Contribution to the lichen flora of South East Greenland. IV. The Ammassalik area

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CONTRIBUTION TO THE LICHEN FLORA OF SOUTH EAST GREENLAND. IV. THE AMMASSALIK AREA

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Abstract

Hansen E. S., 2016: Contribution to the lichen flora of South East Greenland. IV. The Ammassalik area [Papildomi duomenys apie pietryčių Grenlandijos kerpių florą. IV. Ammassalik apylinkės]. – Bot. Lith., 22(1): 72–77.

The paper lists 102 lichen taxa from the Ammassalik area, South East Greenland. Rinodina egedeana and Verrucaria erichsenii are new to East Greenland. Seven lichen taxa are new to South East Greenland, viz. Acarospora peliscypha, Caloplaca magni-filii, Lecanora atromarginata, Lecidella euphorea, Miriquidica nigroleprosa, Peltigera britannica and Rhizocarpon atroflavescens.

Keywords: Arctic region, diversity, lichens.

INTRODUCTION

One hundred and thirty-four lichens collected by the author in the Ammassalik area were previously listed in the paper dealing with the occurrence and distribution of lichens in South East Greenland (Hansen, 1978a). A new revision of the lichen material from Ammassalik Ø and its surroundings have resulted in many additional lichens, which were neglected during the original study more than 40 years ago. The main purposes of the field work in the summers of 1970 and 1971 were to conduct ecological and phytosociological investigations and collect lichens as part of the work implemented by the Greenland Botanical Survey (G. B. U.) in different regions of Greenland. Two hundred taxa of lichens were collected by the author in Tasiilaq in 1985 and 2001 and at the Sermilik station in 2001 (Hansen, 2002). He also reported ninety-seven lichen taxa from five localities in the Sermilik and Ammassalik area as part of a study of the climatic preferences of the lichens in relation to the degree of oceanity or continentality (Hansen, 2012). Extensive botanical investigations were carried out by Dutch phytosociological expeditions in 1966, 1968 and 1969, and numerous lichens are mentioned in the resulting papers, viz. Daniels, 1968, 1975, 1982; Daniels & Ferwerda, 1972; Daniels & Sipman, 1975; Daniels et al., 1985. In the summers of 1970 and 1971, Hansen (1978b) investigated the vertical distribution of 127 lichens on three mountains in Ammassalik Ø and Tugilik, respectively. The present paper aims to contribute further to the knowledge about the lichen flora of the Ammassalik area and to stimulate future lichen research in this area.

Collecting of lichens was carried out by the author in the following nine localities (Hansen, 1978a): 1. Isertoq (65°39´ N, 38°24´ W) – 20–26 August 1971; 2. Qaartuluk (65°45´N, 37°13´W) – 9 August 1970; 3. Island south of Qeertaulaq (65°54´N, 37°07´W) – 26 July 1970; 4. Seeraq (65°56´N, 37°09´W) – 22–28 July 1970; 5. Ikáteq (65°57´N, 36°40´W) – 11–15 August 1971; 6. Ikaasaulaq (65°59´N, 37°26´W) – 9–16 July 1970; 7. Tasiilaq (65°36´N, 37°38´W) – 29 August – 1 September 1970 & 14–16 July 1971; 8. Paornakajiit (66°04´N, 37°38´W) – 28 August – 1 September 1971; 9. Qingertuaq (66°06´N, 37°13´W) – 28 July – 7 August 1970. Lichens were studied in the lowland and up to 1150 m a. s. l. in the...
investigation area, which contains up to c. 1500 m high mountains. The rocks are largely composed of Archaean granodioritic gneisses often with layers of metasediment and basic material with high content of Ca, Fe, Mg and Al. The bedrock of Tasiilaq is mainly composed of charnokite, a basic norite rich in hypersthene (HANSEN, 1978a, 2002). Floristically and climatically, the investigation area is located in the low arctic, oceanic region (JENSEN, 1999). Mixed dwarf shrub heaths are occasionally found on steep slopes in the investigation area. Cassiope tetragona forms comparatively small patches on more or less steep slopes with mainly northern exposure above c. 250 m a. s. l. (DANIELS, 1982). Otherwise north exposed places are often covered by species such as Salix herbacea, Harrimanella hypnoides and Sibbaldia procumbens. Well-developed herb slopes are occasionally found at south exposed sites. According to the measurements made by Asiaq/Groenlands Forundersøgelser, the mean temperature of the warmest month, July, is 10°C in Tasiilaq, while the mean temperature of the coldest month, February, is -20°C. The mean annual precipitation is 951 mm (HANSEN, 2002).

A total of 400 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). The specimens are deposited at the Botanical Museum of the University of Copenhagen (C).

Lichens new to South East Greenland are marked with one asterisk (*). Two asterisks (**) indicate taxa new to East Greenland; “ap.” and “pe.” mean presence of apothecia and perithecia, respectively; “st.” means that the specimen is sterile. Annotations are given regarding substrate of the lichens, and information about the distribution in Greenland is given for selected species of particular interest. General information about the total distribution of the lichens in Greenland is presented after HANSEN (1995), THOMSON (1984, 1997) and KRISTINSSON et al. (2010).

The present paper provides abundant new information about the distribution of numerous lichens in the Ammassalik area. Many species, which were considered rare prior to the new revision of the lichens collected in 1970 and 1971, now appear to be fairly common and widely distributed in the area. Two species, Rinodina egedeana and Verrucaria erichsenii, are new to East Greenland, and seven lichen taxa were reported for the first time from South East Greenland. Lichens such as Biaurota vernalis, Bryonora castanea, Buellia papillata, Carex rariflora, Caloplaca jungermanniae, Peziza extenuata, Pseude attractive boreale and Trappeiopsis granulosa grow more or less abundantly over plant remains in open places in dwarf shrub heaths. Myxobilimbia lobulata and Pyrenopsis furfurea both occur on clayey soil. Cladonia stygia and C. trassii are very common in moist places in the heaths. Lecanora fuscescens and Rinodina archaea are occasionally found growing on dead twigs. Calyptimela aglaea and C. armeniaca occur more or less abundantly on siliceous rocks in places exposed to strong winds. Acarospora sinopica, Miriquidica atrofulva and Porpidia flavocaerulescens have a distinct preference for rocks rich in iron. Lichens such as Acarospora peliscypha, A. smaragdula, Amandinea cacuminum, Rhizocarpon bolanderi and Xanthoria sorediata grow on rocks influenced by guano. Temporarily moist rocks support species such as Aspicilia aquatica, Ephebe hispida, Iionspis suaveolens, Placynthium pannariellum, Rhizocarpon badioatrum, Staurothele fissa and Vester grenopopsis isidiata. Verrucaria cethocarpa, V. erichsenii, V. maura and V. mucosa occur on seashore rocks. Generally, the lichen flora reflects the moist, oceanic climatic conditions that characterize the Ammassalik area, and it is in good accordance with that of Kangerlussuaq, Tugtilik and the region south of Ammassalik Ø (DAHL et al., 1937; DANIELS, 1982; HANSEN, 2002, 2012, 2014, 2015a, b).

**List of species**

* Acarospora peliscypha Th.Fr. – on manured siliceous rocks; 6, 8; st. – A. peliscypha is widely distributed in Greenland (LYNGE, 1940; THOMSON, 1997).
Acarospora sinopica (Wahlenb.) Körb. – on siliceous rock rich in iron together with Rhizocarpon grande; 4; st.

Acarospora smaragdula (Wahlenb.) A.Massal. – on manured siliceous rocks together with Xanthoria elegans and Rhizocarpon geminatum; 1, 6; st.

Amandinea cacuminum (Th.Fr.) H.Mayrhofer & Sheard – on manured siliceous rocks together with Xanthoria candelaria; 1, 5; ap.

Amygdalaria panaeola (Ach.) Hertel & Brodo – on siliceous rocks; 4–9; ap.

Aspicilia aquatica Körb. – on moist siliceous rock; 7; ap.

Aspicilia mastoidea (Lynge) H.Olivier – on mosses together with Caloplaca ammonispori; 9; ap.

Aspicilia mastrucata (Wahlenb.) Th.Fr. – on siliceous rocks; 3, 5, 6, 9; ap.

Bellemerea alpina (Sommerf.) Clauzade & C.Roux – on siliceous rocks together with Rhizocarpon badioatrum; 3–9; ap.

Bellemerea cinereorufescens (Ach.) Clauzade & Cl.Roux – on siliceous rocks together with Umbilicaria deusta; 1, 4; ap.

Bellemerea subsorediza (Lynge) R.Sant. – on moist siliceous rocks; 6–9; st.

Biatora cuprea (Sommerf.) Fr. – on soil; 4, 6, 7, 9; ap.

Biatora vernalis (L.) Fr. – on plant remains including dead twigs; 1, 2, 4, 6, 7, 9; ap.

Bryonora castanea (Hepp) Poelt – on soil rich in humus; 1, 4–7, 9; ap.

Buellia papillata (Sommerf.) Tuck. – on soil rich in humus; 2, 4, 6, 7, 9; ap.

Caloplaca ammiospila (Wahlenb.) H.Olivier – on new mosses; 5; ap.

Caloplaca jungermanniicola (Vahl) Tuck. – on soil rich in humus; 2, 4, 6, 7, 9; ap.

Caloplaca lanosa (Ach.) Hafellner – on manured rocks; 1; ap.

Calvatimela armeniacata (DC.) Hafellner – on siliceous rock; 9; st.

Candelariella dispersa (Räsänen) Hakul. – on Placynthium asperellum on siliceous rocks; 7, 9; ap.

Cladonia borealis S.Stenroos – on soil; 3, 6, 9; st.

Cladonia cornuta (L.) Hoffm. – on soil; 1; st.

Cladonia crispata (Ach.) Flot. – on soil rich in humus; 3, 4; ap.

Cladonia fimбриata (L.) Fr. – on soil rich in humus; 4, 6; st.

Cladonia lutealba Wheldon & A.Wilson – on soil rich in humus; 2, st.

Cladonia macroceras (Delise) Hav. – on soil; 1, 2, 4, 6–9; ap.

Cladonia pocillum (Ach.) Grognot – on siliceous rocks; 5, 7; ap.

Cladonia stygia (Fr.) Ruoss – on soil together with Peligerag malacea; 3, 4, 9; st.

Cladonia sulphurina (Michx.) Fr. – on soil; 6; st.

Cladonia trassii Ahti – on soil; 1, 2, 4, 6–9; ap.

Diploschistes recurviuscens (Schreb.) Norman – on siliceous rocks; 5, 7; ap.

Ephebe hispidula (Ach.) Horw. – on moist siliceous rocks; 1, 8; st.

Euopsis pulvinata (Schaer.) Vain. – on siliceous rocks together with Lecanora polytropa; 1, 5, 6, 9; st.

Frutidella caesioatra (Schaer.) Kalb – on dead mosses and soil together with Biatora vernalis; 6, 7; ap.

Ionaspis suaveolens (Fr.) Th.Fr. ex Stein. – on moist siliceous rock together with Staurothele fissa; 5; ap.

Lecanora argopholis (Ach.) Ach. – on manured rocks; 1, 4–9; ap.

* Lecanora atromarginata (H.Magn.) Hertel & Rambold – on siliceous rocks; 6, 9; ap. – L. atromarginata has previously been reported from a few localities in North East Greenland (HANSEN et al., 2009).

Lecanora atrosulphurea (Wahlenb.) Ach. – on siliceous rock together with Protoparmelia badia and Rhizocarpon geminatum; 4; ap.

Lecanora contractula Nyl. – on siliceous rock; 5; ap.

Lecanora fuscescens (Sommerf.) Nyl. – on dead twig of Salix glauca; 1; ap.

Lecanora interjecta (Ach.) Ach. – on siliceous rocks; 1, 6, 9; ap.
Lecanora leptacina Sommerf. – on plant remains and mosses; 5, 7; ap.
Lecanora leucococca Sommerf. – on moist gneissic rocks together with Rhizocarpon badioatrum; 1, 2; ap.
Lecidea atrobrunnea (Ramond ex Lam. & DC.) Schaer. – on siliceous rocks; 2–4, 6, 8; st.
Lecidea auriculata Th.Fr. – on siliceous rocks; 4–6; ap.
Lecidea lapicida (Ach.) Ach. var. pantherina Ach. – on siliceous rocks; 4, 6, 9; st.
Lecidea tesselata Flörke – on siliceous rocks; 1, 3–5, 9; ap.
*Lecidella euphorea (Flörke) Hertel – on dead twigs together with Nephroma parile; 1; ap.
L. euphorea is widely distributed in West and East Greenland (THOMSON, 1997).
Lecidella wulfenii (Hepp) Körb. – on plant remains; 9; ap.
Lepraria vouauxii (Hue) R.C. Harris – on moist soil together with Protoparmelia pezizoides; 4, 9.
Lopadium coralloideum (Nyl.) Lynge – on plant remains together with Cladonia macrophyllodes; 5, 6, 9; ap.
Melanohalea elegantula (Zahlbr.) O.Blanco, A.Crespo, Divakar, Essl., D.Hawksw. & Lumbsch – on manured siliceous rock together with Physca dubia and Xanthoria candelaria; 5; st.
Miriquidica atrofulva (Sommerf.) A.J. Schwab & Rambold – on siliceous rocks; 1, 4–6, 8; ap.
Miriquidica leucophaea (Flörke ex Rabenh.) Herre – on manured siliceous rock together with Physca dubia and Xanthoria candelaria; 5; st.
*Miriquidica nigroleprosa (Vain.) Hertel & Rambold – on siliceous rocks; 4–8; st.
M. nigroleprosa is widely distributed in West Greenland, but is rare in East Greenland (HANSEN, 1983; KRISTINSSON et al., 2010).
Myxobilimbia lobulata (Sommerf.) Hafellner – on clayey soil; 4, 6, 7, 9; ap.
Nephroma parile (Ach.) Ach. – on dead twig; 1; ap.
Ochrolechia alaskana (Verseghy) Kukwa – on soil and plant remains; 1–9; ap.
Orphniospora moriopsis (A.Massal.) D.Hawksw. – on siliceous rock; 2; ap.
**Peltigera britannica (Gyeln.) Holt.-Hartw. & Tønsberg – among mosses on soil together with Cladonia macroceras; 7; ap. – P. britannica is a rare Greenland lichen known so far from the western and northern part of the island (KRISTINSSON et al., 2010).
Peltigera extenuata (Nyl. ex Vain.) Lojka – among mosses on soil; 1, 4, 6, 9; st.
Peltigera leucophebia (Nyl.) Gyeln. – on soil; 7, 9; ap.
Peltigera membranacea (Ach.) Nyl. – among mosses on soil; 1; st.
Peltigera polydactylon (Neck.) Hoffm. – among mosses on soil; 4; st.
Peltigera ponojensis Gyeln. – among mosses on soil; 9; st.
Pertusaria geminipara (Th.Fr.) C.Knight ex Brodo – on plant remains; 4, 6, 7, 9; st.
Phylliscum demangeonii (Moug. & Mont.) Nyl. – on siliceous rock; 9; ap.
Placynthiella uliginosa (Schrad.) Coppins & P.James – on peat and dead mosses; 5, 9; st.
Placynthium asperellum (Ach.) Trevis. – on siliceous rock; 7; st.
Placynthium pannariellum (Nyl.) H.Magn. – on moist siliceous rocks; 1, 4–6, 9; st.
Porpidia flavocaerulescens (Hornem.) Hertel & A.J. Schwab – on siliceous rocks; 4, 9; ap.
*Pseudephebe minuscula (Nyl. ex Arnold) Brodo & D.Hawksw. – on siliceous rocks; 4, 7; st.
Psoroma tenue Henssen var. boreale Henssen – among mosses on soil together with Rinodina mniareae; 1, 2, 4–9; ap.
Pyrenopsis furfuracea (Nyl.) Leight. – on clayey soil together with Myxobilimbia lobulata; 4, 6, 9; ap.
*Rhizocarpon atroflavescens Lynge – on siliceous rock; 9; ap. R. atroflavescens is a rare Greenland lichen (KRISTINSSON, 2010).
Rhizocarpon badioatrum (Flörke ex Spreng.) Th.Fr. – on moist gneissic rocks together with Umbilicaria deusta and V estergrenopsis isidiata; 1, 2, 5, 6, 8, 9; ap.
Rhizocarpon bolanderi (Tuck.) Herre – on manured siliceous rocks; 1; st.
Rhizocarpon copelandii (Körb.) Th.Fr. – on siliceous rocks; 1, 6, 7, 9; ap.
Rhizocarpon eupetraeum (Nyl.) Arnold – on siliceous rocks together with Lecanora polytropa; 2, 9; ap.
Rhizocarpon geminatum Körb. – on siliceous rocks together with Lecanora polytropa and Prototarmelia badia; 2, 4, 6, 7, 9; ap.
Rhizocarpon grande (Flörke) Arnold – on siliceous rocks together with Tremolecia atrata; 1, 4, 5, 7, 9; ap.
Rhizocarpon inarense (Vain.) Vain. – on siliceous rocks together with Pseudephebe minuscula; 4, 6, 9; ap.
Rhizocarpon jemtlandicum (Malme) Malme – on siliceous rocks; 4, 6, 7, 9; ap.
Rinodina archaea (Ach.) Arnold – on dead twigs; 1; ap.
** Rinodina egedeana (Lindsay) Alstrup & D.Hawksw. – on Peltigera malacea; 9; ap. R. egedeana has previously been reported from Central West Greenland (Alstrup & Hawksworth, 1990).
Rinodina mniaraea (Ach.) Körb. – on soil rich in humus; 6, 7, 9; ap.
Sporastatia polyspora (Nyl.) Grummann – on siliceous rocks; 1, 5, 6; ap.
Staurothele fissa (Taylor) Zwackh – on moist siliceous rocks; 1, 4, 5, 7, 9; pe.
Stereocaulon arcticum Lynge – on soil; 2, 4, 6, 7, 9; st.
Stereocaulon arenarium (L.I. Savicz) I.M. Lamb – on gravelly soil; 2–4, 6, 7, 9; st.
Stereocaulon botryosum Ach. – on siliceous rocks; 5, 6, 8, 9; st.
Stereocaulon glareosum (L.I. Savicz) H.Magn. – on soil; 2, 4, 6, 7, 9; ap.
Trapeliopsis granulosa (Hoffm.) Lumbsch – on soil rich in humus together with Cladonia macrophylla and C. sulphurina; 4, 6, 7; st.
Umbilicaria virginis Schaer. – on gneissic rocks; 2–4, 6, 7; ap.
Verrucaria ceuthocarpa Wahlenb. – on siliceous seashore rock together with Verrucaria erichsenii; 5; pe.
** Verrucaria erichsenii Zschaacke – on siliceous seashore rock; 5; pe. V. erichsenii is common in Central West Greenland (Thomson, 1997).
Verrucaria maura Wahlenb. – on siliceous seashore rocks; 1, 4, 6, 7; pe.
Verrucaria mucosa Wahlenb. – on siliceous seashore rock; 3; pe.
Vestergrenopsis isidiata (Degel.) E.Dahl – on moist gneissic rocks; 2, 7, 9; st.
Xanthoria sorediata (Vain.) Poelt – on manured siliceous rocks; 4, 9; st.

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PAPILDOMI DUOMENYS APIE PIETRYČIÛ GRENLANDIJOS KERPIŲ FLORĄ. IV. AMMASSALIK APYLINKĖS

Eric Steen Hansen

Santrauka

Straipsnyje pateikiamas 102 kerpių taksonų sąrašas iš Ammassalik vietovės pietrytinėje Grenlandijoje. Iš jų dvi rūšys – Rinodina egedeana ir Verrucaria erichsenii yra naujos rytinei Grenlandijai, o septynios pirmą kartą užregistruotos pietrytinėje salos dalyje: Acarospora peliscypha, Caloplaca magni-filii, Lecanora atromarginata, Lecidella euphorea, Miriquidica nigroleprosa, Peltigera britannica ir Rhizocarpon atroflavescens.