

New or interesting Greenland lichens VII

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Abstract – Eight species of lichens, viz. *Aspicilia montana*, *A. polychroma*, *Diploschistes gypsaceus*, *Fulgensia schistidii*, *Hypocenomyce leucococca*, *Lecidea lithophiloides*, *L. sublimosa* and *Toninia nordlandica*, are reported as new to Greenland. Notes on the distribution of all of these species and additionally twenty interesting species of lichens are given.

Lichens / Greenland

Résumé – Huit espèces sont décrites comme nouvelles pour le Groenland : *Aspicilia montana*, *A. polychroma*, *Diploschistes gypsaceus*, *Fulgensia schistidii*, *Hypocenomyce leucococca*, *Lecidea lithophiloides*, *L. sublimosa* et *Toninia nordlandica*. Des informations concernant la distribution de ces espèces ainsi que de vingt autres sont données.

INTRODUCTION

A new revision of Dr. Paul Gelting's Greenland lichen collections carried out by Vagn Alstrup and the author has resulted in the present paper, which deals with twenty-eight new and interesting lichens and their distribution in and outside Greenland. The lichens have been collected during Dr. Gelting's leadership of the Arctic Station of the University of Copenhagen from 1946 to 1954. The station is situated in the eastern part of Qeqertarsuaq at the south coast of Disko in Central West Greenland. Selected specimens collected by T. W. Böcher, P. Eberlin, E. S. Hansen, K. Holmen, J. Vahl and K. Watson are included in the investigation.

MATERIAL AND METHODS

Collection and Identification

Most of the lichens stated in the following list have been collected at different localities in Central West Greenland, a few in other parts of Greenland, for example Ammassalik Island in South East Greenland and Hudsonlandet in Central East Greenland. The Greenland floristic provinces (Böcher *et al.* 1978), where the specimens have been collected, are stated with the abbreviations N, NE, CE, SE, S, SW, CW and NW (Fig. 1). The material, a total of 56 lichen specimens, was studied with Zeiss light microscopes. The specimens are deposited at the Botanical Museum, University of Copenhagen (C).

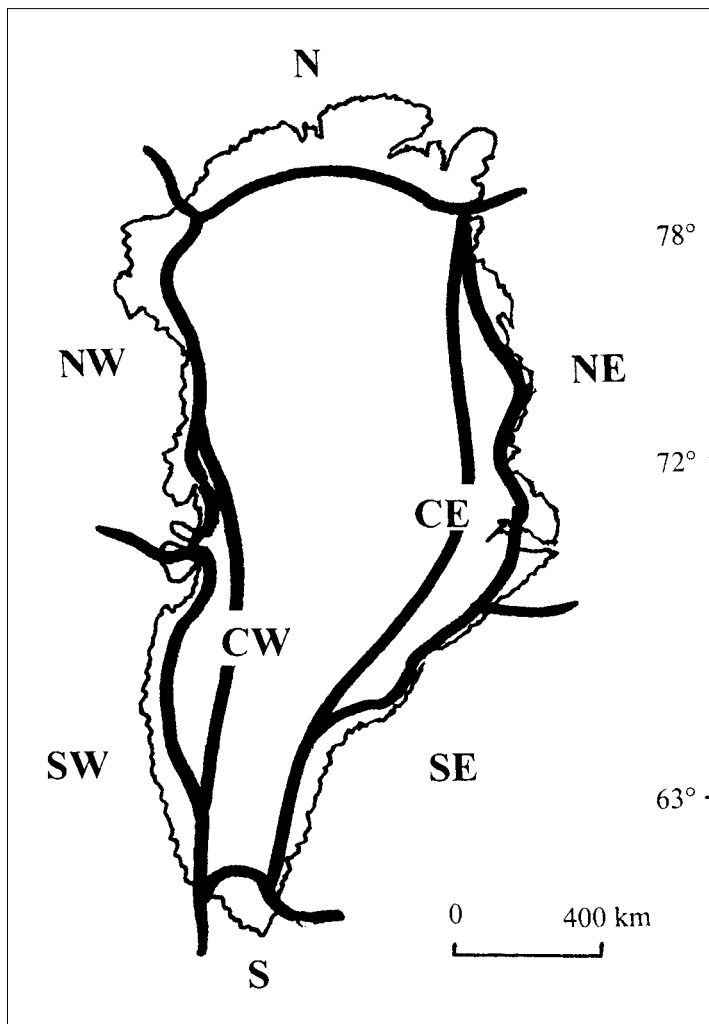


Fig. 1. The floristic provinces of Greenland according to Böcher et al. 1978 (N = North Greenland, NE = North East Greenland, CE = Central East Greenland, SE = South East Greenland, S = South Greenland, SW = South West Greenland, CW = Central West Greenland, NW = North West Greenland).

LIST OF LICHENS

Acarospora pyrenopsoides H. Magn. – SE: Tasiilaq, 65°36'N, 37°38'W, on charnockitic rock, E. S. Hansen 30 June 1985.

A. pyrenopsoides is new to East Greenland. The species has previously been reported from West Greenland (Lynge, 1937) and is also known from Finland, Austria and North America. According to Thomson (1997) its range is unclear.

Aspicilia montana (H. Magn.) Hav. – SW: Tupilaq Island, 68°42'N, 52°53'W, alt. 100 m, on S.-exposed, gneissic boulder in *Salix herbacea* snowbed, P. Gelting 16771a&b; Disko, Qeqertarsuaq/Godhavn, area situated 50 m to the north of the Arctic Station, 69°15'N, 53°32'W, alt. 20 m, on gneissic boulder manured by birds, P. Gelting 10464; Qeqertarsuaq/Godhavn, 69°15'N, 53°32'W, on gneissic rock, P. Gelting 17970 & 18367.

A. montana is new to Greenland. The species is also known from Scandinavia (Santesson, 1993). It probably has a circumpolar distribution.

Aspicilia pergibbosa (H. Magn.) Räsänen – NW: Nuussuaq, Saqqaq, marshy area situated 2 km to the west of the church, 70°01'N, 51°57'W, alt. 10 m, on gneissic rock, P. Gelting 30 October 1949.

A. pergibbosa is new to Nuussuaq Peninsula. The species is also known from Disko, East Greenland, the Northwest Territories and Alaska (Lynge, 1940; Thomson, 1997). It has a circumpolar, arctic distribution.

Aspicilia polychroma Anzi – CW: Paakitsoq, 69°30'N, 50°45'W, on gneissic rock, P. Gelting 25 July 1949; Asuk, 70°11'N, 53°17'W, on basaltic rock, P. Gelting 27 August 1952.

A. polychroma is new to Greenland. The species is also known from North America and Russia (Esslinger & Egan, 1995; Andreev *et al.*, 1996). It has a circumpolar, arctic-alpine distribution.

Diploschistes gypsaceus (Ach.) Zahlbr. – SW: Disko, Qeqertarsuaq/Godhavn, Østerdalen, 69°15'N, 53°32'W, alt. 25 m, in fissure in NE.-exposed, vertical rock, P. Gelting 15672.

D. gypsaceus has a pruinose thallus and pointed spores. The species is new to Greenland. It is also known from America, Europe, Africa, Australia and New Zealand (Purvis *et al.*, 1992). It has a cosmopolitan distribution centered in areas with Mediterranean or dry-temperate climates and occurs usually in cracks in distinctly alkaline rocks (Nimis, 1993).

Euopsis pulvinata (Schaer.) Vain. – NW: Upernavik Distr., Kivssaaq Island, 72°21'N, 55°23'W, alt. 10 m, on basaltic boulder in W.-exposed block-field, P. Gelting 15105.

E. pulvinata is new to Upernavik (Prøven) District. It is a common Greenland epilithic microlichen with a circumpolar, arctic to temperate distribution (Thomson, 1997).

Fulgensia schistidii (Anzi) Poelt – CE: Hudsonlandet, Loch Fyne, 73°40'N, 22°00'W, on mosses on soil, K. Watson 22.

F. schistidii is new to Greenland. The species is also known from Scandinavia and montane-alpine areas in central and southern Europe (Nimis, 1993; Foucard, 2001).

Hymenelia arctica (Lynge) Lutzoni – CW: Qasigiannnguit/Christianshåb, Sarpiussaat, Timaa, 68°34'N, 51°20'W, alt. 2 m, on gneissic rock in brook, P. Gelting 19202; SW: Disko, Qeqertarsuaq/Godhavn, the Arctic Station, 69°15'N, 53°32'W, on basaltic stone, P. Gelting 18150; Blåfjeld, Nuk kitleq, 69°22'N, 54°15'W, on basaltic rock, P. Gelting 14410a; NW: Nordfjord, 69°55'N, 54°23'W, on basaltic boulder in brook, P. Gelting 24 August 1949.

H. arctica is new to Central West Greenland. It is also known from North East Greenland (Lyngé, 1940; Alstrup *et al.*, 2000) and has a circumpolar, arctic to boreal distribution (Santesson, 1993; Esslinger & Egan, 1995; Andreev *et al.*, 1996).

Hypocenomyce leucococca R. Sant. – CW: Arfersiorfik Fjord, Agpaqarfik, 68°11'N, 51°46'W, alt. 20 m, on branches of *Betula nana* in copse, P. Gelting 29 September 1951 (vide I. M. Brodo); NW: Nuussuaq, Saqqaq, 70°01'N, 51°57'W, alt. 60 m, on branches of *Betula nana*, P. Gelting 12399 (vide I. M. Brodo).

H. leucococca is new to Greenland. It is a rare boreal and arctic lichen (Brodo *et al.*, 2001; Foucard 2001).

Lecanora boligera (Norman ex Th. Fr.) Hedl. – S: Narssarssuaq, 61°10'N, 45°26'W, on twig of *Betula pubescens*, P. Gelting 21397 & 21404a; CW: Arfersiorfik Fjord, Agpaqarfik, 68°11'N, 51°46'W, alt. 30 m, on twigs of *Betula nana*, P. Gelting 16316; Sarpiassaat, Timaa, 68°34'N, 51°20'W, on twigs of *Betula nana*, P. Gelting 19159, 19162 & 19184b.

L. boligera is new to South and West Greenland. The species has previously been reported from South East Greenland (Daniels *et al.*, 1985; Hansen, 2002b). It is also known from North America and Europe, where it has an arctic to boreal distribution (Nimis, 1993; Santesson, 1993; Esslinger & Egan, 1995).

Lecanora contractula Nyl. – S: Nanortalik, 60°09'N, 45°15'W, on siliceous rock, P. Eberlin 30 March 1885.

L. contractula is new to South Greenland. It is common along the Greenland coasts and has a circumpolar, arctic-boreal distribution (Thomson, 1997).

Lecanora leucococca Sommerf. – SW: Disko, Qeqertarsuaq/Godhavn, 69°15'N, 53°32'W, on gneissic rock, P. Gelting 19734 & 19746.

L. leucococca is new to Central West Greenland. It has previously been reported from North East and South East Greenland (Alstrup *et al.*, 2000; Hansen, 2002b). The species is also known from Scandinavia (Santesson, 1993).

Lecanora saligna (Schrader) Zahlbr. – NW: Disko, Nordfjord, Kugssinerssuaq Harbour, 69°55'N, 54°25'W, on driftwood, P. Gelting August 1949.

L. saligna is new to Disko. The species is also known from South West Greenland, Europe, Russia and North America (Andreev *et al.*, 1996; Thomson, 1997). It has a temperate to arctic distribution.

Lecidea leucothallina Arnold – SW: Area situated 1 km to the north of Kangaatsiaq, 68°19'N, 53°28'W, alt. 10 m, in cave in E.-exposed, gneissic rock, P. Gelting 16671a; Disko, N. Laksebugt, 69°38'N, 54°48'W, on gneissic rocks, P. Gelting 14325 & 14344; NW: Nuussuaq, Atanikerdluk, 70°04'N, 52°23'W, 20 m, on basaltic boulder, P. Gelting 28 July 1950.

L. leucothallina is new to Nuussuaq Peninsula. Many specimens are available from the Godhavn area and the west coast south of Disko, where the species accordingly is common. It is also known from Europe and North America, but has so far not been reported from the American Arctic (Thomson, 1997).

Lecidea lithophiloides Müll. Arg. – SW: Tupilaq Island, 68°42'N, 52°53'W, alt. 6 m, on gneissic boulder in talus slope, P. Gelting 19318; Disko, Qeqertarsuaq/

Godhavn, the Arctic Station, 69°15'N, 53°32'W, alt. 20 m, on gneissic block manured by snow buntings, P. Gelting 19474.

L. lithophiloides is new to Greenland. The species is common in the Godhavn area according to the many specimens deposited in herb. C. It is also known from Scandinavia (Santesson, 1993).

Lecidea plana (J. Lahm) Nyl. – SW: Sisimiut/Holsteinsborg, 66°56'N, 53°40'W, on siliceous rock, J. Vahl June 1833.

L. plana is new to West Greenland. This circumpolar, arctic-alpine species is widely distributed in East Greenland (Lynge, 1940; Thomson, 1997).

Lecidea sublimosa Nyl. – SW: Disko, Qeqertarsuaq/Godhavn, the Arctic Station, 69°15'N, 53°32'W, on mosses, P. Gelting 20004.

L. sublimosa is new to Greenland. The species is also known from Scandinavia, North America, Novaya Zemlya and Siberia (Thomson, 1997). It has a circumpolar, arctic to boreal distribution.

Lecidella euphorea (Flörke) Hertel – SW: Disko, Qutdligssat, 70°05'N, 53°011'W, alt. 20 m, on twig of *Salix glauca* in *Dryas* heath, P. Gelting 13412.

L. euphorea is new to Disko. The species has previously been reported from South West, North West and East Greenland (Hansen, 1982, 2001, 2002a). It has a wide circumpolar, arctic to boreal and temperate distribution (Thomson, 1997).

Mycobilimbia obscurata (Sommerf.) Rehm (= *Bilimbia tetramera* De Not.) – SW: Disko, Qeqertarsuaq/Godhavn, the Arctic Station, 69°15'N, 53°32'W, alt. 70 m, on mosses on rocky ledge, P. Gelting 20283a; Blåfjeld, Nuk kitleq, 69°22'N, 54°15'W, alt. 20 m, on lichen remains in *Salix herbacea* snowbed, P. Gelting 14393b; N. Laksebugt, 69°38'N, 54°48'W, on mosses on bankside, P. Gelting 14309.

M. obscurata is new to West Greenland. The species has previously been reported from North Greenland (Alstrup *et al.*, 2000). It is also known from Europe, North America and Russia (Purvis *et al.*, 1992; Santesson, 1993; Andreev *et al.*, 1996; Thomson, 1997). *M. obscurata* has a circumpolar, arctic to boreal distribution.

Peltigera occidentalis (E. Dahl) Kristinsson – NW: Inglefield Land, area east of Hiawatha Glacier, 78°50'N, 67°18'W, among mosses in moist *Cassiope* vegetation, E. S. Hansen 990588.

P. occidentalis is new to North West Greenland. It is also known from South West Greenland, Iceland and North America (Thomson, 1984; Vitikainen, 1994).

Pertusaria octomela (Norman) Erichsen – SW: Disko, Qeqertarsuaq/Godhavn, plain situated 100 m to the east of the Arctic Station, 69°15'N, 53°32'W, alt. 10 m, on plant remains and mosses on boggy ground, P. Gelting 17468a & 17469b; Kontaktryggen, alt. 110 m, on mosses and plant remains in heath dominated by mosses, P. Gelting 20498a; Diskofjord, Kangikitleq, 69°47'N, 53°30'W, alt. 6 m, on alkaline soil in boggy *Vaccinium uliginosum* heath, P. Gelting 14216; Mellemfjord, Enoks Havn, 69°47'N, 54°55'W, alt. 30 m, on dead twigs of *Salix glauca*, P. Gelting 13610.

P. octomela is new to West Greenland. The species is rare in East Greenland and is also known from Europe, North America and Russia (Santesson, 1993; Zhurbenko, 1996; Thomson, 1997). It has a circumpolar, arctic to boreal distribution.

Psorula rufonigra (Tuck.) Gotth. Schneid. – CW: Area at the south coast of Nákajanka Peninsula near the head of Søndre Strømfjord, 66°52'N, 50°55'W, on *Spilonema revertens* on loess soil, K. Holmen 21 August 1946; area near the head of the northern branch of Søndre Strømfjord, 67°00'N, 50°40'W, on *Spilonema revertens* on loess soil, T. W. Böcher 18 August 1946.

P. rufonigra is new to the Kangerlussuaq area. Collections are also available from Narssarssuaq in South West Greenland, Angujartorfiup nunaa and Kellyville in Central West Greenland and the Centrum Sø area in North East Greenland. In addition *P. rufonigra* is known from Europe, North America and Russia (Clauzade & Roux, 1985; Zhurbenko, 1996; Thomson, 1997). It has a circumpolar, arctic to temperate distribution and even ranges into the Mediterranean zone (Nimis, 1993).

Pyrenopsis grumulifera Nyl. – NW: Nuussuaq, Saqqaq, area situated 2 km to the west of the church, 70°01'N, 51°57'W, alt. 10 m, on moist, gneissic rock, P. Gelting 30 October 1949.

P. grumulifera is new to Nuussuaq Peninsula. It has previously been reported from Tupilaq Island in Central West Greenland and Kvanefjeld in South West Greenland (Alstrup, 1979). It is also known from Scotland, Scandinavia and North America (Purvis *et al.*, 1992; Santesson, 1993; Esslinger & Egan, 1995).

Rhizocarpon petraeum (Wulfen) A. Massal. – NW: Disko, Qutdligssat, 70°05'N, 53°01'W, alt. 60 m, on basaltic boulder, P. Gelting 13074a.

R. petraeum is new to North West Greenland. This circumpolar species is also known from South West Greenland, Europe, North America, Russia and Australia (Esslinger & Egan, 1995; Andreev *et al.*, 1996).

Rimularia impavida (Th. Fr.) Hertel. & Rambold – SW: Disko, Qeqertarsuaq/Godhavn, Østerlien, 69°15'N, 53°32'W, alt. 12 m, on basaltic boulders, P. Gelting 18999.

R. impavida is new to Disko. Numerous specimens collected by Gelting on both basaltic and gneissic rocks in the Godhavn area are available in herb. C. The species is probably common in Central West and South West Greenland. It has recently been reported as new to East Greenland (Hansen, 2002b) and is also known from Scandinavia and Canada (Thomson, 1997). *R. impavida* has an amphiatlantic distribution.

Schaereria cinereorufa (Schaer.) Th. Fr. – CW: Kangerlussuaq, scree at the foot of Mt. Hassel near the head of the northern branch of Søndre Strømfjord, 67°02'N, 50°40'W, alt. 50-100 m, on a thin layer of loess on boulder, M. Skytte Christiansen 5445; Strømfjordshavn, 66°58'N, 50°57'W, on loess over S.-exposed rock surface, M. Skytte Christiansen 5437.

S. cinereorufa is new to the Kangerlussuaq area. Many specimens from southernmost Greenland, Disko and the Scoresby Sund area in East Greenland are kept in herb. C. The species is also known from Europe, North America and Siberia (Nimis, 1993; Andreev *et al.*, 1996; Thomson, 1997). It has a circumpolar, arctic-alpine distribution.

Toninia nordlandica Th. Fr. – SW: Disko, Qeqertarsuaq/Godhavn, the Arctic Station, 69°15'N, 53°32'W, on gneissic rock, P. Gelting 19721 & 19754.

T. nordlandica is new to Greenland. It is also known from Scandinavia, the Carpathians, the Alps and the Pyrenées (Timdal, 1991).

Toninia verrucarioides (Nyl.) Timdal – CW: Arfersiorfik Fjord, Itivd-liarssuk, 67°55'N, 50°40'W, alt. 15 m, on a thin layer of sand over temporarily moist, gneissic rock manured by ptarmigans, P. Gelting 15974.

T. verrucarioides is new to the Egedesminde District. The species has previously been reported from a few localities in West and East Greenland (Timdal, 1991; Alstrup *et al.*, 2000). It is widely distributed in Europe and North America (Timdal, 1991).

CONCLUSION

Most of the lichens dealt with in the present paper are characterized by their rare to occasional occurrence in Greenland and other arctic and alpine areas as well. Species such as *Aspicilia montana*, *Fulgensia schistidii* and *Lecidea lithophiloides* have so far not been reported from North America or the Russian Arctic, but probably these lichens can be found in both areas. All lichens stated in the list are known from Scandinavia.

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REFERENCES

- ALSTRUP V., HANSEN E. S. & DANIELS F. J. A., 2000 — Lichenized, lichenicolous and other fungi from North and North-East Greenland. *Folia Cryptogamica Estonica* 37: 1-20.
- ANDREEV M., KOTLOV Y., & MAKAROVA I., 1996 — Checklist of Lichens and Lichenicolous Fungi of the Russian Arctic. *Bryologist* 99 (2): 137-169.
- BRODO I. M., SHARNOFF S. D. & SHARNOFF S. S., 2001 — *Lichens of North America*. Yale University Press. New Haven and London. 795 p.
- BÖCHER T. W., FREDSKILD, B., HOLMEN, K. & JAKOBSEN, K., 1978 — *Grønlands Flora*. P. Haase & Søn's Forlag. Copenhagen. 326 pp.
- CLAUZADE G. & ROUX C., 1985 — *Likenøj de okcidenta Europo. Illustrita Determinlibro*. Royan. 893 p.
- DANIELS F. J. A., HANSEN E. S. & SIPMAN H. J. M., 1985 — New records of terricolous microlichens from Southeast Greenland. *Acta Botanica Neerlandica* 34 (1): 49-58.
- ESSLINGER T. L. & EGAN R. S., 1995 — A Sixth Checklist of the Lichen-forming, Lichenicolous, and Allied Fungi of the Continental United States and Canada. *Bryologist* 98 (4): 467-549.
- FOUCARD T., 2001 — *Svenska skorplavar*. Interpublishing. Stockholm. 392 p.
- HANSEN E. S., 1982 — Lichens from Central East Greenland. *Meddelelser om Grønland. Bioscience* 9: 1-33.
- HANSEN E. S., 2001 — Lichens and lichenicolous fungi from Washington Land, western North Greenland. *Folia Cryptogamica Estonica* 38: 1-8.

- HANSEN E. S., 2002a — Lichens from Inglefield Land, N W Greenland. *Willdenowia* 32: 105-125.
- HANSEN E. S., 2002b — Lichens from Ammassalik Ø, Southeast Greenland. *Folia Cryptogamica Estonica* 39: 3-12.
- LYNGE B., 1937 — Lichens from West Greenland, collected chiefly by Th. M. Fries. *Meddelelser om Grønland* 118 (8): 1-225.
- LYNGE B., 1940 — Lichens from North East Greenland collected on Norwegian scientific expeditions in 1929 and 1930. *Skrifter om Svalbard og Ishavet* 81: 1-143.
- NIMIS P. L., 1993 — *The Lichens of Italy. An annotated catalogue*. Museo Regionale di Scienze Naturali. Torino. 897 p.
- PURVIS O. W., COPPINS B. J., HAWKSWORTH D. L., JAMES P. W. & MOORE D. M. (eds.), 1992 — *The lichen flora of Great Britain and Ireland*. Natural History Museum Publications. London. 710 p.
- SANTESSON R., 1993 — *The lichens and lichenicolous fungi of Sweden and Norway*. SBT-förlaget. Lund. 240 p.
- THOMSON J. W., 1997 — *American Arctic lichens. II. The Microlichens*. The University of Wisconsin Press. Wisconsin. 675 p.
- TIMDAL E., 1991 — A monograph of the genus *Toninia* (Lecideaceae, Ascomycetes). *Opera Botanica* 110: 1-137.
- VITIKAINEN O., 1994 — Taxonomic revision of *Peltigera* (lichenized Ascomycotina) in Europe. *Acta Botanica Fennica* 152: 1-96.
- ZHURBENKO M., 1996 — Lichens and lichenicolous fungi of the northern Krasnoyarsk Territory, Central Siberia. *Mycotaxon* 58: 185-232.