nûgssuaq lat. 70°44′ N.

Poa alpina L.

Loc.: 24. Nûgssuaq (Corn), 27. Camp 3 (Corn).

The Copenhagen Botanical Museum has no specimen from localities north of Laksefjord (circa lat. 72°30′ N.). It is said to have been collected at Upernavik by Dr. WALKER on the M'Clintock Expedition (HOOKER 1861). The record from Nûgssuaq, circa lat. 74°10′ N. (ROWLEE & WIEGAND 1897) is doubted by PORSILD (1912). But the species is also recorded by RYDBERG (1912) from North Star Bay (near Thule Station), collected by GOODSELL 1908. GOODSELL also collected plants in Labrador, and therefore the possibility of a confusion of labels cannot be ignored. If the plant really grows near the Thule station, it is strange that it has never been noticed by Danish collectors there. Until the find has been verified it will be most correct to disregard the Thule locality.

Poa arctica R. Br.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (N ThW! FJ!), 8a. Skerries at Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (Corn), 25. Kraulshavn (FJ!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 28. Nunatak I (Corn), 30. Upernaviarssuk (R!), 31. Kangerdluarssuk (R! Corn FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 43. Thom Ö (L&R), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 46. C. York (H), 48. Ivssugigsoq (N).

One of the commonest grasses in the region. Widespread both south of Melville Bugt and along the north coast of Greenland, but most frequent on the non-calcareous, crystalline rocks.—*Poa arctica* is one of the few plants that grow very luxuriantly at the fowl breeding grounds without being in any way limited to such localities or to the beach.

Poa glauca Vahl

Loc.: 8. Tasiussaq (N), 31. Kangerdluarssuk (R!), 43. Thom Ö (L&R!), 48. Ivssugigsoq (N).

It is remarkable that *Poa glauca* is so very poorly represented in the collections from Melville Bugt. This seems to indicate that it is rare there. It is common on the north coast of Greenland (OSTENFELD 1923d). From the region south of lat. 73° N. PORSILD writes on this species (1912, p. 367): "The most common grass here as elsewhere in Greenland".

Poa pratensis L.-*Poa arctica* R. Br.

Loc.: 8. Tasiussaq (R!), 19. Agpalisiorfik (R!), 24. Nûgssuaq (R!), 25. Kraulshavn (FS!), 39. Björlings Ö (FS!), 40. Amdrups Ö (FS!).

As far as is known, definitely identified *Poa pratensis* (*P. alpigena* Lindm.) has its West-Greenland northern limit in Laksefjord, circa lat. 72°30′ N. North of there, as well as to the south, *Poa* forms occur that seem to be intermediary between *Poa pratensis* proper and *Poa arctica*. In all probability they are independent elementary species or races, though their taxonomical value has not so far been made clear (cf. NANNFELDT 1940). No such forms have been observed north of Melville Bugt, so that their northern boundary is in our region. (OSTENFELD's record (1926) of *P. pratensis s. l.* from lat. 76°—80° N. refers to viviparous forms which are best regarded as separate species or races. No viviparous *Poae* have been observed in the Melville Bugt region).

Puccinellia angustata (R. Br.) Rand & Redf.

The species has not been found in the Melville Bugt region, but it is common northwards from Thule and also in the Disko area, northwards up to circa lat. 72°30′ N. (Kangeq, leg. RYDER).—In West Greenland south of Melville Bugt there is, in addition to the main species, var. *vaginata* (Lge.) Holmberg, which comes very close to *P. retroflexa* subsp. *borealis* Holmberg. Var. *vaginata* has been found northwards to Pröven, lat. 72°20′ N. (leg. KOLDERUP ROSENVINGE) and Upernavik, lat. 72°45′ N. (leg. J. VAHL). Calciphilous species.

Puccinellia phryganodes (Trin.) Schribn. & Merr.

Loc.: 8. Tasiussaq (N), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 24. Nûgssuaq (Corn), 37. Sârdlia (FJ!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Widespread both to north and south. Exclusively sea-shore plant.

Puccinellia retroflexa (Curt.) Holmb. subsp. *borealis* Holmb.

Loc.: 8. Tasiussaq (ThW!), 48. Ivssugigsoq (N).

This species is generally widespread south of lat. 73° N. and also occurs in a few finds from Thule, where it seems to have its northern limit.

Puccinellia Vahliana (Liebm.) Schribn. & Merr.

The species grows in the Disko area, as far north as Svartenhuk, Tartûssaq, lat. 71°25′ N. From north of Melville Bugt there is a find from Murchison Sound, circa lat. 75°45′ N. (leg. J. Noe Nygaard). It is more or less associated with calcareous soil and in all probability is quite absent from the greater part of the intermediate stretch of coast.

Trisetum spicatum (L.) Richt.

Loc.: 4. Erqordleq (FJ!), 8. Tasiussaq (N FS!), 18. Kûk (FJ!), 30. Upernaviarssuk (R!), 33. Hoyt Isl. (St).

Taylor has the species as common, but this can scarcely be in conformity with the actual conditions north of lat. 73° N., at any rate the localities far from the heads of the fjords visited by Taylor. The species becomes more common southwards (cf. Porsild 1912). It has also been found at Thule and on the north coast of Greenland, though it does not seem to be frequent there.

Juncaceae.

Juncus biglumis L.

Loc. 48. Ivssugigsoq (N).

Juncus biglumis is generally widespread over the whole of the coast of Greenland, even on the north coast. Hitherto, strangely enough there has been no find between Upernavik (where it was already collected by J. Vahl) and Ivssugigsoq—apart from Taylor's record of the plant as common. Whether or not there is anything real behind this record remains to be seen; but there can be no doubt that this insignificant plant has been overlooked by later collectors and that it must be widespread, if not frequent, over the greater part of Melville Bugt.

Juncus castaneus Sm.

Loc.: 15. Kangerdlugssuaq (FS!).

Before the find at Kangerdlugssuaq by Salomonsen the species was not known in West Greenland farther north than to Amitsuarsuk, lat. 72°30′ N. (leg. Porsild). This moves the northern limit more than a parallel more to the north. According to Porsild (1912) the species in the area lat. 71°—73° N. is associated mainly with favourable, sheltered localities, and there is little probability of its being found much farther north than the said locality.

Juncus triglumis L.
(*J. albescens* (Lge.) Fern.).

With the exception of a single locality in Foulke Fjord, lat. 78°18′ N. (leg. H. G. Simmons), this species is not represented in the Copenhagen Botanical Mu-

seum's collections from localities north of Svartenhuk peninsula (Manîtsorqut, lat. 71°30′ N.). Nevertheless it will undoubtedly be found farther north of there too. For example, PORSILD writes of the region lat. 71°—73° N. (1912, p. 371): "no doubt often overlooked, but hardly as common as the above [*J. biglumis*]". In northern Greenland, however, the species is chiefly associated with calcareous soil. For this reason alone it is presumable that it is absent over the greater part of the Melville Bugt region.

Luzula confusa Lindeb.

Loc.: 4. Erqordleq (FJ!), 5. Kingigtuarssuk (FS!), 8. Tasiussaq (R! N ThW! FJ! FS!), 8a. Skerries at Tasiussaq (N), 10. Upernaviarssuk (R!), 11. Sâtoq (FJ!), 12. Ikerasârssuk (FJ!), 14. Tugtoqortôq (R!), 15. Kangerdlugssuaq (R! FS!), 18. Kûk (FJ!), 19. Agpalisiorfik (R!), 20. Qutdlikorssuit (FJ!), 22. Kitsigsorssuit (FS!), 23. Ûmánap timilia (R!), 24. Nûgssuaq (R! Corn), 25. Kraulshavn (FJ! FS!), 26. Camp 2 (Corn), 27. Camp 3 (Corn), 28. Nunatak I (Corn), 29. Mt. Schurman (Corn), 30. Upernaviarssuk (R! FS!), 31. Kangerdluarssuk R! FS!), 32. Igdlulik (FJ!), 33. Hoyt Isl. (St), 37. Sârdlia (FJ!), 38. Devils Thumb (FJ! FS!), 40. Amdrups Ö (FS!), 44. Bushnan Ö (Suth), 45. Savigsivik (FS!), 48. Ivssugigsoq (N).

To all these localities may be added TAYLOR's record of the species as "frequent".

Luzula confusa is probably the commonest species in the region. Its frequency is decidedly in relation to the fact that the area is mainly built up of non-calcareous rocks, for the species is clearly calciphobous.

Also common both south and north of Melville Bugt.

Luzula nivalis (Laest.) Beurl.

Loc.: 26. Nûgssuaq, Camp 2 (Corn), 27. Camp 3 (Corn), 37. Sârdlia (FJ!), 39. Björlings Ö (FS!), 48. Ivssugigsoq (N), 50. Breaks (FS!).

Hitherto the species has not been found in the south part of the region. PORSILD (1912) records it as common everywhere from lat. 71°—73° N. It is also common on the north coast of Greenland (OSTENFELD 1923d).

In direct contradistinction to the foregoing this species is something of a calciphilous plant, and its low frequency in the Melville Bugt region is doubtless due to edaphic causes.

Luzula spicata (L.) DC.

Loc.: 8. Tasiussaq (N).

This locality represents the most northerly occurrence of the species known in West Greenland. Even if there is no herbarium specimen as proof of this occurrence, there is no reason for doubting the correctness of NATHORST's record (1884, p. 41). The Copenhagen Botanical Museum

has specimens from a locality as far north as Amitsuarssuk, lat. 72°26′ N. (leg. M. P. & Th. Porsild) and the head of Laksefjord, circa lat. 72°30′ N. (leg. Lundager).

Luzula spicata var. *Kjellmani* Nath. (1884, p. 28) is *L. confusa.*

Liliaceae.

Tofieldia coccinea Richards.

Occurs in West Greenland in the Disko area, most northerly lat. 71°52′ N., Agpat island (leg. Porsild) and also at Thule and Murchison Sound. Hitherto it has not been found on the intermediate stretch of the west coast.

Tofieldia palustris Huds.

Loc.: 14. Kangerdlugssuaq (R! FS!), 23. Ûmánap timilia (R!), 33. Hoyt Isl. (St), 35. Wilcox Point (T).

This species has its northern limit within the region. To the south it is common everywhere (Porsild 1912).

7. Concluding Remarks on the Flora of Melville Bugt.

According to the foregoing list of species a total of 101 species of vascular plants have been found within the region of Melville Bugt. Of these, 77 occur both north and south of the region, 19 have their northern limit within it, these being:

Woodsia ilvensis
Betula nana
Draba daurica
Saxifraga Aizoon
Campanula rotundifolia
Antennaria angustata
Diapensia lapponica
Cassiope hypnoides
Loiseleuria procumbens
Phyllodoce coerulea
Bartsia alpina
Pedicularis flammea
Carex pedata
Carex scirpoidea
Poa alpina
Poa pratensis (s. l.)
Juncus castaneus
Luzula spicata
Tofieldia palustris

Only four species have their southern boundary there (all on Kap York peninsula or Carey Öer). These are:

Ranunculus Sabinei
Potentilla rubricaulis arctica
Taraxacum arctogenum
Pleuropogon Sabinei

One species only has never been found on the west coast of Greenland outside of our region: *Draba fladnizensis.*

No fewer than 29 species occur both north and south of the region without having been found within it.

These species are:

Equisetum variegatum
Dryopteris fragrans
Woodsia glabella
Arenaria humifusa
Melandryum apetalum
Arabis Hookeri
Braya purpurascens
Cardamine pratensis
Draba Bellii
Draba subcapitata
Eutrema Edwardsii
Hippuris vulgaris
Koenigia islandica
Ranunculus affinis
Ranunculus trichophyllus
Saxifraga aizoides
Erigeron compositus
Carex atrofusca
Carex incurva
Carex rupestris
Carex saxatilis
Elyna Bellardi
Calamagrostis purpurascens
Dupontia Fisheri
Poa abbreviata
Puccinellia angustata
Puccinellia Vahliana
Juncus triglumis
Tofieldia coccinea

The absence of a very few of these species within the Melville Bugt region may be due to insufficient research. The greater part of them seem really to have a discontinuous distribution on the coast of Greenland. A large part of them are decidedly calciphilous plants and possibly for that reason alone are lacking along the archean regions of Melville Bugt.

This stretch of coast is thus unusually poor in species. It becomes still more conspicuous when it is remembered that of the 101 species, no fewer than 13 are found only on the Kap York peninsula (localities Kap York and Ivssugigsoq), viz.

Honckenya peploides
Draba alpina
Draba cinerea
Ranunculus nivalis
Ranunculus sulphureus
Potentilla pulchella
Potentilla rubricaulis arctica
Mertensia maritima
Taraxacum arctogenum
Bartsia alpina
Arctagrostis latifolia
Pleuropogon Sabinei
Juncus biglumis

and one species, *Ranunculus Sabinei*, on Carey Öer only. It will also be seen that the majority of these species are more or less calciphilous. Thus for the long eastward and southward coast from Kap York (lat. 75°55′ N.) to the 73rd parallel to the south, only 87 species of vascular plants have been found. For purposes of comparison it may be said

that merely for the extremely poorly explored land on the north coast of Greenland north of the 80th parallel, OSTENFELD's summary (1925) contains an almost equal number, 80 species.

As was suggested above, there is no doubt that both climatic and edaphic—and possibly in some cases historic—causes contribute to the discontinuity in the West-Greenland area of the species. On the other hand, the soil conditions are probably the most important in this respect.

If we would form an idea of the frequency of the various species within the region on the basis of the floristic material available, we must bear in mind that a large part of the collections was made by non-professional botanists. Plants with large flowers or inflorescences or with some other conspicuous habitus, are always certain of being noticed, whereas insignificant or unattractive species will often remain in obscurity. For example, there can hardly be any doubt that the *Gramineae*, and perhaps particularly the *Cyperaceae*, are not fairly represented in the collections compared with their actual frequency.

Judging from this material *Luzula confusa* seems to be the commonest plant in the region, being recorded from no fewer than 30 of the 50 localities—the highest representation of any species on the whole. In conjunction with the high number of localities it should be noticed that this plant with its grassy appearance is not one of the conspicuous kinds.

Nine species have been observed in half or more of all localities. These must be placed among the most frequent within the region and are:

Luzula confusa	30	localities
Salix arctica-glauca	29	—
Cassiope tetragona	28	—
Potentilla emarginata	27	—
Saxifraga rivularis	27	—
Cerastium alpinum	25	—
Empetrum hermaphroditum	25	—
Vaccinium uliginosum	25	—
Poa arctica	25	—

Twenty species have been found in at least 15 localities but fewer than 25:

Alopecurus alpinus	23	loc.	*Saxifraga tricuspidata*	18	loc.
Salix herbacea	21	—	*Hierochloe alpina*	18	—
Silene acaulis	20	—	*Draba nivalis*	17	—
Carex rigida	20	—	*Polygonum viviparum*	17	—
Lycopodium Selago	19	—	*Saxifraga cernua*	17	—
Papaver radicatum	19	—	*Saxifraga foliolosa*	17	—

Pedicularis hirsuta	16 loc.	*Phippsia algida*	16 loc.
Melandryum triflorum ...	16 —	*Dryas integrifolia*	15 —
Diapensia lapponica	16 —	*Loiseleuria procumbens* ..	15 —
Eriophorum Scheuchzeri ..	16 —	*Festuca brachyphylla*	15 —

These too must be reckoned among the commonest species in the region, though the part they play in the structure of the vegetation as a whole must vary considerably, and furthermore, their frequency in many cases is in no direct relation to the number of localities in which they have been collected. Species such as *Lycopodium Selago* and *Papaver radicatum* can hardly avoid being noticed, whereas e. g. *Phippsia algida* and *Festuca brachyphylla* are easily overlooked, so that their frequency must be relatively higher than the number of find-spots would indicate directly.

The 29 species comprise more than a third of the species that are distributed over the greater part of Melville Bugt. With a certain approximation we may say that it is among these species that we find those which form the great majority of the plant covering of the region.

Nearly all the species recorded by SALOMONSEN from the breeding grounds of the puffin and the little auk (see pages 11—12 and 15—16) belong to that third of the flora that is most frequent in the region. The bird-cliffs of Melville Bugt are among the richest in the world, and there can be no doubt that the bird life there makes its impress upon the vegetation. The list of species itself, however, is not much affected by this bird life. In reality, the ornithocoprophilous species grow like weeds of a kind. As a rule they are ubiquitous species which are also able to thrive, at any rate locally, on unmanured soil. By means of the strong manuring on and near the bird cliffs they are able to oust those species which make more modest demands on life. Thus the bird-cliffs contribute nothing towards increasing the number of species, rather the contrary.

8. Remarks on the Vegetation of Melville Bugt.

In addition to the collection of herbarium material Dr. SALOMONSEN made valuable notes of the vegetation conditions in a number of localities, some of them lying just to the south and north of the region whose flora is dealt with above. These notes are given here, mostly in chronological order. The Roman numbers refer to the summary of vegetation types given below.

6th June. Spring in Upernavik. The snow lies deep on the north side of the mountains but has gone in parts of the south side, though here too it is lying in large patches. Snow is still falling, but it is thawy.

The ship thermometer is at +1° C. On Upernavik island only *Saxifraga oppositifolia* is in bloom; otherwise there are but few new shoots of *Salix arctica* (or *glauca*), *Pedicularis*, etc. A number of withered plants are to be seen (i. e. they are no longer covered with snow): *Vaccinium uliginosum*, *Dryas integrifolia*, *Cassiope tetragona*, *Empetrum hermaphroditum*, *Silene acaulis*, *Saxifraga oppositifolia*, *Saxifraga* sp., *Carex* sp., *Potentilla emarginata*, *Pedicularis* sp., etc.—So it is not summer yet.

30th June. Langø, near Upernavik (circa lat. 72°45′ N.). There has been sunshine for about a week, most of the snow has melted. The weather in June otherwise used to be wintery with much precipitation in the form of snow and a little rain. A number of flowers have sprung out, others are in bud. The following applies to the south-east slope, except where otherwise mentioned:

"Heath" (II. Mixed dwarf-bush heath), i. e. a mixture of *Betula nana* (character plant), *Vaccinium uliginosum*, *Empetrum hermaphroditum* and a little *Salix* cfr. *glauca*. Both *Salix* and *Betula* now had catkins in bloom. In addition, no small number of blooming *Cassiope tetragona* (NB. the north-exposed *Cassiope* heath not yet in bloom). Here and there *Saxifraga oppositifolia* and *Pedicularis hirsuta*. No moss.

Cassiope tetragona vegetation (III. *Cassiope* heath), north exposure. The heather is green with fresh buds; large flower buds visible. A little moss on the ground.

Cassiope tetragona on snow-patch (III. *Cassiope* heath), i. e. cushions of lichen and moss with *Cassiope*. The heather still brown, hardly any new shoots, and no flower buds to be seen. It is still on frozen soil. The snow has just gone and it is growing almost right up to the edge of a large snowdrift.

"Fell-field" (IV. *Salix-arctic* heath?). Gravel or large stones, no moss but some lichen (grey, slightly branching: *Stereocaulon*). Also *Luzula confusa* and scattered *Salix* bushes.

Dryas heath (VII). Rather dry soil. *Dryas* is often accompanied by *Empetrum*. Only isolated *Dryas* in bloom as yet, most with last year's seed-down on the old stalk and with young buds.

Lake-shore vegetation (IX. Bogs). Moss cushions with sprouting moss and some old dry *Carex* straws on very wet soil. Scattered about are *Salix herbacea* with the leaves beginning to unfold and tufts of *Carex Lachenalii* and *Poa arctica*.

On the banks of small flowing watercourses are *Carex* species and a little moss on the wet, muddy soil.

8th July. Store Fladø (Sâtorssuaq) (circa lat. 72°15′ N.).

(II. Mixed dwarf-bush heath). On early snow-free, south-exposed and therefore dry and warm tracts there is a creeping growth, scarcely

the width of a hand high, of *Dryas integrifolia* (character plant) together with *Cassiope tetragona* (here in bloom) and *Vaccinium uliginosum*. Associate plants: *Papaver radicatum*, *Pyrola grandiflora*, *Empetrum hermaphroditum*, *Salix glauca*.

Dryas heath (VII). On still drier stretches *Dryas* is practically supreme, with only a few cushion plants between. In places the soil is already quite devoid of vegetation, thus forming the transition to:

Fell-field (VI). This, however, is not typically developed on Store Fladø.

The *Cassiope* heath (III) occupies much the greater part of the island. The heather blooms late, only very small green buds being observable at the tips of the old brown stalks. In among the heather is *Salix* cfr. *arctica*. Some moss and lichen on the ground. No particular associate plants, but here and there are *Oxyria digyna* and *Potentilla emarginata*. There are mostly scattered stones large and small.

(Block fields). Terrain with large unweathered blocks, where stone lies by stone, the only growth being lichens. Where a little soil has accumulated there are scattered outposts of the *Cassiope* heath.

Moist depressions. In wet places on the *Cassiope* heath, where streams run through, there are coverings of *Equisetum arvense*, *Lycopodium Selago*, *Eriophorum polystachyum*, *Carex rigida* and *Poa pratensis*. In addition there are scattered plants everywhere from the *Cassiope* heath, viz. both *Cassiope* and *Salix*. Where there is stagnant water the *Cassiope* often disappears, leaving nothing but moss and *Salix* over fairly wide areas (IV. *Salix* heath). This forms the transition to lake-shore (bogs with tussocks).

Bogs (IX). Grassy knolls with *Salix arctica* (s.l.) and *Salix herbacea*.

Marsh (XI). Out in the water are *Eriophorum polystachyum* and *Eriophorum Scheuchzeri* as well as some *Carex* species, e. g. *C. rariflora*.

On some spots that are drier than the bogs proper there is a kind of grassy meadow (XIII. Grassy meadow on flow-earth), consisting of *Carex rigida*, *Arctagrostis latifolia*, *Salix arctica-glauca*, *Draba lactea* etc. Most of the land with grassy meadows still has a withered appearance.

"Beach meadow" (XIV. Sandy shore vegetation), i. e. coarse, gravelly sand beach along the banks of lagoons, on the outer side protected by stone reefs. The vegetation is thin and consists mainly of *Honckenya peploides* and *Mertensia maritima*. Of the other plants on the island only *Salix arctica* (s. l.) extends down to the sandy beach, but not far.

The littoral belt (XVI) with brown algae (*Fucaceae*) and a little washed-up *Laminaria*.

On the whole Store Fladø is characterized by the great dominance of *Cassiope tetragona*, and the moss vegetation is also prominent. This

indicates great humidity and at the same time cold. On the 8th July the plants were still far behind and made a withered impression. Ice and snow still lay in many places on the hill sides, and hardly any mosquitoes had hatched out.

13th July. Eqaluarssuit, in Laksefjord, Pröven (circa lat. 72°30′ N.).

Right down at the mouth of the river, where there is abundant running water, there is a whole forest of *Salix glauca* (I. Willow copses). The tallest bushes were about 30—40 cm. higher than I could reach with my outstretched arm, but most of them are less than man's height. At Orpik the willow copses covered a valley several hundred metres wide, perhaps a kilometre inland, broken only by heaps of stones, i.e. former watercourses. Where the timber is not so dense there is a ground vegetation of *Empetrum hermaphroditum*, *Vaccinium uliginosum* (*microphyllum*) and *Pyrola grandiflora*. In the shade under the thick copse nothing but *Pyrola*, but on wetter soil there are also *Equisetum* (presumably *arvense*) and moss on the ground.

On Trekantfjældet at a height of about 900 m and a little way down the side was "fell-field", where the plants grow in loose gravel (VI), or at springs in wet clay (VIII. Herb-field). Here were *Draba daurica*, *Erigeron* cfr. *unalaschkensis*, *Poa arctica*, *Saxifraga caespitosa*, *Luzula confusa*, *Papaver radicatum*, sporadically some *Cassiope tetragona* and a single *Pyrola grandiflora*.

A little lower among the screes the vegetation becomes thicker, but often broken by bare patches. Here conditions are almost the same as on Fladø, (III) *Cassiope* heath with *Salix arctica-glauca*. On drier spots (VII) *Dryas* heath.

Farther down in the heath itself (II) with a dense, continuous growth of *Vaccinium uliginosum*, *Empetrum hermaphroditum*, *Cassiope tetragona*, *Betula nana* and *Salix arctica-glauca* in close unison. In this heath the character plant is *Betula nana*. It may grow rather high and form copses of up to 30, perhaps 40 cm. in height. Alternating with the more ordinary heath are patches of vegetation af *Salix arctica-glauca*, *Vaccinium uliginosum*, *Empetrum hermaphroditum* and *Ledum decumbens*; associate plants here are *Pyrola grandiflora*, *Cassiope tetragona*, *Phyllodoce coerulea* and *Chamaenerium latifolium*.

Nitrophil vegetation (XII). In Laksefjord, on a camping ground often used by the Greenlanders not far from the river, was a luxuriant growth of *Poa pratensis* and *Alopecurus alpinus*.

The rich vegetation of Laksefjord is in marked contrast to that more to the north, e.g. on the island of Upernavik. In many places here the fell-field with *Salix*, *Dryas*, *Saxifraga oppositifolia*, *Silene acaulis* and other plants, growing sporadically in the gravel, extends right out to sea level, though here and there it is replaced by denser vegetation.

In such cases it is either a pond with *Eriophorum* and *Carex* species, or heath, i.e. *Empetrum-Vaccinium* vegetation with *Salix*, *Pyrola* and certain other species. There is a complete absence of *Ledum*, *Chamaenerium* and *Betula* (though the latter grows elsewhere on adjacent islands), and on slopes with a northern exposure even *Vaccinium* is lacking.

20th July. Upernavik island (circa lat. 72°45′ N.).

Summer has now arrived and the sun has been shining for some considerable time, though alternating with an overcast sky. A little wind and mist, but scarcely any precipitation. Temperature relatively high; many mosquitoes. Most plants now in bloom, indeed some, e. g. *Dryas*, to some extent already past flowering. The following plant communities was found, Berlese samples being taken.

Heath (II), south exposed, with *Empetrum*, *Vaccinium*, *Salix*, no moss. No *Betula nana*, which is absent from the whole island.

Empetrum Heath (II) with *Salix arctica-glauca*, *Cassiope tetragona* and *Pyrola grandiflora*. Thick moss and lichen. No *Vaccinium*. In other words, a somewhat meagre heath.

Cassiope vegetation (III. *Cassiope* heath) on the shady side of stones, northwest exposure, partly blooming, partly still without flower buds. Abundant moss underlayer.

Fell field (VI), southwest exposure. Dry gravel with cushions of *Saxifraga tricuspidata* and *Silene acaulis*.

Patch with *Dryas* (VII. *Dryas* heath), southwest exposure, close to fell field. No moss.

Bog (IX). Northwest exposure, with *Eriophorum polystachyum*, *Polygonum viviparum* and *Salix herbacea*, all growing on dense moss cushions.

Wet soil (IX. Bogs), south exposure, close to spings. Moss cushions with *Luzula confusa* and *Salix herbacea*.

In the vicinity, on still wetter soil, *Eriophorum Scheuchzeri* (XI. Marsh).

25th July. Tasiussaq (circa lat. 73°22′ N.).

Meagre heath (II) with *Dryas*, *Vaccinium*, *Empetrum* and *Carex* sp., as well as scattered plants from the fell-field.

26th July. Kangerdlugssuaq (circa lat. 73°40′ N.).

In this fjord, which runs almost right in to the ice cap but is quite free of snow, the mountains were dismal and bare. As a rule it was fell-field (VI) with sporadic occurrences of *Saxifraga*, *Salix*, *Dryas*, *Carex* etc. However, there is often a meagre heath developed (II) with *Empetrum* and *Vaccinium uliginosum*. *Betula nana* was found on a single occasion, but here towards the north this plant is now very rare.

27th—28th July. Devil's Thumb (circa lat. 74°36′ N.).

The southern slopes of the mountains above the settlement, at most 300 metres high, were examined. They bore a thinned out heath flora (II) consisting of *Vaccinium uliginosum* and *Empetrum hermaphroditum* with *Salix arctica-glauca*, but not with *Betula nana* and no *Ledum*. This heath vegetation covers the mountains with a thin coating, alternating with tussocks of Luzula and other grassy plants, and now and then *Pyrola grandiflora*.

28th July. Amdrups Ö (circa lat. 74°43′ N.).

Luxuriant south slope as on Devil's Thumb. The vegetation (II) consists of *Vaccinium*, *Empetrum* with scattered *Salix*, but no *Betula*.

3rd—7th August. Thule (circa lat. 76°32′ N.).

The vegetation is extremely poor as regards the heath type, i. e. *Betula*, *Ledum* and others are completely absent. *Empetrum* is missing too, but it has been seen at a solitary locality at Siorapaluk.

The vegetation forms a heath (III. *Cassiope* heath) with *Salix arctica* (s. l.) and *Cassiope tetragona*. The latter has taken the place of *Empetrum*.

On drier spots there is an abundance of *Dryas*, forming continuous stretches mixed with *Cassiope* and *Salix*, sometimes also with *Vaccinium uliginosum* (II. Mixed dwarf-bush heath). Along runnels where water runs down there are also grasses growing up above the dwarf-bush vegetation, which as a maximum grows to a height of 10 cm.

Along lake banks (IX. Bogs) there is a soft moss vegetation with *Eriophorum polystachyum* as character plant, besides a number of other plants, but the heath plants (*Dryas*, *Cassiope*) are missing. Curiously enough, *Salix herbacea* could not be found (though it occurred at Savigsivik).

In wet places there was marsh (XI) with *Eriophora* and dense, water-logged moss.

It is a peculiar feature that the plants here at Thule flower later. For instance, *Saxifraga oppositifolia* is blooming everywhere, whilst in Upernavik it was in flower at the beginning of June and had finished flowering at the end of that month.

18th August. Savigsivik (circa lat. 76°0′ N.).

The vegetation on the island was extremely scanty, no doubt as a consequence of the proximity of the ice cap. Only 13 species of flowering plants were found, but reference must be made to the extensive, thick, very soft layers of turf and moss (X) stretching from the foot of the mountains to some distance up the slopes. There were no flower-plants in these moss cushions.

Remarks on the Plant Communities at the Fowl Breeding Grounds [1]) (XII. Ornithocoprophilous Vegetation).

21st June. The precipitous fowling cliff Qaersorssuaq at Upernavik has *Alopecurus alpinus*, *Puccinellia retroflexa* and *Cochlearia groenlandica* growing in clefts and cracks.

27th June. Itugdlalik, small island off Upernavik. At a small lake surrounded by grassy meadow were *Carex subspathacea*, *Cochlearia groenlandica*, *Saxifraga rivularis*, *Stellaris humifusa*, *Poa pratensis*, *Carex rupestris*, *Phippsia algida*, *Alopecurus alpinus*, and out in the water *Potamogeton groenlandicus*.

28th June. Angissoq, island off Upernavik, with northwest slope forming a breeding ground for puffins. Here the character plants were *Poa arctica* and *Alopecurus alpinus*.

24th July. Kingigtuarssuk (lat. 73°15′ N.). Height 0—40 m. On the slope on the west side of the island was a large colony of auks and puffins. The vegetation on this west slope consisted first and foremost of *Poa arctica*, now and then mixed with *Cochlearia groenlandica* and patches of *Salix glauca* and *Salix herbacea*. In addition, *Cerastium alpinum*, *Draba nivalis* and *Potentilla emarginata* were growing in the bird colony.

25th July. Kípako (lat. 73°41′ N.), small island in Melville Bugt. On the large, vertical guillemot cliff *Phippsia algida* was common.

8th August. Siorapaluk (lat. 77°48′ N.). Height 0—400 m. On the evenly sloping south-exposed hill-side was a large heap of screes with large and small blocks in confusion, the breeding place of thousands of little auks. Below this, up to a height of about 100 m, was a dense and thick moss or grass vegetation that continued up between the breeding places, which were confined to the screes. The plants were grasses, viz. *Alopecurus alpinus*, *Poa arctica* and *Poa glauca*, as well as *Cerastium alpinum* and *Stellaria longipes*.

9. Summary of the Principal Types of Vegetation.

Dr. SALOMONSEN's notes provide a very good foundation for an estimation of the conditions under which the plants grow in these parts. On the basis of these notes as well as the list of the flora given in the foregoing I shall endeavour to give the broad outlines of a summary of the principal types of vegetation in the areas which Dr. SALOMONSEN explored.

[1]) The plants identified by TH. SØRENSEN.

I. The willow copses (*Salix glauca*) at Orpik in Laksefjord have previously been described in detail by PORSILD (1912). There is still no report of any willow copse more northerly than these, and future investigation will scarcely alter PORSILD's opinion that this is the absolute northern limit of this type of vegetation in West Greenland.

II. The mixed dwarf-bush heath (Warming's Lynghede [heather heath], 1888, in part) is a type of vegetation that is widely distributed over the whole of West Greenland, though it changes character and becomes poorer in species northwards. Passing from south to north *Empetrum* as the dominating plant decreases and is replaced more and more by *Cassiope tetragona*. A particularly luxuriant type of heath, in which *Ledum* and *Phyllodoce* are dominants, was observed by SALOMONSEN in Laksefjord (circa lat. 72°30′ N.) (cf. also HOLM 1887, p. 312). Here at its northern limit this type seems to be associated with the inland localities. Apparently it is absent in the islands farther north. The northernmost find-spot for *Ledum decumbens* is lat. 72°38′ N. A little more to the north than *Ledum* we find that *Phyllodoce coerolea* and *Loiseleurea procumbens* also disappear. At the head of Laksefjord, and also on the islands northwards to Upernavik, *Betula nana* occurs in large numbers in the most luxuriant heaths. North of there the species occurs only individually in the warmest fjord localities—probably only on south-exposed ground, where it scarcely forms part of the vegetation of the heath proper.

A meagre type of heath, consisting mainly of *Empetrum hermaphroditum*, *Cassiope tetragona*, *Dryas integrifolia*, *Vaccinium uliginosum* and *Salix arctica-glauca*, is widespread over the whole of Melville Bugt. Here *Vaccinium* may be said to some degree to take the place of *Betula nana*. Northwards the *Salix* stands become more and more pure *arctica*, while the *glauca*-like forms disappear. *Empetrum* becomes replaced gradually by *Cassiope tetragona* until in the Thule region it is to be found only in small patches on southern exposures, exactly as in the case of *Betula nana* in the south part of the Melville Bugt region.

III. The *Cassiope* heath. Here *Cassiope tetragona* is the only dominating dwarf bush, though *Salix arctica* occurs commonly, mixed in larger or smaller numbers and increasing as the snow covering increases. In the south part of the region the *Cassiope* heath is to be found mainly on north slopes and places where the snow lies for a relatively long time ("*Cassiope* snow-patch"). Northwards it takes the place of the mixed dwarf bush heath to some extent.

IV. The *Salix arctica* heath. Where the snow melts still later *Cassiope* disappears and *Salix* remains alone, together with a little lichen and moss and some herbs. Among these *Luzula confusa* seems to

occupy the most prominent place in the Melville Bugt region. This meagre *Salix* heath passes insensibly into the next type, viz.:

V. Snow-patch vegetation proper. This type, characterized by very sparse vegetation of small and insignificant plants, as a rule is not recognized as such by non-botanists and in most cases is doubtless recorded as "fell-field" (WARMING 1888). The following species are especially characteristic of these snow-patches: *Saxifraga cernua*, *S. foliolosa*, *S. rivularis*, *S. nivalis* var. *tenuis*, *Sagina intermedia*, *Cardamine bellidifolia*, *Draba lactea*, *Ranunculus pygmaeus*, *Phippsia algida*.

VI. Fell-field proper (cf. BÖCHER 1933, p. 97), confined to areas with scattered or almost no vegetation with no protracted snow covering, undoubtedly occupies no small part of the area within the Melville Bugt region. Despite its scanty and scattered vegetation, fell-field contains many of the commonest species, e. g. *Cerastium alpinum*, *Melandryum triflorum*, *Silene acaulis*, *Papaver radicatum*, *Dryas integrifolia*, *Potentilla emarginata*, *Salix arctica*, *Saxifraga oppositifolia*, *S. tricuspidata*, *Diapensia lapponica*, *Luzula confusa*.

VII. The *Dryas* heath forms the transition from the dry fell-field to the dwarf-bush heath. SALOMONSEN has notes of this type of vegetation at several localities, and there is scarcely any doubt that it is a common type, but hardly covering large continuous areas. *Dryas* heath is less snow-covered in winter than the mixed dwarf-bush heath, and more exposed to the wind. *Dryas* forms a close carpet mixed with several of the plants of the fell-field. As a rule there is no moss carpet on the ground.

VIII. The herb-fields proper seem to disappear towards the north together with the willow copses. The "fell-field" mentioned by SALOMONSEN in Laksefjord at a height of about 900 m distinctly bears the last traces of herb-field vegetation, characterized by the presence of species such as *Draba daurica* and *Erigeron unalaschkensis*.—North of Upernavik too it may perhaps be possible to find extremely northward traces of the West Greenland herb-field vegetation in the form of a sporadic herbal growth along the foot of south-exposed cliffs. As small association fragments scattered among block screes material it may easily escape attention.

IX. Bogs (cf. Warming's Moskjær [moss-bogs], 1888, p. 131), i. e. thick moss cushions (especially *Aulacomnium* and *Camptothecium* species) mixed with a higher vegetation of grassy plants such as *Poa arctica*, *Carex rigida* and *Eriophorum polystachyum* and low bushes creeping in the moss, especially *Salix arctica* and *S. herbacea*, are recorded by SALOMONSEN on Store Fladø and Upernavik. It is hardly likely that typical

moss-bogs occur much more to the north than there. In the more northerly areas these moss-bogs may with some justification be said to be replaced by the next two types, viz.:

X. The dense moss cushions of the drier soil (especially *Dicranum* and similar species), almost without any admixture of higher vascular plants. This moss vegetation is capable of forming considerable layers of peat, up to a thickness of two to four metres (Rasmussen 1921, p. 530). This particularly prolific development of the moss vegetation, however, seems to be associated with the fowling cliffs.

The second plant community which to the north replaces the knolly moss-bogs, but which is not lacking farther south either, is

XI. the heavily waterlogged marsh with *Eriophorum polystachyum*, *E. Scheuchzeri*, *Carex rariflora* and sometimes *Alopecurus alpinus*, and a more or less dense growth of water mosses (*Hypnum* species) on the bottom.

XII. Ornithocoprophilous vegetation. This vegetation is developed on the shores of small lakes, frequented by geese and other fowl, and on the bird cliffs. In spite of the great physiognomic difference between the flat lake banks and the precipitous or completely vertical bird cliffs, their vegetation is to a certain degree composed of the same species. *Alopecurus alpinus* may be mentioned as the most characteristic of the nitrophil species at the breeding grounds, followed by *Poa arctica* and, on the drier spots, *Poa glauca*. In the rock crevices where the water runs down from the bird habitations there is *Phippsia algida*, which here attains to a much more vigorous development than in the snow patches to which it belongs. A few species otherwise associated with the beach and especially the beach lagoons are to be found on the bird cliffs, often at great heights, viz. *Cochlearia groenlandica*, *Puccinellia retroflexa*, and sometimes *Stellaria humifusa*, which, however, scarcely goes far from the salt water.—Other frequent species on the breeding grounds are *Cerastium alpinum*, *Stellaria longipes*, *Saxifraga rivularis* and *Polygonum viviparum*.

A nitrophil vegetation similar to that growing on the bird cliffs is to be found on manured soil, for example the Greenlanders' kitchen middens.

XIII. Grassy meadows on flow-earth. Solifluction, recognizable by glacier-like tongues of earth and characteristic terraces, is observable particularly in sedimentary regions. The grass-grown tongues of flow-earth that are characteristic of such places seem to play a subordinate part in the physiognomy of the Melville Bugt islands. Flow-earth meadows in the proper sense, of which the most characteristic species beyond

doubt is *Arctagrostis latifolia*, are recorded only from Store Fladø by SALOMONSEN. North of Melville Bugt there are to judge from the list of plants, grassy meadows again in the Thule region.

XIV. From Store Fladø SALOMONSEN also records sandy-beach vegetation of *Honckenya peploides* and *Mertensia maritima*. North of Upernavik these species have not been found south of Kap York. No doubt sandy beaches are very rare in the Melville Bugt region.

XV. SALOMONSEN makes no mention of beach-meadows in his descriptions of the vegetation, which perhaps means that this type of vegetation is present only in small fragments. As the two character species of the arctic beach vegetation, viz. *Puccinellia phryganodes* and *Stellaria humifusa*, are widespread in Melville Bugt, it is presumable that the *Puccinellia* beach meadow or salt-marsh is developed wherever soil and terrain conditions along the beach permit.

XVI. Littoral vegetation of *Fucus* species (*Fucus vesiculosus* and *F. inflatus*) and a sub-littoral vegetation of *Laminaria* species, such as those observed by SALOMONSEN on Store Fladø, are probably of common occurrence along the rocky coasts of Melville Bugt.

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Færdig fra Trykkeriet den 27. April 1943.

Sketch map of NORTHWEST GREENLAND

from lat. 72° to lat. 78°

Based on previous maps

1 : 2000000

10 0 50 100 km

— — — Travelling-Route of the Expedition