

LICHENS OF NUUK AREA, SOUTH WEST GREENLAND

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The paper lists 122 lichen taxa from Nuuk area, South West Greenland. These are listed alphabetically and their associations and substrates are briefly indicated.

Key words: Ascomycetes, Greenland, lichens, Nuuk

INTRODUCTION

In July 1946, Mogens Skytte Christiansen collected lichens from Nuuk area in South West Greenland. During this expedition about 400 analyses of quadrates of the vegetation were made. A large number of the commonest lichens occurring in the analyses were determined on the spot or in the temporary laboratory at Kangerlussuaq (BÖCHER 1954). Part of the remaining lichens, mostly microlichens, was identified after the return of the expedition to Copenhagen. However, many lichens remained undetermined until recently. The present paper deals with this material and contains a list of all lichens identified by the author. H. Rink and J. Vahl were the first lichen collectors in the Nuuk area and the Ameralik area just south of Nuuk (BRANTH and GRÖNLUND 1888, DAHL 1950). In 1871 T. M. Fries collected lichens in Nuuk (LYNGE 1937). During the last thirty years of the nineteenth century a few small collections of lichens were made in the Nuuk district by N. Hartz, Th. Holm, L. Kolderup Rosenvinge, A. Kornerup and E. Warming (BRANTH 1892, DAHL 1950). In 1976 V. Alstrup collected lichens and lichenicolous fungi in the Nuuk fjord area (ALSTRUP 1977, 1979, 1986, ALSTRUP and HAWKSWORTH 1990). The present author collected numerous lichens in the Nuuk area including Ameralik in 1990 (HANSEN 1993) and in the Kobbefjord area situated 10 km east of Nuuk in 2010 (HANSEN 2011). M. Skytte Christiansen's material from 1946 is of particular interest, as it contains many more or less rare microlichens.

LOCALITY, GEOLOGY AND CLIMATE

Nuuk (64° 10' N, 51° 43' W) is the capital of Greenland. The town is situated outermost on a peninsula about 25 km from the entrance of Nuuk fjord. Lille Malene (alt. 430 m a. s. l.) and Store Malene (alt. 780 m a. s. l.) are two spectacular mountains in the Nuuk area. They consist of very old gneisses intersected by younger basic dykes (ESCHER and STUART WATT 1976). Different amphibolites of metabasaltic composition and ironstones are abundant in the hilly surroundings of Nuuk. Climatically and floristically, Nuuk area is located in the low arctic, oceanic area (JENSEN 1999). The mean temperature of the warmest month, July, is *ca* 7 °C and of the coldest month, January *ca* –20 °C. Annual precipitation is *ca* 515 mm per year (HANSEN 1993). Nuuk is influenced both by fairly dry winds from the inland ice and by winds from the sea. The snow cover is comparatively thick during winter and early spring.

MATERIALS AND METHODS

Lichens were collected from numerous sampling plots below *ca* 350 m a. s. l. in the Nuuk area including Lille and Store Malene in July 1946. A total of 380 lichen specimens were studied using Zeiss light microscopes and identified by the author. The nomenclature in the list is presented after NORDIN *et al.* (2011) with some exceptions. The specimens are deposited at the Botanical Museum of the University of Copenhagen (C). The substrate preference and the main plant communities in which the lichens occur were noted for all collected specimens.

RESULTS AND DISCUSSION

Floristical observations of particular interest

M. Skytte Christiansen's material contains a number of rare species of particular interest such as, for example, *Arctomia delicatula*, known from South West and Central West Greenland and a few localities in East Greenland (HANSEN 1993, 1995), and *Rhexophiale rhexoblephara*, known from Central West and East Greenland and a few localities in South West Greenland (THOMSON 1997). *Pyrenopsis furfurea* has previously been reported from Disko (GELTING 1954) and a few localities in South West Greenland (DAHL 1950, HANSEN 2018). Many lichens grow on mosses in the dwarf shrub heaths. *Biatora vernalis*, *Bryonora castanea*, *Buellia papillata*, *Lendemeriella nivalis*, *Micarea assimilata*, *Ochrolechia grimmiae*, *Psoroma tenue* var. *boreale* and *P. hypnorum* are typical examples. Eutrophic soil crust lichens, such as, for example, *Placidium lachneum*, are of minor im-

portance in the Nuuk area. *Baeomyces carneus*, *Cladonia borealis*, *C. macroceras* and *Pertusaria oculata* occur in snowpatches and on frost boils (HANSEN 1995, THOMSON 1984) and are supposed to be common in the Nuuk area. Saxicolous lichens are widely distributed in the whole Nuuk area. The following lichens were found growing on both siliceous rocks and basaltic rocks: *Acarospora badiofusca*, *Lecidea atrobrunnea*, *L. lapicida* var. *lapicida*, *Pseudephebe minuscula*, *Rhizocarpon geminatum*, *R. geographicum*, *R. grande*, *R. jemtlandicum* and *Rusavskia elegans*. Skytte Christiansen took a particular interest in freshwater lichens, and such lichens from the border of watercourses and irrigated rock faces are well represented in his collections. *Aspicilia aquatica*, *Ionaspis lacustris*, *Placynthium asperellum*, *Rhizocarpon lavatum*, *Verrucaria aethiobola* and *Vestergrenopsis isidiata* can be mentioned as typical examples. Many more or less moist rocks contain iron, and their faces are often covered by limonite. These faces often hold ferruginous lichens such as, for example, *Acarospora sinopica*, *Miriquidica atrofulva*, *Porpidia melinodes* and *Tremolecia atrata*. Coastal rocks manured by birds support lichens, such as *Acarospora molybdina*, *Amandinea cacuminum*, *Coppinsiella alcarum*, *Massjukiella candelaria*, *Physcia dubia*, *P. tenella* var. *marina*, *Polyozosia contractula*, *P. straminea*, *Rusavskia elegans* and *Umbilicaria arctica*.

Annotated list of species

The following list represents 122 lichen taxa. “ap” and “pe” mean the presence of apothecia and perithecia, respectively; “st” means the specimen is sterile. Annotations are given regarding substrate of the lichens and associated lichen taxa.

Acarospora badiofusca (Nyl.) Th. Fr. – (ap) – on manured siliceous and basaltic rocks together with, e.g., *Circinaria caesiocinerea*, *Miriquidica nigroleprosa*, *Sagedia mastrucata*, and *Vestergrenopsis isidiata*.

Acarospora molybdina (Wahlenb.) A. Massal. – (ap) – on manured siliceous rocks near the sea together with *Massjukiella candelaria*, *Physcia dubia*, *P. tenella* var. *marina* and *Polyozosia straminea*.

Acarospora sinopica (Wahlenb.) Körb. – (st) – on manured siliceous rock rich in iron near the sea together with *Coppinsiella alcarum* and *Polyozosia straminea*.

Allantoparmelia alpicola (Th. Fr.) Essl. – (st) – on siliceous rocks near the sea together with, e.g., *Coppinsiella alcarum* and *Polyozosia contractula*.

Amandinea cacuminum (Th. Fr.) H. Mayrhofer et Sheard – (ap) – on manured siliceous rocks near the sea together with *Massjukiella candelaria* and *Physcia caesia*.

Amandinea coniops (Wahlenb.) M. Choisy ex Scheid.) H. Mayrhofer – (ap) – on manured siliceous rocks near the sea.

Amygdalaria panaeola (Ach.) Hertel et Brodo – (st) – on somewhat moist basaltic rock rich in iron together with *Porpidia melinodes* and *Rhizocarpon grande*.

Arctomia delicatula Th. Fr. – (st) – on mineral soil in dwarf shrub heath.

Aspicilia aquatica (Fr.) Körb. – (ap) – on moist siliceous rock together with *Ionaspis lacustris* and *Tremolecia atrata*.

Aspicilia berntii A. Nordin, Tibell et Owe-Larss. – (ap) – on siliceous rocks together with, e.g., *Allantoparmelia alpicola*, *Miriquidica nigroleprosa* and *Umbilicaria torrefacta*.

Aspicilia cinerea (L.) Körb. – (ap) – on siliceous rock.

Baeomyces carneus Flörke – (st) – between mosses on soil in snowpatch together with *Cladonia borealis*.

Bellemeria alpina (Sommerf.) Clauzade et Cl. Roux – (ap) – on siliceous rocks, together with, e.g., *Calvitimela armeniaca*.

Bellemeria cinereorufescens (Ach.) Clauzade et Cl. Roux – (ap) – on siliceous rocks.

Bellemeria subsorediza (Lyngé) R. Sant. – (st) – on manured, somewhat moist siliceous rocks together with, e.g., *Circinaria caesiocinerea*, *Rhizocarpon badioatrum* and *Umbilicaria torrefacta*.

Biatora vernalis (L.) Fr. – (ap) – between mosses on soil in dwarf shrub heath.

Bryonora castanea (Hepp) Poelt – (ap) – between mosses on soil in dwarf shrub heath.

Bryoplaca tetraspora (Nyl.) Søchting, Frödén et Arup – (ap) – on plant remains over basaltic rock.

Bryoria fuscescens (Gyeln.) Brodo et D. Hawksw. – (st) – on siliceous rocks together with, e.g., *Calvitimela aglaea* and *Orphniospora moriopsis*.

Buellia papillata (Sommerf.) Tuck. – (ap) – between mosses on soil in dwarf shrub heath, together with *Cladonia pocillum*, *Psoroma tenue* var. *boreale* and *Rinodina turfacea*.

Caloplaca fraudans (Fr.) H. Olivier – (ap) – on strongly weathered siliceous rock near the sea together with, e.g., *Acarospora badiofusca*, *Physcia tenella* var. *marina* and *Polyozosia contractula*.

Calvitimela aglaea (Sommerf.) Hafellner – (ap) – on siliceous rocks.

Calvitimela armeniaca (DC.) Hafellner – (st) – on siliceous rocks together with, e.g., *Bellemeria alpina*, *Miriquidica nigroleprosa* and *Rhizocarpon badioatrum*.

Candelariella arctica (Körb.) R. Sant. – (ap) – on manured siliceous rocks near the sea.

Candelariella aurella (Hoffm.) Zahlbr. – (ap) – on *Placynthium asperellum*, *Rhizocarpon geminatum* and *Vestergrenopsis isidiata* on basaltic rocks.

Candelariella placodizans (Nyl.) H. Magn. – (st) – between mosses on soil in dwarf shrub heath.

Candelariella vitellina (Hoffm.) Müll. Arg. – (ap) – on siliceous rocks together with, e.g., *Circinaria caesiocinerea*.

Cetraria aculeata (Schreb.) Fr. – (ap) – on soil in dwarf shrub heath together with *Rhexophiale rhexoblephara* and *Sphaerophorus fragilis*.

Cetraria muricata (Ach.) Eckfeldt – (st) – on soil in dwarf shrub heaths.

Circinaria caesiocinerea (Nyl. ex Malbr.) A. Nordin, S. Savić et Tibell – (ap) – on manured siliceous rocks together with, e.g., *Amandinea coniops*, *Placopsis gelida*, *Rhizocarpon grande* and *Vestergrenopsis isidiata*.

Cladonia borealis S. Stenroos – (st) – on soil in snowpatches.

Cladonia macroceras (Delise) Hav. – (st) – between mosses on soil in snowpatch and dwarf shrub heath.

Cladonia mitis Sandst. – (st) – on soil in dwarf shrub heath together with, e.g., *Psoroma tenue* var. *boreale*, *Rinodina turfacea* and *Sphaerophorus fragilis*.

Cladonia pocillum (Ach.) O. J. Rich. – (st) – between mosses on soil in dwarf shrub heath.

Coppinsiella alcarum (Poelt) E. S. Hansen et S. Y. Kondr. – (ap) – on manured siliceous rocks near the sea.

Dimelaena oreina (Ach.) Norman – (ap) – on siliceous rocks together with, e.g., *Lecidea atrobrunnea*.

Ephebe hispidula (Ach.) Horw. – (ap) – on siliceous rocks.

Euopsis pulvinata (Schaer.) Vain. – (ap) – on siliceous rock.

Frutidella caesioatra (Schaer.) Kalb. – (ap) – on mosses on siliceous rocks.

Ionaspis lacustris (With.) Lutzoni – (ap) – on moist siliceous rocks.

Lecanora atosulphurea (Wahlenb.) Ach. – (ap) – on siliceous rock.

Lecanora intricata (Ach.) Ach. – (ap) – on siliceous rock.

Lecanora leptacina Sommerf. – (ap) – between mosses on soil and on siliceous rock.

Lecanora polytropa (Ehrh. ex Hoffm.) Rabenh. – (ap) – on siliceous rocks together with, e.g., *Lecidea atrobrunnea*, *L. auriculata* and *Rhizocarpon geographicum*.

Lecidea atrobrunnea (Ramond ex Lam. et DC.) Schaer. – (ap) – on manured, moist siliceous and basaltic rocks more or less rich in iron together with *Bellemeria subsorediza*, *Ionaspis lacustris*, *Miriquidica atrofulva*, *Protoparmelia badia*, *Rhizocarpon bolanderi* and *Tremolecia atrata*.

Lecidea auriculata Th. Fr. – (ap) – along small fissures in siliceous rocks.

Lecidea lapicida (Ach.) Ach. var. *lapicida* – (ap) – on moist siliceous and basaltic rocks together with, e.g., *Miriquidica nigroleprosa* and *Umbilicaria torrefacta*.

Lecidea lapicida (Ach.) Ach. var. *pantherina* (DC.) Ach. – (ap) – on moist, siliceous rocks together with, e.g., *Circinaria caesiocinerea*, *Tremolecia atrata* and *Umbilicaria torrefacta*.

Lecidella bullata Körb. – (ap) – on siliceous rock.

Lecidoma demissum (Rutstr.) Gotth. Schneid. et Hertel – (ap) – on soil in dwarf shrub heaths.

Lendemeriella nivalis (Körb.) S. Y. Kondr. (= *Caloplaca nivalis* (Körb.) Th. Fr.) – (ap) – between mosses on soil in dwarf shrub heath.

Lichenomphalia hudsoniana (H. S. Jenn.) Redhead, Lutzoni, Moncalvo et Vilgalys – between mosses on soil in dwarf shrub heath.

Lopadium coralloideum (Nyl.) Lyngby – (ap) – between mosses on soil in dwarf shrub heaths.

Lopadium pezizoideum (Ach.) Körb. – (ap) – on siliceous rock.

Massjukiella candelaria (L.) S. Y. Kondr., Fedorenko, S. Stenroos, Kärnefelt, Elix, Hur et A. Thell – (st) – on manured siliceous rocks near the sea together with *Polyozosia straminea* and *Rinodina balanina*.

Melanelia hepatizon (Ach.) A. Thell – (st) – on siliceous rocks, together with, e.g., *Umbilicaria havaasii*.

Micarea assimilata (Nyl.) Coppins – (ap) – between mosses on soil in dwarf shrub heaths.

Miriquidica atrofulva (Sommerf.) Schwab et Rambold – (st) – on siliceous rocks rich in iron together with *Lecidea atrobrunnea* and *Umbilicaria torrefacta*.

Miriquidica leucophaea (Flörke ex Rabenh.) Hertel et Rambold – (ap) – on siliceous rocks together with *Lecanora polytropia* and *Umbilicaria torrefacta*.

Miriquidica nigroleprosa (Vain.) Hertel et Rambold – (ap) – on manured, somewhat moist siliceous rocks together with, e.g., *Rhizocarpon bolanderi*, *R. inarense* and *Umbilicaria torrefacta*.

Montanelia disjuncta (Erichsen) Divakar, A. Crespo, Wedin et Essl. – (st) – on siliceous rock together with *Umbilicaria torrefacta*.

Montanelia sorediata (Ach.) Divakar, A. Crespo, Wedin et Essl. – (st) – on siliceous rock together with *Lecidea lapicida* var. *pantherina*.

Myriospora smaragdula (Wahlenb. ex Ach.) Nägeli ex Uloth – (ap) – on siliceous rocks together with *Rhizocarpon badioatrum* and *R. copelandii*.

Ochrolechia alaskana (Verseghy) Kukwa – (ap) – between mosses and plant remains in dwarf shrub heaths.

Ochrolechia grimmiae Lyngby – (ap) – on *Racomitrium lanuginosum* in dwarf shrub heath.

Ochrolechia lapuënsis (Räsänen) Räsänen – (st) – between mosses on soil in dwarf shrub heaths.

Ochrolechia tartarea (L.) A. Massal. – (st) – on siliceous rock together with *Allantoparmelia alpicola*.

Ophioparma ventosa (L.) Norman – (ap) – on manured siliceous rock.

Orphniospora moriopsis (A. Massal.) D. Hawksw. – (ap) – on siliceous rocks together with *Allantoparmelia alpicola*, *Pseudephebe minuscula*, *Rhizocarpon geographicum*, *R. inarense*, *Umbilicaria hyperborea* and *U. torrefacta*.

Pachypeltis castellana (Räsänen) Søchting, Frödén et Arup – (ap) – on *Placynthium asperellum* on siliceous rock.

Parmelia omphalodes (L.) Ach. – (st) – on manured siliceous rocks.

Parmelia saxatilis (L.) Ach. – (st) – on manured siliceous rocks.

Parvoplaca tiroliensis (Zahlbr.) Arup, Søchting et Frödén – (ap) – on soil in dwarf shrub heath.

Peltigera rufescens (Weiss) Humb. – (st) – on soil in dwarf shrub heath.

Pertusaria oculata (Dicks.) Th. Fr. – (ap) – between mosses on soil in *Salix herbacea* snowpatch.

Phaeophyscia sciastra (Ach.) Moberg – (st) – on manured siliceous rock together with *Placynthium asperellum*.

Phyllicum demangeonii (Moug. et Mont.) Nyl. – (ap) – on siliceous rock together with *Rhizocarpon bolanderi*.

Physcia caesia (Hoffm.) Fűrnr. – (st) – on manured siliceous rock near the sea.

Physcia dubia (Hoffm.) Lettau – (st) – on manured siliceous rock near the sea.

Physcia tenella (Scop.) DC. var. *marina* (A. Nyl.) Lyngø – (st) – on manured siliceous rocks near the sea.

Placidium lachneum (Ach.) de Lesd. – (pe) – on soil in dwarf shrub heath.

Placopsis gelida (L.) Linds. – (st) – on manured siliceous and basaltic rocks.

Placynthiella uliginosa (Schrad.) Coppins et P. James – (ap) – on soil in dwarf shrub heath.

Placynthium asperellum (Ach.) Trevis. – (st) – on moist siliceous rocks together with, e.g., *Vestergrenopsis isidiata*.

Polyozosia contractula (Nyl.) S. Y. Kondr, Lökös et Farkas – (ap) – on siliceous rocks near the sea together with *Coppinsiella alcarum*, *Physcia tenella* var. *marina* and *Rusavskia elegans*.

Polyozosia straminea (Ach.) S. Y. Kondr., Lökös et Farkas – (ap) – on manured siliceous rocks near the sea.

Porpidia flavicunda (Ach.) Gowan – (ap) – on moist siliceous rock together with *Ionaspis lacustris* and *Rhizocarpon badioatrum*.

Porpidia melinodes (Körb.) Gowan et Ahti – (st) – on somewhat moist basaltic rocks rich in iron.

Protoparmelia badia (Hoffm.) Hafellner – (ap) – on manured siliceous rocks together with, e.g., *Rhizocarpon geminatum*.

Pseudephebe minuscula (Nyl. ex Arnold) Brodo et D. Hawksw. – (st) – on siliceous and basaltic rocks together with, e.g., *Umbilicaria hyperborea* and *U. torrefacta*.

Pseudephebe pubescens (L.) M. Choisy – (st) – on manured siliceous rocks together with, e.g., *Rhizocarpon copelandii* and *R. praebadium*.

Psoroma hypnorum (Vahl) Gray – (ap) – between mosses on soil in dwarf shrub heath.

Psoroma tenue Henssen var. *boreale* Henssen – (ap) – between mosses on soil in dwarf shrub heaths together with, e.g., *Buellia papillata* and *Rinodina turfacea*.

Pyrenopsis furfurea (Nyl.) Leight. – (ap) – on soil in dwarf shrub heath.

Rhexophiale rhexoblephara (Nyl.) Hellb. – (ap) – between mosses on soil.

Rhizocarpon badioatrum (Flörke ex Spreng.) Th. Fr. – (ap) – on manured, somewhat moist siliceous rocks.

Rhizocarpon bolanderi (Tuck.) Herre – (ap) – on manured siliceous rocks together with, e.g., *Lecidea atrobrunnea*, *Rhizocarpon geographicum* and *Tremolecia atrata*.

Rhizocarpon copelandii (Körb.) Th. Fr. – (ap) – on siliceous rocks, together with, e.g., *Rhizocarpon inarense*, *R. superficiale* and *Umbilicaria proboscidea*.

Rhizocarpon eupetraeum (Nyl.) Arnold – (ap) – on siliceous rock.

Rhizocarpon geminatum Körb. – (ap) – on manured siliceous and basaltic rocks.

Rhizocarpon geographicum (L.) DC. – (ap) – on siliceous and basaltic rocks.

Rhizocarpon grande (Flörke) Arnold – (ap) – on manured siliceous and basaltic together with, e.g., *Lecidea atrobrunnea*.

Rhizocarpon inarense (Vain.) Vain. – (ap) – on siliceous rocks together with, e.g., *Rhizocarpon geographicum*.

Rhizocarpon jemtlandicum (Malme) Malme – (ap) – on siliceous and basaltic rocks.

Rhizocarpon lavatum (Fr.) Hazs. – (ap) – on somewhat moist siliceous rock.

Rhizocarpon praebadium (Nyl.) Zahlbr. – (ap) – on siliceous rocks.

Rhizocarpon rittokense (Hellb.) Th. Fr. – (ap) – on siliceous rocks together with, e.g., *Orphniospora moriopsis*, *Pseudephebe minuscula* and *Umbilicaria hyperborea*.

Rhizocarpon superficiale (Schaer.) Vain. – (ap) – on siliceous rocks.

Rinodina balanina (Wahlenb.) Vain. – (ap) – on manured siliceous rocks near the sea.

Rinodina turfacea (Wahlenb.) Körb. – (ap) – between mosses on soil and on plant remains.

Rusavskia elegans (Link) S. Y. Kondr. et Kärnefelt – (ap) – on manured siliceous and basaltic rocks.

Sagedia mastrucata (Wahlenb.) A. Nordin, Savić et Tibell (= *Aspicilia mastrucata* (Wahlenb.) Th. Fr.) – (ap) – on siliceous rocks together with, e.g., *Candelariella arctica*, *Circinaria caesiocinerea* and *Polyozosia straminea*.

Sphaerophorus fragilis (L.) Pers. – (st) – on soil in dwarf shrub heaths.

Tremolecia atrata (Ach.) Hertel – (ap) – on somewhat moist siliceous rocks more or less rich in iron.

Umbilicaria arctica (Ach.) Nyl. – (ap) – on manured siliceous rock together with *Aspicilia cinerea* and *Rhizocarpon geminatum*.

Umbilicaria cylindrica (L.) Delise ex Duby – (ap) – on siliceous rocks.

Umbilicaria havaasii Llano – (st) – on siliceous rock.

Umbilicaria hyperborea (Ach.) Hoffm. – (ap) – on siliceous rocks.

Umbilicaria proboscidea (L.) Schrad. – (ap) – on siliceous rock.

Umbilicaria torrefacta (Lightf.) Schrad. – (ap) – on somewhat moist siliceous rocks.

Verrucaria aethiobola Wahlenb. – (pe) – on moist siliceous rock together with *Ephebe hispidula*.

Vestergrenopsis isidiata (Degel.) E. Dahl – (ap) – on moist siliceous rock.

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