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

NORGES SVALBARD- OG ISHAVS-UNDERSØKELSER
LEDER: ADOLF HOEL

SKRIFTER OM SVALBARD OG ISHAVET

Nr. 13

J. LIND:

THE MICROMYCETES OF SVALBARD

OSLO
I KOMMISJON HOS JACOB DYBWAD
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A. W. BRØGGERS BOKTRYKKERI A S

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BY

J. LIND

WITH ONE MAP AND THREE PLATES

Preface.

The present paper deals with the Micromycetes found on fragments of plants from Svalbard (Spitsbergen and Bear Island). As I have not visited the islands myself the investigation is based exclusively on the dried plant material brought home by other investigators and now to be found in the herbaria at Oslo and Copenhagen. I am greatly indebted to Dr. BERNT LYNGE, and Mr. C. CHRISTENSEN, M. A., Museum Inspectors, of Oslo and Copenhagen respectively, for the very great kindness with which they have placed their rich collections at my disposal. There are also in the Swedish museums large collections of plants from Svalbard, and I am grateful for the promise of permission to borrow them also, but it would be an insurmountable task for me to go through a greater amount of material than that I have already seen. Meanwhile, Professor O. JUEL of Uppsala has been good enough to lend me a small collection of 150 specimens, which the late C. I. JOHANSON had picked out from the herbaria for this very purpose.

The plants which I have seen were collected during the course of a century, and I give below a list of the names of the expeditions and the collectors.

1827. The Norwegian geologist, B. M. KEILHAU, made a voyage to Svalbard. He visited Bear Island from Aug. 20th to 23rd, 1827, explored the land near Sörkapp on Sept. 3rd, and Edge Island from Sept. 11th to 19th the same year. I have found 19 species of fungi on his plants, and it is remarkable how well preserved and unchanged these micromycetes have kept during all these years.

1838—1839. French Government's expedition in "La Recherche". JENS VAHL, a Dane, was a botanist of that expedition and made collections in July—August 1838 in Bell Sound, in July 1839 at Bear Island, and in August 1839 at Magdalena Bay. In his abundant collections I have found 80 fungi.

1858. Swedish expedition under the leadership of OTTO TORELL. In the plants collected by A. E. NORDENSKIÖLD I have seen 3 species of fungi, esp. Entyloma on Dupontia Fisheri.

1861. Swedish expedition led by OTTO TORELL. 7 fungi collected by A. GOËS and 4 fungi by K. CHYDENIUS.

1864. Swedish expedition led by A. E. NORDENSKIÖLD. 37 fungi by A. J. MALMGREN; of these fungi a number were collected on the expedition of 1861, of which MALMGREN also was a member.

1868. Swedish expedition led by A. E. NORDENSKIÖLD. 169 fungi by TH. M. FRIES.

1870. Voyage to Spitsbergen undertaken by two Swedes, HJ. WILANDER and A. G. NATHORST. They found 21 fungi.

1872—1873. Swedish wintering expedition led by A. E. NORDENSKIÖLD. 40 fungi by F. R. KJELLMAN and 1 fungus by P. ÖBERG.

1878. The Norwegian North Atlantic Expedition led by G. O. SARS and H. MOHN. 39 fungi collected by D. C. DANIELSSEN.

1882. Swedish expedition led by A. G. NATHORST and G. DE GEER. NATHORST collected a rich material of plants and several of these were taken for the sake of the parasitical fungi. I have found 156 fungi on NATHORST's plants.

1882—1883. Swedish meteorological wintering expedition led by N. EKHOLM.
1882. 25 fungi by A. THORÉN.
1883. 5 fungi from Cape Thordsen by R. GYLLENCREUTZ.

1890. Swedish expedition led by G. NORDENSKIÖLD. 2 fungi by J. A. BJÖRLING.

1896. The Norwegian botanist, E. JØRGENSEN, made a voyage to Spitsbergen and collected many plants, on which I have found 60 fungi.

1898. Swedish expedition led by A. G. NATHORST. 16 fungi by GUNNAR ANDERSSON and HENRIK HESSELMAN.

1899. Swedish arc measurement expedition led by E. JÄDERIN. During this expedition THORILD WULFF visited Wijde Bay and Treurenberg Bay in July and August and collected 105 fungi.

1907. Expedition fitted out by PRINCE ALBERT I of Monaco, and led by Captein G. ISACHSEN. Mrs. HANNA RESVOLL-HOLMSEN (DIESET) took part in this expedition as a botanist.

1908. Mrs. RESVOLL-HOLMSEN undertook a voyage to Spitsbergen in order to study the flora of the archipelago. In Mrs. RESVOLL-HOLMSEN's excellent material from these two years I have found 790 fungi; several of the plants were collected just because they were attacked by fungi.

1913. Expedition under the patronage of PRINCE ALBERT I of Monaco and led by HERMAN STOLL a Swiss. The botanist was R. SEEGER from Innsbruch, who gathered one fungus.

1915. Swedish geological expedition led by ERIK ANDERSSON (now STENSIÖ). 133 fungi by ERIK ASPLUND.

1919. Norwegian Government's expedition led by ADOLF HOEL. 16 fungi by ERIK STORM.

1920. Norwegian Government's expedition led by ADOLF HOEL. Botanist was JOHANNES LID, who collected 434 fungi. A member of this expediton, KNUT ELLINGSEN, gathered 8 fungi.

1924. Norwegian Government's expedition led by ADOLF HOEL. The botanist, JOHANNES LID, collected 638 fungi. OVE HØEG, a member of this expedition, collected 10 fungi. The large collections from these two last-mentioned expeditions comprise very fine material on which I found many microfungi not hitherto found on Svalbard. A great many plants were collected by Mr. LID solely on account of their being attacked by fungi.

1924. Norwegian Government's fishery expedition led by THOR IVERSEN. 22 fungi from Hope Island by the leader and Mr. EINAR KOEFOED.

1925. Norwegian geological expedition led by TH. VOGT. 95 fungi collected by FRIDTJOV ISACHSEN.

It is rather surprising to see that about 2900 fungi could be found on about 4000 dried plants, of which by far the greater part had not been collected for the sake of the fungi. It shows, in the first place, how quickly every withered, or even only half-withered, leaf is attacked by micromycetes in Arctic regions. It also shows that every single species of microfungi can be found on many different host-plants. Most flowering plants are attacked by numerous micromycetes (see the host-plant index p. 41) and every species of fungi is found on many host-plants. As a matter of fact, it is only of late years that collectors have paid any attention to the numerous micromycetes found on dead leaves; besides A. G. NATHORST and THORILD WULFF, Mrs. HANNA RESVOLL-HOLMSEN and Mr. JOHANNES LID have especially done so. Mrs. RESVOLL-HOLMSEN writes about the parasitic fungi (1913, p. 80): "Sur ce point, j'ai de volumineux matériaux, qui ne sont pas encore traités". These words contain a request (to myself) which I have only now had an opportunity of acting upon to the best of my ability.

Chapter I.

Earlier Accounts of Micromycetes from Svalbard.

The plants that KEILHAU brought back to Norway in 1827 were dealt with by SØREN CHRISTIAN SOMMERFELT, who (1833) mentions three species of Agaricaceae and "Sphaeria herbarum" on Cerastium and Stellaria.

The plants brought home by JENS VAHL in 1839 were dealt with by A. E. LINDBLOM (Botaniska Notiser 1839), the Sphaeria punctiformis being the only micromycet mentioned by him.

In both of these cases the name given can almost certainly be regarded as one given in common to all the small black punctiform fungi.

On the other hand, the collections made by the Swedish expeditions from 1861 to 1868, and especially the plants collected by TH. M. FRIES, were very thoroughly examined at Mustiala by P. A. KARSTEN, who wrote an excellent report on them in 1871 (printed 1872) in which he mentions 62 species of fungi. Twenty-three of these belong to the larger fungi and 39 to the micromycetes, and, of the latter, five are parasites and the rest saprofytes. It is one of the very earliest works we possess on Arctic fungi, and we must admire KARSTEN's good descriptions of the species found. All later naturalists who have carried on researches in this field have benefited by KARSTEN's work. Some years later (1884) KARSTEN returned to the same subject and made some additions and corrections. With a single exception I have succeeded in finding anew all the micromycetes mentioned by KARSTEN and give below a list of those demanding special mention:

No. 23 Mollisia Dehnii is erroneously so named, should be Mollisia atrata.
No. 24 Mollisia advena now Niptera advena. KARSTEN mentions it both on Eriophorum and Luzula, the later form is certainly Naevia pusilla.
No. 26 Trochila diminuens now Naevia diminuens.
No. 27 Duplicaria Empetri now Rhytisma Empetri.
No. 28 Lophodermium culmigenum now Loph. arundinaceum.
No. 30 Clathrospora alpina now Clath. Elynae.
No. 31 Pleospora arctica now Pleosp. Karstenii.

No. 32 Pleospora herbarum seems to be a compound of many species, which is clearly shown by KARSTEN's text, his measurements being very variable, and he describes the perithecia as being both smooth and hairy. In the correcting supplement, however, (1884 p. 37 and p. 38) he writes that most of the specimens to which he gave the name of Pleospora herbarum in 1872 are to be understood as Pyrenophora chrysospora, and he concludes with the rather surprising statement that "Pleospora herbarum et Pyrenophora Androsaces ex insulis Spetsbergensibus nondum sunt cognitae".

Pleospora herbarum subsp. pentamera is now Clathrospora pentamera.

Nos. 35, 36, 37 are to be united in a single species, see below Leptosphaeria caricinella.

No. 42 Sphaeria hyperborea now Didymella hyperborea.

No. 43 Isothea rhytismoides now Hypospila rhytismoides.

No. 44 Sphaerella eucarpa now Massaria eucarpa.

No. 45 Sphaerella genuflexa subsp. polaris now Mycosphaerella polaris.

No. 46 Sphaerella Andromedae now Leptosphaeria Andromedae.

Nos. 47—48—49 Sphaerella Cerastii, Sph. Stellarinearum and Sph. Tassiana should doubtless all be united in one species, see p. 37. That Cladosporium graminum — as KARSTEN thinks — should be connected with this species has not yet been proved.

No. 55 Sphaerella distincta has later by KARSTEN himself been named Lizonia.

No. 59 Leptostroma Potentillae now Leptothyrium arcticum.

No. 61 Ustilago Candollei now Ustilago inflorescentiae.

In the supplement which KARSTEN published later (1884) he mentions having found 8 species on the same plants from Svalbard, of these Pyrenophora chrysospora f. polaris is identical with Pyren. Cerastii, Septoria caudata is now Heteropatella umbilicata and Helminthosporium flexuosum is certainly Cladosporium graminum.

Since KARSTEN's time very little has appeared about the Micromycetes of Svalbard. The "Zweite deutsche Nordpolarexpedition" visited Spitsbergen in the year 1870 and FUCKEL mentions (1874 p. 323 and p. 322) two species as having been found here viz.,

Sphaeria arctica now Mycosphaerella Tassiana and
Pleospora hyperborea now Leptosphaeria Andromedae

that is, only two of KARSTEN's species with other names.

PAX (1892 p. 73) mentions only Lycoperdon furfuraceum Schaeff and on old leaves of Dryas some Pyrenomycet "bereits verrottet".

THORILD WULFF has in company with E. ROSTRUP published a list (1902 p. 115) of 9 species of micromycetes collected by himself in 1899.

At last a few samples of Mrs. HANNA RESVOLL-HOLMSEN's collections were sent to me, and were reported (1913 p. 80), and finally it should be mentioned that J. I. LIRO, on going through the herbaria, has noted the presence of some Ustilagineae (1924), viz., Ustilago nivalis Liro and Ustilago violacea.

Taking them all together we have hitherto noticed about 45 species of micromycetes from Svalbard, and this number has now in the present paper increased to 197 species. From the foregoing brief historical survey it will also be seen that Finlanders, Swedes, Norwegians and Danes have all greatly helped one other, both with collections and with their treatment of the material.

There has been excellent collaboration between the scientists of all the four nations.

Chapter II.

Enumeration of Micromycetes from Svalbard.

Chytridiaceae.

Synchytrium groenlandicum ALLESCHER 1897 p. 40.

On Saxifraga cernua, Coles Bay. Saxifraga rivularis, Sörkapplandet. Always found on all the leaves of the attacked plants, so undoubtedly its mycelium quite penetrates the host-plant or single branches. It is often found as thick swellings on the leaf-stalk or on the margin of the leaves.

Peronosporaceae.

Peronospora Alsinearum CASPARY Syll. VII p. 246.

On Cerastium nigrescens, Advent Bay (LID).

Peronospora parasitica (FRIES) TULASNE. Syll. VII p. 249.

On Cochlearia officinalis, Sörkapplandet and Öyrnes. Draba alpina, Sassen Bay.

Discomycetes.

Lachnea stercorea (FRIES) GILL., Syll. VIII p. 183.

On dung of Anser sp., Advent Bay (LID).

Lachnum patens (FRIES) KARSTEN, Syn. Dasyscypha patens REHM, Syll. VIII p. 466.

On Catabrosa algida, Hope Island (IVERSEN and KOEFOED).

Belonioscypha vexata (DE NOT.) REHM, Syn. Belodinium vexatum DE NOT. Syll. VIII p. 503.

On Carex pulla, Advent Bay (H. RESVOLL-HOLMSEN). Never before found in Arctic regions.

Phialea rhodoleuca FRIES S. M. II p. 217, Syll. VIII p. 264.

On Equisetum variegatum, Cape Boheman (LID). Equisetum arvense, Longyear Valley (LID).

Mollisia atrata (FRIES) KARSTEN, Syn. Pyrenopeziza atrata (PERS.) FUCKEL, Syll. VIII p. 354, Trochila Potentillae ROSTRUP 1888 p. 540.

Common on Potentilla emarginata, Pot. multifida, Pot. nivea and especially on Pot. pulchella from all localities in which Potentilla is collected. It is quite evidently the same species as that which KARSTEN saw on Pontentilla and classified (1872 p. 95) as Mollisia Dehnii.

And it is, further, the same species that ROSTRUP l. c. has described from Greenland as Trochila Potentillae and mentioned often from Arctic regions in his papers from 1888 to 1894, but later on he mentions it only as Mollisia atrata.

Mollisia graminea KARSTEN 1871 p. 198, Syll. VIII p. 352.

On Eriophorum Scheuchzeri, Erioph. polystachyum, Luzula confusa, Deschampsia alpina from Spitsbergen and Bear Island.

Mollisia graminis (DESM.) KARSTEN, Hedwigia 32, 1893 p. 60.

On Alopecurus alpinus, Deschampsia alpina, Poa abbreviata and Poa arctica from Bell Sound, Green Harbour and Cape Boheman. It is not quite the same species as that which REHM (1896 p. 1265) has described as Beloniella graminis. I have in accordance with KARSTEN found the asci 50—65 μ × 9—10 μ and the spores 13—15 μ × 4 μ.

Helotium herbarum FRIES, Syll. VIII p. 217.

On Poa alpigena, Wijde Bay (THORILD WULFF). Poa alpigena × alpina, Olsokflyan (E. STORM). Stellaria humifusa, Advent Bay (TH. M. FRIES). Cerastium Regelii, Sörkapplandet (LID).

Niptera advena (KARSTEN) LIND, Syn. Mollisia advena KARSTEN 1872 p. 95, Syll. VIII p. 352. See Pl. I Fig. 3.

Common on Eriophorum polystachyum in Ice Fjord and on Festuca rubra, Cross Bay (H. RESVOLL-HOLMSEN). KARSTEN has also reported it on Eriophorum from Ice Fjord. With its elongated, fusiform or scarcely clavate spores, pointed at both ends and clustered together in the asci, it is a true Niptera and widely different from Niptera melatephra (LASCH) REHM, Niptera Eriophori (KIRCHNER) REHM apud VESTERGREN 1909 p. 53 and Niptera cymbispora (ROSTRUP), Niptera caricinella PECK and Niptera arctica REHM, which are all to be found in Arctic regions on dead leaves of Cyperaceae and Juncaceae. Its spores measure 32—40 μ longitudinally with 2—3 septa.

Niptera phaea REHM, Syll. VIII p. 484.

On Carex misandra, Kings Bay (H. RESVOLL-HOLMSEN). Carex subspathacea, Advent Point (ASPLUND) and Bell Sound (LID).

Belonidium juncisedum (KARSTEN) REHM, Syn. Mollisia junc. KARSTEN 1871 I p. 198, Syll. VIII p. 347 and ? Mollisia scirpina (PECK) SACC., Syll. VIII p. 348.

On Juncus castaneus, Longyear Valley (LID). Juncus biglumis Bell Sound (LID). A peculiar species with characteristic short and wide asci, sporidia filiform and clustered. Possibly this is the same species as that from Adirondack U. S. A. of which PECK has given a very incomplete description.

Pseudopeziza Bistortae (FRIES) FUCKEL, Syll. VIII p. 723, Syn. Rhytisma Bistortae LIBERT, Ectostroma Bistortae FRIES S. M. II p. 602, Pseudorhytisma Bistortae JUEL.

On leaves of Polygonum viviparum, Cape Thordsen (H. RESVOLL-HOLMSEN), Dickson Bay (LID), Tempel Bay (NATHORST).

Fabraea Cerastiorum (FRIES) REHM, Syn. Pseudopeziza Cerast. FUCKEL, Syll. VIII p. 725.

On Cerastium alpinum, Advent Bay (DANIELSSEN).

Pyrenopeziza Svalbardensis spec. nov., see Pl. III Figs. 19 and 20. Apotheciis epiphyllis in foliis nigricantibus innatis, dein erumpentibus, orbicularibus, c. 400 μ diam., disco nigrofuscescente margine nigricante cincto, ascis cylindraceo—clavatis 60 μ × 6—7 μ, octosporis; Iod ÷, paraphysibus hyalinis ad 4 μ crassatis; sporidiis distichis, oblongo-clavatis, curvulis, apice rotundatis, 1-septatis, non constrictis, hyalinis, guttulatis, 15—16 × 4 μ. Subiculo late effuso ex hyphis ramosis, septatis, 6 μ latis, nigrofuscis. In foliis semivivis Saxifragae hirculis, Advent Bay 5th August 1924 leg. JOHANNES LID, nec non in foliis denigratis Drabae Wahlenbergii, Cape Boheman et Ny Ålesund 28th August 1920 (LID).

The mycelium of this fungus penetrates all the radical leaves of the same plant, sometimes also the upper ones and the root entirely, all the leaves of the same plant being attacked, the leaves at last becoming black and brittle and quite porous like charcoal. An excellent species, externally very closely resembling various other species of Pyrenopeziza e. g. Pyrenop. nigrificans, differing from them, however, by its uni-septate, clavate spores.

Orbilia Primulae (REHM) SACC. Syll. VIII p. 630.

On Taraxacum arcticum, Green Harbour (LID).

Patellaria macrospora (FUCKEL) PHILL., Syn. Durella compressa (PERS.) TUL. Syll. VIII p. 790.

On floating timber, Bear Island (TH. M. FRIES).

Crumenula pusiola KARSTEN 1871 I p. 214 and 1872 p. 96, Syn. Godronia pusiola KARSTEN 1885 p. 144, Syll. VIII p. 604.

Collected on Dupontia Fisheri, Poa alpigena, Poa alpina, Poa alpina × arctica, Poa arctica, Poa Balfourii, Puccinellia Vahliana and Trisetum spicatum from Sörkapplandet up to Treurenberg Bay. KARSTEN has recorded it on Poa alpigena from many localities. An excellent species having small urceolate cups and the external cells of the ascomata prosenchymatic elongated as typical of the genera Crumenula and Godronia. It is mainly confined to withered, prematurely killed leaves of Poa especially Poa arctica; on other host-plants it is very rare. And it is undoubtedly more common on such dead leaves of Poa than has hitherto been recorded. The fact is that the said species is to be found in the herbaria from several places under erroneous names. I have, for instance, classified specimens of this species from Novaya Zemlya (1924 b p. 7) as Beloniella graminis,

and E. ROSTRUP has similarly included specimens from Greenland under the name of Mollisia graminis.

Helotiella erythrostigma (REHM) SACC., Syll. VIII p. 476, Syn. Mollisia eryth. REHM apud VOSS 1887 p. 225, Calloria erythrostigmoides REHM 1896 p. 464.

On Cerastium alpinum it is common from many localities on the western coast of Spitsbergen. On Cerastium nigrescens and Cerastium Regelii it is only found at Bear Island, Sörkapplandet and Norsk-öyane. The mycelium penetrates the stem and the leaves of the host giving them a characteristic pale scarlet colour.

Naevia diminuens (KARSTEN) REHM, Syn. Phacidium dimin. KARSTEN 1885, Syll. VIII p. 721, Trochila dimin. KARSTEN 1871 I p. 248 and 1872 p. 96.

On Colpodium fulvum, Deschampsia alpina, Dupontia Fisheri, Festuca ovina, Festuca rubra, Puccinellia Vahliana, Carex glareosa, Carex Lachenalii, Carex pulla, Carex rigida, Carex rupestris, Carex subspathacea and Carex ursina in many different localities on Spitsbergen as well as on Bear Island. Recorded by KARSTEN as found on Hierochloë alpina and Carex glareosa, Carex Lachenalii and Carex ursina from Green Harbour, Advent Bay and Liefde Bay. As KARSTEN further mentions it as found on Luzula confusa and does not mention Naevia pusilla, he has evidently united both these species, which are certainly closely related. Furthermore, the species in question is closely allied to Naevia ignobilis (Karsten) which is also found on dead leaves of Carex and in the same localities. It is very difficult to say whether the subtile differences proposed by KARSTEN (1871 I), REHM (1896 p. 142) and SCHROETER (1908 p. 151) to separate these species, are really constant. It can only be decided by a monographic treatment of the whole of this difficult genus.

Naevia diminuens (KARSTEN) REHM forma *prominens* KARSTEN 1872 p. 96, Syll. VIII p. 721.

Common on dead leaves of Alopecurus alpinus, Calamagrostis neglecta, Catabrosa algida, Hierochloë alpina, Poa alpigena, Poa alpina and Poa arctica from Hope Island and all localities visited on the west and north coast of Spitsbergen. KARSTEN has originally described the same form on Alopecurus alpinus from Green Harbour (TH. M. FRIES). The ascomata are black and convex, externally not to be distinguished from Lophodermium except by the elongated ostiolum of the latter; asci clavate 54—60 $\mu \times$ 10—12 μ, spores 15—17 $\mu \times$ 4—5 μ. It is a well-marked form, and it is a debatable point whether it is not rather an independent species. It is hitherto only known from Spitsbergen.

Naevia fuscella (KARSTEN) LIND 1910 b p. 11, Syn. Trochila fuscella KARSTEN 1871 I p. 248, Phacidium fuscellum KARSTEN 1885 p. 160, Syll. VIII p. 720.

On Festuca rubra, Sörkapplandet (LID) and Freemann Strait (MALMGREN). Luzula nivalis, Quade Hoek (H. RESVOLL-HOLMSEN).

Naevia pusilla (LIB.) REHM 1896 p. 118 c. icon., Syll. VIII p. 662, Syn. Trochila juncicola ROSTRUP 1886 p. 231, Syll. VIII p. 732.

On Juncus biglumis and triglumis, Luzula arcuata, Luz. confusa, Luz. nivalis and Luz. Wahlenbergii, very common in all localities visited at Spitsbergen as well as at Bear Island. Concerning details for its nomenclature, see LIND 1910 b p. 11.

Naeviae Stellariae (ROSTRUP) LIND 1924 b p. 8, Syn. Trochila Stell. ROSTRUP 1888 p. 540, Syll. VIII p. 731. See Pl. I Fig. 4.

On Stellaria longipes from Bell Sound, Coles Bay and Advent Bay.

Phacidiaceae.

Pseudophacidium degenerans KARSTEN 1885 p. 157, Syll. VIII p. 778, Syn. Phacidium degen. KARSTEN 1871 I p. 252, Cenangium Vaccinii (FUCKEL) SACC., Syll. VIII p. 558, Dothiora Vacc. FUCKEL apud REHM 1896 p. 94 and p. 1249, Myxophacidium degen. v. HÖHNEL in Annal. Mycol. 1917 p. 330.

On Vaccinium uliginosum, Coles Bay (R. SEEGER).

Phacidium Polygoni ROSTRUP 1891 p. 612.

On dead leaves of Polygonum viviparum from Advent Bay and Hiorthamn (LID), Cape Thordsen and Klaas Billen Bay (H. RESVOLL-HOLMSEN).

Stegia subvelata REHM, Hedwigia 19, 1880 p. 176, Syll. VIII p. 734, Syn. Micropeziza subvel. REHM, Stegia Caricis PECK, Syll. XIV p. 814 (see BUBAK: Einige neue Pilze aus N. Am., Journal of Mycology 1906 March), Stegia subvelata REHM var. Winteri REHM 1896 p. 157.

On dead leaves of Carex glareosa, Carex Lachenalii, Carex rigida, Carex rupestris and Carex subspathacea from various localities at Ice Fjord and once from Liefde Bay. This very excellent species, known immediately by its elongated, lanceolate, acutely pointed paraphyses has, as far as I can see, never before been met with in Arctic regions.

Sphaeropezia Empetri (FRIES) REHM 1896 p. 73, Syn. Leptosphaeria Empetri (FUCKEL) WINTER 1887 p. 487, Metasphaeria Empetri SACC. Syll. II p. 171, Excipula Empetri FRIES S. M. II p. 190, Syll. III p. 668.

On dead leaves of Empetrum nigrum from Bell Sound (J. VAHL), Green Harbour (TH. M. FRIES) and Coles Bay (H. RESVOLL-HOLMSEN). The present specimens agree very well with the description by FRIES viz., "Primo convexo-conica dein cylindrica, demum obovato-cylindrica".

Rhytisma Empetri FRIES, Syll. VIII p. 751, Syn. Sphaeria Empetri FRIES S. M. II p. 522, Duplicaria Empetri FUCKEL.

On Empetrum nigrum from Green Harbour (TH. M. FRIES). KARSTEN (1872 p. 96) has found it on quite the same collection, and I have not been able to discover the fungus on other collections of Empetrum from Svalbard. It agrees very well with the description given by FRIES viz., " . . . . junior omnino vera Sphaeria orbicularis, laevis, atra, nitida . . . . demum vera collapsa, adplanata, inaequalis . . . .". Undoubtedly the Melasmia Empetri Magnus (see below p. 39) represents the conidial fructification of this species.

Rhytisma salicinum FRIES, Syll. VIII p. 753.

On leaves of Salix polaris and Salix herbacea × polaris collected in many different localities at Spitsbergen and Bear Island.

Hysteriaceae.

Lophodermium arundinaceum (FRIES) CHEV., Syll. II p. 795. Syn. Lophoderm. culmigenum KARSTEN 1872 p. 96.

On dead leaves of Calamagrostis neglecta, Catabrosa algida and concinna, Deschampsia alpina, Dupontia Fisheri, Festuca ovina and rubra, Hierochloë alpina, Poa abbreviata, Poa alpigena × alpina, Poa alpigena × arctica, Poa alpina, Poa arctica, Poa Balfourii, Puccinellia angustata and Vahliana and Trisetum spicatum. Collected in many different localities, not absent from any region visited at Svalbard. I have seen 100 collections of Gramineae especially Festuca and Poa with this fungus. KARSTEN (1872 p. 96) has recorded it on nearly all the same grasses.

Lophodermium caricinum (DESM.) DUBY, Syll. II p. 797.

On Eriophorum Scheuchzeri, Advent Bay (LID). Undoubtedly Leptostroma Henningsii ALLESCHER is the conidial fructification of this species, see p. 39.

Lophodermium Svalbardense spec. nov. Peritheciis ellipticis, innato-superficialibus, siccis medio leviter collabentibus, laevibus, nudis, nigris, demum rima longitudinali dehiscentibus, c. 200 μ diam., macula lata, albicante insidentibus. Ascis elongato-clavatis, sursum obtusis, breve stipitatis 75—90 μ × 12—13 μ, rectis, octosporis, paraphysibus filiformibus obvallatis. Sporidiis filiformibus, flexuosis, hyalinis, continuis apicem versus incrassatis, 63 μ × 2—3 μ. See Pl. I Figs. 1 and 2.

Hab. in caulibus emortuis Papaveris radicatae. Sassen Bay Sept. 1st, 1908 leg. H. RESVOLL-HOLMSEN.

Erysiphaceae.

Erysiphe graminis FRIES S. M. II p. 242, Syll. I p. 19. Syn. Oidium monilioides LINK, Syll. IV p. 46.

On living leaves of Poa alpina, Poa alpigena × arctica and Catabrosa algida from Advent Bay, Björndalen, Cape Boheman and Wijde Bay. The present fungus is only in its Oidium stage according to the custom of this species when growing in most northerly places.

Sphaerotheca fuliginea (FRIES) LIND 1913 p. 160.

On Taraxacum arcticum. Advent Bay July and August (LID).

Microthyriaceae.

Microthyrium arcticum OUDS. 1885 p. 160 c. fig., Syll. IX p. 1058.

On Potentilla pulchella, Treurenberg Bay (MALMGREN).

Dothideaceae.

Dothidella betulina (FRIES) SACC., Syll. II p. 628, Syn. Dothidea betulina FRIES S. M. II p. 554, Eurhyachora betulina THEISSEN et SYDOW, Annal. Mycol. 1915 p. 365, Dothidella Betulae nanae (WAHLENB.) SACC.

On Betula nana, Coles Bay and Advent Bay.

Phyllachora amenti ROSTRUP 1891 b p. 5, Syn. Haplothecium amenti THEISSEN et SYDOW, Annal. Mycol. 1915 p. 291.

Upon the stalk of the catkins of Salix polaris, Longyear Valley and Cape Thordsen (LID).

Phyllachora Junci (FRIES) FUCKEL, Syll. II p. 605, Syn. Sphaeria Junci FRIES S. M. II p. 428, Endothorella Junci, THEISSEN et SYDOW, Annal. Mycol. 1915 p. 110.

On Juncus arcticus, Dickson Bay (LID). The mycelium penetrates the whole of the Juncus, accordingly one plant is found attacked by Phyllachora on all its stems, while another plant close by is quite free.

Sphaeriales.

Coleroa circinans (FRIES) WINTER, Syn. Perisporium circinans FRIES S. M, III p. 252, Venturia circinans SACC. See Pl. II. Fig. 12.

On Potentilla pulchella, Bell Sound, Advent Bay and Klaas Billen Bay. The perithecia are minute, only about 120—150 μ in diam., globose, covered by dense, black, short, rigid setae, situated on the upper surface of the leaves in large, close, irregular clusters that give the living leaves an almost black colour. The asci measure 64—72 μ × 10—16 μ, the spores 20—24 μ × 8—9 μ, the unripe spores are hyaline, later on chlorine and finally olive brown, the upper cell is almost globular the lower narrow and conical.

Lizonia distincta KARSTEN 1871 II p. 186 and 1885 p. 59, Syll. I p. 574, Syn. Sphaerella distincta KARSTEN 1872 p. 107, Mycosphaerella distincta STARBÄCK 1896.

On Catabrosa algida and concinna, Puccinellia angustata and Vahliana from many places. KARSTEN has found it on Puccinellia Vahliana from Cape Thordsen (TH. M. FRIES).

Mycosphaerella perexigua (KARSTEN) JOHANSON, Syn. Sphaerella perex. KARSTEN 1871 II p. 54, Syll. I p. 528, Mycosphaerella perexigua var. minima JOHANSON 1884 p. 166, Syll. IX p. 653.

Common on Juncus biglumis, Juncus triglumis, Luzula confusa and Luz. nivalis besides a single instance on Carex misandra. KEILHAU has collected it at Edge Island 1827 and all the following collectors have met with the same species at all the stations visited. KARSTEN has originally described it on Juncus biglumis from Advent Bay and Nordfjord 1868 (TH. M. FRIES). The perithecia are perhaps a little smaller than those of Wichuriana viz., 50 μ in diam., asci 24—25 μ × 9—12 μ, spores 12—16 μ × 3 μ. It is often found associated with Septoria punctoidea, which it greatly resembles.

Mycosphaerella pusilla (AWD.) JOHANSON, Syn. Sphaerella pusilla AWD., Syll. I p. 530, Sphaerella Tassiana DE NOT. var. pusilla (AWD.) KARSTEN 1871 p. 168,

On Carex rigida, Carex rupestris and Carex subspathacea, only collected in the Ice Fjord.

Mycosphaerella Wichuriana (SCHROETER) JOHANSON, Syn. Sphaerella Wich. SCHROETER 1881 p. 173, Syll. I p. 530, Mycosphaerella Tassiana var. alpina LINDFORS 1915 p. 256 c. fig.

Found on the leaves of many different species of Cyperaceae and Gramineae viz., Carex Hepburnii, Carex misandra, Carex pulla, Carex rupestris, Carex subspathacea, Alopecurus alpinus, Catabrosa algida and concinna, Dupontia Fisheri, Poa alpigena × arctica, Poa Balfourii and Puccinellia Vahliana. Collected at all visited localities on the west coast of Spitsbergen and also at Magdalena Bay, Liefde Bay, Wijde Bay, Brandewijne Bay, Edge Island and Bear Island. Perithecia epiphyllous, innate, congregated on dark gray spots, which on the species of Carex are formed like a band across the leaf infected. On Puccinellia the spots blacken the whole of the surface of the attacked leaf. The perithecia are exceedingly small, only 65 μ in diameter, the asci few and globular, the spores clustered and comparatively large. There is no doubt about Lindfors' fungus being the same species as the present.

Mycosphaerella Tassiana (DE NOT.) JOHANSON, Syn. Sphaerella Tassiana DE NOT. Syll. I p. 530, Sphaerella pachyasca ROSTRUP, Syll. IX p. 613, Didymella nivalis (FUCKEL) BERLESE et VOGLINO Syll. IX, p. 664. See Pl. I Fig. 11.

Mycosphaerella Tassiana is the most common of all fungi on Spitsbergen and Bear Island, and is found on the following host-plants: Cystopteris fragilis, Equisetum arvense, Alopecurus alpinus, Calama-

grostis neglecta, Carex spp., Catabrosa algida and concinna, Cobresia caricina, Colpodium fulvum, Deschampsia alpina and caespitosa, Dupontia, Eriophorum spp., Festuca ovina and rubra, Hierochloë, Juncus arcticus, Juncus biglumis, Juncus castaneus, Juncus triglumis, Luzula confusa and nivalis, Poa spp., Tofieldia and Trisetum. Further on Arabis alpina, Braya, Campanula uniflora, Cardamine bellidifolia and pratensis, Cassiope, Cerastium spp., Cochlearia officinalis, Draba spp., Eutrema, Honckenya, Koenigia, Melandrium affine and apetalum, Mertensia, Minuartia spp., Papaver, Pedicularis hirsuta, Polemonium, Polygonum, Potentilla emarginata and nivea, Ranunculus lapponicus and sulphureus, Sagina, Saxifraga cernua, Sax. comosa, Sax. flagellaris, Sax. hirculus, Sax. nivalis, Sax. oppositifolia, Silene acaulis, Stellaria spp. and Taraxacum arcticum. Especially common on Poa and Carex as well as on Cerastium, Silene, Stellaria and Papaver on which it is hardly ever absent. On the other hand, it is never found on the more robust and thick-skinned plants such as Dryas, Betula nana, Salix, Vaccinium, Empetrum. It attacks Equisetum arvense, but never Equ. scirpoides and Equ. variegatum.

Mycosphaerella polaris (KARSTEN) LINDAU, Syn. Sphaerella polaris KARSTEN, Syll. I p. 486, Sphaerella genuflexa AWD. subsp. polaris KARSTEN 1872 p. 104.

On Salix polaris from Bell Sound and Wijde Bay. Salix herbacea × polaris, Sörkapplandet. Originally described from Spitsbergen as a variety, but later on considered by SACCARDO a proper species. In the absence of sufficient material I am not capable of taking any standpoint in the present case.

Mycosphaerella maculiformis (FRIES) SCHROETER, Syn. Sphaerella mac. FRIES, Syll. I p. 477.

On dead leaves of Betula nana, Coles Bay.

Mycosphaerella confinis (KARSTEN) LIND, Syn. Sphaerella conf. KARSTEN 1872 p. 106 and 1871 II p. 179, Sphaerella carniolica NIESSL, Oestr. bot. Zeitschr. 1875 p. 85 and apud VOSS 1891 p. 158, Syll. I p. 502.

Found on some species of Caryophyllaceae viz., Sagina intermedia, Melandrium affine and apetalum, Honckenya peploides, Minuartia verna and Arenaria ciliata. Further, on some species of Cruciferae, viz., Braya purpurascens, Cochlearia officinalis, Draba alpina, Dr. oblongata, Dr. rupestris, Dr. subcapitata and Dr. Wahlenbergii. And finally on Erigeron unalaschkensis. The mycelium of the fungus penetrates the whole branch or the entire host-plant, and the densely clustered perithecia are to be found on every dead or withering leaf of the affected plant, even on the sepals. KARSTEN has described it on Braya and Draba from many different places, THORILD WULFF too (1902 p. 115) has found it at Wijde Bay and Treurenberg Bay.

SACCARDO (Syll. I p. 502) and KARSTEN (1885 p. 67) both consider Sphaerella carniolica identical with the present species.

Mycosphaerella densa (ROSTRUP) LIND, Syn. Sphaerella densa ROSTRUP 1885 p. 225, Syll. IX p. 622.

On Cardamine bellidifolia and pratensis, Eutrema Edwardsii and Saxifraga nivalis. It occurs in many places on the western coast of Spitsbergen from Björnbeinflyan in the South to Cross Bay in the North. Biologically it is of the same type as Mycosph. confinis, attacking almost all the leaves of the same plant while they are still alive. The bright reddish-brown perithecia are very small and clustered together as closely as possible, often forming circular patches up to 2 cm. in diameter — on the leaves of Saxifraga — on the upper side of the leaves.

Mycosphaerella Ranunculi (KARSTEN) LIND, Syn. Sphaerella Ran. KARSTEN 1872 p. 105, Syll. IX p. 611, Sphaerella fusispora FUCKEL 1874 p. 318 c. fig., Syll. IX p. 611, Sphaerella fusispora var. groenlandica ALLESCHER 1897 p. 46.

On dead leaves and petioles of Ranunculus affinis, Ran. glacialis, Ran. nivalis, Ran. pygmaeus and Ran. sulphureus, common at all visited localities from Sörkapp northwards to Norsköyane. KARSTEN describes it from Green Harbour and Wijde Bay.

Mycosphaerella vivipari (WINTER) LIND, Syn. Sphaerella vivip. WT. Syll. XI p. 299.

On dead leaves of Polygonum viviparum found along the whole of the western shores of Spitsbergen from Sörkapp to Cross Bay. The perithecia are small and globular, only 150 μ in diam., asci cylindrical 39—40 μ × 5—6 μ, spores hyaline 10—13 μ × 3 μ.

Mycosphaerella Polygonorum (CRIÉ) LIND, Syn. Sphaerella Polyg. (CRIÉ) SACC., Syll. I p. 512.

On dead leaves of Polygonum viviparum from Bell Sound up to Magdalena Bay. It differs from all other Arctic species of this genus in the colour of the spores, they are hyaline while unripe, later on greenish, finally olive-brown. Asci 60—80 μ × 20—25 μ, spores 21—24 × 9—11 μ;I have found them considerably larger than recorded by SACCARDO, he also calls the spores "dilute virescentibus" and can therefore hardly have seen mature spores.

Mycosphaerella minor (KARSTEN) JOHANSON, Syn. Sphaerella minor KARSTEN 1871 II p. 246, Syll. I p. 519.

On Saxifraga hirculus from several places in the Ice Fjord and in one instance from Bell Sound (VAHL) and from Bear Island (KEILHAU). The perithecia are smaller than those of Tassiana, more depressed in the leaves, glossy black, and with a plane surface; asci smaller, 24—30 μ × 7—9 μ, spores 12—13 μ × 3—4 μ, often hyaline-chlorine.

Mycosphaerella inconspicua (SCHROETER) VESTERGREN, Syn. Sphaerella incons. SCHROETER 1881 p. 173, Syll. I p. 499.

On dead leaves and peduncles of Cassiope tetragona Tempel Bay, Cape Thordsen and Coles Bay.

Mycosphaerella Pedicularidis (KARSTEN) LIND, Syn. Sphaerella Ped. KARSTEN 1872 p. 107, Syll. I p. 501.

On Pedicularis lanata only once, Saurieberget (H. RESVOLL-HOLMSEN) on Pedicularis hirsuta very common even from Edge Island (KEILHAU). KARSTEN has described it from Green Harbour (TH. M. FRIES).

Mycosphaerella eriophila (NIESSL) Syn. Sphaerella eriophila NIESSL.

On Erigeron unalaschkensis, Advent Bay and Alkhornet.

Mycosphaerella Taraxaci (KARSTEN) LIND, Syn. Sphaerella Tarax. KARSTEN 1872 p. 106, Syll. I p. 509.

On dead leaves of Petasites frigidus and Taraxacum arcticum, common at all visited localities. KARSTEN has described it on Taraxacum from Lomme Bay and Kings Bay. It closely resembles Myc. minor and Myc. eriophila, as the perithecia are glossy black, immerged in the leaf and rather plane; they are often clustered closely together and have always been found on the upper side of the leaves.

Physalosphora alpestris NIESSL 1876 p. 170.

On Carex misandra, Cross Bay (H. RESVOLL-HOLMSEN). The perithecia are most frequently found on the margin of the leaves. The large, light spores correspond exactly to the description given by NIESSL.

Physalosphora Empetri ROSTRUP 1901 p. 310, Syll. XVII p. 583, Syn. Physalosp. alpina SPEG. subspec. Crepiniana SACC. Syll. IX p. 594, Phomatospora Crepiniana (SACC.) THEISSEN, Verh. Zool.-botan. Gesell. Wien 1916 p. 389.

On Empetrum nigrum, Mimesdalen (NATHORST) and Coles Bay (H. RESVOLL-HOLMSEN).

Venturia chlorospora (CES.) KARSTEN, Syll. I p. 586.

On dead leaves of Salix herbacea, Salix herbacea × polaris, Salix polaris and Salix reticulata from Spitsbergen and Bear Island.

Venturia ditricha (FRIES) KARSTEN, Syll. I p. 587.

On dead leaves of Betula nana. Coles Bay (NATHORST).

Venturia Petasitidis (FUCKEL) SACC., Syll. I p. 592 and Syll. IX p. 691.

On leaves of Petasites frigidus, Cape Thordsen and Longyear Valley.

Massariopsis Wulffii LIND 1924 p. 296, see Pl. I Fig. 8.

On Poa arctica, Poa alpigena × arctica and Puccinellia Vahliana from Cross Bay, Quade Hoek and Nordfjord.

Didymella glacialis REHM, Hedwigia 21, 1882 p. 121.

On Poa alpigena × alpina, Klaas Billen Bay (H. RESVOLL-HOLMSEN). Asci cylindrical 63 μ × 6 μ, very numerous in the perithecium, para-

physes filiform, sporidia chlorine, uniseptate, constricted at the septum, 12—14 μ × 4 μ.

Didymella hyperborea (KARSTEN) SACC., Syll. I p. 551, Syn. Sphaeria hyperborea KARSTEN 1872 p. 103. See Pl. I Fig. 7.

On dead leaves of Cassiope tetragona, Green Harbour and other places in the Ice Fjord beside Wijde Bay (THORILD WULFF). KARSTEN has described it after specimens from Green Harbour (TH. M. FRIES).

Didymosphaeria Dryadis (FUCKEL) BERLESE et VOGLINO, Syll. IX p. 733, Syn. Pleospora Dryad. FUCKEL 1874 b p. 93 c. fig.

On dead leaves of Dryas octopetala from, Bell Sound, Ice Fjord, Cross Bay and Treurenberg Bay.

Leptosphaeria Equiseti KARSTEN 1872 p. 101, Syll. II p. 81, BERLESE 1894 p. 54, see Pl. II Fig. 15.

On Equisetum scirpoides and Equ. variegatum from several localities from Recherche Bay up to Wijde Bay. KARSTEN has described it on Equisetum variegatum from Liefde Bay. KARSTEN'S species is distinguished from Leptos. limosa, Leptos. hiemalis and Leptos. arvensis by the spores being 7—13 septate, cylindrical and obtuse at both ends, 36—37 μ × 7—8 μ, asci cylindrical 81—96 μ × 9—16 μ.

Leptosphaeria consobrina KARSTEN 1872 p. 102, Syll. II p. 78.

On leaves of Carex parallela and Carex pulla from several localities in the Ice Fjord. KARSTEN has also found it on Carex pulla from Ice Fjord (TH. M. FRIES).

Leptosphaeria caricinella KARSTEN 1872 p. 100, Syll. II p. 65, Syn. Leptosph. junciseda KARSTEN 1872 p. 101, Syll. II p. 67 and Leptosph. vagans KARSTEN 1872 p. 101, Syll. II p, 59, see Pl. II Fig. 18.

Found on Carex Lachenalii, Carex pulla, Carex rigida, Catabrosa algida and concinna, Dupontia, Pleuropogon, Puccinellia Vahliana, Juncus biglumis and triglumis and Luzula confusa over all the western and northern coasts of Spitsbergen from Sörkapplandet up to Treurenberg Bay. KARSTEN has originally described it as three different species, an examination of the copious material brought home in later years has convinced me that it is all a single species.

Leptosphaeria arundinacea (SOW.) SACC., Syll. II p. 62.

On Poa abbreviata, Gips Bay (LID).

Leptosphaeria microscopica KARSTEN 1872 p. 102, Syll. II p. 59, Syn. Leptosph. culmorum AWD., Leptosph. typharum (DESM.) KARSTEN, Syll. II p. 64 p. 54 see BERLESE 1894 p. 66 and v. HÖHNEL in Annales Mycol. 1917 p. 129.

On Carex Lachenalii, Carex misandra, Carex parallela, Carex pulla, Carex rupestris, Carex ursina, Eriophorum polystachyum, Erioph. Scheuchzeri, Juncus arcticus and biglumis, Alopecurus alpinus, Deschampsia alpina, Dupontia, Festuca ovina, Hierochloë, Poa alpigena, Poa alpina × arctica, Puccinellia phryganoides and Vahliana from all

the places visited from Sörkapplandet up to Wijde Bay and Lomme Bay. KARSTEN has described it on Poa, Trisetum and Alopecurus from Cross Bay, Magdalena Bay and Liefde Bay.

Leptosphaeria algida ROSTRUP 1888 p. 560.

On Catabrosa algida and concinna from Cape Boheman, Wahlenberg Bay and Red Bay. It is rather difficult to distinguish the species from Leptosph. microscopica.

Leptosphaeria insignis KARSTEN 1872 p. 100, Syll. II p. 71.

On Alopecurus, Colpodium fulvum, Deschampsia alpina and caespitosa, Dupontia Fisheri and Poa alpigena × arctica from Sörkapplandet up to Liefde Bay and Wijde Bay. KARSTEN has described it on Colpodium fulvum and Dupontia. The perithecia are small and insignificant in appearance, the asci, on the other hand, quite uncommonly large. I have measured asci 143—180 μ × 30—37 μ, spores 5 septate, the third cell much longer and broader than the other five, the colour is not green as on BERLESE's illustration (1894 p. 79) but yellowish-brown.

Leptosphaeria graminum SACC., Michelia 1878 p. 119, Syn. Metasphaeria gram. SACC., Syll. II p. 174.

On Poa alpigena × alpina. Olsokflyan (E. STORM). By its very small asci and its almost hyaline, small and narrow spores it deviates in a marked degree from all the other species of Leptosphaeria mentioned here. Asci 40 μ × 6 μ, spores 12—15 μ, 3 septate.

Leptosphaeria culmicola (FRIES) AWD., Syll. II p. 70, Syn. Sphaeria culmicola FRIES S. M. II p. 430.

On Festuca ovina, Klaas Billen Bay (H. RESVOLL-HOLMSEN), and on Carex parallela, Dickson Bay (LID).

Leptosphaeria culmifraga (FRIES) CES., Syll. II p. 75.

On Carex misandra and Carex pulla further on several species of Gramineae viz., Alopecurus alpinus, Catabrosa algida, Catabrosa concinna, Poa abbreviata and Poa alpina. Rarely on the leaves, more often on old withered sheaths at the base of the tufts.

Leptosphaeria brachyasca ROSTRUP 1891 p. 618, Syll. XI p. 321, see Pl. II Fig. 17.

On leaves of Saxifraga oppositifolia, Bear Island (LID). This singular species deviates considerably from other species of Leptosphaeria by its broad, obtuse and cylindric asci.

Leptosphaeria Andromedae (AWD.) SACC., Syll. II p. 49, Syn. Sphaerella Androm. AWD. Synopsis Pyrenomyc, Pleospora hyperborea FUCKEL 1874 b p. 93 c. fig., Leptosphaeria hyperborea (FUCKEL) BERLESE et VOGLINO.

On dead leaves of Cassiope tetragona, common. KARSTEN has seen it from Green Harbour (TH. M. FRIES) and FUCKEL has seen it from Spitsbergen (1874 p. 322). It is scarcely a true Leptosphaeria; the

immature spores are long time 1-septate, hyaline, later on 3-septate and finally brown. It stands between Leptosphaeria and Massaria.

Leptosphaeria coniothyrium (FUCKEL) SACC.

On leaves of Salix polaris, Sassen Bay (H. RESVOLL-HOLMSEN).

Leptosphaeria Silenes acaulis DE NOT., Syll. II p. 47, Syn. Leptosph. Stellariae ROSTRUP 1888 p. 557. Syll. IX p. 783, Leptosph. Rostrupii BERLESE 1894 p. 87, Leptosph. Hausmanniana AWD. Hedwigia 7, 1868 p. 185.

On Silene acaulis, Stellaria humifusa and Stellaria longipes from Bell Sound, various places in Ice Fjord and from Magdalena Bay, certainly common but inconspicuous. KARSTEN has recorded it (1872 p. 102) from Green Harbour (TH. M. FRIES).

Leptosphaeria Weberi OUDS, 1885 p. 156 c. fig., Syll. IV p. 756, BERLESE 1894 p. 68.

On Ranunculus pygmaeus from Sörkapplandet, Cape Boheman and Cape Thordsen (LID).

Metasphaeria sepalorum VLEUGEL 1908 p. 369 c. fig.

On Luzula nivalis, Grey Hoek (FRIDTJOV ISACHSEN).

Metasphaeria Cassiopes ROSTRUP 1888 p. 561, see Pl. I Fig. 9.

On Cassiope tetragona from Mimesdalen and Longyear Valley.

Pleospora Karstenii SACC., Syll. II p. 271, Syn. Pleospora arctica KARSTEN 1872 p. 79, Pleospora islandica JOHANSON 1884 p. 170 c. fig.

Common on dead leaves of Juncus biglumis, Eriophorum polystachyum, Carex pulla, Alopecurus alpinus, Calamagrostis neglecta, Catabrosa algida, Colpodium fulvum, Deschampsia alpina, Dupontia Fisheri, Festuca ovina and rubra, Poa abbreviata, Poa alpigena × alpina, Poa alpigena × arctica, Poa arctica, Puccinellia angustata and Pucc. Vahliana from Sörkapplandet and up to Wijde Bay. KARSTEN has described it on Poa alpigena from Liefde Bay (TH. M. FRIES). Easily recognisable by its small perithecia, its stalkless asci and large spores of light colour and thin walls, it has from 7 to 10 septa across and numerous thin walls at length which are seldom continued from cell to cell. Paraphyses numerous.

Pleospora discors (DUR. et MONT.) CES. et DE NOT., Syll. II p. 230, BERLESE 1900 p. 18, Syn. Pleospora Arctagrostidis OUDS. 1885 p. 154, Syll. IX p. 879, BERLESE 1900 p. 17, Pleospora heterospora DE NOT. Syll. II p. 273.

Found on many different species of Monocotyledones viz., Alopecurus alpinus, Arctagrostis latifolia, Calamagrostis neglecta, Catabrosa algida, Colpodium fulvum, Deschampsia alpina, Dupontia Fisheri, Hierochloë alpina, Poa abbreviata, Poa alpigena, Poa alpigena × alpina, Poa alpigena × arctica, Poa arctica, Carex Hepburnii, Carex pulla, Carex rupestris and Juncus triglumis from all localities visited. Tihs is doubtless the species seen by KARSTEN (1872 p. 98) on

Alopecurus and taken by him to be a Pleospora herbarum with large spores. The spores are 39—43 μ × 15—18 μ, 7 septate, elliptic, acuminate, the walls rather stout and dark coloured, with few longitudinal walls, asci 110—135 μ × 27—35 μ, early dissolved.

Pleospora Junci PASSERINI et BELTRANI, Syll. II p. 273. Syn. Pleosp. spinosella REHM, Syll. II p. 272.

On Juncus arcticus, Juncus biglumis and Luzula nivalis from Bell Sound and a few places in Ice Fjord. I see no reason to keep the two above-named species separated, BERLESE has (1888 Tab. IV Fig. 2) delineated Pleosp. spinosella as having the spores 5 septate, but it is not in accordance with the description. The asci are clavate, 90—95 μ × 16—21 μ, the spores elliptical, chestnut-coloured, 7 septate, and with a single septum longitudinally, 24—30 μ × 10—14 μ.

Pleospora scirpicola (FRIES) KARSTÉN, Syll. II p. 265, BERLESE 1888 Tab. I Fig. 11 and 1900 p. 13, Syn. Sphaeria scirpicola FRIES S. M. II p. 510.

On Eriophorum polystachyum, Juncus arcticus; Festuca ovina and Festuca rubra from Green Harbour, Coles Bay and Dickson Bay.

Pleospora deflectens KARSTEN 1872 p. 99, Syll. II p. 266, Syn. Pleosp, deflectens var. triseti KARSTEN 1872 p. 100, Pleosp. hydrophila KARSTEN sec. KARSTEN 1885 p. 38 and BERLESE 1900 p. 11.

Found on many different host-plants monocotyledones as well as dicotyledones viz., Carex Lachenalii, Catabrosa algida, Cat. concinna, Deschampsia alpina, Festuca ovina, Puccinellia Vahliana, Draba cinerea, Cerastium nigrescens, Melandrium affine and apetalum, Silene acaulis, Potentilla emarginata, Pot. pulchella and Ranunculus nivalis. Collected at many places in Ice Fjord and also Sörkapplandet, Cross Bay, Liefde Bay, Brandewijne Bay and Bear Island. KARSTEN has described it on Poa alpigena and Trisetum spicatum from Liefde Bay (TH. M. FRIES). Concerning the shape of the spores it reminds one of the spores of Pyrenophora coronata, Pyrenoph. setigera and Pleospora vagans, their upper half is broad and globular, their lower half is long and narrow and scarcely without septa lengthwise, the colour is at first yellow, later on dark brown, asci 95—105 μ × 15—20 μ, quickly dissolved, the spores are 20—24 μ × 7—8 μ, 7 septate, constricted at the 3 septum.

Pleospora vagans NIESSL, Syll. II p. 287.

On Catabrosa algida. Brandewijne Bay (TH. M. FRIES).

Pleospora infectoria FUCKEL, Syll. II p. 265, Syn. Pleosp. vulgaris NIESSL, Syll. II p. 243, Pleosp. Drabae SCHROETER 1881 p. 176, Syll. II p. 253.

Very common on many different host-plants of Dicotyledones as well as of Monocotyledones, viz., Carex incurva, Carex parallela, Carex pulla, Juncus biglumis, Dupontia Fisheri, Festuca ovina, Poa

abbreviata, Poa alpina, Poa Balfourii, Puccinellia angustata, Pucc. phryganoides and Pucc. Vahliana, also Campanula rotundifolia Cardamine bellidifolia, Draba alpina. Dr. cinerea, Dr. Adamsii, Dr. nivalis, Dr. subcapitata, Dr. Wahlenbergii, Eutrema Edwardsii, Arenaria ciliata, Cerastium alpinum, Melandrium affine and apetalum, Stellaria longipes, Papaver radicatum, Pedicularis hirsuta, Ped. lanata, Polygonum viviparum, Saxifraga aizoides, Sax. cernua, Sax. comosa, Sax. groenlandica, Sax. hirculus, Sax. nivalis, Sax. oppositifolia, Sax. tenuis and Taraxacum arcticum. From all the places visited on Spitsbergen as well as on Bear Island.

Pleospora Magnusiana BERLESE 1900 p. 15, see Pl. III Figs. 21 and 22.

On some Monocotyledones viz., Carex incurva, Carex parallela, Eriophorum polystachyum and Scheuchzeri, Luzula nivalis, Calamagrostis neglecta, Catabrosa algida, Deschampsia alpina and caespitosa, Poa abbreviata, Poa alpigena, Poa alpigena × alpina, Poa alpigena × arctica, Poa alpina, Poa arctica, Poa Balfourii, Puccinellia angustata and Pucc. Vahliana. From many localities on the western coast of Spitsbergen, also from Liefde Bay, Wijde Bay, Treurenberg Bay and Lomme Bay on the north coast.

It somewhat resembles Pleospora media, but is easily recognisable by the perithecia tapering upwards in a conical neck which is often oblique. The spores are cylindrical and in the middle somewhat narrower, the walls are fairly strong, 5 crosswalls and 1 longitudinal wall and the latter often bends obliquely to the side in the two outermost segments, asci 108—135 μ × 25—30 μ, spores 24—30 μ × 12—15 μ, the colour dark chestnut, the perithecia are 200—210 μ in diameter.

The history of this species is rather peculiar, it has been delineated by BERLESE (1888 Tab. III Fig. 8) under the name of Pleospora pentamera KARSTEN, but in the text BERLESE himself writes that the figure does not correspond to KARSTEN's description and he therefore repeats KARSTEN's description verbatim. Later on BERLESE must have received fresh material of the true Pentamera from KARSTEN, as we find in the larger edition of his illustrated work (1900) a very striking illustration of Pentamera, while our species is now called Pleosp. Magnusiana with the remark that it has been found "in culmis et foliis Glyceriae Vahlianae in Visby, Gotlandiae, Magnus". Here again, however, there must be a mistake, for Puccinellia Vahliana has never been found in Gothland. Another of our Svalbardian fungi viz., Pleospora deflectens, is also asserted to have been found at Visby (Syll. II p. 266, BERLESE 1900). In both cases there must be a mistake. Pleospora Magnusiana has hitherto never been found outside of Svalbard.

Pleospora macrospora SCHROETER 1881 p. 176, Syll. II p, 263, Pl. III, Fig. 24.

On Colpodium fulvum, Sörkapplandet (LID) and on Hierochloë alpina from Coles Bay (H. RESVOLL-HOLMSEN).

Pleospora herbarum (FRIES) RABENHORST, Syll. II p. 247.

I have seen quite typical Pl. herbarum on dead leaves and stems of Arabis alpina, Cardamine bellidifolia, Cardamine pratensis, Draba alpina, Dr. cinerea, Dr. oblongata, Dr. Wahlenbergii, Eutrema Edwardsii, Melandrium affine, Oxyria digyna, Papaver radicatum, Ranunculus nivalis, Ran. sulphureus, Saxifraga hirculus, Sax. nivalis, Sax. tenuis, Pedicularis hirsuta, Polemonium humile, Erigeron unalaschkensis and on the catkins of Salix polaris. Found in all the localities visited on Spitsbergen and Bear Island. It is by no means impossible that the "Sphaeria herbarum" and "Sphaeria punctiformis" mentioned before, p. 8, really belonged to the present species, in any case Pleospora herbarum can still be shown on the plants collected by KEILHAU and JENS VAHL. It is quite certain that KARSTEN has also fairly often had the true Pleospora herbarum before him (1872 p. 98), even though he insists later (1884 p. 38) that it is not found in Svalbard.

Pleospora Dianthi (CES.) BERLESE 1888 p. 61 c. fig., Syn. Pleospora infectoria FUCKEL var. Dianthi (CES.) BERLESE 1900 p. 12.

On Melandrium affine and apetalum from the Ice Fjord. It strongly resembles Pleosp. infectoria but the spores are somewhat longer and acuminated.

Pleospora media NIESSL, Syll. II p. 244.

On dead stems of Cerastium alpinum. Bell Sound (LID).

Pleospora Wulffii spec. nov., see Pl. III Fig. 25. Peritheciis sub epidermide foliorum haud mutata innatis, levibus, deplanato-globosis, ostiolo punctiformi, rarius papilla parva ornatis, epidermidem vix perforante instructis, contextu parenchymatico, fuliguseo, 255 μ diam., ascis oblongo-clavatis sursum late rotundatis basi in stipitem brevissimum, nodulosum abcuntibus, paraphysibus filiformibus, hyolinis obvallatis, 120—126 μ × 21—26 μ, octosporis. Sporidiis basi oblique monostichis, sursum distichis, oblongo-fusoideis, utrinque acutiusculis, rectis vel vix curvalts, semper 7-septatis, loculis mediis nonnullis septulo longitudinali divisis, parte superiori turgidiore brevioreque, inferne attenuatis, 39—40 μ × 10—12 μ, luteis. Habitat in foliis siccis Stellariae longipedis, Wijde Bay 17th July 1899 by THORILD WULFF.

This beautiful species, hitherto undescribed, has been collected by the late Dr. THORILD WULFF and I have for this reason proposed to name it after the friend of my younger days, that enthusiastic Swedish botanist and ardent spirit, who contributed so largely to our knowledge of the nature and flora of Svalbard.

Pyrenophora setigera (NIESSL) SACC., Syll. II p. 281.

On Cerastium alpinum, Melandrium affine and apetalum, Silene acaulis and Saxifraga oppositifolia from Bell Sound up to Ice Fjord. The spores have 4—5, at most 6, crosswalls, they are constricted in the middle and divided into two parts, of which one is broad, the other long and narrow, length-wall through 4 cells only.

Pyrenophora Wichuriana (SCHROETER) SACC. Syll. II p. 286, BERLESE 1888 p. 218, Syn. Pleospora Wich. SCHROETER 1881 p. 14.

On Carex pulla, Advent Bay (H. RESVOLL-HOLMSEN).

Pyrenophora paucitricha (FUCKEL) BERLESE et VOGLINO, Syll. IX p. 897, Syn. Pleospora pauc. FUCKEL 1874 b p. 93.

On dead leaves of Salix polaris and Salix reticulata from all places visited.

Pyrenophora filicina LIND 1910 p. 157, Syll. XXII p. 280, see Pl. III Fig. 23.

On Cystopteris fragilis, Bell Sound (LID). It has by earlier authors been united with Pyr. chrysospora but it can readily be distinguished from the latter by its having only 5—6 crosswalls in the spores, while chrysospora is constant in having 7 crosswalls, besides, the spores are larger viz., 28—34 $\mu \times$ 15—17 μ.

Pyrenophora helvetica (NIESSL) SACC., Syll. II p. 283.

On Cardamine bellidifolia, Cochlearia officinalis and Draba alpina from Sörkapplandet, Skjemmenes, Bell Sound and Coles Bay. Its small perithecia are conical, the asci slender, clavate and persistent, 80—90 $\mu \times$ 17—18 μ; spores oblique, 7 septate, with thick, brown walls, constricted in the middle.

Pyrenophora chrysospora (NIESSL) SACC., Syll. II p. 285 and Syll. IX p. 896.

Found on many Dicotyledones viz., Arenaria ciliata, Cerastium alpinum, Cerast. nigrescens, Cerast. Regelii, Melandrium affine and apetalum, Minuartia biflora, Min. verna, Sagina intermedia, Stellaria humifusa, Stell. longipes, Braya purpurascens, Cardamine bellidifolia, Draba alpina, Dr. alpina $\times$ oblongata, Dr. cinerea, Dr. Adamsii, Dr. nivalis, Dr. oblongata, Dr. Wahlenbergii, Eutrema Edwardsii, Oxyria digyna, Polygonum viviparum, Papaver radicatum, Potentilla emarginata, Ranunculus affinis, Ran. nivalis, Ran. pygmaeus, Ran. sulphureus, Saxifraga aizoides, Sax. cernua, Sax. comosa, Sax. flagellaris, Sax. groenlandica, Sax. hieracifolia, Sax. hirculus, Sax. nivalis, Sax. oppositifolia, Sax. tenuis, Pedicularis hirsuta, Ped. lanata and Polemoneum humile. In other words, it is found on almost all the Dicotyledones known from Svalbard. I have found this fungus 130 times on the material I have had under investigation. It is evenly distributed all over Spitsbergen and Bear Island.

Pyrenophora Cerastii (OUDS.) LIND 1924 b p. 18, Syn. Pleospora Cerastii OUDS. 1885 p. 155, Pyrenophora glacialis (NIESSL) BERLESE et VOGLINO,

BERLESE 1900 p. 40, Pyrenoph. chrysospora (NIESSL) SACC. var. polaris KARSTEN 1884 p. 38, Syll. IX p. 896, see Pl. I Fig. 10.

Found on quite the same plants as chrysospora, very common in the Ice Fjord, but beyond that I have seen it only once from Cross Bay and once from Wijde Bay. In Mimesdalen it was found on Cystopteris fragilis (F. ISACHSEN).

Pyrenophora hispida (NIESSL) SACC., Syll. II p. 284, BERLESE 1888 p. 224.

On Melandrium affine and apetalum at different places in the Ice Fjord. Characterised by its large, collapsed perithecia, 300 μ broad, and its dark-coloured, 7 septate spores 20—25 μ × 12—14 μ.

Pyrenophora Androsaces (FUCKEL) SACC., Syll. II p. 284, Syn. Pleospora Fuckeliana NIESSL.

Found once on Tofieldia palustris and on many species of Dicotyledones viz., Cerastium alpinum, Cerast. nigrescens, Cerast. Regelii, Melandrium affine, Minuartia biflora and verna, Silene acaulis, Draba alpina, Dr. subcapitata, Dr. Wahlenbergii, Eutrema Edwardsii, Oxyria digyna, Papaver radicatum, Saxifraga comosa, Potentilla alpestris, Pot. emarginata, Pot. nivea, Pot. pulchella, Ranunculus nivalis, Ran. pygmaeus, Ran. sulphureus, Polemonium humile, Pedicularis hirsuta, Ped. lanata, Campanula uniflora, Camp. rotundifolia and Arnica alpina.

I have seen this species 90 times from all the places visited on Spitsbergen and Bear Island. It is never absent on dead leaves and stems of Polemonium humile or Potentilla pulchella; on the other hand, it seldom occurs on Silene acaulis from Svalbard, which from other countries is often given as its most common host-plant. It can be recognised by its very large spores which are always broadest in the middle with 7 straight crosswalls and up to 7 length-walls in the midmost cell; asci 120—150 μ × 27—36 μ, spores 38—45 μ × 22—25 μ.

Pyrenophora comata (NIESSL) SACC., Syll. II p. 286.

On Braya purpurascens, Draba alpina, Dr. oblongata, Dr. Wahlenbergii, Eutrema Edwardsii, Ranunculus affinis, Ran. sulphureus, Saxifraga comosa and Erigeron eriocephalus from Bell Sound, Ice Fjord, Cross Bay, Welcome Point and Wijde Bay. A beautiful species with large asci 116—142 μ × 36—39 μ, soon dissolved, with 8 large, dark coloured spores, 8—10 septate across and three length-walls, 39—48 μ × 16—23 μ.

Clathrospora punctiformis (NIESSL) BERLESE, Syn. Pleospora punct. NIESSL, Syll. II p. 271.

On Carex misandra from Cape Boheman (LID). It deviates considerably from the Clathrospora which I have seen from North Greenland (1924 p. 300) on the same host. The present one has, in fact, seven cross-septa and the six central cells are divided lengthwise, asci 75 μ × 24 μ, spores biseriate 27—30 μ × 10—12 μ. The material is very scarce.

Clathrospora pentamera (KARSTEN) BERLESE 1900 p. 28, Syn. Pleospora pentamera KARSTEN 1872 p. 99, Syll. II p. 266, see Pl. II Fig. 14.

On many different host-plants of Monocotyledones as well as of Dicotyledones viz., Carex glareosa, Carex Hepburnii, Carex incurva, Carex parallela, Carex pulla, Carex rigida, Carex rupestris, Eriophorum polystachyum, Juncus arcticus. Junc. biglumis, Junc. triglumis, Luzula confusa, Luz. nivalis, Alopecurus alpinus, Calamagrostis neglecta, Catabrosa algida, Cat. concinna, Deschampsia alpina and caespitosa, Dupontia Fisheri, Festuca ovina and rubra, Herochloë alpina, Poa abbreviata, Poa alpigena, Poa alpigena × alpina, Poa alpigena × arctica, Poa alpina, Poa alpina × arctica, Poa arctica, Poa Balfourii, Puccinellia angustata, Pucc. phryganoides, Pucc. Vahliana and Trisetum spicatum. Further on Cerastium alpinum, Melandrium affine and apetalum, Sagina intermedia, Stellaria longipes, Draba alpina, Dr. cinerea, Dr. oblongata, Dr. Wahlenbergii, Eutrema Edwardsii, Papaver radicatum, Oxyria digyna, Polygonum viviparum, Saxifraga cernua, Sax. comosa, Sax. nivalis, Pedicularis hirsuta, Ped. lanata and Taraxacum arcticum. I have found it not less than 190 times on the plants collected at Svalbard espec. from Bell Sound and Ice Fjord, also from Norsk-öyane, Wijde Bay, Treurenberg Bay, Lomme Bay and Freeman Strait.

A most characteristic species not to be confounded with any other species, certainly a very old type of fungi. Perithecia lentiform, large, without any papil, the wall of the asci is thick and permanent, paraphyses very stout and numerous. The spores are of a peculiar, clear, yellowish-brown colour, by which they are easily recognised together with their flattened shape; the septa are unusually stout and the structure of the sporidia is always very regular, the sporidia are but rarely seen with five or six cross-walls, a fact which KARSTEN has also observed.

Clathrospora Elynae RABENHORST, Hedwigia I, Syn. Pleospora Elynae (RBH.) CES. et DE NOT., Syll. II p. 273, Clathrospora alpina AWD. Mycol. europ.

On Carex Hepburnii, Eriophorum polystachyum, Juncus arcticus, Luzula confusa and Poa alpina. From several places in Ice Fjord and from Kings Bay. KARSTEN (1872 p. 97) was the first to find this very peculiar species in Arctic regions; and, like myself, found it on Carex Hepburnii of the same localities; it is worth noticing that I have observed it seven times on the same Carex without being able to find it once on any of the countless other specimens of Carex from Svalbard.

Massaria eucarpa (KARSTEN) nom. nov., Syn. Sphaerella eucarpa KARSTEN 1872 p. 103, Syll. I p. 512 see Pl. II Fig. 13.

On Polygonum viviparum from Bell Sound, Cape Thordsen, Cape Boheman, Green Harbour, Hiorthamn, Dickson Bay and Cross Bay.

On Pedicularis hirsuta from Bell Sound. KARSTEN has described it from Advent Bay and Cross Bay on Polygonum viviparum.

Massaria macrotheca (ROSTRUP) nov. nom., Syn. Metasphaeria macrot. ROSTRUP 1888 p. 561, see Pl. II Fig. 16.

On Carex pulla and Carex subspathacea from Bell Sound and Kings Bay. This species, too, is seen in its fully mature state to be a true Massaria, the unripe spores show quite the same characteristic figure as BERLESE (1900) has delineated for unripe spores of Massaria. ROSTRUP has described the immature fungus and I will give a description of the ripe fungus here:

Peritheciis sparsis, globoso-depressis. tectis, atris, amplis; ascis cylindraceis vel saccato-oblongis, stipitatis, crasse tunicatis, 140—180 μ × 20—30 μ, 8 sporis; sporidiis inordinate-tristichis, primo hyalinis, 1-septatis guttulis 4 cubicis instructis, denique 3-septatis, fuscescentibus, cylindraceis, utrinque obtuse rotundatis, muco obvolutis, 36—42 μ × 13—15 μ.

From the description it is the same as BLYTT has found on Carex vaginata on the Dovre mountains (ROSTRUP 1891 b p. 8) and calls Sphaerella Luzulae Cooke, and it is closely allied to Massaria Holoschaeni Passer. Syll. IX p. 761 on Scirpus.

Gnomonia hyparctica LIND 1926 p. 176, see Pl. I, Figs. 5 and 6.

On dead sepals and peduncles of Cassiope tetragona from Green Harbour and Skansen.

Linospora insularis JOHANSON 1884 p. 171, Syll. IX p. 935, Syn. Ceutocarpon insulare BERLESE 1900 p. 149.

On dead leaves of Salix polaris and Salix herbacea × polaris from Sörkapplandet, Bell Sound, and Ice Fjord but not north of it. Also from Bear Island. The perithecia are fairly large and ovoid, easily perceived on both sides of the leaf, but they do not colour the substratum black. Rostrum of the same length as the perithecium, fastened to one end of the latter and points obliquely outwards. Asci long and slender with 8 filiform spores, 160—200 μ × 7—8 μ, spores 2 μ thick and of equal length with the asci. It is often found in company with Marssonina obscura.

Hypospila rhytismoides (BAB.) NIESSL, Syn. Sphaeria rhytism. BAB. et BERK., Laestadia rhytism. SACC. Syll. I p. 424, Isothea rhytism. FRIES Summa Veg. p. 421.

On Dryas octopetala from Bell Sound and Ice Fjord. THORILD WULFF has found it (1902 p. 115) in Wijde Bay.

Ustilagineae.

Ustilago hyperborea BLYTT 1896 p. 28.

On Luzula confusa. Advent Bay (LID).

Ustilago vinosa (BERK.) TULASNE, Syll. VII p. 469.

On Oxyria digyna from Advent Bay, Cape Boheman, Green Harbour and Bear Island. KARSTEN (1872 p. 108) has seen it from Green Harbour and Bear Island.

Ustilago Bistortarum (DE CAND) KOERNICKE.

On leaves of Polygonum viviparum, Advent Bay (LID). The mycelium is perennial and survives the winter in the subterranean parts of the plant.

Ustilago inflorescentiae MAIRE 1907 p. 273, Syll. XXI p. 498, Syn. Ustil. ustilaginea (DE CAND.) LIRO 1924 p. 7, Sphacelotheca Polygoni vivipari SCHELLENBERG, Syll. XXI p. 508, Sphacelotheca hydropiperis (SCHUM.) DE BY, Syll. VII p. 499, Ustilago Bistortarum DE CAND. var. inflorescentiae TRELEASE, Syll. XVII p. 473.

On Polygonum viviparum, Sörkapplandet, Bell Sound and Ice Fjord.

Ustilago picacea LAGERH. et LIRO, LIRO 1924 p. 8.

On Koenigia islandica, Advent Bay (ASPLUND). Closely related, perhaps even identical with Ustil. inflorescentiae.

Ustilago nivalis LIRO 1924 p. 42.

In the fruit of Sagina nivalis from Advent Bay (NATHORST) see LIRO (l. c.), I have not succeeded in finding it.

Ustilago violacea (PERSON) ROUSSEL, Syll. VII p. 474.

In the anthers of Silene acaulis, English Bay, Advent Bay and Wijde Bay (THORILD WULFF 1902 p. 115), of Stellaria longipes from Tempel Bay (ASPLUND see LIRO 1924 p. 270).

Cintractia caricis (PERSON) MAGNUS, Syn. Ustilago caricis UNGER, Syll. VII p. 464.

On Carex misandra from Cape Boheman (LID) and on Cobresia caricina from Mimesdalen (FRIDTJOV ISACHSEN).

Schizonella melanogramma (DE CAND.) SCHROETER, Syll. VII p. 500.

On Carex rupestris from Advent Bay (LID) and from Treurenberg Bay (THORILD WULFF 1902 p. 115).

Tolyposporium Junci (SCHROETER) WORONIN, Syll. VII p. 501.

On Juncus biglumis from Advent Bay (LID).

Entyloma ambiens (KARSTEN) JOHANSON 1884 p. 159, Syn. Ustilago amb. KARSTEN 1872 p. 108.

Common on leaves of Dupontia Fisheri from Bell Sound, Green Harbour, Coles Bay, Lomme Bay and Bear Island, also found once on leaves of Poa alpina × arctica from Cape Boheman (LID). KARSTEN mentions it (1872 p. 108) as found "In foliis graminum ad Advent Bay 8th August 1868", and judging from the material I have seen,

there can be no doubt that KARSTEN has found it on Dupontia Fisheri. Externally it resembles a Phyllachora, the sori are black as pitch, longish, and often take up the greater part of the leaf. As KARSTEN writes, these crustlike sori often burst lengthwise; the sporidia are black and closely heaped together, sharp-edged by mutual pressure.

Uredineae.

Melampsora arctica ROSTRUP 1888 p. 535, Syll.VII p. 594 and IX p. 296, Syn. Melamps. alpina JUEL, Syll. XI p. 183, Melamps. reticulatae BLYTT 1896 p. 65.

At Svalbard the Caeoma is only found on Saxifraga groenlandica, and Uredo and Teleuto only on Salix polaris, common in Ice Fjord and also Bell Sound, Cross Bay and Bear Island. KLEBAHN mentions (Zeitschr. für Pflanzenkr. Bd. 17 p. 156) that he has employed Caeoma from Svalbard in his experiments, it must then almost certainly have been on Saxifraga groenlandica.

Puccinia Polygoni vivipari KARSTEN, Syn. Pucc. Bistortae (STRAUSS) DE CAND., SYDOW 1904 p. 571.

On living leaves of Polygonum viviparum, common in Bell Sound and Ice Fjord. Angelica, Selinum, Conopodium etc. are not found at Svalbard, there is, accordingly, reason to suppose that the present species propagates itself without Aecidium, as happens in many other places.

Puccinia Cardamines-bellidifolia DIETEL, SYDOW 1904 p. 510.

On Cardamine bellidifolia at several places in Ice Fjord besides Little Red Bay.

Puccinia Cochleariae LIRO, SYDOW 1904 p. 893.

On Cochlearia officinalis from Björnbeinflyan and Cape Boheman (LID).

Puccinia Drabae RUDOLPHI, SYDOW 1904 p. 512, Syn. Pucc. Drabae var. arctica HENNING apud ALLESCHER 1897 p. 41, Pucc. ambiens ROSTRUP apud GRØNLUND 1879 p. 74.

On Draba Adamsii, Dr. alpina × oblongata and Dr. cinerea from Dickson Bay, Advent Bay and Skansen.

Puccinia Oxyriae FUCKEL, SYDOW 1904 p. 567.

On Oxyria digyna from Advent Bay (LID).

Puccinia Arenariae (SCHUM.) WINTER, SYDOW 1904 p. 553.

On Cerastium alpinum from Advent Bay and Wijde Bay (THORILD WULFF 1902 p. 115).

Puccinia Saxifragae SCHLECHTENDAL, SYDOW 1904 p. 500, Syn. Pucc. curtipes HOWE, see LIRO 1908 p. 266 and JØRSTAD 1923 b p. 5.

On Saxifraga cernua, Sax. groenlandica, Sax. hieracifolia, Sax. nivalis, Sax. rivularis and Sax. tenuis from the west coast of Spitsbergen from

Sörkapplandet up to Amsterdam Island and Grey Hoek, also from Bear Island (LID).

Puccinia Jueliana DIETEL, SYDOW 1904 p. 502.

On Saxifraga aizoides from Lyckholmdalen and Myggdalen (LID).

Basidiomycetes.

Exobasidium Vaccinii Myrtilli (FUCKEL) JUEL f. *amphigena* JUEL in Sv. Bot. Tidskr. 1912 p. 365 c. fig.

On Cassiope tetragona, Advent Bay (LID). I follow JUEL's nomenclature, although in my opinion it seems rather to be an autonomous species, particularly limited to Cassiope.

Fungi imperfecti.

Phyllosticta Saxifragarum ALLESCHER 1897 p. 49.

On Saxifraga hirculus from Bell Sound (KNUT ELLINGSEN). Deviates from the common type of Phyllosticta by its long, narrow spores. I found them cylindrical, strait, hyaline, continuous, 9 μ × 1 μ. Its systematic place is Septoria as well as Phyllosticta.

Phoma Caricis (FRIES) SACC., Syll. III p. 164, Syn. Sphaeria Caricis FRIES S. M. II p. 435.

On Carex glareosa and Carex pulla from Advent Bay and Sassen Bay.

Phoma sepalorum spec. nov. Peritheciis superficialibus, sparsis vel subconfluentibus, fusco-atris, e basi globosa in ostiolum, conicum, obtusum attenuatis, 210 μ diam,, 255 μ alt.. Sporidiis oblongis, rectis, utrinque obtusis, hyalinis, 6 μ × 3 μ. Hab. in pagina exteriore nec non in pagina interiore sepalorum Luzulae nivalis socia Metasphaeriae sepalorum. Andréebreen in Red Bay 31st July 1925 leg. FRIDTJOV ISACHSEN.

Phoma graminis WEST., Syll. III p. 167.

On Festuca ovina and Poa abbreviata from Sassen Bay. Spores narrow, acuminated, not guttulate, 6—7 μ × 2—3 μ.

Phoma alpina SPEG., Syll. III p. 136, Syn. Phoma alpina subspec. planiuscula KARSTEN 1884 p. 38, Phyllosticta groenlandica ALLESCHER 1897 p. 49.

On Chrysosplenium tetrandrum, Saxifraga cernua, Sax. comosa, Sax. hieracifolia, Sax. hirculus, Sax. nivalis and Sax. oppositifolia from many places from Sörkapplandet up to Magdalena Bay, Smeerenberg and Liefde Bay. KARSTEN (1884 p. 38) mentions it on Saxifraga hieracifolia from Green Harbour.

This species is slightly variable and is found on both dead leaves and stems. Judging from the description it is the same species as that found by ALLESCHER in Greenland.

Phoma sceptri KARSTEN, Syll. III p. 129.

On Pedicularis hirsuta and Ped. lanata from Dickson Bay and Treurenberg Bay (THORILD WULFF 1902 p. 115).

Phoma complanata (FRIES) DESM., Syll. III p. 126.

On Pedicularis hirsuta from Cape Thordsen (THORÉN).

Phoma herbarum WEST., Syll. III p. 133, Syn. Phoma herbarum var. Thulensis KARSTEN 1884 p. 39.

On Braya purpurascens, Draba alpina, Dr. cinerea, Dr. nivalis, Dr. oblongata, Dr. subcapitata, Dr. Wahlenbergii, Minuartia biflora, Min. verna, Sagina intermedia, Oxyria digyna, Saxifraga comosa, Sax. groenlandica, Sax. nivalis, Pedicularis hirsuta and Campanula uniflora. Common in Bell Sound, Ice Fjord, Cross Bay, Magdalena Bay, Little Red Bay, Liefde Bay, Wijde Bay, Treurenberg Bay and other places. KARSTEN (1884 p. 39) has found it on Pedicularis hirsuta (TH. M. FRIES).

SACCARDO writes wrongly that the spores are 10 μ broad and ALLESCHER repeats (1901 p. 330) the same misprint.

Phoma nebulosa (FRIES) BERK., Syll. III p. 135, Syn. Sphaeropsis nebulosa FRIES S. M. II p. 430.

On Stellaria longipes from Coles Bay and Advent Bay.

Phoma Oudemansii BERLESE et VOGLINO, Syll. X p. 174, Syn. Phoma Polemonii OUDS. 1885 p. 161 c. fig.

On dead leaves of Polemonium humile from Bell Sound and Ice Fjord.

Phoma Ranunculi KARSTEN 1905 p. 8.

On Ranunculus affinis, Ran. pygmaeus and Ran. nivalis from Sörkapplandet, Grey Hoek, Tempel Bay and Cross Bay. Easily recognised by its small spores.

Plenodomus Svalbardensis spec. nov. Peritheciis globosis, immersis, mox liberis, astomis, nigris, sporidiis numerosissimis, continuis, hyalinis, rectis, 5—6 μ × 1 μ. In caulibus foliisque emortuis Drabae alpinae. Magdalena Bay 17th August 1907 leg. H. RESVOLL-HOLMSEN.

Sphaeronema foliicolum (FUCKEL) LIND 1910 b p. 13, Syn. Ceratostoma foliicola FUCKEL 1874 b p. 94 c. fig.

On leaves of Salix polaris from Cape Thordsen (LID).

Asteroma Cacaliae DESM., Syll. III p. 211.

On dead leaves of Petasites frigidus from Coles Bay (H. RESVOLL-HOLMSEN).

Ascochyta graminicola SACC., Syll. III p. 407.

On Alopecurus alpinus, Festuca ovina and Poa arctica from Advent Bay, Quade Hoek, Cross Bay and Hamburger Bay.

Ascochyta Dianthi (FRIES) LIBERT, Syll. X p. 301, Syn. Depazea Dianthi FRIES S. M. II p. 531.

On Stellaria humifusa from Cloven Cliff and Green Harbour.

Diplodina arctica LIND 1910 b p. 14, Syll. XXII p. 1046.

On Festuca rubra, Poa alpigena × alpina and Poa alpina × arctica from Olsokflyan, Green Harbour and Cross Bay.

Diplodina Pedicularidis (FUCKEL) LIND 1924 b p. 21, Syn. Phoma Pedic. FUCKEL 1874 p. 318, Syll. X p. 176, Gloeosporium Pedic. ROSTRUP 1894 p. 29, Gloeosp. Pedicularidis lanatae ALLESCHER 1897 p. 53.

On Pedicularis hirsuta from Advent Bay (LID). The excellent specimens collected by Mr. LID at Svalbard confirm the view I arrived at on seeing specimens from Novaya Zemlya, viz., that we have here a very curious Diplodina, the mycelium of which penetrates the whole of the living plant and gives it quite another shape. A special feature is that the attacked plant does not put forth flowers.

Diplodina Papaveris (OUDS.) LIND, Syn. Ascochyta Papaveris OUDS. 1885 p. 157, Syll. X p. 301, Ascochyta Drabae OUDS. 1885 p. 157, Syll. X p. 301.

On Draba alpina, Dr. cinerea, Dr. nivalis, Dr. oblongata, Dr. Wahlenbergii, Melandrium affine, Silene acaulis, Minuartia verna, Papaver radicatum, Polygonum viviparum, Ranunculus nivalis and sulphureus, Saxifraga comosa and nivalis. From the west coast of Spitsbergen from Sörkapplandet up to Magdalena Bay and Norsköyane. It seems to be a specifically Arctic and plurivor species that OUDEMANS found in his time at Novaya Zemlya and described respectively as Ascochyta Papaveris on Papaver and as Ascochyta Drabae on Draba. Perithecia c. 270 μ diam., spores strait, cylindrical, obtuse, 12—15 μ × 3—3,7 μ, 1-septate.

Diplodina Euphrasiae (OUDS.) ALLESCHER 1901 p. 686.

On dead fruits of Pedicularis hirsuta from Green Harbour (TH. M. FRIES). Perithecia flattened, c. 120 μ in diam, with a 20 μ broad porus, sporidia at first ovoid undivided, then cylindrical, obtuse, quite hyaline, 10—12 μ × 2—3 μ, 1-septate.

Septoria punctoidea KARSTEN 1884 p. 38, Syll. III p. 566.

On Luzula confusa and nivalis common from Sörkapp up to Magdalena Bay. KARSTEN has described it on Carex misandra from Advent Bay (TH. M. FRIES). Perithecia numerous and minute, only 40—47 μ in diam., containing cylindrical, hyaline spores, 2-septate, 24 μ × 1 μ. It is often found in company with Mycosphaerella perexigua

Septoria Eriophori OUDS. 1885 p. 155 c. fig.

On Eriophorum polystachyum and Scheuchzeri from Coles Bay, Nordfjord and Kings Bay.

Septoria Melandrii PASSER., Syll. III p. 517.

On Melandrium apetalum from Tempel Bay (ASPLUND). Sporidia 60—64 μ × 2 μ, 5—7-septate.

Septoria polaris KARSTEN 1884 p. 38, Syll. III p. 523.

On dead leaves of Ranunculus lapponicus from Advent Bay (TH. M. FRIES, see KARSTEN l. c.). I have not succeeded in finding it.

Septoria salicicola (FRIES) SACC., Syll. III p. 503.

On Salix polaris from Wijde Bay and Treurenberg Bay (see THORILD WULFF 1902 p. 115).

Septoria Saxifragae PASSERINI, Syll. III p. 527.

On Saxifraga groenlandica, Bear Island (LID).

Septoria Stellariae ROB. et DESM., Syll. III p. 518.

On Cerastium alpinum, Minuartia verna and Stellaria longipes from Bell Sound, Advent Bay and Bear Island. This is doubtless the species that KARSTEN (1872 p. 104) mentions as Sphaerella Cerastii Fuckel "conidiis et peritheciis juvenilibus" on Cerastium alpinum from Norsköyane. I have found the spores filiform 60—84 $\mu \times 1$—2 μ.

Rhabdospora Campanulae FAUTREY, Syll. X p. 392.

On Campanula uniflora from Cross Bay (H. RESVOLL-HOLMSEN).

Rhabdospora Drabae (FUCKEL) BERLESE et VOGLINO, Syll. X p. 391, Syn. Phoma Drabae FUCKEL 1874 b p. 94 see LIND 1926.

On Carex Hepburnii, Carex misandra, Carex pulla, Carex rupestris, Cobresia caricina, Deschampsia alpina, Festuca rubra, Poa abbreviata, Poa alpigena, Poa alpigena × alpina, Poa alpigena × arctica, Poa arctica, Poa Balfourii, Puccinellia angustata and Vahliana, Juncus arcticus, Draba alpina, Dr. cinerea, Dr. nivalis, Dr. Wahlenbergii, Cerastium alpinum, Cer. Regelii, Minuartia biflora and Melandrium apetalum from all localities visited on Spitsbergen and Bear Island.

Rhabdospora pleosporoides SACC., Syll. III p. 588.

On Draba cinerea, Dr. rupestris, Dr. Wahlenbergii and Oxyria digyna from Bell Sound, Coles Bay, Green Harbour, Advent Bay, Magdalena Bay and Bear Island. An easily perceptible and characteristic species, often found on dead stems of stout herbs and often in company with Heteropatella umbilicata.

Eriospora leucostoma BERK. et BR., Syll. III p. 600.

On Carex misandra from Advent Bay (TH. M. FRIES).

Stagonospora eriophorella (SACC.) nov. nom., Syn. Septoria erioph. SACC. apud HARRIMAN 1904 p. 19.

On Juncus arcticus, Dickson Bay (LID). Spores exactly cylindrical, filiform, obtuse at both ends, yellow, 10-septate, with several small drops of oil on either side of each septum, 75—84 $\mu \times 3$ μ. The immature spores are hyaline. I must therefore suppose this to be the species described by SACCARDO as a Septoria.

Coniothyrium olivaceum BON., Syll. III p. 305.

On Draba oblongata, Sassen Bay (H. RESVOLL-HOLMSEN).

Diplodia Bessimyanii LIND 1924 b p. 22.

On dead leaves on Poa alpigena from Sörkapplandet (E. STORM). Perithecia scattered, innate, flattened, 150 μ diam., hypophyllous, sporidia cylindrical, obtuse, pale brown, 18—21 $\mu \times 3{,}5$—5 μ.

Diplodia Simmonsii ROSTRUP 1906 p. 8.

On Poa alpigena × alpina and Luzula confusa from Klaas Billen Bay and Bear Island.

Diplodia perpusilla DESM. Syll. III p. 365.

On dead leaves of Draba subcapitata from Kings Bay (TH. M. FRIES). Perithecia innate, flattened, 110 μ diam., spores cylindrical, stout, yellowish-brown, obtuse at both ends, 9—11 μ × 3 μ, uniseptate, scarcely constricted at the septum, with 1—2 small gutulae in both segments.

Hendersonia Arabidis ROSTRUP 1888 p. 571, Syll. X p. 325.

On Draba alpina, Dr. cinera, Dr. nivalis, Dr. subcapitata, Dr. Wahlenbergii from Sörkapplandet, Bell Sound, Advent Bay, Sassen Bay and Cross Bay.

Hendersonia arundinacea (DESM.) SACC., Syll. III p. 436, Syn. Hendersonia culmicola SACC. var. minor SACC., Syll. III p. 437.

On Alopecurus alpinus, Catabrosa algida, Deschampsia alpina, Dupontia Fisheri, Festuca ovina and rubra, Poa abbreviata, Poa alpina, Poa arctica, Puccinellia phryganoides, Pucc. Vahliana, Carex glareosa, Carex Hepburnii, Carex misandra and Juncus biglumis, common. It is a perfectly uniform type found on all the above named host-plants. The perithecia are large and lentiform, the spores cylindrical, straight, narrow, obtuse at both ends, 3-septate, brown, 21—26 μ × 3—4 μ. With regard to host-plants and distribution it seems to follow Leptosphaeria microscopica.

Hendersonia crastophila SACC., Syll. III p. 438.

On Alopecurus alpinus, Dupontia Fisheri, Festuca ovina and rubra, Poa alpigena and Puccinellia angustata from Björnbeinflyan, Advent Bay and Sassen Bay. Perithecia large and depressed, immerged in the substratum, spores straight, cylindrical, 7-septate, 26—30 μ × 4—4,5 μ, at first light, later on nut-brown.

Hendersonia Rostrupii LIND 1926.

On Hierochloë alpina and Poa abbreviata from Advent Bay, Sassen Bay and Klaas Billen Bay.

Hendersonia gigantea LIND 1910 p. 161, Syll. XXII p. 1070.

On Juncus arcticus, Carex pulla and Carex rigida from Saurieberget, Advent Bay, Sassen Bay and Dickson Bay.

Hendersonia Stefanssonii ROSTRUP 1903 p. 320, Syll. XVIII p. 365.

On Carex misandra from Kings Bay and Cross Bay.

Leptothyrium arcticum (FUCKEL) LIND 1924 b p. 23.

On Potentilla emarginata and Pot. nivea from many localities from Bell Sound up to Magdalena Bay and Norsköyane.

Leptothyrium palustre FAUTREY, Syll. XI p. 554.

On Pedicularis hirsuta from Sörkapplandet (LID).

Leptostroma Henningsii ALLESCHER, Syll. XI p. 556.

On Eriophorum polystachyum from Advent Bay (LID). Perithecia scutiform, glossy black, often fairly large, up to 0,5 mm in diam., with a narrow, straight slit. This is doubtless the species described by SCHROETER (1908 p. 179) as the conidial stage of Lophodermium caricinum, see p. 16.

Melasmia Empetri MAGNUS, Syll. X p. 419.

On leaves and stems of Empetrum nigrum from Coles Bay and Cape Boheman. Spores curved, hyaline, 3-septate, 17—20 μ × 4 μ. Surely the conidial stage of Rhytisma Empetri, see p. 16.

Heteropatella umbilicata (FRIES) JAAP, Syn. Heterop. cercosperma (ROSTRUP) LIND 1913 p. 473, Septoria caudata KARSTEN 1884 p. 38 see LIND 1926 p. 170.

On Hirochloë alpina, Poa alpigena, Draba Wahlenbergii, Ranunculus affinis, Ran. nivalis from Sörkapp, Alkhornet, Green Harbour, Cape Thordsen and Cape Boheman. KARSTEN has described it (l. c.) "ad caules siccos in Beeren Eiland 24th July 1868 TH. M. FRIES".

Gloeosporium Roaldii LIND 1910 b p. 20, Syll. XXII p. 1185.

On Polemonium humile from Green Harbour and Advent Bay.

Marssonina obscura (ROMELL) MAGNUS, Syn. Marsonia obscura ROMELL, Syll. X p. 478.

On Salix herbacea × polaris and Salix polaris from Sörkapplandet and Quade Hoek.

Coryneum foliicolum FUCKEL, Syll. III p. 780, Syn. Coryneum Cassiopes ROSTRUP 1906 p. 9.

On dead leaves of Cassiope tetragona, Cape Boheman (LID). I think it necessary to unite these two species. I have not been able to find distinguishing marks between them; the present specimens agree with FUCKEL's description as well as with ROSTRUPS.

Botrytis cinerea FRIES S. M. III p. 398., Syll. IV p. 129.

On dead stems of Papaver radicatum and Saxifraga comosa from Red Bay and Advent Bay, in the stage called Sclerotium durum PERSON.

Bostrychonema alpestre CESATI, Syll. IV p. 185.

On living leaves of Polygonum viviparum from Ice Fjord.

Mastigoporium album RIESS, Syll. IV p. 220.

On Poa alpigena × alpina and Poa alpigena × arctica from Sörkapplandet and Björnbeinflyan (LID).

Goniosporium puccinioides (FRIES) LINK, Syll. IV p. 280.

On Juncus triglumis and Carex misandra from Advent Bay and Longyear Valley.

Cladosporium graminum CORDA, Syll. IV p. 365.

On dead leaves of many species of Gramineae etc. It can be found with both 2, 3 and 4 septa in the spores, so it is undoubtedly the

same as KARSTEN (1884 p. 39) has referred to Brachysporium flexuosum from Kobbe Bay, Brandewijne Bay etc.

Cladosporium herbarum FRIES, Syll. IV p. 350.

Common on dead leaves and stems of many different species of Dicotyledones.

Dendryphium fumosum FRIES, Syll. IV p. 488.

On dead stems of Eutrema Edwardsii from Dickson Bay (LID).

Isariopsis alborosella (DESM.) SACC., Syll. IV p. 630.

On Cerastium alpinum, Cer. nigrescens and Cer. Regelii, attacking the leaves before they are dead. Small, black, sterile dots resembling perithecia may generally be found on the dead leaves. Collected at many places at Spitsbergen and Bear Island.

Sclerotium fulvum FRIES S. M. II p. 255, Syll. XIV p. 1163.

On dead leaves of Puccinellia Vahliana from Cape Boheman (LID).

Chapter III. List of Host-Plants.

Alopecurus alpinus SM.
Syn. *Alop. ovatus* HORN.
Ascochyta graminicola.
Clathrospora pentamera
Hendersonia arundinacea
— crastophila
Leptosphaeria culmifraga
— insignis
— microscopica
Mollisia graminis
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens f. prominens
Pleospora discors
— Karstenii
Arabis alpina L.
Mycosphaerella Tassiana
Pleospora herbarum
Arctagrostis latifolia (R. BR.).
Syn. *Colpodium latifolium* R. BR.
Pleospora discors
Arenaria ciliata L.
Mycosphaerella confinis
Pleospora infectoria
Pyrenospora Cerastii
— chrysospora
Arnica alpina (L.) OLIN.
Pyrenophora Androsaces
Betula nana L.
Dothidella betulina
Mycosphaerella maculiformis
Venturia ditricha
Braya purpurascens (R. Br.) BUNGE.
Syn. *Br. alpina* (L.) var. *glabella* TRAUTV.
Mycosphaerella confinis
Mycosphaerella Tassiana
Phoma herbarum
Pyrenophora Cerastii
— chrysospora
— comata
Calamagrostis neglecta (EHRH.).
Syn. *Calam. stricta* (TIM.).
Cladosporium graminum
Clathrospora pentamera
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens f. prominens
Pleospora discors
— Karstenii
— Magnusiana
Campanula rotundifolia L.
Pleospora infectoria
Pyrenophora Androsaces
Campanula uniflora L.
Mycosphaerella Tassiana
Phoma herbarum
Pyrenophora Androsaces
Rhabdospora Campanulae
Cardamine bellidifolia L.
Mycosphaerella densa
— Tassiana
Pleospora herbarum
— infectoria
Puccinia Cardamines bellidifoliae

Pyrenophora Cerastii
— chrysospora
— helvetica
Cardamine pratensis L.
Cladosporium herbarum
Mycosphaerella densa
— Tassiana
Pleospora herbarum
Carex glareosa Wg.
Clathrospora pentamera
Hendersonia arundinacea
Mycosphaerella Tassiana
Naevia diminuens
Phoma Caricis
Stegia subvelata
Carex Hepburnii Boott.
Clathrospora Elynae
— pentamera
Hendersonia arundinacea
Mycosphaerella Wichuriana
Rhabdospora Drabae
Carex incurva Lightf.
Cladosporium graminum
Clathrospora pentamera
Mycosphaerella Tassiana
Pleospora infectoria
Carex Lachenalii Schkuhr.
Syn. *Carex lagopina* Wg.
Leptosphaeria caricinella
— microscopica
Mycosphaerella Tassiana
Naevia diminuens
Stegia subvelata
Carex misandra R. Br.
Syn. *Carex fuliginosa* Schkuhr.
Cintractia Caricis
Clathrospora pentamera
— punctiformis
Eriospora leucostoma
Goniosporium puccinioides
Hendersonia arundinacea
— Stefanssonii
Leptosphaeria culmifraga
— microscopica
Mycosphaerella perexigua
— Tassiana
— Wichuriana
Niptera phaea
Physalospora alpestris
Rhabdospora Drabae
Carex parallela (Laest.) Sommerf.
Clathrospora pentamera.
Leptosphaeria consobrina
— culmicola
— microscopica
Mycosphaerella Tassiana
Pleospora infectoria
— Magnusiana
Carex pulla Good.
Belonioscypha vexata
Clathrospora pentamera
Hendersonia gigantea
Leptosphaeria caricinella
— consobrina
— culmifraga
— microscopica
Massaria macrotheca
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens
Phoma Caricis
Pleospora discors
— infectoria
— Karstenii
Pyrenophora Wichuriana
Rhabdospora Drabae
Stegia subvelata
Carex rigida Good.
Clathrospora pentamera
Hendersonia gigantea
Mycosphaerella Tassiana
Naevia diminuens
Stegia subvelata
Carex rupestris All.
Clathrospora pentamera
Leptosphaeria consobrina
— microscopica
Mycosphaerella pusilla

Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens
Pleospora discors
Rhabdospora Drabae
Schizonella melanogramma
Stegia subvelata

Carex subspathacea WORMSKJOLD.
Syn. *Carex salina* WG.
Leptosphaeria caricinella
Massaria macrotheca
Mycosphaerella pusilla
— Tassiana
— Wichuriana
Naevia diminuens
Niptera phaea
Stegia subvelata

Carex ursina DEW.
Hendersonia arundinacea
Leptosphaeria microscopica
Mycosphaerella Tassiana
Naevia diminuens

Cassiope tetragona (L.) DEW.
Syn. *Andromeda tetragona* L.
Coryneum foliicolum
Didymella hyperborea
Exobasidium Vaccinii myrtilli
Gnomonia arctica
Leptosphaeria Andromedae
Metasphaeria Cassiopes
Mycosphaerella inconspicua
— Tassiana

Catabrosa algida (SOLAND) FRIES.
Syn. *Phippsia algida* R. BR.
Cladosporium graminum
Clathrospora pentamera
Erysiphe graminis
Hendersonia arundinacea
Lachnum patens
Leptosphaeria algida
— caricinella
— culmifraga
Lizonia distincta
Lophodermium arundinaceum
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens f. prominens
Pleospora discors
— Karstenii
— Magnusiana
— vagans

Catabrosa concinna FRIES.
Clathrospora pentamera
Leptosphaeria algida
— caricinella
— culmifraga
Lizonia distincta
Lophodermium arundinaceum
Mycosphaerella Tassiana
— Wichuriana
Pleospora vagans

Cerastium alpinum L.
Clathrospora pentamera
Fabraea Cerastiorum
Helotiella erythrostigma
Isariopsis alborosella
Mycosphaerella Tassiana
Pleospora deflectens
— infectoria
Pyrenophora Androsaces
— Cerastii
— chrysospora
— setigera
Rhabdospora Drabae
Septoria Stellariae

Cerastium nigrescens (EDM.) OSTENFELD.
Helotiella erythrostigma
Isariopsis alborosella
Peronospora Alsinearum
Pleospora deflectens
Pyrenophora Androsaces
— Cerastii

Cerastium Regelii OSTENFELD.
Syn. *Cerast. Edmonstonii* WATS. var. *caespitosum* et var. *Regelii*. *Cerastium alpinum* var. *caespitosum* MALMGREN.

Helotiella erythrostigma
Helotium herbarum
Isariopsis alborosella
Mycosphaerella Tassiana
Pyrenophora Androsaces
— Cerastii
— chrysospora
Rhabdospora Drabae
Chrysosplenium tetrandrum (LUND) FRIES.
Phoma alpina
Cobresia caricina WILLD.
Cintractia Caricis
Mycosphaerella Tassiana
Rhabdospora Drabae
Cochlearia officinalis L.
Mycosphaerella confinis
— Tassiana
Peronospora parasitica
Puccinia Cochleariae
Pyrenophora helvetica
Colpodium fulvum (TRIN.).
Syn. *Arctophila fulva* TRIN. *Arctophila effusa f. depauperata.*
Colpodium Malmgrenii ANDR.
Leptosphaeria insignis
Mycosphaerella Tassiana
Pleospora discors
— Karstenii
— macrospora
Cystopteris fragilis (L.) BERN.
Mycosphaerella Tassiana
Pyrenophora Cerastii
— filicina
Deschampsia alpina (L.).
Cladosporium graminum
Clathrospora pentamera
Hendersonia arundinacea
Leptosphaeria insignis
— microscopica
Lophodermium arundinaceum
Mollisia graminea
— graminis
Mycosphaerella Tassiana
Naevia diminuens
Pleospora deflectens
— discors
— Karstenii
— Magnusiana
Rhabdospora Drabae
Deschampsia caespitosa (L.).
Clathrospora pentamera
Leptosphaeria insignis
Mycosphaerella Tassiana
Pleospora Magnusiana
Draba Adamsii LEDEB.
Syn. *Draba glacialis* ADAMS.
Mycosphaerella Tassiana
Pleospora infectoria
Puccinia Drabae
Pyrenophora chrysospora
Draba alpina L.
Cladosporium herbarum
Clathrospora pentamera
Coniothyrium olivaceum
Diplodina Papaveris
Hendersonia Arabidis
Mycosphaerella confinis
— Tassiana
Peronospora parasitica
Phoma herbarum
Plenodomus Svalbardensis
Pleospora herbarum
— infectoria
Pyrenophora Androsaces
— Cerastii
— chrysospora
— comata
— helvetica
Rhabdospora Drabae
Draba alpina × *oblongata.*
Puccinia Drabae
Pyrenophora Cerastii
— chrysospora
Draba cinerea ADAMS.
Syn. *Draba arctica* VAHL.
Draba Magellanica LAM.
Cladosporium herbarum

Clathospora pentamera
Diplodina Papaveris
Hendersonia Arabidis
Mycosphaerella Tassiana
Phoma herbarum
Pleospora deflectens
— herbarum
— infectoria
Puccinia Drabae
Pyrenophora Cerastii
— chrysospora
Rhabdospora Drabae
— pleosporoides

Draba nivalis LILJEBLAD.
Diplodina Papaveris
Hendersonia Arabidis
Mycosphaerella Tassiana
Phoma herbarum
Pleospora infectoria
Pyrenophora Cerastii
— chrysospora
Rhabdospora Drabae

Draba oblongata R. BR.
Clathrospora pentamera
Coniothyrium olivaceum
Diplodina Papaveris
Mycosphaerella confinis
— Tassiana
Phoma herbarum
Pleospora herbarum
Pyrenopeziza Svalbardensis
Pyrenophora Cerastii
— chrysospora
— comata

Draba rupestris R. BR.
Syn. *Draba hirta* L.
Diplodina Papaveris
Mycosphaerella confinis
Rhabdospora pleosporoides

Draba subcapitata SIMM.
Syn. *Draba altaica* (LEDEB.).
Diplodia perpusilla
Hendersonia Arabidis
Mycosphaerella confinis
Phoma herbarum
Pleospora infectoria
Pyrenophora Androsaces
— Cerastii

Draba Wahlenbergii HARTM.
Syn. *Draba fladnizensis* WULF.
Clathrospora pentamera
Diplodina Papaveris
Hendersonia Arabidis
Heteropatella umbilicata
Mycosphaerella confinis
— Tassiana
Phoma herbarum
Pleospora herbarum
— infectoria
Pyrenopeziza Svalbardensis
Pyrenophora Androsaces
— Cerastii
— chrysospora
— comata
— helvetica
Rhabdospora Drabae
— pleosporoides

Dryas octopetala L.
Didymosphaeria Dryadis
Hypospila rhytismoides

Dupontia Fisheri R. BR.
Syn. *Dup. psilosantha* RUPR.
Clathrospora pentamera
Crumenula pusiola
Entyloma ambiens
Hendersonia arundinacea
— crastophila
Leptosphaeria insignis
— microscopica
Lophodermium arundinaceum
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens
Pleospora infectoria
— Karstenii

Empetrum nigrum L.
Melasmia Empetri
Physalospora Empetri

Rhytisma Empetri
Sphaeropezia Empetri
Equisetum arvense L.
Mycosphaerella Tassiana
Phialea rhodoleuca
Equisetum scirpoides L. C. RICH.
Leptosphaeria Equiseti
Equisetum variegatum SCHLEICH.
Syn. *Equ. tenellum* (LILJEBL.) KROK.
Leptosphaeria Equiseti
Phialea rhodoleuca
Erigeron eriocephalus J. VAHL.
Pyrenophora comata
Erigeron unalaschkensis (DE CAND.) VIERH.
Syn. *Erigeron uniflorus* L.
Mycosphaerella confinis
— eriophila
Pleospora herbarum
Pyrenophora Androsaces
— chrysospora
Eriophorum polystachyum L.
Syn. *Erioph. angustifolium* ROTH.
Clathrospora Elynae
— pentamera
Leptosphaeria microscopica
Leptostroma Henningsii
Mollisia graminea
Mycosphaerella Tassiana
Niptera advena
Pleospora Karstenii
— Magnusiana
— scirpicola
Septoria Eriophori
Eriophorum Scheuchzeri HOPPE.
Syn. *Er. capitatum* HOOKER.
Leptosphaeria microscopica
Lophodermium caricinum
Mollisia graminea
Mycosphaerella Tassiana
Pleospora Magnusiana
Septoria Eriophori
Eutrema Edwardsii R. BR.
Clathrospora pentamera
Dendryphium fumosum
Mycosphaerella densa
— Tassiana
Pleospora herbarum
— infectoria
Pyrenophora Androsaces
— Cerastii
— chrysospora
— comata
Festuca ovina L.
incl. var. *brevifolia* R. RR.
Ascochyta graminicola
Cladosporium graminum
Clathrospora pentamera
Hendersonia arundinacea
— crastophila
Leptosphaeria culmicola
— microscopica
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens
Phoma graminis
Pleospora deflectens
— infectoria
— Karstenii
— Magnusiana
— scirpicola
Festuca rubra L.
Cladosporium graminum
Clathrospora pentamera
Diplodina arctica
Hendersonia arundinacea
— crastophila
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens
Niptera advena
Pleospora Karstenii
— scirpicola
Rhabdospora Drabae
Hierochloë alpina (LILJEBL.).
Cladosporium graminum

Clathrospora pentamera
Hendersonia Rostrupii
Heteropatella umbilicata
Leptosphaeria microscopica
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens f. prominens
Pleospora discors
— macrospora

Honckenya peploides (L.) EHRH.
Mycosphaerella confinis
— Tassiana

Iuncus arcticus WILLD.
Clathrospora Elynae
— Pentamera
Hendersonia gigantea
Leptosphaeria microscopica
Mycosphaerella Tassiana
Pleospora Junci
— scirpicola
Rhabdospora Drabae
Stagonospora eriophorella

Juncus biglumis L.
Belonidium juncisedum
Clathrospora pentamera
Hendersonia arundinacea
Leptosphaeria caricinella
— microscopica
Mycosphaerella perexigua
-- Tassiana
Naevia pusilla
Pleospora infectoria
— Junci
— Karstenii
Tolyposporium Junci

Juncus castaneus SMITH.
Belonidium juncisedum
Mycosphaerella Tassiana

Juncus triglumis L.
Clathrospora pentamera
Goniosporium puccinioides
Leptosphaeria caricinella
Mycosphaerella perexigua
— Tassiana
Naevia pusilla
Pleospora discors

Koenigia islandica L.
Mycosphaerella Tassiana
Ustilago picacea

Luzula arcuata (WG.) SM.
Naevia pusilla

Luzula confusa LINDEB.
Syn. *Luzula hyperborea* R. BR.
Luzula arcuata var. *hyperborea.*
Clathrospora Elynae
— pentamera
Diplodia Simmonsii
Leptosphaeria caricinella
Mollisia graminea
Mycosphaerella perexigua
— Tassiana
Naevia pusilla
Septoria punctoidea
Ustilago hyperborea

Luzula nivalis (LAEST.) BEURL.
Syn. *Luzula arctica* BLYTT.
Clathrospora pentamera
Metasphaeria sepalorum
Mycosphaerella perexigua
— Tassiana
Naevia fuscella
— pusilla
Phoma sepalorum
Pleospora Junci
— Magnusiana
Septoria punctoidea

Luzula Wahlenbergii Rupr.
Naevia pusilla

Melandrium affine (VAHL).
Syn. *Wahlbergella affinis* (VAHL) FRIES.
Clathrospora pentamera
Diplodina Papaveris
Mycosphaerella confinis
— Tassiana
Pleospora Dianthi
— herbarum
— infectoria

Pyrenophora Androsaces
— Cerastii
— chrysospora
— hispida
— setigera
Rhabdospora Drabae
Melandrium apetalum (L.) FENZL.
Syn. *Lychnis apetala* L.
Wahlbergella apetala (L.) FRIES.
Clathrospora pentamera
Mycosphaerella confinis
— Tassiana
Pleospora Dianthi
— infectoria
Pyrenophora Cerastii
— chrysospora
— hispida
— setigera
Rhabdospora Drabae
Septoria Melandrii
Mertensia maritima (L.) DC.
Syn. *Stenhammaria maritima* RCHB.
Mycosphaerella Tassiana
Minuartia biflora (L.) S. et T.
Syn. *Alsine biflora* WG.
Mycosphaerella Tassiana
Phoma herbarum
Pyrenophora Androsaces
— Cerastii
— chrysospora
Rhabdospora Drabae
Minuartia Rossii (R. BR.) GRAEBN.
Syn. *Arenaria Rossii* R. BR.
Mycosphaerella Tassiana
Minuartia verna (L.) HIERN.
Syn. *Alsine rubella* WG.
Alsine hirta WORMSKJOLD.
Diplodina Papaveris
Mycosphaerella confinis
— Tassiana
Phoma herbarum
Pyrenophora Androsaces
— Cerastii
Pyrenophora chrysospora
Septoria Stellariae
Oxyria digyna (L.) HILL.
Clathrospora pentamera
Phoma herbarum
Pleospora herbarum
Puccinia Oxyriae
Pyrenophora Androsaces
— Cerastii
— chrysospora
Rhabdospora pleosporoides
Ustilago vinosa
Papaver radicatum ROTTB.
Syn. *Pap. nudicaule* L.
Botrytis cinerea
Clathrospora pentamera
Diplodina Papaveris
Lophodermium svalbardense
Mycosphaerella Tassiana
Pleospora herbarum
— infectoria
Pyrenophora Androsaces
— Cerastii
— chrysospora
Pedicularis hirsuta L.
Clathrospora pentamera
Diplodina Euphrasiae
— Pedicularidis
Leptothyrium palustre
Massaria eucarpa
Mycosphaerella Pedicularidis
— Tassiana
Phoma complanata
— herbarum
— sceptri
Pleospora herbarum
— infectoria
Pyrenophora Androsaces
— chrysospora
Pedicularis lanata WILLD.
Clathrospora pentamera
Mycosphaerella Pedicularidis
Phoma sceptri
Pleospora infectoria

Pyrenophora Androsaces
— Cerastii
— chrysospora
Petasites frigidus (L.) FRIES.
Asteroma Cacaliae
Mycosphaerella Taraxaci
Pyrenophora Cerastii
Venturia Petasitidis
Pleuropogon Sabinei R. BR.
Leptosphaeria caricinella
Poa abbreviata R. BR.
Clathrospora pentamera
Crumenula pusiola
Hendersonia arundinacea
— Rostrupii
Leptosphaeria arundinacea
— culmifraga
Lophodermium arundinaceum
Mollisia graminis
Mycosphaerella Tassiana
Phoma graminis
Pleospora discors
— infectoria
— Karstenii
— Magnusiana
Rhabdospora Drabae
Poa alpigena (FRIES) LINDM.
Syn. *Poa pratensis* L.
Clathrospora pentamera
Crumenula pusiola
Diplodia Bessimyanii
Hendersonia crastophila
Helotium herbarum
Heteropatella umbilicata
Leptosphaeria microscopica
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens f. prominens
Pleospora discors
— Karstenii
— Magnusiana
Rhabdospora Drabae
Poa alpigena × *alpina.*
Clathrospora pentamera
Didymella glacialis
Diplodia Simmonsii
Diplodina arctica
Helotium herbarum
Leptosphaeria graminum
— microscopica
Lophodermium arundinaceum
Mastigosporium album
Mycosphaerella Tassiana
Pleospora discors
— Karstenii
— Magnusiana
Rhabdospora Drabae
Poa alpigena × *arctica.*
Clathrospora pentamera
Erysiphe graminis
Leptosphaeria insignis
— microscopica
Lophodermium arundinaceum
Massariopsis Wulffii
Mastigosporium album
Mycosphaerella Tassiana
— Wichuriana
Pleospora discors
— Karstenii
— Magnusiana
Rhabdospora Drabae
Poa alpina L.
Clathrospora Elynae
— pentamera
Crumenula pusiola
Erysiphe graminis
Hendersonia arundinacea
Leptosphaeria culmifraga
— microscopica
Lophodermium arundinaceum
Mycosphaerella Tassiana
Naevia diminuens f. prominens
Pleospora infectoria
— Magnusiana
Poa alpina × *arctica.*
Syn. *Poa jemtlandica* (ALMQ.).
Clathrospora pentamera
Crumenula pusiola

Diplodina arctica
Entyloma ambiens
Leptosphaeria microscopica
Mycosphaerella Tassiana
Poa arctica R. Rr.
Syn. *Poa flexuosa* Wg. non Host.
Poa cenisia auctor. scandinavic.
Poa rigens Hartm.
Ascochyta graminicola
Cladosporium graminum
Clathrospora pentamera
Crumenula pusiola
Hendersonia arundinacea
Leptosphaeria microscopica
Lophodermium arundinaceum
Massariopsis Wulffii
Mollisia graminis
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens f. prominens
Pleospora discors
— Karstenii
— Magnusiana
Rhabdospora Drabae
Poa Balfourii Parn.
Syn. *Poa glauca* Vahl.
Poa caesia Sm.
Cladosporium graminum
Clathrospora pentamera
Crumenula pusiola
Lophodermium arundinaceum
Mycosphaerella Tassiana
— Wichuriana
Pleospora infectoria
— Magnusiana
Rhabdospora Drabae
Polemonium humile Willd.
Syn. *Pol. pulchellum* Bunge.
Gloeosporium Roaldii
Mycosphaerella Tassiana
Phoma Oudemansii
Pleospora herbarum
Pyrenophora Androsaces
— chrysospora
Polygonum viviparum L.
Bostrychonema alpestre
Clathrospora pentamera
Diplodina Papaveris
Massaria eucarpa
Mycosphaerella Polygonorum
— Tassiana
— vivipari
Phacidium Polygoni
Pleospora infectoria
Pseudopeziza Bistortae
Puccinia Polygoni vivipari
Pyrenophora chrysospora
Ustilago inflorescentiae
Potentilla alpestris Hall. fil.
Syn. *Pot. maculata* Pourr.
Pyrenophora Androsaces
Potentilla emarginata Pursh.
Syn. *Pot. fragiformis* Willd
f. *parviflora* Trautv.
Cladosporium herbarum
Leptothyrium arcticum
Mollisia atrata
Mycosphaerella Tassiana
Pleospora deflectens
Pyrenophora Androsaces
— chrysospora
Potentilla multifida L.
Mollisia atrata.
Potentilla nivea L.
Leptothyrium arcticum
Mollisia atrata
Mycosphaerella Tassiana
Pyrenophora Androsaces
Potentilla pulchella R. Br.
Coleroa circinans
Microthyrium arcticum
Mollisia atrata
Pleospora deflectens
Pyrenophora Androsaces
— Cerastii
Puccinellia angustata R. Br.
Syn. *Glyceria angustata* Fries.
Cladosporium graminum

Clathrospora pentamera
Hendersonia crastophila
Lizonia distincta
Lophodermium arundinaceum
Mycosphaerella Tassiana
Pleospora infectoria
— Karstenii
— Magnusiana
Rhabdospora Drabae

Puccinellia phryganoides (TRIN.) S. et M.
Syn. *Glyceria reptans* LAEST.) KROK.

Glyceria vilfoidea (AND.) FRIES.
Cladosporium graminum
Clathrospora pentamera
Hendersonia arundinacea
Leptosphaeria microscopica
Mycosphaerella Tassiana
Pleospora infectoria

Puccinellia Vahliana (LIEBM.) S. et M.
Syn. *Poa Vahliana* LIEBM.

Glyceria Kjellmani LANGE.
Clathrospora pentamera
Crumenula pusiola
Hendersonia arundinacea
Leptosphaeria caricinella
— microscopica
Lizonia distincta
Lophodermium arundinaceum
Massariopsis Wulffii
Mycosphaerella Tassiana
— Wichuriana
Naevia diminuens
Pleospora deflectens
— infectoria
— Karstenii
— Magnusiana
Rhabdospora Drabae
Sclerotium fulvum

Ranunculus affinis R. BR.
Syn. *Ran. arcticus* RICH.

Ran. amoenus LEDEB.
Clathrospora pentamera
Heteropatella umbilicata
Mycosphaerella Ranunculi
Phoma Ranunculi
Pyrenophora chrysospora
— comata

Ranunculus glacialis L.
Mycosphaerella Ranunculi

Ranunculus lapponicus L.
Mycosphaerella Tassiana
Septoria polaris

Ranunculus nivalis L.
Diplodina Papaveris
Heteropatella umbilicata
Mycosphaerella Ranunculi
Phoma Ranunculi
Pleospora deflectens
— herbarum
Pyrenophora Androsaces
— chrysospora

Ranunculus pygmaeus WG.
Leptosphaeria Weberi
Mycosphaerella Ranunculi
Phoma Ranunculi
Pyrenophora Androsaces
— chrysospora

Ranunculus sulphureus SOLAND.
Diplodina Papaveris
Mycosphaerella Ranunculi
— Tassiana
Pleospora herbarum
Pyrenophora Androsaces
— Cerastii
— chrysospora
— comata

Sagina intermedia FENZL.
Syn. *Sagina nivalis* (LINDBL.) FRIES.
Clathrospora pentamera
Mycosphaerella confinis
— Tassiana
Phoma herbarum
Pyrenophora Cerastii
— chrysospora

Salix herbacea L.
Linospora insularis
Venturia chlorospora

Salix herbacea × *polaris*.
Linospora insularis
Marssonina obscura
Rhytisma salicinum
Venturia chlorospora
Salix polaris WG.
Leptosphaeria coniothyrium
Linospora insularis
Marssonina obscura
Melampsora arctica
Mycosphaerella polaris
Phyllachora amenti
Pleospora herbarum
Pyrenophora Cerastii
— paucitricha
Rhytisma salicinum
Septoria salicicola
Sphaeronema foliicolum
Venturia chlorospora
Salix reticulata L.
Pyrenophora paucitricha
Venturia chlorospora
Saxifraga aizoides L.
Pleospora infectoria
Puccinia Jueliana
Pyrenophora Cerastii
— chrysospora
Saxifraga cernua L.
Clathrospora pentamera
Mycosphaerella Tassiana
Phoma alpina
Pleospora infectoria
Puccinia Saxifragae
Pyrenophora Cerastii
— chrysospora
Synchytrium groenlandicum
Saxifraga comosa RETZ.
Syn. *Sax. stellaris* L. var. *comosa*.
Botrytis cinerea
Cladosporium herbarum
Clathrospora pentamera
Diplodina Papaveris
Mycosphaerella Tassiana
Phoma alpina
Phoma herbarum
Pleospora infectoria
Pyrenophora Androsaces
— Cerastii
— chrysospora
— comata
Saxifraga flagellaris WILLD.
Mycosphaerella Tassiana
Pyrenophora chrysospora
Saxifraga groenlandica L.
Syn. *Sax. caespitosa* L. *Sax. decipiens* EHRH. f. *caespitosa* (L.) NATH.
Melampsora arctica
Phoma herbarum
Pleospora infectoria
Puccinia Saxifragae
Pyrenophora Cerastii
— chrysospora
Septoria Saxifragae
Saxifraga hieraciifolia W. et K.
Phoma alpina
Puccinia Saxifragae
Pyrenophora Cerastii
— chrysospora
Saxifraga hirculus L.
Mycosphaerella minor
— Tassiana
Phoma alpina
Phyllosticta Saxifragarum
Pleospora herbarum
— infectoria
Pyrenopeziza svalbardensis
Pyrenophora Cerastii
— chrysospora
Saxifraga nivalis L.
incl. var. *tenuis* WG.
Clathrospora pentamera
Diplodina Papaveris
Mycosphaerella densa
— Tassiana
Phoma alpina
— herbarum
Pleospora herbarum
— infectoria

Puccinia Saxifragarum
Pyrenophora Cerastii
— chrysospora
Saxifraga oppositifolia L.
Leptosphaeria brachyasca
Mycosphaerella Tassiana
Phoma alpina
Pleospora infectoria
Pyrenophora Cerastii
— chrysospora
— setigera
Saxifraga rivularis L.
Puccinia Saxifragae
Synchytrium groenlandicum
Silene acaulis L.
Diplodina Papaveris
Leptosphaeria Silenes acaulis
Mycosphaerella Tassiana
Pleospora deflectens
Pyrenophora Androsaces
— chrysospora
— setigera
Ustilago violacea
Stellaria humifusa ROTTB.
Ascochyta Dianthi
Helotium herbarum
Leptosphaeria Silenes acaulis
Mycosphaerella Tassiana
Pyrenophora chrysospora
Stellaria longipes GOLDIE.
Clathrospora pentamera
Leptosphaeria Silenes acaulis
Mycosphaerella Tassiana
Naevia Stellariae
Phoma nebulosa
Pleospora infectoria
Pyrenophora Cerastii
— chrysospora
Septoria Stellariae
Ustilago violacea
Taraxacum arcticum (TRAUTV.) DAHLST.
Clathrospora pentamera
Mycosphaerella Taraxaci
— Tassiana
Orbilia Primulae
Pleospora infectoria
Sphaerotheca fuliginea
Tofieldia palustris HUDS.
Syn. *Tofieldia borealis* WG.
Mycosphaerella Tassiana
Pyrenophora Androsaces
Trisetum spicatum (L.) RICHT.
Syn. *Trisetum subspicatum* (L.) P. B.
Clathrospora pentamera
Crumenula pusiola
Lophodermium arundinaceum
Mycosphaerella Tassiana
Vaccinium uliginosum L.
Pseudophacidium degenerans

On the following 12 vascular plants from Svalbard no fungi has hitherto been found:
Cassiope hypnoides (L.) DON.
Gentiana tenella ROTTB.
Hippuris vulgaris L.
Lycopodium Selago L.
Parrya nudicaulis (L.) REGEL.
Ranunculus hyperboreus ROTTB.
— *Pallasii* SCHLECHT.
— *lapponicus* × *Pallasii*.
Rhodiola rosea L.
Rhododendron lapponicum (L.) WG.
Taraxacum brachyceras DAHLST.
Woodsia glabella R. BR.

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Synonyms are printed in *italics*.

Explanation of the Plates.

Plate I.

Fig. 1. Stem of Papaver radicatum with Lophodermium Svalbardense $^{7}/_{1}$.
— 2. Ascus of Lophodermium Svalbardense $^{700}/_{1}$. Sassen Bay 1st September 1908. H. RESVOLL-HOLMSEN.
— 3. Ascus and spores of Niptera advena $^{700}/_{1}$, on Eriophorum polystachyum from Novaya Zemlya.
— 4. Asci and paraphyse of Naevia Stellariae on Stellaria longipes $^{700}/_{1}$, from Novaya Zemlya.
— 5. Gnomonia hyparctica on the peduncle of Cassiope tetragona $^{50}/_{1}$.
— 6. Two asci of Gnomonia hyparctica $^{700}/_{1}$. Green Harbour 17th August 1868. TH. M. FRIES.
— 7. Two asci $^{700}/_{1}$, and habitus of Didymella hyperborea $^{7}/_{1}$, on Cassiope tetragona.
— 8. Massariopsis Wulffii $^{700}/_{1}$, on Puccinellia angustata from Greenland.
— 9. Metasphaeria Cassiopes $^{620}/_{1}$, on Cassiope tetragona from Greenland.
— 10. Pyrenophora Cerastii $^{700}/_{1}$, on Oxytropis campestris from Arctic Canada.
— 11. Mycosphaerella Tassiana $^{700}/_{1}$, on Poa arctica from Arctic Canada.

Plate II.

Fig. 12. Coleroa circinans, 1 perithecium $^{27}/_{1}$, ascus and spores $^{700}/_{1}$. On Potentilla pulchella, Advent Bay 1878. D. C. DANIELSSEN.
— 13. Spores of Massaria eucarpa on Polygonum viviparum. Hiorthamn 31th August 1920. J. LID.
— 14. Clathrospora pentamera $^{700}/_{1}$, on Draba Wahlenbergii from Novaya Zemlya.
— 15. Leptosphaeria Equiseti, 1 ascus and 6 spores $^{700}/_{1}$, on Equisetum scirpoides, Bell Sound 18th July 1920. J. LID.
— 16. Massaria macrotheca, ascus with unripe spores $^{700}/_{1}$, on Carex subspathacea. Bell Sound 15th July 1920. J. LID.
— 17. Leptosphaeria brachyasca $^{620}/_{1}$, on Saxifraga groenlandica from Greenland.
— 18. Leptosphaeria caricinella $^{700}/_{1}$, on Carex pulla from Greenland.

Plate III.

Figs. 19 and 20. Pyrenopeziza Svalbardensis, 1 apothecium $^{130}/_{1}$ and 5 spores $^{700}/_{1}$, on Draba Wahlenbergii. Ny Ålesund 28th August 1920. J. LID.

Figs. 21 and 22. Pleospora Magnusiana, 1 perithecium $^{130}/_{1}$, ascus and 3 spores $^{700}/_{1}$, on Carex parallela. Advent Bay 5th August 1924. J. LID.

— 23. Pyrenophora filicina, ascus $^{700}/_{1}$, on Cystopteris fragilis. Bell Sound 9th July 1920. J. Lid.

— 24. Pleospora macrospora, 2 asci and 3 spores $^{420}/_{1}$, on Hierocloë alpina. Coles Bay 5th July 1908. H. RESVOLL-HOLMSEN.

— 25. Pleospora Wulffii, 1 ascus and 2 spores $^{700}/_{1}$, on Stellaria longipes. Wijde Bay 17th July 1899. THORILD WULFF.

The figures on plates I and II are drawn by Mr. OVE ROSTRUP, mainly from specimens from Svalbard. The figures on plate III are drawn by Mr. JOHANNES LID.

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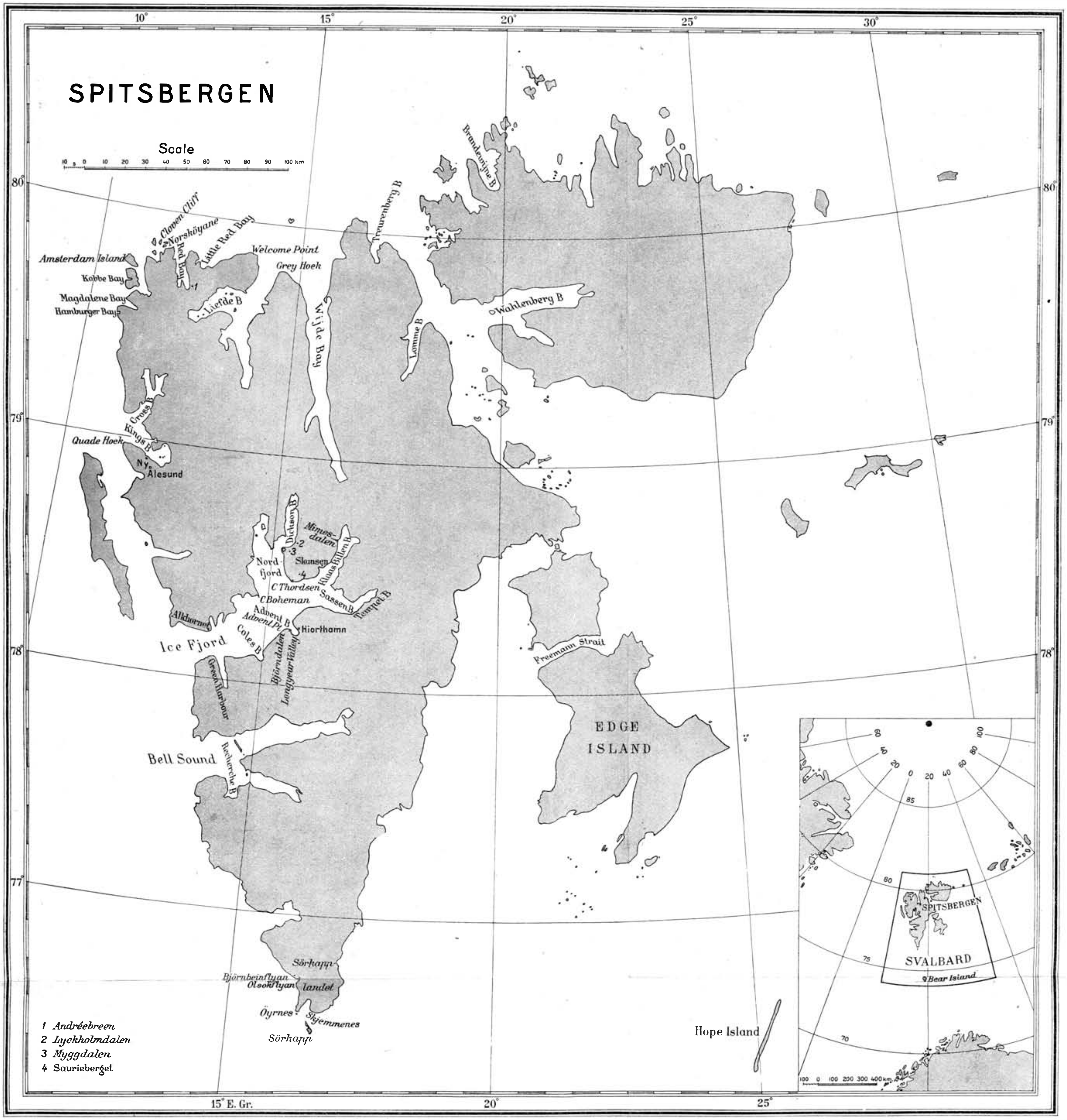
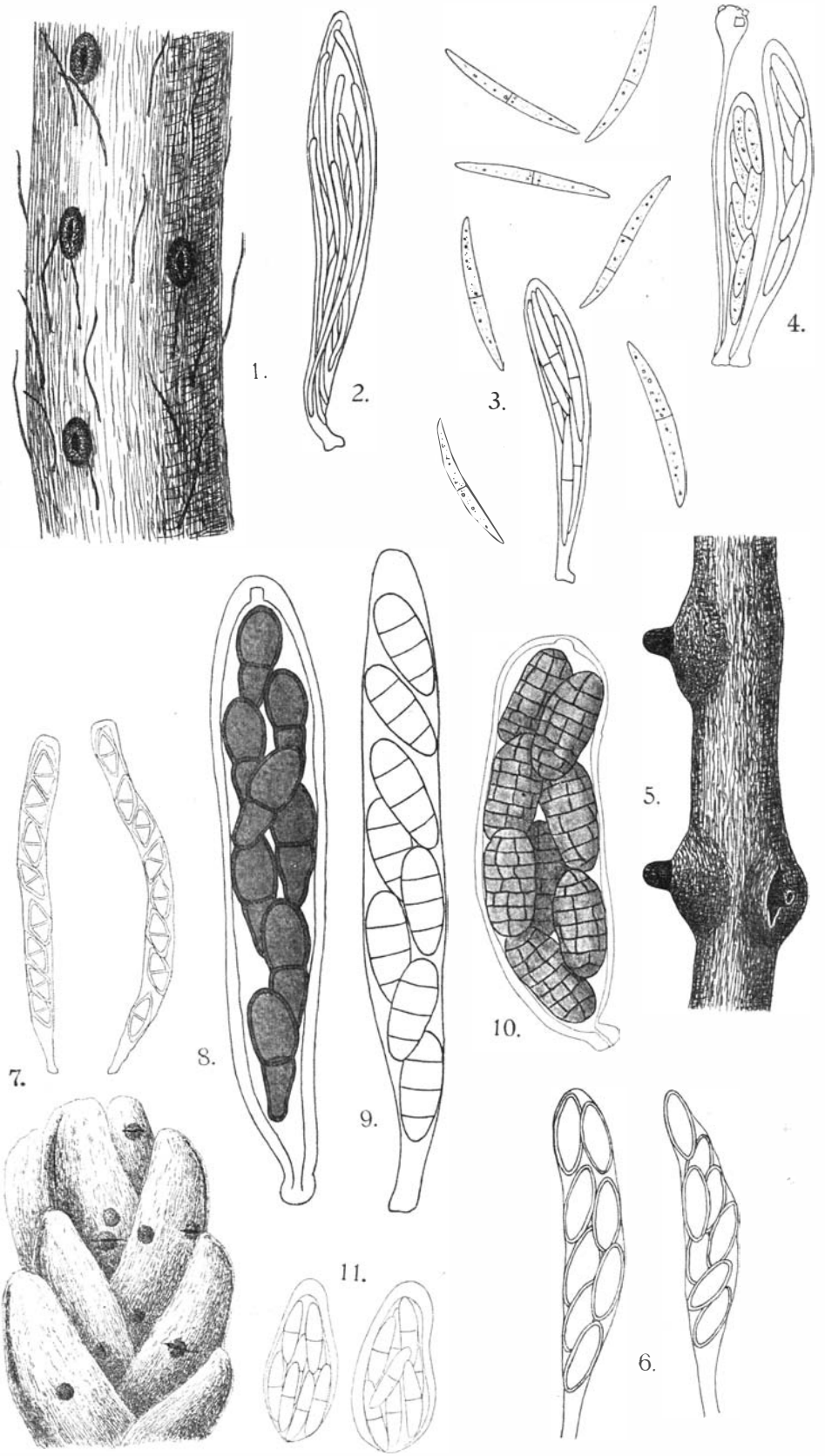

SPITSBERGEN
Scale
Amsterdam Island
Kobbe Bay
Magdalene Bay
Hamburger Bay
Cloven Cliff
Norsköyane
Red Bay
Little Red Bay
Welcome Point
Grey Hoek
Liefde B
Wijde Bay
Treurenberg B
Lomme B
Brandewijne B
Wahlenberg B
Cross B
Kings B
Quade Hoek
Ny Ålesund
Dickson B
Mimesdalen
Nordfjord
Skansen
Klaus Billen B
C Thordsen
C Boheman
Sassen B
Tempel B
Advent B
Advent Pt
Hiorthamn
Coles B
Ice Fjord
Alkhornet
Green Harbour
Björndalen
Longyear-Valley
Freemann Strait
EDGE ISLAND
Bell Sound
Recherche B
Sörkapp
Björnbeinflyan
Olsokflyan
landet
Öyrnes
Skjemmenes
Sörkapp
Hope Island
1 Andréebreen
2 Lyckholmdalen
3 Myggdalen
4 Saurieberget
SPITSBERGEN
SVALBARD
Bear Island
15° E. Gr.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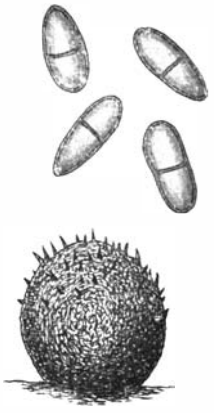

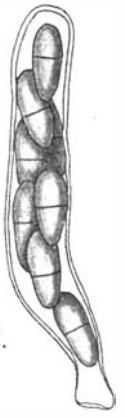

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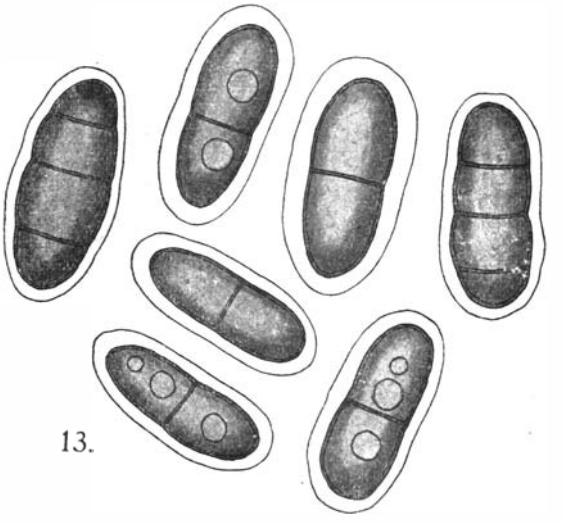

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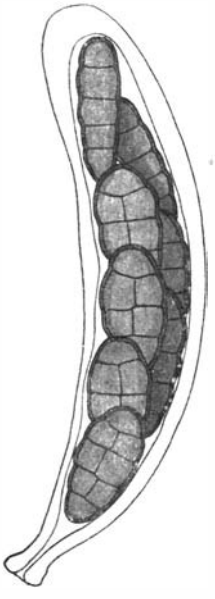

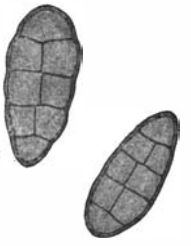

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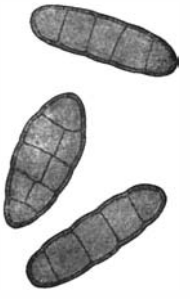

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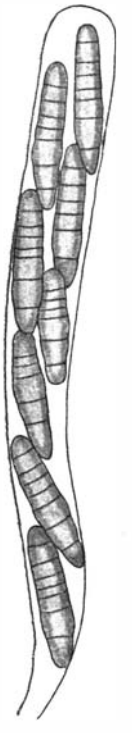

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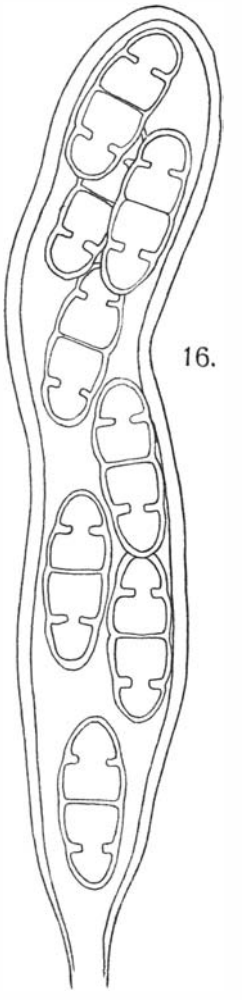

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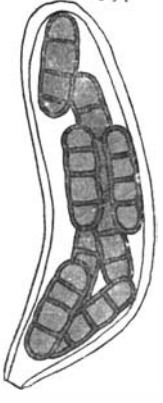

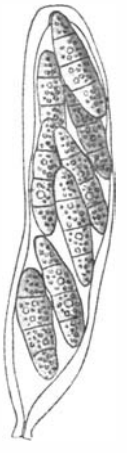

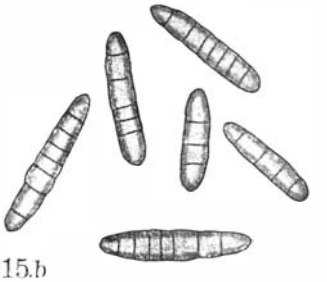

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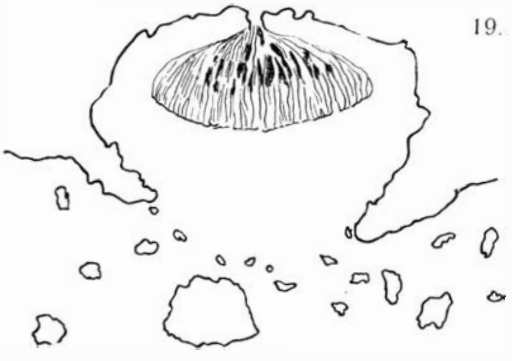
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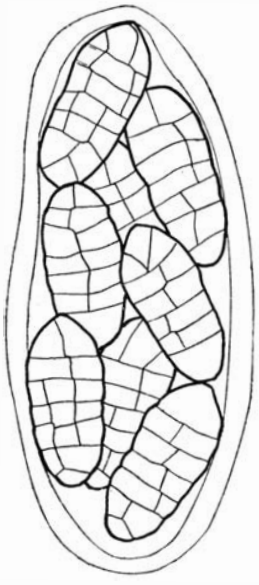
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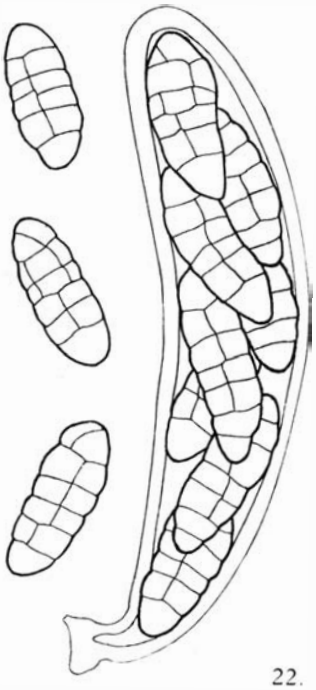
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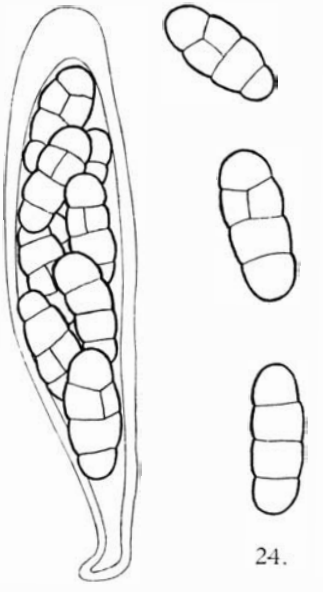
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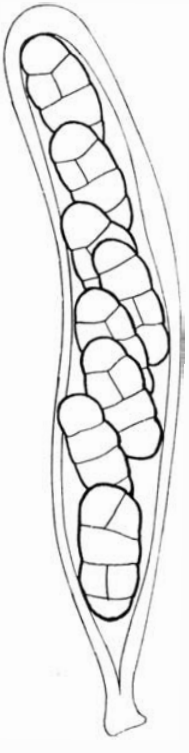

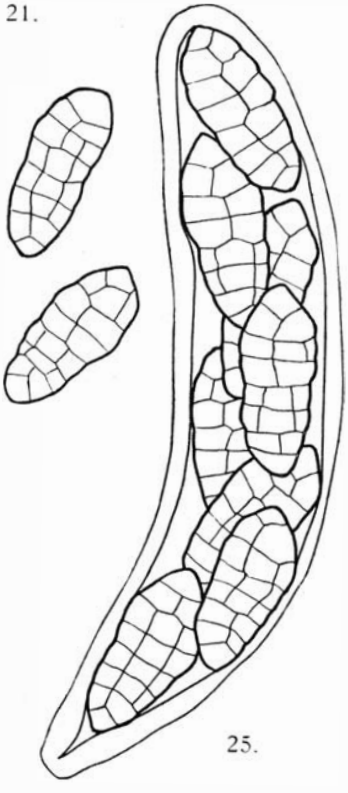
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Results of the Norwegian expeditions to Svalbard 1906—1926 published in other series. (See Nr. 1 of this series.)

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.

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The following topographical maps have been published separately:

Bjørnøya (Bear Island). Oslo 1925. Scale, 1 : 25 000. Kr. 10,00.

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RESULTATER AV DE NORSKE STATSUNDERSTØTTEDE SPITSBERGENEKSPEDITIONER

(RESULTS OF THE NORWEGIAN STATE-SUPPORTED SPITSBERGEN EXPEDITIONS)

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