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LEADER: EIGIL KNUTH

HEPATICAE

COLLECTED

BY THE PEARYLAND EXPEDITION

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BY

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INTRODUCTION

Only few hepatics are earlier known from this area. In Meddelelser om Grønland vol. 51, no. 10, p. 381 HESSELBO mentions *Lophozia* (*Isopaches*) *bicrenatus* (SCHMID.) DUM. I have examined the specimen from Independence Fjord, Peary Land (leg. P. FREUCHEN 1912) and it contains *Lophozia latifolia* SCHUSTER, but no *Isopaches bicrenatus*, which latter species is to be excluded from the list of the hepatics of Greenland. In Ibid. vol. 64, no. 10, p. 272—273 he mentions following species collected by Dr. TH. WULFF. The names in brackets are to be excluded from the list of hepatics of Greenland: *Gymnomitrion concinnatum* (LIGHTF.) CORDA (Lemming Fjord). *Marsupella groenlandica* C. JENSEN = *M. arctica* BRYHN et KAAL. (Low Point). *Arnellia fennica* (GOTTSCHE) LINDB. (Sommerdalen). *Eucalyx subellipticus* (LINDB.) BREIDLER (Low Point). *Haplozia* (*Jungermania*) *atrovirens* (SCHL.) DUM. (Kap Benét, not refound by me; Lemming Fjord). *Lophozia* (*Tritomaria*) *quinquedentata* (HUDS.) COIGN. (Low Point, Kap Benét, Lemming Fjord). *Lophozia* (*Orthocaulis*) *quadriloba* (LINDB.) EVANS (Low Point, Lemming Fjord, Sommerdalen, Kap May). *Lophozia ventricosa* (DICKS.) DUM. (Lemming Fjord, Sommerdalen, Kap May, not refound by me). (*Lophozia alpestris* (SCHLEICH.) EVANS Kap Salor, is *Lophozia latifolia* SCHUSTER and not *L. alpestris*; Centrum, poor material, not possible to determine). (*Lophozia excisa* (DICKS.) DUM. f. *Limprichtii* (LINDB.) MASS. (Centrum) is *Lophozia latifolia* SCHUSTER.). (*Lophozia* (*Leiocolea*) *Mülleri* (NEES) DUM. (J. P. Koch Fjord, not refound by me; Kap Salor, is a large celled *Lophozia* (leaf cells about 30 μ), probably *Lophozia groenlandica* (NEES) MACOUN; Sommerdalen, not refound by me). (*Cephaloziella Starkei* (FUNCK) SCHIFFNER var. *verrucosa* SCHIFFNER is *C. arctica* BRYHN et DOUIN (Low Point, Kap Benét, Lemming Fjord)). (*C. Starkei* var. *rupestris* C. J. is a mixture of *Cephaloziella arctica* BRYHN et DOUIN and *C. subdentata* WARNST. (Lemming Fjord). *Odontoschisma Macounii* (Aust.) UNDERW. (Low Point). *Blepharostoma trichophyllum* (L.) DUM. var. *brevirete* BRYHN et KAAL. (Lemming Fjord). (*Scapania irrigua* (NEES) DUM. forma *arctica* (Kap May) agrees well with *Scapania obcordata* (BERGGREN) S. ARNELL from Spitzbergen). (*Scapania curta* (MART.)

(Centrum) is *S. calcicola* (ARN. et PERSS.) INGHAM, *S. curta* var. *rosacea* (CORDA) CARR. (Low Point) is a mixture of *S. calcicola* and *S. gymnostomophila* KAAL.).

One of the specimens named *Marsupella groenlandica* C. JENSEN from Low Point is *Orthocaulis cavifolius* S. ARNELL et H. BUCH, provided with redbrown gemmae. The specimen also contains *Tritomaria quinquedentata* and *Cephaloziella arctica*. In a specimen from Lemming Fjord occurs *Lophozia groenlandica* (NEES) MACOUN. In a specimen from Kap Salor occurs *Sphenolobus minutus* (CR.) ST. *Lophozia latifolia* SCHUSTER is observed from Centrum, Low Point, Independence Fjord.

The for the area new species found in the old collections are thus: *Cephaloziella arctica* BRYHN et KAAL., *C. subdentata* WARNST., *Lophozia groenlandica* (NEES) MACOUN, *L. latifolia* SCHUSTER, *Orthocaulis cavifolius* S. ARNELL et H. BUCH, *Scapania calcicola* (ARN. et PERSS.) INGHAM, *S. gymnostomophilum* BRYHN et KAAL., *S. obcordata* (BERGGREN) S. ARNELL, *Sphenolobus minutus* (CR.) ST.

I am very indebted to Dr. KJELD HOLMEN, Copenhagen, for help in tracing the old specimens of P. FREUCHEN and Dr. Th. WULFF in the Botanical Museum of Copenhagen.

LIST OF SPECIES

The following list contains the species of hepatics found in specimens collected by the Danish Expedition to Peary Land, chiefly by Dr. KJELD HOLMEN. The few specimens of other collectors have the name of the collector after the number, number without collector-name means that the specimen is collected by Dr. HOLMEN. In the list of localities the latitude and longitude is given the first time the locality is mentioned. The figures before the names of the localities are the same as given in the list in Meddelelser om Grønland vol. 124 no. 9. I is Western Outer District, II Western Inner District, III Innermost District, IV Eastern Inner District, V Eastern Outer District, VI Northern Inner District, VII The Jørgen Brønlund Fjord Area.

Riccardia pinguis (L.) GRAY.

Localities:

VII. Heilprin Land, Jørgen Brønlund Fjord. Lat. 82°10' N. Long. 31° W.:

Eriophorum bog, alt. 70 m. 244 f.

Eriophorum bog at lake Klaresø, alt. 75 m. 6116.

Occurred as solitary thalli in carpets of fen-mosses.

Anthelia juratzkana (LIMPR.) TREVIS.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier. Lat. 81°48' N. Long. 31°45' W.: Meadow rich in mosses, alt. 1 m. 7479, 7480. Moist meadow with *Luzula* spp., alt 1 m 7815. 45. Saxifragadal: Lat. 81°51' N. Long. 31°15' W.: Dry, stony fell-field, alt. 25 m 6374.

V. East coast of Peary Land. 70. Herlufsholm Strand. Lat. 82°40' N. Long. ab 21° W.: Swamp at the bank of a pond, alt. 75 m 6999.

VII. Heilprin Land, Jørgen Brøndlund Fjord: Moist *Anthelia* snow-patch, alt. 500 m 8249.8250, 8184. Dry, gravelly field, alt. 610 m. 8839. Stony terrace at river, alt. 60 m 6595.

Seems to be common, usually as scattered stems in carpets of mosses, but also as pure carpets in snow-patches.

Blepharostomum trichophyllum (L.) DUM.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: Moist, sandy soil, amongst other bryophytes, alt. 5 m. 6323, 6329. Moist meadow with *Luzula* spp., alt. 1 m 7815. 54. Saxifragadal: Dry, stony fell-field, alt. 25 m 6373. Wet *Vaccinium uliginosum* heath, alt. 150 m 7029, 7041.

IV. 53. Neergaard Elv. Lat. 82°00' N. Long. 26°00' W.: Moist *Saxifraga flagellaris*-moss assoc., alt. 30 m 7689.

V. East coast of Peary Land. 70. Herlufsholm Strand. Moist-wet, sandy soil on east-exposed slope, alt. 150 m 7623. At the foot of rocks near pond. alt. 75 m 7732. 74. G. B. Schley Fjord, near the mouth. Lat. 83°00' N., Long. 24°30' W.: In a river delta, alt. 2 m. 8762, 8766, leg. J. C. TROELSEN.

VII. Heilprin Land. Jørgen Brønlund Fjord: Moist meadow with *Arctagrostis* and *Equisetum*, alt. 60 m 6729. Moist *Anthelia* snow-patch, alt. 500 m 8249, 8250. *Cassiope tetragona* heath, alt. 600 m 251 h. leg. BØRGE FRISTRUP. Dry, stony fell-field, alt. 460 m 8789. Slightly moist, stony fell-field, alt. 500 m 8714. Near Kap Knud Rasmussen, slightly moist stone slope, alt. 150 m 8530.

Only sterile material collected. Judging from the vegetative features all the material must be referred to var. *brevirete* KAAL. The main species does not seem to occur in Arctis.

Cephaloziella arctica BRYHN et DOUIN.

Localities:

II. 23. Øvre Midsommersø. South coast. Lat. 82°14' N. Long. 34°40' W. Moist meadow at the foot of north-exposed slope, alt. 180 m 7524.

III. North coast of Independence Fjord. Lat. 82°14' N. Long. 24°00' W.: Moist meadow, alt. ca 100 m 6450.

39. Diabasholmene. Lat. 82°00' N. Long. 31°00': Dry, sandy ground on rock-shelves (basalt), alt. 20 m 7892.

South coast of Independence Fjord: 43. Kap Glacier. Moist meadow with *Luzula* spp., alt. 1 m 7812, 7815, 7824. Meadow rich in mosses, alt. 1 m 7470, 7471, 7472, 7478, 7479, 7480.

45. Saxifragadal: Wet *Vaccinium uliginosum* moor, alt. 50 m. 7371. Wet *Vaccinium uliginosum* heath, alt. 150 m 7036.

V. East coast of Peary Land. 71. Herlufsholm Strand: Moist-wet, sandy soil on east-exposed slope, alt. 150 m 7212. Moist clayey hollow, rich in mosses, alt. 20 m 7647. Slightly moist hollow, rich in mosses, alt. 20 m 7905, 7911. Slightly moist soil in hollow, alt. 20 m 7709. Swamp

at the bank of a pond, alt. 75 m 6997, 6999. At the foot of rocks near pond, alt. 75 m 7732.

VII. Heilprin Land, Jørgen Brønlund Fjord: Wet *Carex*—*Eriophorum* meadow, alt. 500 m. 8607 leg. BØRGE FRISTRUP. Wet *Carex aquatilis* meadow, alt. 500 m. 6749. *Eriophorum* bog at lake Klaresø, alt. 75 m 6118, 6119.

Common, usually intermingled other bryophytes, sometimes as small blackish carpets.

Cephaloziella divaricata (FRANC) SCHFFN.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: 6329.

45. Saxifragadal: Wet *Vaccinium uliginosum* moor, alt. 100 m 7366. Ditto, alt. 150 m 7410.

V. East coast of Peary Land. 70. Herlufsholm Strand: Slightly moist fell-field, stony, alt. 75 m 6969. Moist — wet, sandy soil on east-exposed slope. alt. 150 m 7623. Dry stone-field. rich in mosses, alt. 75 m 7171. Slightly moist soil in a hollow, alt. 20 m 7581.

VII. Heilprin Land, Jørgen Brønlund Fjord: Moist *Cassiope* heath on slope, alt. 700 m 8805 leg. BØRGE FRISTRUP. Wet patch in stone field, alt. 460 m 281 e.

Arnellia fennica (G.) LINDB.

Locality:

VII. Heilprin Land, Jørgen Brønlund Fjord: Moist *Cassiope* heath on slope, alt. 700 m 8805 leg. BØRGE FRISTRUP. Only a few plants in the specimen.

Cryptocolea imbricata SCHUSTER.

Locality:

III. South coast of Independence Fjord. 45. Saxifragadal: Wet *Vaccinium uliginosum* heath, alt. 150 m 7041.

Grows together with *Tritomaria quinquedentata*, *Sphenolobus minutus* and *Bleparostoma trichophyllum* var. *brevirete*. Described from Lake Superior, Michigan, USA and also found on Ellesmere Island.

Nardia scalaris (SCHRAD.) GRAY.

Localities:

IV. South coast of Independence Fjord. 53. Neergaard Elv. Dry, stony terrace at the river, alt. 50 m 7717.

V. East coast of Peary Land. 70. Herlufsholm Strand: Slightly moist soil in a hollow, alt. 20 m 7709. Dry, stony fell-field, alt. 75 m 7449.

74. B. G. Schley Fjord near the mouth: In a river delta, alt. 2 m 8766, leg. J. C. TROELSEN.

VII. Heilprin Land: Slightly moist, stony fell-field, alt. 500 m 8714.

Jungermania schiffneri (LOITL.) EVANS.

Localities:

IV. North coast of Independence Fjord. 51. Graptolithelv. Lat. 82°14' N. Long. 24°00' W.: Alt. ca 100 m 6463, leg. J. C. TROELSEN.

V. Kap Vaarbrud. Lat. 82°18' N. Long. 21°30' W.: Alt. 40 m 7599.

70. Herlufsholm Strand: In moist hollow on the plain, alt. 20 m 7300, 7581. Moss swamp at the shore of a pond, alt. 75 m. 7563. Swamp at the bank of a pond, alt. 75 m 6997.

VII. Heilprin Land, Jørgen Brønlund Fjord: *Eriophorum* bog at lake Klaresø, alt. 75 m 6118, 6119.

Near Kap Knud Rasmussen. Lat. 82°10' N. Long. 31°00' W. Wet *Carex stans* marsh, alt. 25 m 6076.

Occurs as var. *cavifolius* SCHUSTER, generally sterile, only a few perianths observed.

Leicolea heterocolpos (THED.) BUCH.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: Meadow rich in mosses. alt. 1 m 7472.

45. Saxifragadal: Moist moss-moor with *Cassiope tetragona* on NW-exposed slope, alt. 30 m. 7078.

IV. 63. Nord, Prinsesse Ingeborg Halvø. Lat. 81°36' N. Long. 17° W., leg. J. C. TROELSEN.

V. 74. B. G. Schley Fjord, near the mouth: In a river delta, alt. 2 m. 8766, leg. J. C. TROELSEN.

VII. Heilprin Land, Jørgen Brønlund Fjord: Wet patch in stone field, alt. 460 m. 281e. Slightly moist, stony field, alt. 500 m. 8714.

Erlandsen Land, Jørgen Brønlund Fjord, Buen. Lat. 82°12' N. Long. 31° W.: Moist snow patch.

This species occurs here as var. *harpanthoides* (BRYHN et KAAL.) SCHUSTER.

Leicolea badensis (G.) JØRG.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: alt. 1 m. 7815. Meadow rich in mosses, alt. 1 m. 7472.

45. Saxifragadal: Wet *Vaccinium uliginosum* heath, alt. 150 m. 7029.

V. East coast of Peary Land. 69. Kap Eiler Rasmussen. Lat. 82°38' N. Long. 20°30' W.: On old musk-ox dung on gravelly coastplain, alt. 10 m. 7118.

71. Herlufsholm Strand: Dry stony field, alt. 75 m. 7449.

VII. Heilprin Land, Jørgen Brønlund Fjord: Shady rock cave, alt. 75 m. 194d. Moist clay at rivulet, alt. 20 m. 231. Ditto, alt. 100 m.

217. Stony terrace at river, alt. 60 m. 6595.

Lophozia alpestris (SCHLEICH.) EVANS.

Localities:

I. 8. Sverdrup Ø. Mascart Inlet. Lat. 82°55' N. Long. 44°30' W. 7978. leg. K. ELLITSGAARD RASMUSSEN.

III. South coast of Independence Fjord. 43. Kap Glacier, alt. 100 m. 7960.

Lophozia groenlandica (NEES) MACOUN.

Localities:

IV. North coast of Independence Fjord. 51. Graptolithelv. Lat. 82°14' N. Long. 24°00' W.: Moist meadow, alt. ca 100 m. leg. J. C. TROELSEN.

VII. Heilprin Land, Jørgen Brønlund Fjord: Moss cushions at rivulet, alt. 300 m. 238 f.

Only collected sterile. The colourless gemmae and large cells of the leaves are characteristic.

Lophozia latifolia SCHUSTER.

Locality:

V. East coast of Peary Land. 71. Herlufsholm Strand: Moist — wet, sandy soil on east-exposed slope, alt. 150 m. 7623.

This arctic calcicolous species was expected to be found, it seems to be rare in this area.

Orthocaulis floerkei (WEB. et MOHR) BUCH.

Locality:

IV. Nord, leg. J. C. TROELSEN.

Orthocaulis Kunzeanus (HÜB.) BUCH.

Localities:

V. East coast of Peary Land. 71. Herlufsholm Strand: Moist — wet, sandy soil on east exposed exposed slope, alt. 150 m. 7623. At the foot of rocks near pond, alt. 75 m. 7732, 7742.

74. G. B. Schley Fjord, near the mouth: In a river delta, alt. 2 m. 8762, leg. J. C. TROELSEN.

The plants from Herlufsholm Strand 7732 and 7742 are of a dark brown, rigid form and agree well with the description of *Jungermania Vahlia* NEES. I have, however, not had the opportunity to compare them with the type.

Orthocaulis quadrilobus (LINDB.) BUCH.

Localities:

IV. Nord, leg. J. C. TROELSEN.

V. East coast of Peary Land. 71. Herlufsholm Strand: At the foot of rocks near pond, alt. 75 m. 7741.

Only a few plants are collected of this usually common arctic species.

Sphenolobus minutus (CRANTZ) STEPH.

Localities:

I. 2. Jewell Fjord, Nansen Land. Lat. 83°06' N. Long. 42°30' W. 8258, leg. K. ELLITSGAARD RASMUSSEN.

III. South coast of Independence Fjord: 43. Kap Glacier: Moist meadow with *Luzula* spp., alt. 1 m. 7824. Ditto 6329. Meadow rich in mosses, alt. 1 m. 7470, 7472, 7478, 7479, 7480.

45. Saxifragadal: Dry and stony fell-field, alt. 10 m. 7088. Dry and stony fell-field, alt. 150 m. 7011, 7092. Wet *Vaccinium uliginosum* moor, alt. 100 m. 7372. Wet *Vaccinium uliginosum* heath, alt. 150 m. 7041. Wet *Vaccinium uliginosum* moor, alt. 150 m. 7029, 7417.

V. East coast of Peary Land. 71. Herlufsholm Strand: Slightly moist, stony fell-field, alt. 75 m. 6959. Slightly moist stone field, alt. 75 m. 7669.

VII. Heilprin Land, Jørgen Brønlund Fjord: Dry, stony fell-field, alt. 500 m. 8836. Dry, gravelly field, alt. 610 m. 8843.

Common. Much of the collected material can be referred to var. *grandis* (G.) S. ARN. et O. MÅRT.

Tritomaria quinquedentata (HUDS.) BUCH.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: Moist, sandy soil, amongst other bryophytes, alt. 5 m. 6323, 6329. Moist meadow with *Luzula* spp., alt. 1 m 7812, 7815. Meadow rich in mosses, alt. 1 m 7473, 7478, 7480.

45. Saxifragadal: Dry and stony fell-field, alt. 10–25 m 7099. Wet *Vaccinium uliginosum* moor, alt. 100 m 7366, 7372. Wet *Vaccinium*

uliginosum moor, alt. 150 m 7410, 7411, 7412. Wet *Vaccinium uliginosum* heath, alt. 150 m 7017, 7029, 7032, 7036, 4041.

V. East coast of Peary Land. 71. Herlufsholm Strand: Slightly moist soil at the foot of a great boulder, alt. 75 m 7124.

74. G. B. Schley Fjord, near the mouth: In a river delta. alt. 2 m 8762, leg. J. C. TROESEN.

VII. Heilprin Land, Jørgen Brønlund Fjord: Moist *Anthelia* snow-patch, alt. 500 m 8250. Moist hollow in stone field. 8718.

Common.

Tritomaria quinquedentata (HUDS.) BUCH.
var. *grandiretis* BUCH.

Locality:

V. East coast of Peary Land. 71. Herlufsholm Strand: At the foot of rocks near pond, alt. 75 m. 7741.

Scapania calcicola (ARN. et PERSS.) INGHAM.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: Meadow rich in mosses, alt. 1 m 7480. Slightly moist, sandy soil on rock-shelf (basalt), alt. 10 m 7109.

53. Neergaard Elv. Dry stony terrace at the river, alt. 50 m 7717. Moist *Saxifraga flagellaris*-moss association, alt. 30 m 7689.

V. North coast of Independence Fjord. 65. Kap Vaarbrud. Lat. 82°18' N. Long. 21°30' W. Slightly moist ground at the foot of a rock, alt. 10 m 7939.

VII. Heilprin Land, Jørgen Brønlund Fjord: Slightly moist *Cassiope tetragona* heath with *Cnestrum alpestre*, alt. 460 m. 286 b. Wet patch in stone field, alt. 461 m 281 e. Moist *Cassiope* heath on slope, alt. 700 m 8805, leg. BØRGE FRISTRUP.

Scapania irrigua (NEES) DUM.

Localities:

II. Øvre Midsommersø. Moist meadow at the foot of a northexposed slope, alt. 180 m. 7524.

III. North coast of Independence Fjord. 41. Diabasnæs. Shady crevice of rock (basalt). 7066.

VII. Heilprin Land, Jørgen Brønlund Fjord: Dry, stony fell-field, alt. 60 m. 8788. *Eriophorum*-bog, alt. 70 m. 244 d. *Eriophorum*-bog at lake Klaresø, alt. 75 m. 6118.

Odontoschisma macounii (AUST.) UNDERW.

Localities:

III. South coast of Independence Fjord. 45. Saxifragadal: Dry, stony fell-field, alt. 25 m. 6373, 6374. Wet *Vaccinium uliginosum* heath, alt. 150 m. 7042. Wet *Vaccinium uliginosum* moor, alt. 150 m. 7412.

VII. Heilprin Land, Jørgen Brønlund Fjord: Moist *Anthelia* snow-patch, alt. 500 m. 8249, 8250. Wet *Carex aquatilis* meadow, alt. 500 m.

Gymnomitrion concinnatum (LIGHTF.) CORDA.

Localities:

III. South coast of Independence Fjord. 43. Kap Glacier: Moist *Luzula confusa* dominated moss-association, alt. 3 m. 6337.

3 i Saxifragadal: Dry and stony fell-field, alt. 10–25 m. 6343, 7091.

VII. East coast of Peary Land. 71. Herlufsholm Strand: Moist — wet, sandy soil on east exposed slope, alt. 150 m. 7195.

Gymnomitrion corallioides NEES.

Locality:

III. South coast of Independence Fjord. Saxifragadal: Dry, stony fell-field, alt. 25 m. 6343.

Sauteria alpina (NEES) NEES.

Localities:

II. Aftenstjernesø. Lat. 82°17' N. Long. 37°30' W.: Snow-patch, alt. 115 m. 9052, leg. J. C. TROELSEN.

III. South coast of Independence Fjord. 46 Astrup Fjord, Krognæs: 1899, leg. P. JOHNSEN.

North coast of Independence Fjord. 41. Diabasnæs: Shady crevice of rock (basalt), alt. 10 m. 7068.

VII. Heilprin Land, Jørgen Brønlund Fjord: Moist, shady rock-cave (dolomit). With *Timmia bavarica* and *Amblystegiella* sp. Alt. 50 m. 6053. Moist, sandy soil near river, alt. 20 m. 197. Shady rock-cave, alt. 75 m. 194 d.

Erlandsen Land, Jørgen Brønlund Fjord, Buen. Lat. 82°12' N. Long. 31° W.: Moist snow-patch, on shade. 6299.