

DET KONGELIGE DEPARTEMENT
FOR HANDEL, SJØFART, INDUSTRI, HÅNDVERK OG FISKERI

NORGES SVALBARD- OG ISHAVS-UNDERSØKELSER
LEDER: ADOLF HOEL

MEDDELELSE Nr. 49

MICROMYCETES
FROM VESTSPITSBERGEN

COLLECTED BY DR. EMIL HADAČ IN 1939

BY

ASBJØRN HAGEN

THE INTRODUCED FLORA
OF SPITSBERGEN

BY

EMIL HADAČ

OSLO

I KOMMISJON HOS JACOB DYBWAD

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Preface.

During his geobotanical studies in Vestspitsbergen in the summer of 1939 — especially in Isfjorden in the “Sassen-quarter” — Dr. Emil Hadač (Prague), who is a keen observer, collected some Micromycetes, which he kindly entrusted to me for determination. The collection, which consists of 101 samples, has been presented by Dr. Hadač to the Botanical Museum of the University of Oslo.

As regards former mycological investigations in Svalbard, reference may be made to the paper of Lind (1928), the most exhaustive work on the mycoflora of Svalbard.

Dr. Hadač collected Micromycetes in the following places:

Bellsund: Calypsobyen at the southern entrance, and Vår-solbukta at the northern entrance.

Isfjorden, exclusive of the “Sassen-quarter”: Alkhornet (Trygghamna), Longyearbyen, Hotellneset, Coloradofjella in Tempelfjorden (Nøis's hut) around contour 276.2 m, Tschermakfjellet, and Kapp Wijk.

Isfjorden in the “Sassen-quarter“ (see the map, p. 2):

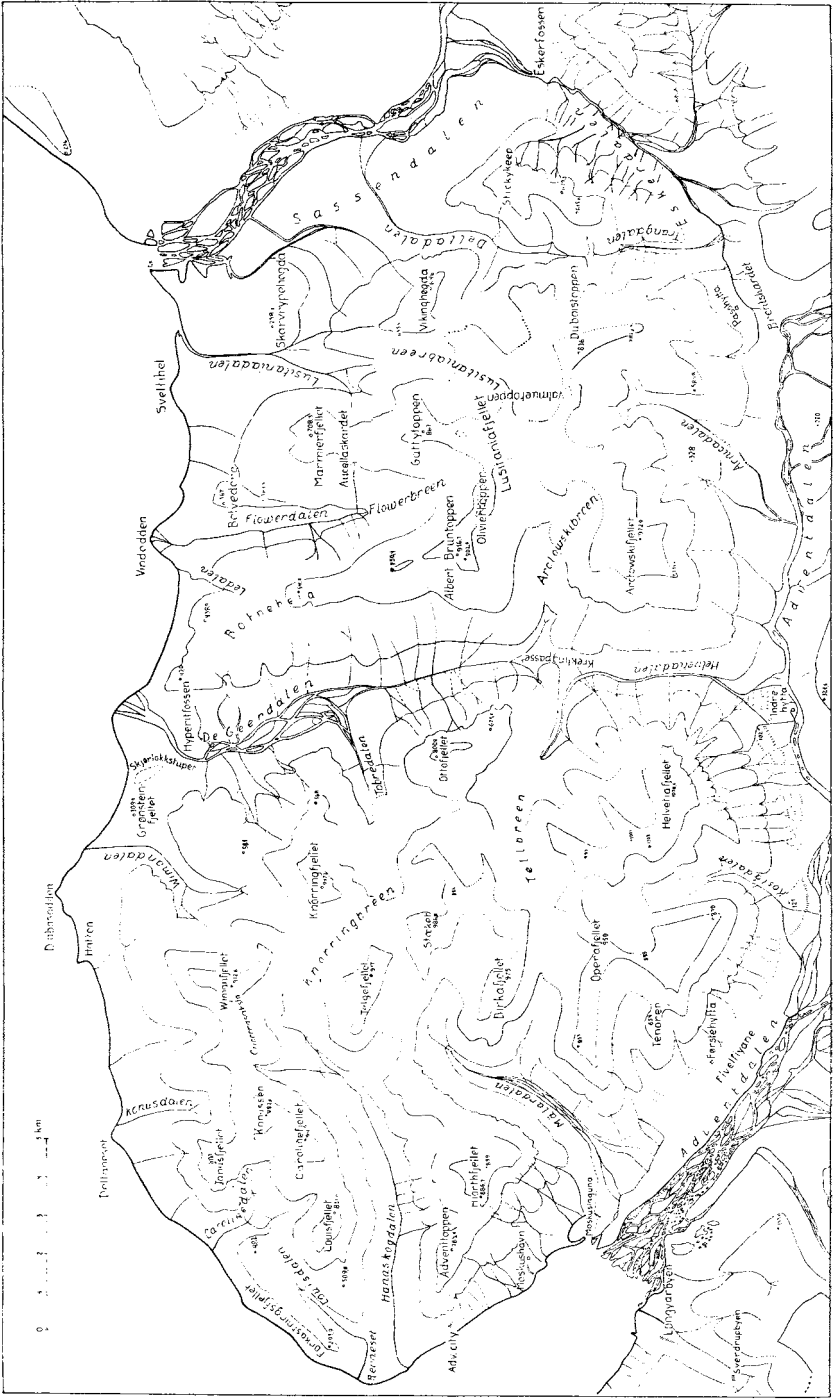
Moskushavn (formerly Hiorthhamn). Louisdalen. Konusdalen. Hatten. Diabasodden. De Geerdalen: Hyperitfossen. De Geerdalen: The delta. Botneheia. Ledalen. Flowerdalen. Lusitaniadalen. Eskerdalen. Brentskardet. Brentskardet: Passhytta. Helvetiadalen. Adventdalen: Indrehyttta. Adventdalen: Førstehyttta. Mälardalen.

The north coast of Vestspitsbergen: Sallyhavn in Birgerbukta.

As to the nomenclature of the host plants I have followed that of Dr. Hadač in his paper *Die Gefäßpflanzen des “Sassen-Gebietes”, Vestspitsbergen* (in the press).

Oslo, Botanical Museum of the University. December 1940.

Asbjørn Hagen.



Map of Sassen Quarter.

Enumeration.

Phycomycetes.

1. *Synchytrium potentillae* (Schroet.) Lagerh.

Syn. *S. cupulatum* Thom., cf. Tobler-Wolff 1913 p. 49—50.

On *Dryas octopetala* L. var. *minor* Hook. Isfjorden: Moskus-havn, August 24th. The resting sori measured $96-150 \times 69-117 \mu$.

This species has not been found in Svalbard before. In North East Greenland it was found by the present author on the Norwegian Scientific Expedition of 1933. Other northern records are Troms in Northern Norway (Blytt 1896 p. 24) and Iceland (Rostrup 1903 p. 285, Larsen 1932 p. 464).

2. *Peronospora alsinearum* Casp.

On *Cerastium alpinum* L. s. l. Bellsund: Calypsobyen, August 16th. — Isfjorden: Moskus-havn, August 2nd and 24th; Botneheia, July 22nd; Eskerdalen, July 28th; Tempelfjorden: Coloradofjella, August 26th.

Common conidia measurements were $15-22.5 \times 15-18 \mu$.

3. *Peronospora parasitica* (Fr.) Tul.

On *Cochlearia groenlandica* L. Bellsund: Calypsobyen, August 16th; Isfjorden: Longyearbyen, in the harbour, July 18th; Moskus-havn, August 18th; Diabasodden, August 11th; Brentskardet, July 29th.

The conidiophores were found to be up to 12μ thick; common conidia measurements were $24-27 \times 18-24 \mu$.

Ascomycetes.

4. *Sphaerotheca fuliginea* (Schlecht.) Salm.

On *Taraxacum arcticum* (Trautv.) Dahlst. Isfjorden: Helvetia-dalen, July 25th (perithecia $66-75 \times 61.5-72 \mu$, conidia $24-27 \times 13.5-16.5 \mu$).

5. *Mycosphaerella densa* (Rostr.) Lind.

On *Cardamine pratensis* L. ssp. *angustifolia* (Hook.) Schulz. Isfjorden: Tempelfjorden: Coloradofjella, August 26th.

6. *Rhytisma salicinum* Fr.

On *Salix polaris* Wahlenb. Isfjorden: Konusdalen, August 28th; Diabasodden, August 11th; Indrehytta, July 31st; between Førstehytta and Mälardalen (Operafjellet), August 14th; Mälardalen, August 30th.

7. *Laetinaevia erythrostromoides* (Fr.) Nannf.

Syn. *Helotiella erythrostroma* (Rehm) Sacc., *Calloria erythrostromoides* Rehm.

On *Cerastium Regelii* Ostenf. Isfjorden: Eskerdalen, July 28th.

In 1933 the present author found this fungus several times in the area between Kapp Linné and Russekeila in Isfjorden. As to the distribution of this characteristic species, reference may be made to the papers of Nannfeldt (1928 p. 118) and Lind (1927 p. 23, 1928 p. 14 and 1934 p. 92).

8. *Pseudorhytisma bistortae* (Fr.) Juel.

Syn. *Pseudopeziza bistortae* (Fr.) Fuck.

On *Polygonum viviparum* L. Isfjorden: Moskushavn, August 18th and 30th; Hatten, August 11th.

Basidiomycetes.

9. *Melampsora epitea* (Knze. & Schm.) Thuem.

Syn. *M. arctica* Rostr.

On *Saxifraga cespitosa* L. Isfjorden: Moskushavn, August 2nd (caeomaspores $13.5-25.5 \times 12.5-22.5 \mu$); Hyperitfossen, July 24th (caeomasp. $13.5-32.5 \times 8(11)-24.5 \mu$); Botneheia, July 21st (caeomasp. $13.5-28.5(32.5) \times 11-21 \mu$); Ledalen, July 6th (caeomasp. $15-27(37) \times 8(11)-24.5 \mu$); Flowerdalen, July 12th (on *S. cespitosa* L. var. *aurea* Hadač, caeomasp. $16-31 \times (9.5) 13.5-25.5 \mu$); Lusitaniadalen, very frequent, July 9th (caeomasp. $13.5-29.5 \times 13.5-21.5 \mu$). The caeoma has also been collected on this host in Isfjorden: Alkhornet, July 15th, 1939, leg. Knut Aarhus (spores $15-27 \times 11.5-23.7 \mu$).

On *Saxifraga oppositifolia* L. Isfjorden: Flowerdalen, July 5th (caeomaspores $16-24.5 \times 13.5-19.5 \mu$); Lusitaniadalen, July 9th (caeomasp. $15-18(21) \times (9) 12-15 \mu$). On this host *Melampsora epitea* has only been found once before in Svalbard, viz. by the present author in Isfjorden: Surroundings of the lakelet on Kapp Linné, O + I, July 9th, 1933.

On *Salix polaris* Wahlenb. Isfjorden: Moskushavn, II + III, September 1st (teleutosori dominating, uredospores $15-21 \times 12-15 \mu$; teleutosori amphigenous, teleutospores $30-60 \times 6-14 \mu$, commonly c. $40-50 \mu$ long). — De Geerdalen: The delta, II + III, July 21st (uredospores $15.5-28.5 \times 13.5-23 \mu$, uredosori amphigenous; capitate paraphyses up to 86.5μ long, the heads measuring $16-32.5$ longitudinally and $13.5-30 \mu$ transversally and their membrane $2-9 \mu$ at top; of the several more clavate paraphyses some were found to be $11-22 \mu$ broad in their upper part, with thinner wall, $1-2 \mu$; teleutosori occurred amphigenously, teleutospores c. $22-55 \times 8-14 \mu$). — Brentskardet, II, July 27th (uredosori occurred hypophyllously or amphigenously, small, partly confluent, $0.2-1.8$ mm long, with numerous hyaline, up to 84μ long paraphyses, the heads of which measured $19-32.5 \times 16-25$ (27) μ ; wall thickness at top $2-9.5$ (11) μ , generally not exceeding 8μ ; uredospores $13.5-23$ (27.5) \times (11) $13.5-17.5$ (20.5) μ).

10. *Puccinia bistortae* (Str.) DC.

Syn. *P. polygoni-vivipari* Karst.

On *Polygonum viviparum* L. Isfjorden: Moskushavn, II + III, August 22nd (uredospores few, $23-24.5 \times 20.5-23 \mu$; teleutospores $19-31 \times 13.5-20.5 \mu$); Moskushavn, (II) + III, August 29th (uredospores very few, $21.5-25.5 \times 20.5-21.5 \mu$; teleutospores $21.5-33$ (35.5) $\times 13.5-21.5$ (25.5) μ); Moskushavn, III, September 1st (only teleutospores to be found, $19.5-24 \times 15-18 \mu$); Konusdalen, (II) + III, August 28th (teleutospores $17.5-30 \times 13-22.5 \mu$; only very few and old uredospores observed); De Geerdalen: The delta, II + III, July 21st (uredospores $19-27.5 \times 19-23 \mu$; teleutospores $19-27 \times 15-18.5 \mu$); De Geerdalen: Northern part, II + III, July 11th (uredosori in majority, uredospores (20) $21.5-27 \times 19-21.5 \mu$; teleutospores $19-29 \times$ (14) $16-18 \mu$, very commonly c. 16μ broad, 1 small bright spore $17 \times 15.5 \mu$); Hyperitfossen, II + III, July 23rd (uredo dominating, uredospores $18.5-27 \times 17.5-21.5 \mu$; teleutospores $19-24.5 \times 16-19 \mu$); Lusitaniadalen, II + III, July 9th (uredospores few, $21-29.5 \times 19-24 \mu$; teleutospores $21.5-28.5 \times 13.5-19 \mu$); Eskerdalen, II + III, July 28th (uredospores $20-28.5$ (31) $\times 17.5-21.5 \mu$; teleutospores $20-27.5 \times 13.5-21.5 \mu$).

11. *Puccinia cruciferarum* Rud.

Syn. *P. cardamines-bellidifoliae* Diet.

On *Cardamine bellidifolia* L. Isfjorden: Moskushavn, August 19th (ex herb., spores $29-42 \times 13-18 \mu$); Hyperitfossen, July 21st (spores $27.5-42 \times (11.5) 13-18 (21) \mu$, one mesospore observed).

12. *Puccinia drabae* Rud.

On *Draba Bellii Holm var. gracilescens* E. Ekm. (this specimen has been determined by Johannes Lid, Botanical Museum of the University in Oslo; in Dr. Hadač's paper it has been called *Draba alpina f. hebecarpa*). Isfjorden: Moskushavn, August 24th (spores $30-40.5 \times 15-19 \mu$, generally with a very slight apical thickening, not over 4μ).

13. *Puccinia oxyriae* Fuck.

On *Oxyria digyna* (L.) Hill. Isfjorden: Indrehytta, II + III, July 26th (uredospores $25-36 \times 21-26.5 \mu$; teleutospores $34-50 \times 16-24.5 (26.5) \mu$).

14. *Puccinia saxifragae* Schlecht.

On *Saxifraga cernua* L. Isfjorden: Moskushavn, August 24th (spores $24.5-40.5 \times 12.5-19 \mu$; mesospores $21.5-43 \times 12.5-17.5 \mu$); Moskushavn, September 1st (spores $21-31.5 \times 15-18 \mu$). Hyperitfossen, July 24th (spores (21.5) $27-38 \times 13-19 (24) \mu$).

On *Saxifraga hieraciifolia* Waldst. & Kit. Isfjorden: Moskushavn, August 22nd (spores $21-35.5 \times 15-24 \mu$; mesospores present, $27 \times 19-21.5 \mu$); near Passhytta, July 27th (spores $21.5-33 \times 15.5-21 \mu$); Billefjorden: Skansbukta, August 21st (spores $23-34.5 \times 13.5-21.5 \mu$, mesospores present $24 \times 13.5 \mu$), leg. Ing. Arne Egge (cf. last part of the preface of Dr. Hadač's paper).

On *Saxifraga nivalis* L. Isfjorden: Moskushavn, August 29th (spores $18.5-30 \times 15.5-21 \mu$); Konusdalen, August 28th (spores $19-31.5 \times 15-21.5 \mu$); Hyperitfossen, July 24th (spores $21-32.5 \times 13.5-21 \mu$); Indrehytta, July 26th (spores $20.5-32.5 \times 13.5-21.5 \mu$).

On *Saxifraga tenuis* (Wg.) H. Sm. Isfjorden: Louisdalen, August 21st (spores $21.5-32.5 \times 12-19 \mu$; mesospores $20.5-21.5 \times 13-13.5 \mu$, apex thickened up to 8μ); Hyperitfossen, July 24th ($21.5-37 \times 13-19 \mu$).

15. *Ustilago bistortarum* (DC.) Koern.

On *Polygonum viviparum* L. Isfjorden: De Geerdalen: The delta, July 21st; Indrehytta, July 26th; Mälardalen, August 30th.

16. *Ustilago inflorescentiae* (Trel.) Maire.

On *Polygonum viviparum* L. Isfjorden: Longyearbyen, July 17th; Hotellneset, July 18th; Konusdalen, August 28th; Lusitania-dalen, July 9th; Indrehytta, July 26th.

17. *Ustilago nivalis* Liro.

On *Sagina intermedia* Fenzl. Isfjorden: Moskushavn, August 18th, spores 8—12 μ . (the smut was found by the author on examining the phanerogam collections of Dr. Hadač). In literature this interesting species has been recorded from only one locality in Svalbard before: Adventfjorden, August 9th, 1882, leg. A. G. Nathorst (Liro 1924 p. 42—43 and Lind 1928 p. 32). Going through the Arctic, Norwegian, and Swedish material of *Sagina intermedia* in the Herbarium of the Botanical Museum of the University in Oslo, I also found it in Professor B. Lynges's collections from Bellsund: Lågfjorden (Van Mijen Bay): Blåhuken, August 16th, 1926 (spores 9.3—13.4 μ , the majority c. 11 μ ; chiefly spherical (-ovate), very rarely irregularly angular-longish).

On the Norwegian Scientific Expedition to North East Greenland in 1933, *Ustilago nivalis* was found by the present author at Clavingøya: Kapp Mary [74° 11' N], August 5th (spores 9.3—12 μ , the majority 10—11 μ), this being an addition to the mycoflora of the New World. Afterwards I found it in the collections of the Norwegian Scientific Expedition to North East Greenland in 1932 from Kapp Hold-with-Hope [c. 73° 30' N], August 13th, leg. Sigurd Aandstad (spores 9.3—13 μ , most commonly 10.3 μ).

18. *Ustilago striaeformis* (West.) v. Niessl.

On *Poa arctica* R. Br. Isfjorden: Brentskardet, July 29th (spores 9—15 \times 7.5—11 μ).

Ustilago striaeformis is an addition to the mycoflora of Svalbard, and I have not seen it recorded on this host plant before. Liro (1924 p. 377) mentions it from *Poa pratensis* L.

“mit Formen”. I have compared the spores of the specimen from Svalbard with those of *Ustilago striaeformis* on *Poa pratensis* from the Norwegian mountains (Valdres), and found that they were very similar.

19. *Ustilago vinosa* (Berk.) Tul.

On *Oxyria digyna* (L.) Hill. Bellsund: Vårsolbukta, August 16th. Isfjorden: Alkhorneret (Trygghamna), August 17th; Moskushavn, August 18th; Diabasodden, August 11th; Hyperitfossen, July 23rd; Botneheia, July 12th and 22nd; Eskerdalen, July 28th; the mouth of Helvetiadalen towards Adventdalen, July 25th; Tschermakfjellet, August 25th; Kapp Wijk, August 27th. — The north coast of Vestspitsbergen: Sallyhavn in Birgerbukta, September 3rd.

20. *Ustilago violacea* (Pers.) Rouss.

On *Silene acaulis* L. Isfjorden: Longyearbyen, July 15th; De Geerdalen: The delta, July 20th; between Indrehytta and Moskushavn, August 1st.

21. *Cintractia caricis* (Pers.) Magn.

On *Carex subspathacea* Wormskj. ex Hornem. Isfjorden: Dicksonfjorden: Kapp Wijk, August 27th. In this locality the smut occurred very abundantly.

Cintractia caricis has previously not been found on this host in Svalbard.

22. *Exobasidium vaccinii-myrtilli* (Fuck.) Juel f. *amphigena* Juel.

See Juel 1912 p. 365 and Lind 1928 p. 34.

On *Cassiope tetragona* (L.) D. Don. Isfjorden: Longyearbyen, July 17th; Moskushavn, August 24th; Konusdalen, August 28th; Hyperitfossen, July 23rd; Brentskardet, July 29th; Helvetiadalen, July 25th; between Indrehytta and Moskushavn, August 1st; Dicksonfjorden: Kapp Wijk, August 25th.

In the Herbarium of the Botanical Museum of the University in Oslo I have also seen specimens from Isfjorden: Billefjorden: Blomsterhaugane in Mimersdalen, September 4th, 1928, leg. O. A. Høeg, and from Adventfjorden, July, 1930, leg. Gert Jynge. Going through the herbaria, I have taken it out of the collections of Hanna Resvoll-Holmsen from Isfjorden: Coles Bay, August 4th and 7th, 1908, further from Krossfjorden: Ebeltoftthavn, July 22nd, 1908.

Finally, it may be mentioned that the most common colour of the hypertrophied leaves has been observed in the field by Dr. Hadač to be 341—103 C. D. C. (cf. Séguy 1936).

23. *Exobasidium Warmingii* Rostr.

On *Saxifraga oppositifolia* L. Isfjorden: Coloradofjella in Tempelfjorden, August 26th; Hyperitfossen, July 23rd; Ledalen, July 6th; Eskerdalen, July 28th.

Exobasidium Warmingii is an addition to the mycoflora of Svalbard. In 1933 I also collected it in many localities on *Saxifraga oppositifolia* in North East Greenland on the Norwegian Scientific Expedition.

Fungi imperfecti.

24. *Diplodina pedicularidis* (Fuck.) Lind.

Cf. Lind 1924 p. 21 and 1928 p. 36.

On *Pedicularis hirsuta* L. Isfjorden: near Passhytta, July 27th; between Indrehytta and Passhytta, July 27th; Indrehytta, July 26th.

25. *Bostrychonema alpestre* Ces.

On *Polygonum viviparum* L. Isfjorden: Moskushavn, August 30th (conidia $18-27 \times 12-14.7 \mu$; conidiophores $5-7 \mu$ thick, up to 174μ long); Konusdalen, August 28th; the delta of De Geerdalen, July 21st (2-celled conidia measured $17.5-24.5 \times 11-13.5 \mu$, some young 1-celled ones $13.5-19 \times 8-11 \mu$); Indrehytta, July 26th (conidia $18-27 \times 10.5-12 \mu$); Mälardalen, August 30th (conidiophores to 175μ long, $4-6 \mu$ broad, septate; conidia $19-27 \times 13.5-16 \mu$).

26. *Cladosporium herbarum* Fr.

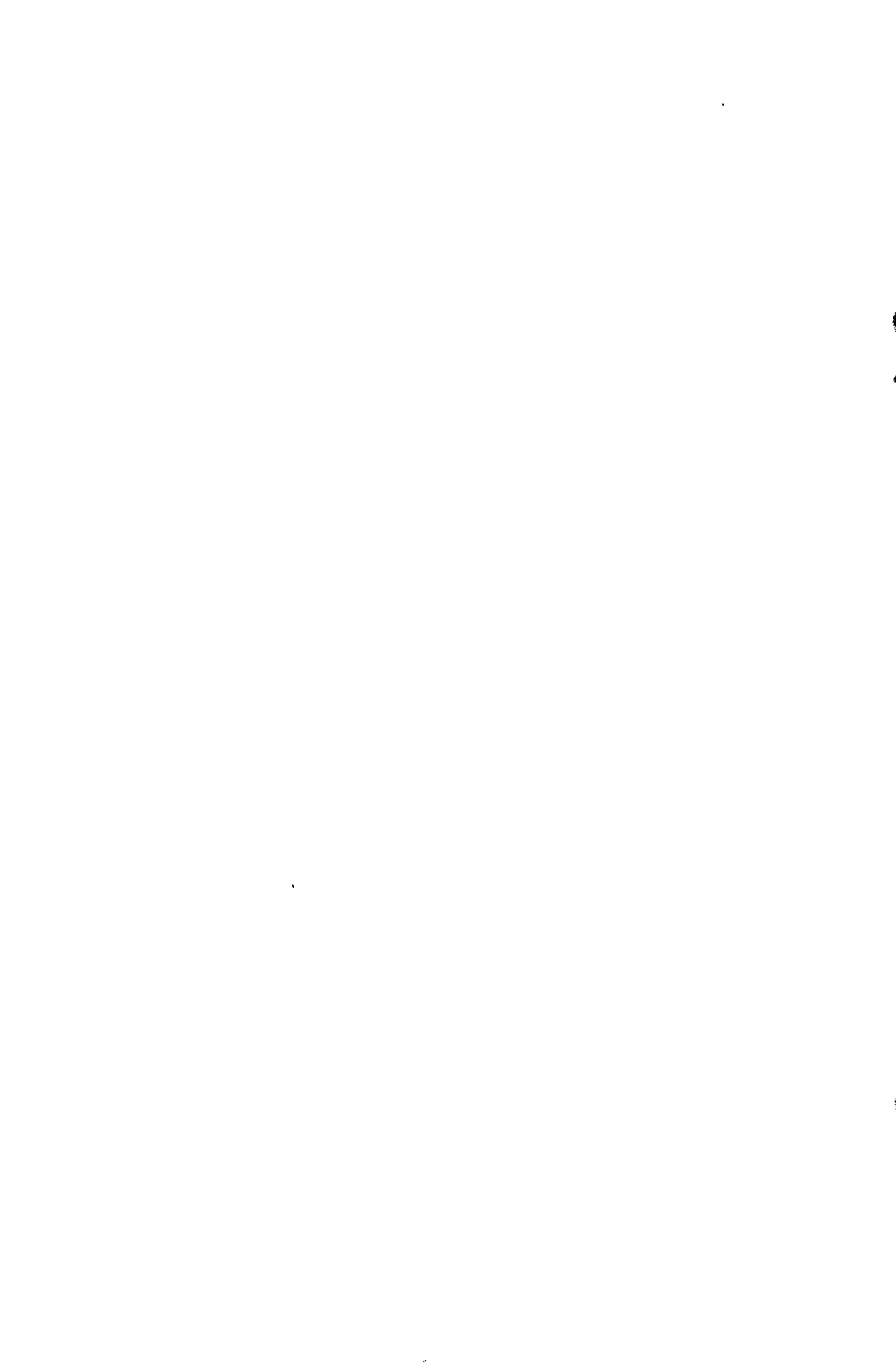
On *Minuartia rubella* (Wahlenb.) Graebn. Isfjorden: Moskushavn, August 22nd (hyphes c. $4-9 \mu$ broad; conidia 1—2—3-celled, $8-14 \times 4-7 \mu$).

Host index:

<i>Cardamine bellidifolia</i>	<i>Puccinia cruciferarum</i>
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<i>Taraxacum arcticum</i>	<i>Sphaerotheca fuliginea</i>

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The Introduced Flora of Spitsbergen.

BY

EMIL HADAČ.

Adventive plants were found as far back as the last century in Spitsbergen. As early as in 1897, 15 adventive plants were reported from Advent Bay (Adventfjorden) by Ekstam. Recently Høeg and Lid, in particular, have worked on the introduced flora of Spitsbergen. Their list of species from Isfjorden and Kongsfjorden already contains 26 numbers.

In the summer of 1939, I had the opportunity of visiting several inhabited places in Vestspitsbergen, where quite a number of weeds were observed. A publication on these finds, together with the enumeration of the adventive species previously known, might not be without interest.

The introduced plants of Spitsbergen were collected systematically in the following years and the following localities:

- 1897: Adventbay (Ekstam)
 - 1898: Virgohamn (Andersson & Hesselmann)
 - 1928: Hotellneset (probably identical with the locality of Ekstam)
 - Longyearbyen
 - Ny-Ålesund in Kongsfjorden (Kings Bay) (all Høeg & Lid)
 - 1939: Longyearbyen
 - Moskushavn (Hiorthhamn)
 - Advent City (ruins)
 - Hotellneset
 - Sverdrupbyen
 - Deltaneset
 - Revneset
 - Tempelfjorden: Nøis's hut
 - Kapp Wijk in Dicksonfjorden
 - Russekeila at the mouth of Isfjorden
 - Calypsobyen in Bellsund
 - Ny-Ålesund (all Hadač).
- } All these localities are at or near Adventfjorden.

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1. *Achillea millefolium* L. 1897. Adventbay (= Adventfjorden).
1928. Ny-Ålesund.
1939. Longyearbyen, with flower-buds. Moskus-havn.
 2. *Achillea ptarmica* L. 1939. Longyearbyen, sterile.
 3. *Agrostemma githago* L. 1897. Adventbay, in flower.
 4. *Alchemilla Wichurae* Bus. 1939. Moskus-havn, sterile (det. Eilif Dahl).
 5. *Alopecurus pratensis* L. 1939. Revneset, in flower.
 6. *Alopecurus myosuroides* Huds. 1939. Longyearbyen, in the harbour.
 7. *Avena sativa* L. 1928. Ny-Ålesund, Longyearbyen.
1939. Longyearbyen.
 8. *Carum carvi* L. 1939. Longyearbyen, sterile.
 9. *Cerastium cespitosum* Gil. . . 1897. Adventbay.
1939. Longyearbyen.
 10. *Chenopodium album* L. 1897. Adventbay.
1898. ?? Virgohamn as "Chenopodium sp.?"
1928. Hotellneset. Longyearbyen. Ny-Ålesund.
1939. Longyearbyen.
 11. *Conringia orientalis* Dum. . . 1928. Hotellneset.
 12. *Deschampsia cespitosa* (L.) P. B.
(non *D. cespitosa* f. *borealis*
Auct. fl. spitsb., quae *D. brevis-*
folia R.Br.) 1928. Hotellneset.
1939. Ny-Ålesund, Longyearbyen, Moskus-havn,
Advent City. (This mining camp was deserted
many years ago. The plants have thus en-
dured for more than 20 years.) Calypsobyen.
 13. *Erysimum hieraciifolium* L. . 1897. Adventbay.
 14. *Erysimum cheiranthoides* L. . 1928. Hotellneset.
 15. *Fagopyrum sagittatum* Gilib. 1897. Adventbay.

16. *Festuca rubra* L. *F. rubra* "introduced form" Høeg & Lid, without locality; not "*F. rubra* v. *arenaria*" Auct. fl. Spitsb. plurim. — The indigenous form is *F. cryophila* Krecz.) 1939. Longyearbyen, Moskushavn, Advent City, Tempelfjorden, Calypsobyen.
17. *Galeopsis tetrahit* L. 1897. Adventbay.
1939. Longyearbyen.
18. *Galium aparine* L. 1897. Adventbay.
19. *Hieracium* cf. *vulgatum* 1939. Longyearbyen.
20. *Hordeum vulgare* L. 1897. Adventbay.
21. *Lappula echinata* Gil. 1928. Hotellneset.
22. *Lapsana communis* L. 1939. Longyearbyen (det. P. Størmer).
23. *Lithospermum arvense* L. 1897. Adventbay.
24. *Matricaria inodora* L. 1928. Longyearbyen, Hotellneset, Ny-Ålesund.
1939. Longyearbyen, Moskushavn.
25. *Medicago hispida* Gaertn. 1928. Longyearbyen.
26. *Melilotus* cf. *officinalis* Desr. 1928. Longyearbyen.
27. *Myosotis arvensis* (L.) Hill. 1939. Moskushavn, Longyearbyen, Sverdrupbyen
28. *Phleum pratense* L. 1928. Longyearbyen, Hotellneset
29. *Pisum sativum* L. 1928. Longyearbyen, Ny-Ålesund.
1939. Sverdrupbyen.
30. *Plantago major* L. 1928. Hotellneset.
31. *Poa alpina* L. f. *florigera* As far as I know, only viviparous forms of *Poa alpina* have hitherto been observed in Spitsbergen. I have collected specimens with well developed flowers and anthers which appeared quite normal. As no proof exists that the viviparous form might be transformed into the flowering one on soil rich in nitrates, it seems probable that the latter has been introduced.
1939. Moskushavn, Ny-Ålesund.
32. *Poa alpigena* (Fr) Lindm. ssp. *domestica* (Læst. pro. var. *P. prat.*, Lindm. pro var) n. comb. 1928. Moskushavn (Tornøe).
1939. Moskushavn, Longyearbyen, Hotellneset, Sverdrupbyen, Tempelfjorden, Russekeila, Calypsobyen, Ny-Ålesund.
33. *Poa trivialis* L. v. *stricta* Döll. 1939. Longyearbyen.
34. *Polygonum aviculare* L. 1897. Adventbay.
1928. Ny-Ålesund.
1939. Longyearbyen, Sverdrupbyen.
35. *Polygonum convolvulus* L. 1928. Hotellneset.
36. *Ranunculus acer* L. 1928. Longyearbyen, Hotellneset, Ny-Ålesund.
1939. Longyearbyen, Moskushavn.
37. *Ranunculus repens* L. 1939. Longyearbyen.
38. *Raphanus raphanistrum* L. 1928. Hotellneset.
39. *Rumex acetosa* L. 1897. Adventbay.
1898. Virgohamn.
1928. Ny-Ålesund.
1939. Longyearbyen, Sverdrupbyen.
40. *Rumex acetosella* L. 1928. Ny - Ålesund, Longyearbyen.
1939. Sverdrupbyen, Longyearbyen.
41. *Rumex domesticus* Hartm 1928. Longyearbyen, Ny - Ålesund.
1939. Longyearbyen, Moskushavn.
42. *Secale cereale* L. 1897. Adventbay.

43. *Senecio cf. vulgaris* L..... 1898. Virgohamn.
44. *Sinapis arvensis* L 1928. Hotellneset.
45. *Sisymbrium altissimum* L. . . 1939. Longyearbyen.
46. *Sonchus oleraceus* L..... 1898. Virgohamn.
47. *Stellaria media* L. 1898. Virgohamn.
1928. Ny-Ålesund, Hotellneset, Longyearbyen
(H. & L.), Moskushavn (Tornøe).
1939. Moskushavn, Longyearbyen, Kapp Wijk,
Tempelfjorden, Deltaneset.
48. *Taraxacum officinale* Web... 1939. Longyearbyen.
49. *Thlaspi arvense* L. 1897. Adventbay.
1928. Hotellneset, Longyearbyen, Ny-Ålesund.
50. *Trifolium hybridum* L..... 1928. Hotellneset, Longyearbyen.
1939. Longyearbyen.
51. *Trifolium pratense* L..... 1928. Longyearbyen, Hotellneset.
1939. Longyearbyen.
52. *Vicia angustifolia* (L.) Reich. 1897. Adventbay.

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