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

NORGES SVALBARD- OG ISHAVS-UNDERSØKELSER
LEDER: ADOLF HOEL

SKRIFTER OM SVALBARD OG ISHAVET

Nr. 43—46.

NR. 43. BJØRN BJØRLYKKE: VASCULAR PLANTS FROM SOUTH EAST GREENLAND COLLECTED ON THE "HEIMEN" EXPEDITION IN 1931 PRELIMINARY REPORT

NR. 44. JOHANNES LID: VASCULAR PLANTS FROM SOUTH EAST GREENLAND COLLECTED ON THE "SIGNALHORN" EXPEDITION IN 1931

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NR. 46. S. O. F. OMANG: BEITRÄGE ZUR HIERACIUMFLORA OST-GRÖNLANDS

OSLO
I KOMMISJON HOS JACOB DYBWAD
1932

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

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

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

With map: Spitsberg (Côte Nord-Ouest). Scale 1:100000. (2 sheets.) Charts: De la Partie Nord du Foreland à la Baie Magdalena, and Mouillages de la Côte Ouest du Spitsberg.

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

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

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

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

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

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

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

GRAARUD, AAGE, Observations météorologiques. 1913, No. 1. Kr. 2,40.

HELLAND-HANSEN, BJØRN and FRIDTJOF NANSEN, The sea west of Spitsbergen. 1912, No. 12. Kr. 3,60.

ISACHSEN, GUNNAR, The hydrographic observations. 1912, No. 14. Kr. 4,20.

With chart: Waters and anchorages on the west and north coast. Publ. by the Norw. Geogr. Survey, No. 198.

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

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

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

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

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

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

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

With map: Spitsberg (Partie Nord-Ouest). Scale 1:200000 (2 sheets).

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

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

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

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

The following topographical maps and charts have been published separately:

Bjørnøya (Bear Island). Oslo 1925. Scale 1:25000. Kr. 10,00.

Bjørnøya (Bear Island). Oslo 1925. Scale 1:10000. (In six sheets.) Kr. 30,00.

Chart of Bear Island. (No. S1). Oslo 1929. Scale 1:40000 Kr. 4,00. (With description.)

Bear Island Waters. (No. S2). Oslo 1930. Scale 1:350000. Kr. 5,00.

Spitsbergen. Chart, Bellsund—Forlandsrevet including Isfjorden. (No. S3). Scale 1:200000. Kr. 5,00.

A preliminary edition of topographical maps on the scale of 1:50000 covering the regions around Kings Bay, Ice Fjord, and Bell Sound, together with the map of Bear Island, scale 1:25000, is published in:

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

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SKRIFTER OM SVALBARD OG ISHAVET

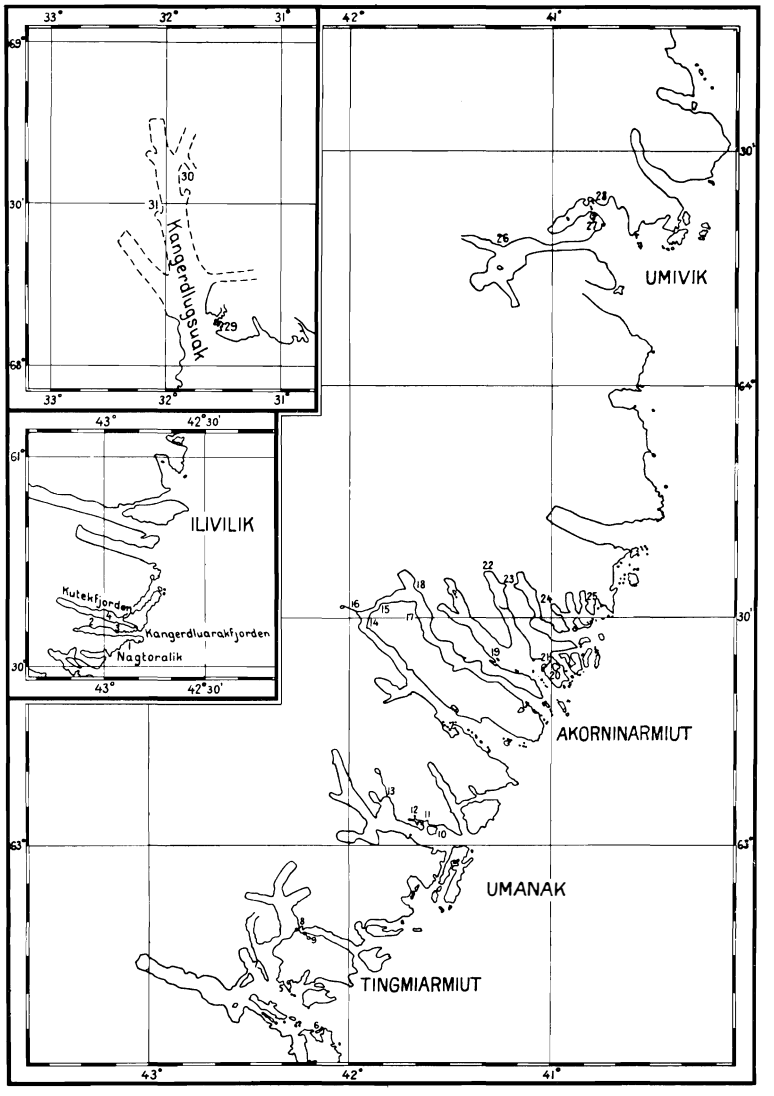
Nr. 45.

B. LYNGE

LICHENS FROM SOUTH EAST GREENLAND

COLLECTED IN 1931 ON NORWEGIAN EXPEDITIONS

OSLO
I KOMMISJON HOS JACOB DYBWAD
1932



Sketch map showing localities.

1. Nagtoralik
2. Mortensberg
3. Straumen
4. Kutekfjorden
5. Brattneset
6. Langholmen
7. Igdlormiut
8. Bjørnhamna
9. Lomvatnet
10. Rudi-øya
11. Vogtsbu
12. Innfjorden
13. Pilerkit
14. Bjørlykkeneset
15. Moreneneset
16. Dronning Maries dal
17. Skjoldungen, Inner North Side
18. Myrodden
19. Finnsbu
20. Imarsivik
21. Imarsivikøya at Flosundet
22. Head of Trollfjorden
23. Trollfjordeidet
24. Eidsdalen
25. Kikut
26. Otto Sverdrupfjorden
27. Uterminut
28. Nordenskiölds nunatakk
29. Skardet
30. Elvefaret
31. Brandal

Preface.

In 1931 the Norwegian Scientific Exploration of Svalbard and the Arctic Regions (*Norges Svalbard- og Ishavs-undersøkelser*) equipped an expedition to South East Greenland in the M/S "Heimen", under the command of the geologist Professor Thorolf Vogt, Trondheim.

A young student, Bjørn Bjørlykke, joined the expedition as botanist. Mr. Bjørlykke chiefly devoted his attention to the vascular plants. But he also collected several lichens.

Another Norwegian expedition worked in the fjords of South East Greenland in the same year. It was equipped by Mr. Peter S. Brandal, of Sunnmøre.

Their ship was the S/S "Signalhorn", of Brandal. Botanical work was done by Mr. J. Kr. Tornøe, the leader of the expedition. His collection is not a large one, but it contains several interesting finds.

The two expeditions worked in the following places, enumerated from south to north:

	Bjørlykke.	Tornøe.
Nagtoralik		Sept. 6th.
Kangerdluarak:		
Mortensberg		Sept. 7th and 9th.
Straumen		Sept. 8th.
Kutekfjorden		Sept. 9th.
Tingmiarmiut:		
Lomvatnet	Aug. 2nd.	
Sundet		Sept. 1st.
Umanak: Vogtsbu	Aug. 15th.	
Akorninarmiut:		
Dronning Marie's dal	Aug. 5th.	
Finnsbu, pluribi	Aug. 10th and 11th.	
Imarsivik	Aug. 24th.	
Eidsdalen	Aug. 24th.	
Kikut	Aug. 26th.	

Umivik:	Bjørlykke.	Tornøe.
Otto Sverdrupfjorden....	Aug. 21st.	
Tennholmen	Aug. 21st.	
Nordenskiöld's Nunatak	Aug. 20th.	
Kangerdlugssuak:		
Skardet		Aug. 22nd.
Elvefaret		Aug. 21st.
Brandal		Aug. 21st.

These localities will be found on the map, on page 2.

Their plants have been presented to the Botanical Museum of Oslo.

In the present paper all their lichens are enumerated, 71 different species in all. This is a valuable contribution to our knowledge of the lichen flora of a region that has been so poorly explored. But the chief interest lies in the comparison between the lichens of these southern fjords, and the fjords of North East Greenland, which have been much better explored. We have a considerable literature on the lichens of the northern fjords. I may refer to the bibliography in Lynge and Scholander: Lichens from North East Greenland, Skrifter om Svalbard og Ishavet, No. 41, Oslo 1932. From the south-eastern fjords we previously have some scattered contributions by several Danish expeditions. Literary records of them are found in J. S. Deichmann Branth and Chr. Grønlund: Grønlands Lichen-Flora, Kjøbenhavn 1888, Medd. om Grønland, Vol. III.

These plants belong to the Botanical Museum of Copenhagen. I am much indebted to my botanical friends at the museum, especially to its Inspector, Dr. C. Christensen, for permission to study them.

There is a considerable difference between the lichen flora of the southern and the northern fjords. These small collections contain at least 12, perhaps 14, species that were not found by the two Norwegian expeditions to Eirik Raude's Land in 1929 and 1930. (The Crustaceous lichens of these expeditions are only in part determined). And there are also several species, which we found to be rare in North East Greenland or which we only detected there in the most southerly fjords.

Such a difference is only to be expected along a coast of this enormous extent. But it is of great interest to see it so clearly, even in collections which are much too small to be really representative. And also to follow the distribution of the individual species.

I am indebted to Dr. H. Sandstede, Zwischenahn, and to Dr. V. Gyelnik, Budapest, for valuable help in the determination of a *Cladonia* and a *Peltigera*.

Oslo December 9th. 1931.

Alectoria Ach.

1. *Alectoria jubata* (L.) Nyl. var. *chalybeiformis* (L.).
Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu.
It grows on other lichens.

Buellia D. Notrs.

2. *Buellia disciformis* (Fr.) Deichm. Branth et Rostr.
f. *muscorum* (Schaer.) Vain.
Akorninarmiut: Eidsdalen.

Caloplaca Th. Fr.

3. *Caloplaca elegans* (Link) Th. Fr.
Akorninarmiut: Dronning Marie's dal.

4. *Caloplaca stillicidiorum* (Vahl) Lynge.
Tingmiarmiut: Lomvatnet.

5. *Caloplaca subolivacea* (Th. Fr.) Lynge.
Tingmiarmiut: Lomvatnet. Akorninarmiut: Dronning Marie's dal.

Candelariella Müll. Arg.

6. *Candelariella vitellina* (Ehrh.) Müll. Arg.
Umanak: Vogtsbu. Umivik: Nordenskiöld's Nunatak.

Cetraria Ach.

7. *Cetraria crispa* (Ach.) Nyl.
Kangerdluarak: Mortensberg. Akorninarmiut: Dronning Marie's dal, Eidsdalen and Finnsbu. Kangerdlugssuak: Brandal.
There were several fine plants, suggesting a common and widespread species, as was to be anticipated.

8. *Cetraria Delisei* (Bory) Th. Fr.

Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Finnsbu pluribi, and Kikut. Kangerdlugssuak: Brandal and Elvefaret.

Well represented in this collection, as is usual in Arctic collections.

9. *Cetraria fahlunensis* (L.) Vain.

Akorninarmiut: Eidsdalen and Kikut.

In either plant some pycnoconidia were detected.

It is well known that *Cetraria hepatizon* is a common and widespread lichen in the Arctic. But *Cetraria fahlunensis* has been identified with certainty only from a few places. It is a more southern species than the former, perhaps also a more western. A revision of the Spitsbergen material in several herbaria is necessary to solve the latter question.

10. *Cetraria hepatizon* (Ach.) Vain.

Tingmiarmiut: Lomvatnet.

Only a small plant. Pycnoconidia were not detected, but the under side is quite black.

11. *Cetraria islandica* (L.).

Kangerdluarak: Mortensberg. Akorninarmiut: Finnsbu and Eidsdalen.

Though common enough at home, this is one of the more interesting finds. For farther north, in Eirik Raude's Land north of Scoresby Sound, it is a rare plant, and not well developed. Its presence in the southern fjords is, therefore, a characteristic southern feature.

12. *Cetraria nivalis* (L.) Ach.

Umanak: Vogtsbu. Akorninarmiut: Finnsbu. Kangerdlugssuak: Brandal.

Cladonia (Hill) Vain.

13. *Cladonia alpicola* (Fr.) Vain.

Akorninarmiut: Dronning Marie's dal and Finnsbu.

A very interesting find, for to judge from the herbaria it is one of the rarest lichens in Greenland. It was not found in the Norwegian collections from North East Greenland. So far, I have only seen one plant, collected by L. Smith at Godhavn in West Greenland (herb. Copenhagen).

14. *Cladonia bellidiflora* (Ach.) Schaer.

Kangerdluarak: Mortensberg. Tingmiarmiut: Lomvatnet. Akorninarmiut: Finnsbu pluribi, and Eidsdalen. Umivik: Tennholmen.

This species is common enough on the west coast, up to Disko, but formerly there were only two localities on the east coast. It must

be a southern plant in Greenland. — *Cladonia bellidiflora* was not found by the Norwegian expeditions to Eirik Raude's Land in North East Greenland.

There were so many plants and so many localities in Bjørlykke's and Tornøe's collections that we are justified in regarding it as a common species in South East Greenland.

15. *Cladonia cariosa* (Ach.) Spreng.

Kangerdlugssuak: Elvefaret.

I detected only one plant, of the common Arctic type, with whitish basal squamules and podetia. Its yellowish reaction with KOH ensures the determination.

It was not an unexpected find, for this lichen is quite common in North East Greenland.

16. *Cladonia coccifera* (L.) Willd. var. *stemmatina* Ach.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Finnsbu pluribi.

var. *pleurota* (Flk.) Schaer.

Kangerdluarak: Mortensberg and Straumen. Tingmiarmiut: Lomvatnet. Akorninarmiut: Finnsbu and Eidsdalen.

Cladonia coccifera is an ubiquitous species in the Arctic, well represented also in these collections. Its var. *pleurota* is perhaps the commoner one, also an indication of a southern situation.

17. *Cladonia deformis* Hoffm.

Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Finnsbu.

One of several interesting *Cladoniae* in the collections. The Norwegian expeditions did not find it in North East Greenland, it is in reality an addition to the lichen flora of East Greenland. But in West Greenland it is common as far north as Disko.

The Umanak plants are fine, the others small and not quite typical.

18. *Cladonia degenerans* (Flk.) Spreng. f. *dilacerata* Schaer.

Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu.

One of the rarest species in Greenland, cfr. Lynge and Scholander Lichens from North East Greenland, 1932, p. 45.

19. *Cladonia elongata* (Jacq.) Hoffm.

Kangerdluarak: Mortensberg. Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Dronning Marie's dal, Finnsbu pluribi, Eidsdalen and Kikut. Umivik: Tennholmen.

A lot of fine plants from many localities, suggesting a common and widespread species, as was to be anticipated.

20. *Cladonia lepidota* Nyl. var. *stricta* (Nyl.) DR.

Akorninarmiut: Finnsbu and Eidsdalen.

There were but two plants. But in a collection like this we cannot conclude that it should be rare for that reason.

The former plant is f. *hypophylla,* so common in the Arctic, the latter has better developed podetia, almost f. *pterophora.*

21. *Cladonia mitis* Sandst.

Nagtoralik. Kangerdluarak: Mortensberg. Kutekfjorden. Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Dronning Marie's dal, Finnsbu pluribi, Eidsdalen and Kikut. Umivik: Otto Sverdrupfjorden and Tennholmen.

There was a large number of plants from many localities. It must be a common and widespread plant in this part of East Greenland. North of Scoresby Sound it is not at all common.

I found no other *Cladonia* of the *silvatica* section in the collections.

22. *Cladonia pyxidata* (L.) Fr. var. *pachythallina* (Wallr.) Vain.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Finnsbu.

var. *chlorophaea* Flk.

Akorninarmiut: Dronning Marie's dal.

23. *Cladonia rangiferina* (L.) Web.

Nagtoralik. Kangerdluarak: Mortensberg, c. fr. Kutekfjorden. Umanak: Vogtsbu.

The Norwegian expeditions to North East Greenland did not find this species. In these collections from South East Greenland it was found only in the southernmost localities. There were many fine plants, one of them was fertile.

24. *Cladonia uncialis* (L.) Web.

Tingmiarmiut: Lomvatnet.

There was only one plant in the collection.

The *Cladoniae* were the most interesting lichens in these two collections. In 1929 and 1930 two trained Norwegian lichenologists, Lynge and Scholander, brought home only 14 different species of this genus from Eirik Raude's Land, north of Scoresby Sound. Bjørlykke and Tornøe, with no lichenological training whatever, detected no less than 12 different *Cladoniae* in the fjords of South East Greenland, and 5 of them were not found in the northern collections.

Of course it was but natural that there should be a considerable difference between the floras of these districts of the East Greenland coast, which are separated by such great distances. But it was of interest to see the difference so clearly.

Coniocybe Ach.

25. *Coniocybe furfuracea* Ach.

Tingmiarmiut: Lomvatnet.

There was only a minute sterile fragment, growing on a *Solorina*. But I think that its colour and its habitus should be sufficient to identify it.

It is an addition to the lichen flora of East Greenland, but there are some finds from West Greenland, see Deichm. Branth and Grønlund: Grønlands Lichen-Flora, 1888, p. 508.

Gyrophora Ach.

26. *Gyrophora arctica* Ach.

Umanak: Vogtsbu. Akorninarmiut: Dronning Marie's dal. Eidsdalen.

There were only a few plants. It is a very nitrophilous species, and the travellers told me that there are but few sea birds in this part of Greenland.

27. *Gyrophora cylindrica* (L.) Ach. var. *Delisei* (Despr.) Th. Fr.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Kikut. Kangerdlugssuak: Elvefaret.

var. *fimbriata* Ach.

Nagtoralik. Akorninarmiut: Dronning Marie's dal, Imarsivik, and Finnsbu pluribi. Umivik: Nordenskiöld's Nunatak. Kangerdlugssuak: Skardet.

var. *tornata* Ach.

Akorninarmiut: Imarsivik.

Gyrophora cylindrica is better represented in the collection than any other lichen. The formae are quite confluent, as they usually are; var. *fimbriata* is much coarser in these Arctic collections than it is in our home lichen flora.

28. *Gyrophora erosa* (Web.) Ach.

Akorninarmiut: Finnsbu pluribi. Kangerdlugssuak: Elvefaret.

These plants are $CaCl_2O_2 \div$. There were not many plants.

29. *Gyrophora hyperborea* Ach.

Umanak: Vogtsbu. Akorninarmiut: Dronning Marie's dal, Finnsbu and Eidsdalen. Kangerdlugssuak: Elvefaret.

There were many plants, *Gyrophora hyperborea* is supposed to be common.

30. *Gyrophora rigida* DR.

Umanak: Vogtsbu.

I was glad to find this species. It was not found in our collections from Eirik Raude's Land, and it is supposed to be a southern species in East Greenland.

31. *Gyrophora torrefacta* (Lightf.) Cromb.

Umanak: Vogtsbu.

These plants are red with $CaCl_2O_2$.

Icmadophila Trevis.

32. *Icmadophila ericetorum* (L.) A. Zahlbr.

Akorninarmiut: Finnsbu.

Supposed to be a southern species in East Greenland, I have not identified it in our collections from North East Greenland.

Lecanora (Ach.) Th. Fr.

33. *Lecanora castanea* (Hepp) Th. Fr.

Tingmiarmiut: Lomvatnet, only a fragment.

34. *Lecanora intricata* Ach.

Akorninarmiut: Finnsbu and Eidsdalen.

But a few minute plants; the determination is not quite certain.

35. *Lecanora melanophthalma* Ram.

Akorninarmiut: Dronning Marie's dal.

36. *Lecanora polytropa* (Ehrh.) Th. Fr. var. *leucococca.*

Akorninarmiut: Eidsdalen.

Lecidea (Ach.) A. Zahlbr.

37. *Lecidea arctica* Somrft.

Umanak: Vogtsbu. Akorninarmiut: Eidsdalen.

Only minute fragments, overgrown by other lichens.

38. *Lecidea assimilata* Nyl. var. *infuscata* Th. Fr.

Akorninarmiut: Imarsivik.

39. *Lecidea confluens* Fr.

Akorninarmiut: Eidsdalen.

Only 2 sterile plants. I have ventured the determination on account of their habitus, and the chemical reaction (medulla J intense caerulea).

The thallus is infested by a parasite (undetermined), a Pyrenomycete with 1-septated dark spores.

40. *Lecidea demissa* (Rutstr.) Ach.

Akorninarmiut: Eidsdalen.

Only a minute fragment. The determination is not quite certain.

41. *Lecidea Dicksonii* Ach.

Akorninarmiut: Eidsdalen.

42. *Lecidea glomerulosa* (DC.) Steud. var. *muscorum* (Wulf.) Vain.

Kangerdlugssuak: Brandal.

43. *Lecidea* (?) *neglecta* Nyl.

Umanak: Vogtsbu. Akorninarmiut: Imarsivikøya. Umivik: Nordenskiöld's Nunatak.

The apothecia, which several authors have described, do not belong to this species, but to a parasitic fungus. I am not convinced that this species really is a *Lecidea*.

44. *Lecidea vernalis* (L.) Ach.

Akorninarmiut: Dronning Marie's dal.

Nephroma Ach.

45. *Nephroma arcticum* (L.) Torss.

Kutekfjorden.

Certainly a southern plant on the east coast of Greenland. The Norwegian expeditions did not find it in Eirik Raude's Land, the northernmost locality on the east coast is Simiutat, 63° 45′, leg. Hartz. On the west coast it attains 69° n., in Jonârssulik (Kronprins Eiland), leg. Kruuse.

Ochrolechia Mass.

46. *Ochrolechia frigida* (Sw.) Lynge.

Lynge Lich. Nov. Zemlya (1928) p. 182.

Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Eidsdalen. Umivik: Otto Sverdrupfjorden. Kangerdlugssuak: Elvefaret and Skardet.

There were not many plants, but to judge from the numerous localities it is quite as common on the east coast of Greenland as in other Arctic regions.

47. *Ochrolechia inaequatula* (Nyl.) A. Zahlbr.

Akorninarmiut: Eidsdalen, only one plant.

Parmelia (Ach.) De Notrs.

48. *Parmelia alpicola* Th. Fr.

Umanak: Vogtsbu.

Evidently a rare plant on the east coast of Greenland. Hartz collected it in Danmarkøya in Scoresby Sound, and the Norwegian expeditions at Kapp Simpson in Davy Sound. It is not common on the west coast, where it occurs as far north as Ritenbenk near Disko, leg. J. Vahl.

49. *Parmelia granulosa* Lynge.

Lynge et Scholander Lich. from North East Greenland (1932) p. 74.

Umanak: Vogtsbu, 800 m above sea-level.

Only a small plant. It is very nitidous, but it is too dark for *Parmelia stygia.*

50. *Parmelia groenlandica* Lynge.

Lynge and Scholander Lich. North East Greenland (1932) p. 73.

Umanak: Vogtsbu.

Its pycnoconidia are straight, cylindrical, 7—8 × 1 μ. The plants are not so crustiform as the type is, they approach *Parmelia centrifuga.*

51. *Parmelia minuscula* Nyl. f. *applanata* Lynge.

Lynge and Scholander Lich. North East Greenland (1932) p.71—72.

Akorninarmiut: Imarsivik-øya.

It is a quite typical plant.

52. *Parmelia omphalodes* (L.) Ach.

Umanak: Vogtsbu.

A few greyish plants, with *Alectoria jubata.*

It was only found once by the Norwegian expeditions to North East Greenland in 1929 and 1930. It is supposed to be a more southern plant on the east coast of Greenland, but Hartz collected it in several places in Scoresby Sound: Kapp Stewart, Danmarksøya, Hekla Havn, and Eberlin at "Nanese", East Greenland. There are not many finds from West Greenland in the Copenhagen herb., as far north as Jakobshavn, leg. J. Vahl.

53. *Parmelia pubescens* (L.) Vain.

Umanak: Vogtsbu. Akorninarmiut: Finnsbu. Umivik: Nordenskiöld's Nunatak.

The internodes are so short that the plants approach *Parmelia minuscula.*

54. *Parmelia saxatilis* (L.) Ach.

Umanak: Vogtsbu.

Peltigera Willd.

55. *Peltigera aphthosa* (L.) Willd.

Kangerdluarak.

Peltigera aphthosa sensu angustiore (excl. of *Peltigera variolosa*) was not found by the Norwegian expeditions to North East Greenland. I was therefore very glad to find it from this southerly fjord. We cannot conclude much from a single find, but our present knowledge suggests it to be a southern species in Greenland. Gyelnik confirmed the determination.

56. *Peltigera canina* (L.)

Akorninarmiut: Dronning Marie's dal.

Only one plant. *Peltigera rufescens* is common in North East Greenland, but *Peltigera canina* was not found there by the Norwegian expeditions in 1930 and 1931. It is evidently a southern plant on the east coast of Greenland.

57. *Peltigera malacea* (Ach.) Fr.

Akorninarmiut: Dronning Marie's dal.

It is only a minute fragment, but it has the thick thallus and the characteristic under side of this species.

58. *Peltigera scabrosa* Th. Fr.

Akorninarmiut: Dronning Marie's dal, and Kikut.

This species, which is so widely distributed in the Arctic, was not found by the Norwegian expeditions to North East Greenland. It has been found as far north as Scoresby Sound: Røde ø (Hartz).

59. *Peltigera variolosa* (Mass.) Gyelnik.

Akorninarmiut: Dronning Marie's dal c. fr. and Finnsbu.

The former plants approach *Peltigera aphthosa*.

Pertusaria D. C.

60. *Pertusaria oculata* (Dicks.) Th. Fr.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Finnsbu pluribi.

There were several plants of this species, perhaps the commonest *Pertusaria* in the Arctic.

Psoroma (Ach.) Nyl.

61. *Psoroma hypnorum* (Dicks.) Hoffm.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Kikut.

Rhizocarpon (Ram.) Th. Fr.

62. *Rhizocarpon badioatrum* (Flk.) Th. Fr.

Akorninarmiut: Eidsdalen, with *Lecidea Dicksonii*.

Upper part of hymenium reddish-violet, spores dark, 1-septated, large: about 33 × 13 μ, often shrunken.

63. *Rhizocarpon Copelandii* (Kbr.) Th. Fr.

Umanak: Vogtsbu.

Spores dark, 1-septated, medulla blood-red with KOH, thallus grey, verrucose. The apothecia are not so convex as they usually are.

64. *Rhizocarpon geographicum* (L.) DC.

Akorninarmiut: Finnsbu and Eidsdalen.

Solorina Ach.

65. *Solorina crocea* (L.) Ach.

Tingmiarmiut: Lomvatnet. Akorninarmiut: Dronning Marie's dal, Finnsbu pluribi, and Eidsdalen. Umivik: Otto Sverdrupfjorden, and Nordenskiöld's Nunatak. Kangerdlugssuak: Elvefaret.

There were a lot of plants, it must be quite common. It is rare north of Scoresby Sound.

Sphaerophorus Pers.

66. *Sphaerophorus fragilis* (L.) Pers.

Umanak: Vogtsbu.

The plants were tested with J and found to be J −; some of them were really fine plants. It is a rare species in the Arctic; perhaps a western species.

Stereocaulon Schreb.

67. *Stereocaulon alpinum* Laur.

Akorninarmiut: Dronning Marie's dal and Finnsbu. Kangerdlugssuak: Elvefaret.

The plants are sterile. Some of them have low podetia, such plants are distinguished from *Stereocaulon rivulorum* by their larger phyllocladia. An altogether certain determination of such plants is not always possible.

68. *Stereocaulon denudatum* Flk.

Nagtoralik. Tingmiarmiut: Lomvatnet. Umanak: Vogtsbu. Akorninarmiut: Finnsbu. Umivik: Nordenskiöld's Nunatak. Kangerdlugssuak: Elvefaret.

This species was extremely rare in North East Greenland. The two Norwegian expeditions of 1929 and 1930 found it only once, at Kapp Simpson, in Davy Sound. It shows, better than many other facts, the very Arctic character of Eirik Raude's Land.

But in these southern fjords it is very common; there were several finds from many localities.

69. *Stereocaulon paschale* (L.) Fr.

Nagtoralik. Kangerdluarak: Mortensberg. Akorninarmiut: Eidsdalen.

It was very satisfactory to receive this species in so many plants from several localities. It was lacking in the collections of the two Norwegian expeditions of 1929 and 1930 from Eirik Raude's Land. Eberlin collected it at "Karra Akunguak" in East Greenland (61° 48′).

70. *Stereocaulon rivulorum* Magn.

Umanak: Vogtsbu. Akorninarmiut: Dronning Marie's dal. Kangerdlugssuak: Elvefaret.

One fertile plant, from Umanak, made a safe determination possible. Cfr. *Stereocaulon alpinum*.

Thamnolia Ach.

71. *Thamnolia vermicularis* (Sw.) Ach.

Umanak: Vogtsbu.

Only a fragment.

Printed, April 5th, 1932.

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