

The lichen flora of Kuhn Ø and Blåbærdalen, easternmost Th. Thomsen Land, North East Greenland

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Abstract – This paper lists 113 taxa of lichens from Kuhn Ø and Blåbærdalen in North East Greenland. All taxa (totally 59) reported from Kuhn Ø are new to this island, and all species (totally 85) reported from Blåbærdalen are new to this locality. *Arctoparmelia separata* is an addition to the known lichen flora of East Greenland. 26 entries represent northern range extensions in East Greenland. Notes on the distribution of the collected lichens are given.

Lichen flora / Kuhn Ø / Blåbærdalen / Th. Thomsen Land / Greenland

INTRODUCTION

During two Norwegian expeditions in 1929 and 1930 the extensive coastal area between Scoresby Land (c. 72°N) and Wollaston Forland (c. 74°N) was investigated lichenologically. The macrolichens were published by Lyngé & Scholander (1932) and the microlichens by Lyngé (1940). Totally the collections indicate a very rich lichen flora. In 1995 Vagn Alstrup, Fred Daniels and the author collected more than 400 taxa of lichens in Kronprins Christian Land (c. 80°N) (Alstrup *et al.*, 2000). Accordingly there are obvious reasons to assume that the lichen flora of the coastal area between Wollaston Forland and Lambert Land (c. 79°N) are fairly rich in species. Although very few lichenological studies have been performed in this region, the assumption appears to be confirmed to some extent by two independent investigations carried out by the British physician, Roderich Corner, and the author. Corner collected lichens on Kuhn Ø in 1990 during a British expedition, while the author made lichen collections two years before in Blåbærdalen situated on the other side of Fligely Fjord just opposite to Kuhn Ø. Corner kindly handed his collections over to the author for determination. As the two collections supplement each other quite well, it was decided to combine the results in the present paper, which accordingly deals with 113 taxa of lichens. Future collecting work in large land areas such as, for example, Hochstetter Forland, the Dove Bugt area and Germania Land will undoubtedly reveal a far richer lichen flora in the region between 74°N and 80°N in North East Greenland.

MATERIAL AND METHODS

Study area

Kuhn Ø is located at c. 75°N in Hochstetterbugten just north of Wollaston Forland. The island is separated from Th. Thomsen Land by the c. 4 km broad Fligely Fjord (Fig. 1). Kuhn Ø is c. 40 km long and mountainous with numerous watercourses cutting the coastal lowland areas. The maximum altitude of the mountains is about 1100 m a. s. l. Bastian Bugt cuts into the coastline on the northeastern side of the island. Blåbærdalen is a c. 10 km long valley almost perpendicular to the coast of Th. Thomsen Land.

The investigation area is situated in the East Greenland Caledonian fold belt. Gneissic rocks belonging to the Grandjean Fjord metamorphic complex dominate in the surroundings of Blåbærdalen and in the central part of Kuhn Ø (Escher & Stuart Watt, 1976). The bedrock in the northeastern part of Kuhn Ø north of Bastian Bugt is composed of granite, while post-Devonian deposits occupy the eastern and western sides of Kuhn Ø. Floristically, the area is medium arctic, continental (Jensen, 1999). Mixed snow-patch-like dwarf shrub heaths with *Cassiope tetragona* and *Salix arctica* and more dry heaths dominated by *Dryas* or *Carex rupestris* and *Carex nardina* occur commonly in the investigation area. Like the fell-fields with fewer phanorogams these heath types are fairly rich in lichens contrary to the marshes and the proper snow-patches. More or less nitrophilous lichen communities alternate with more indifferent saxicolous communities. Climatically, the region is situated in the medium arctic, continental zone. Meteorological observations from Daneborg (74°18'N, 20°13'W) show an annual mean temperature of c. -10°C. The mean temperature of the warmest month, July, is +4°C, while the mean temperature of the coldest month, February, is c. -24°C. The annual precipitation is c. 210 mm, most of it falling as snow (Jakobsen, 1992; Hansen, 1996).

Collection and Identification

Collection of lichens was carried out at numerous sample plots in Blåbærdalen and on Kuhn Ø. The collected material, a total of 182 lichen specimens, was studied with Zeiss light microscopes and determined/checked by the author. An asterisk (*) in front of the name in the list of lichens indicates that the collection represents a northern range extension of the taxon in East Greenland. The specimens are deposited at the Botanical Museum, University of Copenhagen (C). Collections, which have been distributed from herb. C as part of "Lichenes Groenlandici Exsiccati" (LGE), are stated by their exsiccate numbers. The nomenclature in the list follows Santesson *et al.* (2004).

LIST OF LICHENS

* *Acarospora sinopica* (Wahlenb.) Körb. – I: Blåbærdalen, 74°49'N, 20°45'W, on siliceous rock with patches of limonite together with *Acarospora smaragdula*, *Placynthium asperellum* and *Tremolecia atrata*, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

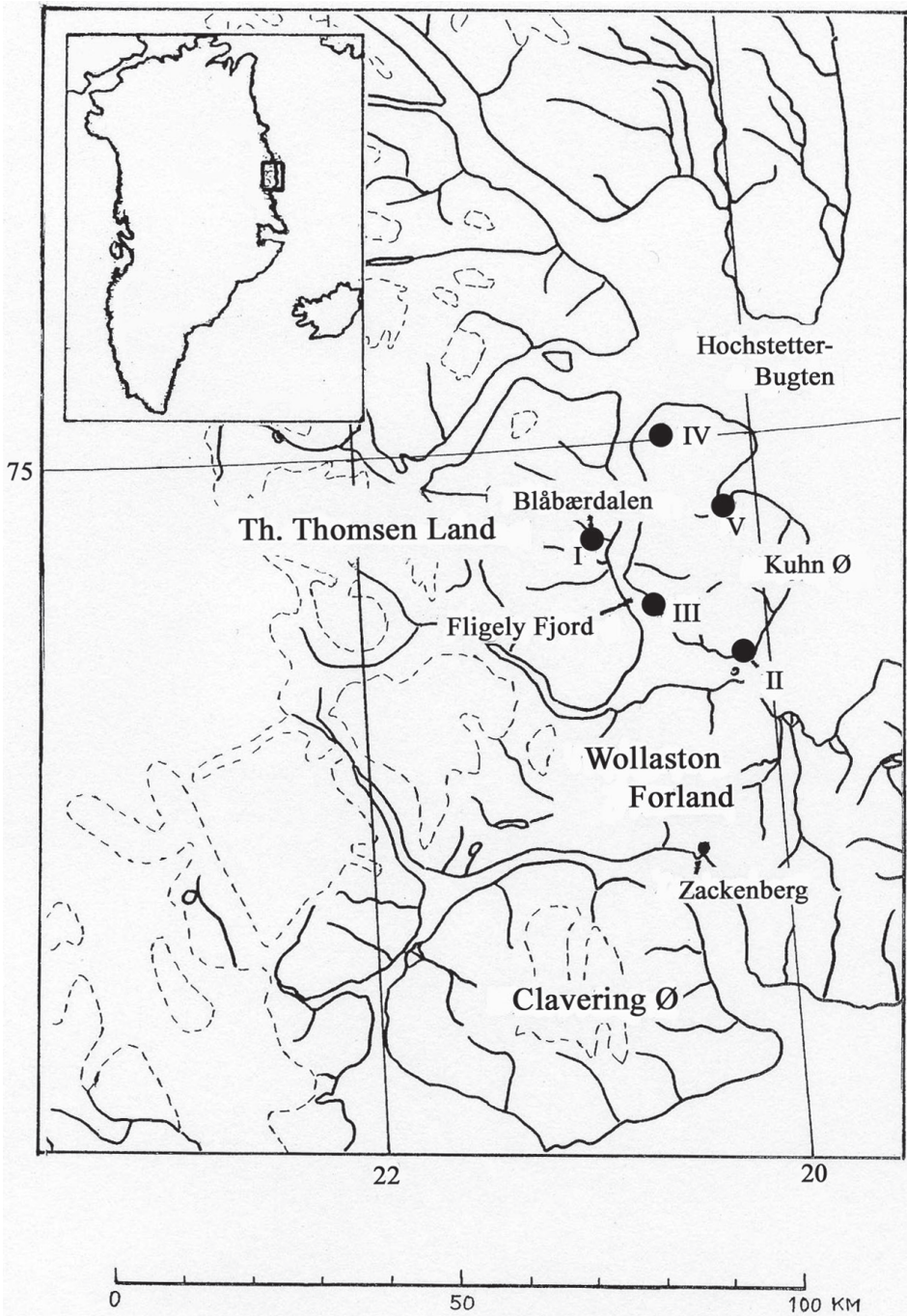


Fig. 1. Location of the investigation area in North East Greenland. I: Blåbærdalen. II: Southern end of Kuhn Ø. III: West side of Kuhn Ø. IV: Northwestern part of Kuhn Ø. V: South side of Bastian Bugt. The inlay map of Greenland shows the position of the Kuhn Ø area.

Acarospora smaragdula (Wahlenb.) A. Massal. – I: Blåbærdalen, 74°49'N, 20°45'W, on limonite crust on siliceous rock, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Alectoria nigricans (Ach.) Nyl. – I: Blåbærdalen, 74°49'N, 20°45'W, on soil in *Cassiope tetragona* heath, E. Hansen 28 July 1988; II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mould together with *Cetraria muricata*, *Flavocetraria nivalis* and *Thamnolia vermicularis*, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°47'N, 20°32'W, on soil on rock, R. Corner 8 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on mosses on N.-exposed rock together with *Sphaerophorus fragilis*, R. Corner 21 August 1990. A common, bi- and circumpolar, terricolous lichen (Hansen, 1995).

* *Allantoparmelia alpicola* (Th. Fr.) Essl. – IV: Mountain in northwestern part of Kuhn Ø, 75°02'N, 20°24'W, alt. 600 m, on rock in boulder field together with *Pseudephebe minuscula* and *Umbilicaria virginis*, R. Corner 25 August 1990; V: South side of Bastian Bugt, 74°54'W, 20°09'W, on rock together with *Pseudephebe minuscula*, R. Corner 22 August 1990. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Amandinea punctata (Hoffm.) Coppins & Scheid. – I: Blåbærdalen, 74°49'N, 20°45'W, on old musk ox dung together with *Caloplaca tirolensis*, E. Hansen 28 July 1988. A widespread, bi- and circumpolar lichen with a wide substrate specificity (Thomson, 1997).

Arctoparmelia separata (Th. Fr.) Hale – I: Blåbærdalen, 74°48'N, 20°49'W, alt. c. 400 m, on plant remains on rock on stony plateau together with *Melanelia hepatizon*, R. Corner 29 August 1990; IV: North West side of Kuhn Ø, 75°00'N, 20°34'W, on stone on raised beach together with *Pseudephebe minuscula* and *Umbilicaria hyperborea*, R. Corner 25 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on *Racomitrium lanuginosum* on siliceous stone on N.-exposed rocky slope together with *Pseudephebe minuscula* and *Rhizocarpon jemtlandicum*, R. Corner 21 August 1990. A widespread, circumpolar, muscicolous and saxicolous lichen (Thomson, 1984; Hansen, 2002). The species is new to East Greenland. It has previously been reported as new to West Greenland (Hansen, 2000, 2002).

Arthrorhaphis alpina (Schaer.) R. Sant. – I: Blåbærdalen, 74°49'N, 20°45'W, on soil, E. Hansen 28 July 1988. A widespread, bipolar, terricolous lichen (Nimis, 1993).

Arthrorhaphis citrinella (Ach.) Poelt – V: South side of Bastian Bugt, 74°54'N, 20°09'W, on soil on N. exposed rocky slope together with *Alectoria nigricans*, R. Corner 22 August 1990. A widespread, bipolar, terricolous lichen (Hansen, 1995). Contrary to *Arthrorhaphis alpina* the thallus of *A. citrinella* lacks Ca-oxalate crystals (Hansen & Obermayer, 1999).

Baeomyces carneus Flörke – I: Blåbærdalen, 74°49'N, 20°45'W, on soil and plant remains, E. Hansen 28 July & 30 July 1988. A widespread, bi- and circumpolar, terricolous lichen (Thomson, 1984; Andreev *et al.*, 1996). Thallus reacts K + red because of content of norstictic acid.

Baeomyces rufus (Huds.) Rebut. – I: Blåbærdalen, 74°49'N, 20°45'W, on soil, E. Hansen 30 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995). Thallus reacts K + yellow (stictic acid).

Bryoria chalybeiformis (L.) Brodo & D. Hawksw. – III: West side of Kuhn Ø, 74°47'N, 20°33'W, on soil in coastal heath, R. Corner 8 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on soil on N. –exposed rock together with *Alectoria nigricans*, R. Corner 21 August 1990. An arctic-alpine, bi- and circumpolar lichen (Thomson, 1984).

Buellia papillata (Sommerf.) Tuck. – III: West side of Kuhn Ø, 74°48'N, 20°35'W, on mosses and plant remains in coastal heath together with *Sphaerophorus globosus*, R. Corner 8 August 1990 & 74°51'N, 20°32'W, alt. 300 m, on mosses on sandstone cliff, R. Corner 27 August 1990. A widespread, bi- and circumpolar, terricolous and muscicolous lichen.

Caloplaca castellana (Räsänen) Poelt – I: Blåbærdalen, 74°49'N, 20°45'W, on *Placynthium asperellum* on rock, E. Hansen 30 July 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 1995).

Caloplaca cerina (Ehrh. ex Hedw.) Th. Fr. – I: Blåbærdalen, 74°49'N, 20°45'W, on plant remains together with *Caloplaca tirolensis* and *Rinodina turfacea*; E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Caloplaca jungermanniae (Vahl) Th. Fr. – I: Blåbærdalen, 74°49'N, 20°45'W, on mosses and plant remains together with *Caloplaca tirolensis*, *Flavocetraria nivalis* and *Physconia muscigena*, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous and muscicolous lichen (Hansen, 1995).

* ***Caloplaca psoricida*** E. S. Hansen, Poelt & Søchting – I: Blåbærdalen, 74°49'N, 20°45'W, on *Psora rubiformis* on mineral soil together with *Candelariella placodizans* and *Lecanora geophila*, E. Hansen 28 July & 30 July 1988. A scattered, endemic, parasitic lichen known so far from Qeqertarsuaq, Upernavik and Qaanaaq in West Greenland and Ittoqqortoormiut and Blåbærdalen in East Greenland (Hansen *et al.*, 1987; Hansen, 2007). LGE 343 (*Psora rubiformis*).

Caloplaca tetraspora (Nyl.) H. Olivier – I: Blåbærdalen, 74°49'N, 20°45'W, on mosses and plant remains, E. Hansen 28 July & 30 July 1988. An arctic-alpine, bi- and circumpolar, muscicolous lichen (Hansen, 1995).

Caloplaca tirolensis Zahlbr. – I: Blåbærdalen, 74°49'N, 20°45'W, on soil, mosses and plant remains, E. Hansen 28 July & 30 July 1988; III: West side of Kuhn Ø, 74°38'N, 20°35'W, on bark of *Salix arctica* together with *Lecanora fuscescens*, R. Corner 17 August 1990 & 74°51'N, 20°32'W, alt. 300 m, on mosses on dry agglomerate crag together with *Physconia muscigena*, R. Corner 27 August 1990. An arctic-alpine, bi- and circumpolar, terricolous lichen (Hansen, 1995).

* ***Candelariella placodizans*** (Nyl.) H. Magn. – I: Blåbærdalen, 74°49'N, 20°49'W, on mineral soil, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995). LGE 344.

Candelariella vitellina (Hoffm.) Müll. Arg. – I: Blåbærdalen, 74°49'N, 20°49'W, on siliceous rocks together with *Rhizocarpon geminatum*, E. Hansen 28 July & 30 July 1988. A common, saxicolous lichen with a worldwide distribution (Hansen, 1995).

* ***Candelariella xanthostigma*** (Ach.) Lettau – I: Blåbærdalen, 74°49'N, 20°49'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°51'N, 20°32'W, alt. 300 m, on mosses on crag, R. Corner 27 August 1990. A widespread, bi- and circumpolar, terricolous lichen.

Cetraria islandica (L.) Ach. – I: Blåbærdalen, 74°49'N, 20°49'W, on soil, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°46'N, 20°30'W, on soil in coastal heath, R. Corner 10 August 1990 & 74°47'N, 20°33'W, among mosses on soil, R. Corner 8 August 1990 & 74°48'N, 20°37'W, on soil in *Cassiope tetragona* heath, R. Corner 17 August 1990 & 74°51'N, 20°34'W, on soil together with *Cetrariella delisei*, R. Corner 7 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on soil on N. – exposed slope, R. Corner 21 August 1990. A common, widespread, terricolous lichen.

Cetraria muricata (Ach.) Eckfeldt – I: Blåbærdalen, 74°49'N, 20°49'W, on soil, E. Hansen 28 July 1988; II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990. A widespread, circumpolar, terricolous lichen.

Cetrariella delisei (Bory ex Schaer.) Kärnefelt & Thell – I: Blåbærdalen, 74°49'N, 20°49'W, on soil in *Cassiope tetragona* heath together with *Flavocetraria cucullata*, E. Hansen 28 July 1988; II: South side of Kuhn Ø, 74°42'N, 20°13'W, on soil, R. Corner 13 August 1990 & 74°43'N, 20°12'W, on soil on coastal rocks together with *Vulpicida tilesii*, R. Corner 13 August 1990; III: West side of Kuhn Ø, 74°49'N, 20°33'W, on soil on rock together with *Diploschistes muscorum*, R. Corner 5 August 1990 & 74°49'N, 20°37'W, on soil in coastal heath together with *Sphaerophorus globosus*, R. Corner 4 August 1990 & 74°50'N, 20°37'W, on soil in coastal tundra, R. Corner 6 August 1990. A common, circumpolar, terricolous lichen.

* *Cladonia amaurocraea* (Flörke) Schaer. – II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°50'N, 20°37'W, on soil in coastal *Cassiope-Salix arctica* heath, R. Corner 19 August 1990. A common, circumpolar, terricolous lichen.

Cladonia borealis S. Stenroos – II: Southern end of Kuhn Ø, 74°45'N, 20°23'W, alt. 300 m, among mosses on soil on S. – exposed slope, R. Corner 9 August 1990; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on soil in coastal tundra together with *Cladonia chlorophaea* and *Psoroma tenue*, R. Corner 8 August 1990; IV: Northwestern end of Kuhn Ø, 75°02'N, 20°24'W, alt. 300 m, on mineral soil, R. Corner 25 August 1990. A common and widespread, circumpolar, terricolous lichen.

* *Cladonia cenotea* (Ach.) Schaer. – III: West side of Kuhn Ø, 74°47'N, 20°33'W, on soil rich in humus in coastal heath together with *Cladonia pyxidata* and *Peltigera leucophlebia*, R. Corner 8 August 1990. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

* *Cladonia chlorophaea* (Flörke ex Sommerf.) Spreng. – III: West side of Kuhn Ø, 74°48'N, 20°35'W, on soil in coastal tundra, R. Corner 8 August 1990. A common, cosmopolitan, terricolous lichen (Hansen, 1995).

* *Cladonia ecmocyna* Leight. – I: Blåbærdalen, 74°49'N, 20°49'W, on soil together with *Flavocetraria cucullata* and *F. nivalis*, E. Hansen 30 July 1988. A common, circumpolar, terricolous lichen.

* *Cladonia luteoalba* Wheldon & A. Wilson – III: West side of Kuhn Ø, 74°49'N, 20°37'W, among mosses on soil, R. Corner 4 August 1990. A widespread, bi- and circumpolar, terricolous lichen (Hansen, 1995).

* *Cladonia mitis* Sandst. – I: Blåbærdalen, 74°49'N, 20°49'W, on soil in *Cassiope* heath, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on soil in coastal heath, R. Corner 17 August 1990 & 74°49'N, 20°35'W, alt. 100 m, among mosses in *Cassiope* heath, R. Corner 5 August 1990; IV: South side of Kuhn Ø, 74°42'N, 20°13'W, on soil on coastal rocks, R. Corner 13 August 1990. A common and widespread, circumpolar, terricolous lichen.

* *Cladonia phyllophora* Hoffm. – II: South side of Kuhn Ø, 74°43'N, 20°12'W, on soil on coastal rocks, R. Corner 13 August 1990. A widespread, circumpolar, terricolous lichen.

* *Cladonia pleurota* (Flörke) Schaer. – V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on soil rich in humus on N. – exposed rocky slope together with *Cladonia sulphurina*, R. Corner 21 August 1990. A widespread, circumpolar, terricolous lichen (Thomson, 1984).

Cladonia pocillum (Ach.) Grognot – I: Blåbærdalen, 74°49'N, 20°49'W, on soil rich in humus, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on soil in coastal heath, R. Corner 17 August 1990. A widespread, circumpolar, terricolous lichen. LGE 346.

* *Cladonia pyxidata* (L.) Hoffm. – I: Blåbærdalen, 74°49'N, 20°49'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°47'N, 20°33'W, on soil rich in humus in coastal heath, R. Corner 8 August 1990 & 74°52'N, 20°34'W, on mosses and plant remains in coastal heath together with *Psoroma tenue*, R. Corner 20 August 1990. A common and widespread, circumpolar, terricolous lichen.

* *Cladonia sulphurina* (Michx.) Fr. – V: South side of Bastian Bugt, 74°54'N, 20°09'W, among mosses on soil on rocky slope, R. Corner 21 August 1990. A common, circumpolar, terricolous lichen.

* *Cladonia trassii* Ahti – I: Blåbærdalen, 74°49'N, 20°49'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°49'N, 20°37'W, on soil in coastal tundra together with *Psoroma tenue* and *Sphaerophorus globosus*, R. Corner 4 August 1990 & 74°52'N, 20°34'W, among mosses in coastal *Cassiope* heath, R. Corner 20 August 1990. A widespread, circumpolar, terricolous lichen.

Collema substellatum H. Magn. – III: West side of Kuhn Ø, 74°51'N, 20°32'W, alt. 300 m, on mineral soil on sandstone cliff together with *Fulgensia bracteata*, R. Corner 27 August 1990. A disjunct, terricolous lichen (Hansen, 1993, 2008). The present collection represents a southern range extension of the taxon in Greenland.

Diploschistes muscorum (Scop.) R. Sant. – I: Blåbærdalen, 74°49'N, 20°49'W, on soil rich in humus, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°49'N, 20°33'W, on soil on rock together with *Cetrariella delisei*, R. Corner 5 August 1990. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Flavocetraria cucullata (Bellardi) Kärnefelt & Thell – I: Blåbærdalen, 74°49'N, 20°49'W, on soil rich in humus in *Cassiope* heath together with *Cetrariella delisei* and *Cladonia ecmocyna*, E. Hansen 28 July & 30 July 1988. A common and widespread, circumpolar, terricolous lichen.

Flavocetraria nivalis (L.) Kärnefelt & Thell – I: Blåbærdalen, 74°49'N, 20°49'W, on soil rich in humus, E. Hansen 28 July & 30 July 1988; II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on dry mound, R. Corner 12 August 1990; V: South side of

Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on mosses, R. Corner 21 August 1990. A common and widespread, terricolous lichen.

Fulgensia bracteata (Hoffm.) Räsänen – I: Blåbærdalen, 74°49'N, 20°49'W, on mosses and soil, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°51'N, 20°32'W, alt. 300 m, on mineral soil, R. Corner 27 August 1990. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Fuscopannaria praetermissa (Nyl.) P. M. Jørg. – III: West side of Kuhn Ø, 74°51'N, 20°32'W, alt. 300 m, on soil on sandstone cliff, R. Corner 27 August 1990. A widespread, circumpolar, terricolous lichen (Hansen, 2000).

Lecanora epibryon (Ach.) Ach. – I: Blåbærdalen, 74°49'N, 20°49'W, on soil rich in humus, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 2000).

Lecanora fuscescens (Sommerf.) Nyl. – III: West side of Kuhn Ø, 74°48'N, 20°35'W, on bark of *Salix arctica*, R. Corner 17 August 1990. A widespread, circumpolar, corticolous lichen (Thomson, 1997).

Lecanora geophila (Th. Fr.) Poelt – I: Blåbærdalen, 74°49'N, 20°49'W, on soil, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, among mosses on mineral soil in coastal heath, R. Corner 8 August 1990. A somewhat scattered, circumpolar, terricolous lichen (Hansen, 1995). LGE 345.

Lecanora luteovernalis Brodo – I: Blåbærdalen, 74°49'N, 20°49'W, on plant remains and mosses, E. Hansen 28 July & 30 July 1988. A scattered, terricolous lichen so far known from North America, Greenland and Svalbard (Hansen, 1995; Thomson, 1997).

Lecanora polytropa (Ehrh. ex Hoffm.) Rabenh. – I: Blåbærdalen, 74°49'N, 20°49'W, on siliceous rock, E. Hansen 28 July 1988. A common, bi- and circumpolar, saxicolous lichen.

Lecidea lapicida (Ach.) Ach. var. *lapicida* f. *ochracea* (Nyl.) Vain. – I: Blåbærdalen, 74°49'N, 20°49'W, on siliceous rock, E. Hansen 1 August 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Lecidella wulfenii (Hepp) Körb. – III: West side of Kuhn Ø, 74°48'N, 20°35'W, on bark of *Salix arctica* in coastal tundra, R. Corner 17 August 1990. A widespread, circumpolar lichen with a rather wide substrate specificity (Thomson, 1997).

* *Lecidoma demissum* (Rutstr.) Gotth. Schneid. & Hertel – I: Blåbærdalen, 74°49'N, 20°49'W, on mineral soil, E. Hansen 28 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Lepraria eburnea J. R. Laundon – I: Blåbærdalen, 74°49'N, 20°49'W, on soil, E. Hansen 28 July 1988. A widespread, terricolous lichen (Tønsberg, 1992; Saag et al., 2007).

Lepraria gelida Tønsberg & Zhurb. – I: Blåbærdalen, 74°48'N, 20°35'W, on soil and mosses, E. Hansen 30 July 1988. A somewhat scattered, terricolous lichen known so far from Greenland, the Russian Arctic and Svalbard (Tønsberg & Zhurbenko, 2006; Saag et al., 2007).

* *Melanelia hepatizon* (Ach.) Thell – I: Blåbærdalen, 74°48'N, 20°35'W, among mosses on rock, E. Hansen 30 July 1988 & 74°48'N, 20°49'W, alt. c. 400 m, on mosses on rock on stony plateau, R. Corner 29 August 1990; III: West side of

Kuhn Ø, 74°52'N, 20°30'W, alt. 500 m, among mosses on rock, R. Corner 7 August 1990. A widespread, circumpolar, saxicolous lichen (Hansen, 1995). LGE 350.

Melanelia infumata (Nyl.) Essl. – I: Blåbærdalen, 74°48'N, 20°35'W, on stone manured by birds together with *Miriquidica garovaglii* and *Physcia dubia*, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Miriquidica garovaglii (Schaer.) Hertel & Rambold – I: Blåbærdalen, 74°48'N, 20°35'W, on stone manured by birds, E. Hansen 30 July 1988. An arctic-alpine, circumpolar, saxicolous lichen (Thomson, 1997).

* *Nephroma expallidum* (Nyl.) Nyl. – III: West side of Kuhn Ø, 74°50'N, 20°37'W, among mosses on soil in coastal heath, R. Corner 19 August 1990 & 74°52'N, 20°34'W, among mosses on soil in coastal *Cassiope-Salix arctica* heath, R. Corner 20 August 1990. A widespread, circumpolar, terricolous lichen. The species is rare in East Greenland (Hansen, 1995).

Ochrolechia frigida (Sw.) Lyngé – II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on plant remains in coastal *Cassiope* heath, R. Corner 17 August 1990 & 74°49'N, 20°37'W, on soil in coastal heath together with *Protopannaria pezizoides* and *Solorina crocea*, R. Corner 4 August 1990. A common and widespread, terricolous lichen.

* *Ochrolechia lapuënsis* (Vain.) Räsänen – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on mosses on soil rich in humus in coastal heath, R. Corner 17 August 1990. A widespread, probably circumpolar, terricolous lichen (Hansen, 2002, 2005).

Ochrolechia upsaliensis (L.) A. Massal. – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

* *Ophioparma ventosa* (L.) Norman – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 30 July 1988; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on N. – exposed rock, R. Corner 21 August 1990. A widespread, circumpolar, saxicolous lichen.

Peltigera didactyla (With.) J. R. Laundon – I: Blåbærdalen, 74°48'N, 20°35'W, on mosses, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on mosses in coastal tundra together with *Psoroma tenue*, R. Corner 17 August 1990 & 74°50'N, 20°37'W, on dead branch of *Salix* in coastal *Cassiope-Salix arctica* heath together with *Rinodina archaea*, R. Corner 19 August 1990. A common and widespread, terricolous lichen.

Peltigera lepidophora (Nyl. ex Vain.) Bitter – I: Blåbærdalen, 74°48'N, 20°35'W, on alkaline soil together with *Solorina bispora*, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Peltigera leucophlebia (Nyl.) Gyeln. – I: Blåbærdalen, 74°48'N, 20°35'W, among mosses in *Cassiope* heath, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°51'N, 20°29'W, alt. 600 m, on mosses on wet flushed slope, R. Corner 6 August 1990. A widespread, terricolous lichen.

Peltigera rufescens (Weiss) Humb. – I: Blåbærdalen, 74°48'N, 20°35'W, among mosses, E. Hansen 30 July 1988. A common and widespread, terricolous lichen.

Pertusaria coriacea (Th. Fr.) Th. Fr. – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Pertusaria oculata (Dicks.) Th. Fr. – V: South side of Bastian Bugt, 74°54'N, 20°09'W, on soil on N. – exposed rocky slope together with *Alectoria nigricans*, R. Corner 22 August 1990. An arctic-alpine, circumpolar lichen with a distinct preference for snow-patches (Hansen, 1995).

Physcia caesia (Hoffm.) Fürnr. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 30 July 1988. A widespread, saxicolous lichen.

Physcia dubia (Hoffm.) Lettau – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock manured by birds together with *Melanelia infumata*, *Rhizocarpon geminatum* and *Xanthoria elegans*, E. Hansen 30 July 1988. A widespread, saxicolous lichen.

Physconia muscigena (Ach.) Poelt – I: Blåbærdalen, 74°48'N, 20°35'W, on soil and mosses, E. Hansen 28 July & 30 July 1988; III: West side of Kuhn Ø, 74°51'N, 20°32'W, alt. 300 m, on dry agglomerate crag, R. Corner 27 August 1990. A circumpolar, terricolous and saxicolous lichen.

Placidiopsis pseudocinerea Breuss – I: Blåbærdalen, 74°48'N, 20°35'W, on soil, E. Hansen 30 July 1988. A rare, disjunct, terricolous lichen (Breuss & Hansen, 1988; Thomson, 1997). The collection was identified by Othmar Breuss.

Placynthium asperellum (Ach.) Trevis. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen.

Pleopsidium chlorophanum (Wahlenb.) Zopf – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock, E. Hansen 1 August 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 2008).

* *Polychidium muscicola* (Sw.) Gray – III: West side of Kuhn Ø, 74°50'N, 20°33'W, on mosses on soil near watercourse, R. Corner 6 August 1990 & 74°52'N, 20°30'W, alt. c. 500 m, on mosses on rock, R. Corner 7 August 1990. A widespread, circumpolar, terricolous lichen (Andreev *et al.*, 1996; Thomson, 1997).

Porpidia melinodes (Körb.) Gowan & Ahti – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous stone in glacial stream, E. Hansen 31 Juli 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995). LGE 351.

Protopannaria pezizoides (Weber) P. M. Jørg. & S. Ekman – III: West side of Kuhn Ø, on soil in coastal heath together with *Ochrolechia frigida* and *Solorina crocea*, R. Corner 4 August 1990. A widespread, circumpolar, terricolous lichen (Hansen, 1995).

Protoparmelia badia (Hoffm.) Hafellner – I: Blåbærdalen, 74°48'N, 20°35'W, on rock manured by birds, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Protoblastenia rupestris (Scop.) J. Steiner – I: Blåbærdalen, 74°49'N, 20°45'W, on sandstone, E. Hansen 3 August 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995). LGE 352.

Pseudephebe minuscula (Nyl. ex Arnold) Brodo & D. Hawksw. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rocks together with, for example, *Rhizocarpon geographicum*, *Sporastatia testudinea* and *Umbilicaria hyperborea*, E. Hansen 28 July, 30 July & 1 August 1988; IV: North West side of Kuhn Ø, 75°00'N, 20°34'W, on stone on raised beach, R. Corner 25 August 1990; Mountain in northwestern part of Kuhn Ø, 75°02'N 20°24'W, alt. 600 m, on rock in boulder field, R. Corner 25 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, on N. – exposed, siliceous rocks, R. Corner 21 August & 22 August 1990. A common, bi- and circumpolar, saxicolous lichen.

Pseudephebe pubescens (L.) M. Choisy – II: Southern end of Kuhn Ø, 74°42'N, 20°13'W, on coastal rock, R. Corner 13 August 1990. A common, bi- and circumpolar, saxicolous lichen.

Psora decipiens (Hedw.) Hoffm. – I: Blåbærdalen, 74°48'N, 20°35'W, on alkaline soil together with *Rinodina mniaraea*, E. Hansen 30 July 1988. A widespread, circumpolar, terricolous lichen.

Psora rubiformis (Ach.) Hook. – I: Blåbærdalen, 74°48'N, 20°35'W, on soil, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, terricolous lichen. LGE 343.

Psoroma tenue Henssen – III: West side of Kuhn Ø, 74°47'N, 20°33'W, on mosses in coastal heath, R. Corner 8 August 1990 & 74°49'N, 20°37'W, on mosses in coastal tundra, R. Corner 4 August 1990 & 74°52'N, 20°34'W, on mosses and plant remains in coastal heath, R. Corner 20 August 1990. An arctic-alpine and boreal, circumpolar, terricolous lichen (Hansen, 2008).

Rhizocarpon geminatum Körb. – I: Blåbærdalen, 74°48'N, 20°35'W, on rocks manured by birds together with, for example, *Physcia dubia* and *Xanthoria elegans*, E. Hansen 28 July & 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Rhizocarpon geographicum (L.) DC. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock, E. Hansen 28 July 1988. A common and widespread, saxicolous lichen. LGE 362.

Rhizocarpon jemtlandicum (Malme) Malme – V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on N. – exposed, siliceous rock, R. Corner 21 August 1990. An arctic and boreal, circumpolar, saxicolous lichen.

Rhizocarpon pusillum Runemark – I: Blåbærdalen, 74°48'N, 20°35'W, parasitic on *Sporastatia testudinea* on siliceous rocks, E. Hansen 30 July & 1 August 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 1995).

Rhizocarpon superficiale (Schaer.) Vain. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock together with *Pseudephebe minuscula*, E. Hansen 1 August 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 1995).

Rhizoplaca melanophthalma (DC.) Leuckert & Poelt – I: Blåbærdalen, 74°48'N, 20°35'W, on rock manured by birds, E. Hansen 30 July 1988. A widespread, circumpolar, saxicolous lichen (Hansen, 2008). LGE 363.

* ***Rinodina archaea*** (Ach.) Arnold – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on bark of *Salix arctica*, R. Corner 17 August 1990 & 74°50'N, 20°37'W, on bark of *Salix arctica*, R. Corner 20 August 1990. A widespread, circumpolar, corticolous and terricolous lichen (Thomson, 1997).

Rinodina mniaraea (Ach.) Körb. – I: Blåbærdalen, 74°48'N, 20°35'W, on mineral soil together with *Caloplaca tirolensis*, E. Hansen 28 July 1988. A common, circumpolar, terricolous lichen.

Rinodina olivaceobrunnea C. W. Dodge & G. E. Baker – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988. A somewhat scattered, bi- and circumpolar, parasiticolous and terricolous lichen (Nimis, 1993).

Rinodina roscida (Sommerf.) Arnold – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July & 30 July 1988. An arctic-alpine, circumpolar, terricolous lichen (Thomson, 1997).

Rinodina turfacea (Wahlenb.) Körb. – I: Blåbærdalen, 74°48'N, 20°35'W, on plant remains, E. Hansen 28 July 1988; III: West side of Kuhn Ø, 74°48'N, 20°35'W, on mosses and plant remains in coastal tundra, R. Corner 17 August 1990. An arctic-alpine, circumpolar, terricolous lichen.

Solorina bispora Nyl. – I: Blåbærdalen, 74°48'N, 20°35'W, on soil, E. Hansen 28 July & 30 July 1988; II: Southern end of Kuhn Ø, 74°44'N, 20°22'W, among mosses on soil on S. – exposed cliff, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°50'N, 20°33'W, among mosses on soil on sheltered bank in mire, R. Corner 6 August 1990. A widespread, circumpolar, terricolous lichen.

Solorina crocea (L.) Ach. – I: Blåbærdalen, 74°48'N, 20°35'W, on soil and mosses, E. Hansen 1 August 1988; III: West side of Kuhn Ø, 74°49'N, 20°37'W, among mosses on soil in coastal heath, R. Corner 4 August 1990. A common, circumpolar snow-patch-lichen.

* ***Solorina octospora*** Arnold – I: Blåbærdalen, 74°48'N, 20°35'W, on soil and mosses, E. Hansen 28 July & 30 July 1988. A circumpolar, terricolous lichen, which is relatively common in Central East Greenland, but otherwise somewhat scattered (Thomson, 1984; Hansen, 1995).

Sphaerophorus fragilis (L.) Pers. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 30 July 1988; II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°50'N, 20°36'W, on gravelly soil in coastal heath together with *Sphaerophorus globosus*, R. Corner 6 August 1990; IV: North West side of Kuhn Ø, 75°00'N, 20°21'W, on soil on talus slope, R. Corner 25 August 1990; V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, among mosses on N. – exposed rock, R. Corner 21 August 1990. A widespread, saxicolous lichen.

Sphaerophorus globosus (Huds.) Vain. – II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990; III: West side of Kuhn Ø, 74°47'N, 20°33'W, among mosses on soil rich in humus in coastal heath, R. Corner 8 August 1990 & 74°49'N, 20°37'W, on soil and mosses in coastal tundra, R. Corner 4 August 1990 & 74°50'N, 20°36'W, on gravelly soil in coastal heath, R. Corner 6 August 1990. A widespread, terricolous and saxicolous lichen.

Sporastatia testudinea (Ach.) A. Massal. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock, E. Hansen 28 July, 30 July & 1 August 1988. An arctic-alpine, circumpolar, saxicolous lichen. LGE 347.

Stereocaulon alpinum Laurer – I: Blåbærdalen, 74°48'N, 20°35'W, on soil, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°49'N, 20°37'W, on soil in coastal tundra, R. Corner 4 August 1990 & 74°50'N, 20°37'W, on soil in coastal

Cassiope-Salix arctica heath, R. Corner 19 August 1990. A common, circumpolar, terricolous lichen. LGE 349.

* *Stereocaulon glareosum* (L. I. Savicz) H. Magn. – V: South side of Bastian Bugt, 74°54'N, 20°09'W, alt. 30 m, on soil over N. – exposed rock, R. Corner 21 August 1990. A circumpolar, terricolous lichen.

Thamnolia vermicularis (Sw.) Schaer. – I: Blåbærdalen, 74°48'N, 20°35'W, on soil, E. Hansen 28 Juli & 30 July 1988; II: Southern end of Kuhn Ø, 74°45'N, 20°19'W, on soil on dry mound, R. Corner 12 August 1990. A common, bi- and circumpolar, terricolous lichen.

Tremolecia atrata (Ach.) Hertel – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rock with patches of limonite, E. Hansen 30 July 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 1995).

Umbilicaria decussata (Vill.) Zahlbr. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 30 July 1988; III: West side of Kuhn Ø, 74°46'N, 20°25'W, alt. 300 m, on boulder, R. Corner 9 August 1990. A widespread, circumpolar, saxicolous lichen (Hansen, 2008).

Umbilicaria hyperborea (Ach.) Hoffm. – I: Blåbærdalen, 74°48'N, 20°35'W, on siliceous rocks, E. Hansen 28 July & 30 July 1988; II: South side of Kuhn Ø, 74°43'N, 20°12'W, on boulder near the coast, R. Corner 13 August 1990; III: West side of Kuhn Ø, 74°46'N, 20°25'W, alt. 300 m, on boulder, R. Corner 9 August 1990; IV: North West side of Kuhn Ø, 75°00'N, 20°34'W, on stone on raised beach, R. Corner 25 August 1990. A widespread, circumpolar, saxicolous lichen (Hansen, 1995).

Umbilicaria lyngei Schol. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 28 July & 30 July 1988. An arctic-alpine, circumpolar, saxicolous lichen (Hansen, 2008).

* *Umbilicaria vellea* (L.) Hoffm. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 30 July 1988. A scattered, circumpolar, saxicolous lichen.

Umbilicaria virginis Schaer. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock, E. Hansen 28 July 1988; II: South side of Kuhn Ø, 74°42'N, 20°14'W, on rock, R. Corner 13 August 1990; III: West side of Kuhn Ø, 74°46'N, 20°25'W, alt. 300 m, on boulder, R. Corner 9 August 1990; IV: North West side of Kuhn Ø, 75°02'N, 20°24'W, alt. 600 m, on boulder, R. Corner 25 August 1990. A common, circumpolar, saxicolous lichen.

Usnea sphacelata R. Br. – III: West side of Kuhn Ø, 74°52'N, 20°27'W, alt. 600 m, on boulder near the summit of mountain, R. Corner 7 August 1990. A widespread, bipolar, saxicolous lichen.

Vulpicida tilesii (Ach.) J.-E. Mattsson & M.-J. Lai – II: South side of Kuhn Ø, 74°43'N, 20°12'W, on soil together with *Cetrariella delisei* in S. –exposed area, R. Corner 13 August 1990. A widespread, circumpolar, terricolous lichen. The collection represents a southern range extension in Greenland (Hansen, 1981, 1995).

Xanthoria candelaria (L.) Th. Fr. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock manured by birds together with *Physcia dubia* and *Xanthoria elegans*, E. Hansen 30 July 1988. A common, bi- and circumpolar, saxicolous, corticolous and lignicolous lichen.

Xanthoria elegans (Link) Th. Fr. – I: Blåbærdalen, 74°48'N, 20°35'W, on rock manured by birds, E. Hansen 30 July 1988. A common and widespread, nitrophilous and calciphilous, saxicolous lichen.

CONCLUSION

In spite of an intensified botanical field work in certain parts of North East Greenland during the last decades (Bay, 1992), vast areas between 74°N and 80°N still are in need of further lichenological investigation. Almost a fourth of R. Corner's and the authors lichen species from Kuhn Ø and Blåbærdalen appears to represent northern range extensions in East Greenland. Future collecting work in this part of Greenland will undoubtedly result in new range extensions of this type. Another conspicuous feature as regards the composition of the lichen flora of Kuhn Ø and its surroundings is the interesting mixture of distinct oceanic species such as *Allantoparmelia alpicola*, *Cetrariella delisei*, *Cladonia ecmocyna*, *C. phyllophora*, *C. trassii*, *Lecidoma demissum*, *Pertusaria oculata* and *Solorina crocea* and distinct continental species such as *Arctoparmelia separata*, *Collema substellatum*, *Diploschistes muscorum*, *Fulgensia bracteata*, *Fuscopannaria praetermissa*, *Nephroma expallidum*, *Ochrolechia upsaliensis*, *Psora decipiens*, *Rinodina mniaraea*, *R. roscida* and *Solorina octospora*. It is somewhat surprising that part of the continental and more or less calciphilous lichens was found in the Blåbærdalen area, but not on the geologically younger deposits on the east and west side of Kuhn Ø.

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