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OF THE

SECOND NORWEGIAN ARCTIC EXPEDITION IN THE "FRAM"

1898—1902.

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VOL. II.

AT THE EXPENSE OF THE FRIDTJOF NANSEN FUND
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REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 5.

GUNN. ISACHSEN:

ASTRONOMICAL AND GEODETICAL OBSERVATIONS

AT THE EXPENSE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

PUBLISHED BY

VIDENSKABS-SELSKABET I KRISTIANIA

WITH 2 PLATES AND 3 MAPS

KRISTIANIA
PRINTED BY A. W. BRØGGER
1907

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Introduction.

The astronomical observations and determinations of geographical position contained in the following pages, were made by BAUMANN, FOSHEIM, ISACHSEN, SCHEI and SVERDRUP; while A. ALEXANDER, JOH. DAHL and GRAARUD have assisted in the working-out of the observations.

As the work had to be hastened on, on account of SVERDRUP's book "Nyt Land" ("New Land"), so that the charting had to be partially based upon the preliminary drawings, certain discrepancies have arisen between the final calculations and the first maps.

Where there have been several determinations of the same point, careful discrimination has been exercised; and a number of observations, made under unfortunate circumstances, have been omitted, when observations of the same points have been made later in the course of the expedition under more favorable conditions.

The geographical results of the expedition are arranged as follows:

I. Description of the Instruments.
II. Account of the Surveying.
III. Geographical Position of the Winter Harbours; and Error of Chronometer Kutter (Kt.) on Greenwich Mean Time.
IV. Observations on Sledge-Journeys.
V. Triangulation of Gaase Fjord.

In conclusion I would tender my thanks to the above-named assistants, as also to Prof. H. GEELMUYDEN, Christiania, for his ready help before starting on the Expedition.

Special thanks are also due to Prof. H. MOHN, Director of the Meteorological Institute, Christiania, for his kind advice and revision of the material.

Christiania; 5th April, 1906.

Gunn. Isachsen.

I.

Description of the Astronomical and Surveying Instruments.

The Expedition took with it the following instruments for astronomical and surveying observations:

1. A large altazimuth by OLSEN & Co. of Christiania. This instrument was also used on the Fram Expedition of 1893—96. It was damaged by an accident before the Expedition reached its first winter quarters, and could not be repaired with the means at our disposal.

2. Two smaller altazimuths, marked No. 1 and No. 2, also by OLSEN & Co. The telescope, the axis of which is broken by a reflecting prism, has an aperture of 25 mm., a focal length of 20 cm., and a magnifying power of 15 diameters. Both the circles have a diameter of 12 cm., are divided into 20′, and are each read by 2 verniers that give 30″. The verniers of the vertical circle can be made level by means of a spirit-level; and there is a second spirit-level on the alidade of the horizontal circle. The angular value of one division of the levels is 15″. There is no screw with pinion for the adjustment of the focus of the telescope for different distances; the adjustment is made by hand, and the eye-piece fixed with ordinary screws. This arrangement, inconvenient as it is when the instrument is to be used for triangulation, had the effect of keeping the optical axis accurately adjusted, even on the sledge-journeys; and the treatment that an instrument of this description is liable to receive on such journeys is anything but gentle. In the course of the four years, both the objective and the eye-piece end had almost worn through the wooden sides of the instrument-case.

There is no special stand for this instrument, but it can be fixed to the top of the case by means of a hook, the case itself being then placed upon the snow, while the observer is in a lying position. On most of the journeys, however, a plane-table was taken, and the instrument simply placed upon it.

3. An ordinary ship's sextant by HECKELMANN, Hamburg, reading 10″.

4. Two small pocket-sextants.

5. A compass. The card (THOMSON'S) was one taken out of an ordinary mariners' compass, and placed in a box made on board.

6. A NEGRETTI & ZAMBRA telescope, with an aperture of 7.4 cm. and a magnifying power of 65 diameters. This was used for the observations of the solar eclipse of the 28th May, 1900.

7. Three odometers were made during the voyage, the first during the winter 1898—99. I made a trial of this in the spring of 1899, and found it very useful on an expedition across Ellesmere Land in the summer of that year. As it proved an excellent contrivance in surveying, two more were made later on.

An odometer is a wheel, to the axis of which is attached a registering-apparatus, which records the number of revolutions performed by the wheel. When the circumference of the wheel is known, the distance traversed may be calculated.

The relative proportions of the radius of the wheel and the gearing of the registering-apparatus were so arranged that the distance traversed could be read off directly from the latter. (See Pl. I and II.)

The registering-apparatus consisted of three endless screws, which geared into three corresponding cog-wheels.

Screw No. 1, which was firmly attached to the axle of the wheel, imparted motion to screw No. 2 in 22 revolutions. Screw No. 2 in its turn transmitted motion to screw No. 3 in 36 revolutions. Thus from axle No. 1 to axle No. 3, the number of revolutions was 792. The circumference of the wheel measured 2.341 metres, and therefore in one revolution of axle No. 3, the wheel covered a distance of 2.341 metres $\times$ 792 = 1854 metres = 1 nautical mile.

Axle No. 3 was furnished with an index, moving on a dial that was divided into tenths of a nautical mile. Hundredths of a mile could be judged.

In order to count the whole number of miles, screw No. 4 transmitted motion to axle No. 4 in 30 revolutions. The index of axle No. 4 thus registered up to 30 nautical miles.

The principle itself is well known and of general application on bicycles and carriages. The difficulty in our case was to obtain a practical connection between sledge and wheel, and to make it sufficiently strong and light.

In order that it might be used under varied conditions, the wheel, when connected with the sledge, had to be capable of being moved up, and down, and to the sides, in relation to the sledge; and all the time it must remain upright.

It was not until 1901 that we found a connection that fulfilled all requirements. It was a kind of "universal coupling", that was strong and kept in good order on all subsequent expeditions.

The weight of the odometer and accessories was 3.9 kilogrammes.

Two of our odometers are now with Captain AMUNDSEN on the "Gjøa", in polar regions.

The Expedition was furnished with 3 box-chronometers, KUTTER No. 24 (Kt), MEWES (M), and FRODSHAM No. 3555 (Fr). These were placed in a cupboard in Captain BAUMANN's cabin at a height of about 1.2 metre above the deck. In the saloon outside, a thermograph had its place at a height of about 1.6 metre above the deck. The thermograph was compared daily with the thermometer that hung close beside it.

The pocket-chronometers used on the sledge-journeys — we had six of them — were carried in a watch-pocket below the belt. They were kept in a leather pouch with a lock, which in its turn lay in a loose pocket of cat-skin that had the hair inside. When on board, they were kept in the cupboard beside the above-mentioned ship's chronometers.

The chronometer Kutter, which proved to be the most uniform in rate, formed the basis upon which all the calculations were made.

The error of the chronometer Kutter on Greenwich mean time is given below in Part III. The results are not smoothed, as the probable degree of accuracy is scarcely large enough to give any value to a smoothing of the few data.

A comparison with the rate of the other chronometers has given us no reason to doubt the correctness of the difference in longitude between the winter haven of 1899 and that of 1900.

Observations made on a sledge-expedition to Beechey Island (determined by several British expeditions), verify the longitude of the last two of the Expedition's winter havens.

II.

Account of the Surveying.

Hayes Fjord, Beitstad Fjord and Jökel Fjord were surveyed during the autumn of 1898. A base-line of 1100 metres was measured at the station "Fort Juliane".

In the spring of 1899, a base-line of 1500 metres was measured at the head of Flagler Fjord; and from this line the work was continued eastwards with points and offsets, thereby establishing a connection with the points laid down the previous autumn.

Mainly for purposes of verification, further base-lines were measured at the head of Alexandra Fjord and on Cocked Hat Island.

The azimuth of the network of triangles was determined by azimuth observations (the line from Kjøthaugen to Cape Camperdown).

The initial point of the surveying was the geographical position of the winter haven. Its latitude was determined by several meridian observations of the sun, and its longitude by several series of lunar distances.

For the mutual verification of instruments and measurements, determinations of latitude and longitude were made in several localities by means of solar observations and pocket chronometers.

For the actual surveying, a plane-table and a kippregel were used; and at the more important points, angles were measured with the theodolite.

The starting-points for the mapping-operations of the years 1899 to 1902 were the positions of the various winter havens.

The latitude of the winter haven in Havne Fjord, Jones' Sound, and also that of the other two winter havens, is the mean of several meridian observations of the sun.

The longitude of the winter haven in Havne Fjord was determined by observation of the solar eclipse in May, 1900; that of the winter haven in Gaase Fjord, 1900—01, was found by observations there in June, 1900, in relation to that of Havne Fjord, with the aid of one of

our best pocket-chronometers. The longitude of the fourth winter haven, 1901—02, in Gaase Fjord, was determined in relation to that of the third, by triangulation in the summer of 1902.

In the autumn of 1899, I was engaged in surveying in Jones' Sound — the region east of Havne Fjord — in very much the same manner as in our first winter quarters.

My plan in my first work in 1900 was to use, instead of a plane-table, the altazimuth for angles, and the odometer for distances; but there were many hindrances to this method. The employment of the altazimuth for terrestrial purposes presupposes clear weather, of which there was exceedingly little at that time of year. On such expeditions too, the time that can be spared for waiting is limited. We therefore greatly felt the want of a large compass on this expedition; but we had only one, and that was being used by SVERDRUP. The tract mapped by him north of Cape Farewell was thus determined by compass, and by the distances traversed by odometer.

It was also very unfortunate for us that the odometer's coupling with the sledge broke three times over the rough pack-ice, the last time irreparably.

Surveying operations in 1901 and 1902 were carried on with plane-table, kippregel, and odometer, the last-named having now attained almost "perfection". The points were further verified by astronomical observations with an altazimuth or a pocket sextant. This was necessary, as the recorded traversed distances between two points are of course somewhat greater than they are in reality, on account of the impossibility of going in a perfectly straight line.

The western part of Jones' Sound, Hell Gate (Helvedsporten), and a few other tracts, were surveyed without using the odometer, principally on boat-expeditions.

The island of St. Helena, off COLIN ARCHER Peninsula, was an important point as far as the first of the above districts was concerned. Its position was found from the triangulation of Gaase Fjord, mentioned above and below, in 1902, from azimuths observed from points in Gaase Fjord, that are intersected by the mean of several observations of latitude made on St. Helena.

Thus, with the assistance of St. Helena, points on the north side of Jones' Sound were connected with points on its south side.

In order to verify these points, several determinations of longitude were also made by sun and chronometer, and several points were marked by SUMNER's lines.

Gaase Fjord and adjoining districts were triangulated during the summer of 1902, starting from a repeatedly measured base-line of 1500 metres, on the ice of the fjord.

In this triangulation, azimuths were taken northwards to Bear Cape Land (Bjørnekaplandet), and southwards — as already mentioned — to St. Helena and other points. This connects the most northerly and westerly points of our region with those farthest south and east, all being based upon the geographical position of the winter haven. This was the main purpose of the triangulation, during which trigonometrical measurements of altitude were also made.

The mode of travelling in arctic regions makes altimetry difficult. Most of our altitudes have been obtained by reducing readings of pocket aneroid barometers. The error of these instruments, however, underwent great changes, owing to the rough treatment to which the driving with dogs in arctic regions subjects them.

In addition to barometers, we had with us, as a rule, other instruments for hypsometric measurements; but, as already indicated, no small proportion of our altitudes were measured trigonometrically.

During the winter months, our observations were worked out, and maps were constructed and drawn (principally on Mercator's projection). Great assistance in calculating was afforded by BØRGEN's tables on Mercator's function (see Prof. C. BØRGEN, "Ueber die Auflösung nautisch-astronomischer Aufgaben"; Hamburg, 1898). These were moreover easily carried on expeditions, as they numbered only ten pages.

All our measurements were made in low temperatures, from a few degrees of heat down to about 50° C below zero. There were therefore difficulties connected with the work, and not infrequently as a consequence of this, a whole series of observations had to be rejected, or the observations repeated.

Some of us, too, might have something to tell of the difficulty of carrying on this kind of work with eyes that are strained with a bright sun and reflected light.

III.

The Geographical Position of the Winter Harbours, and the Errors of Chronometer Kutter on Greenwich Mean Time.

The latitude and longitude of the various winter harbours is the point of departure for the surveying of the arctic regions visited by the Expedition. These observations are taken by BAUMANN.

First Winter Harbour in Rice Strait, 1898—99.

The *Latitude* is found, from 3 meridian altitudes of the sun, to be *78° 45.'7 N.*

The *Longitude* is found, by a set of 7 lunar distances, to be $4^h\ 59^m\ 46^s$ or *74° 56.'5.* W. of Greenwich.

Observations for Latitude by Sextant.

Day.		2h.	I. E.	b.	t.	Latitude.
1899.	April 25 .	⊙ 48° 38' 10"	– 3' 50"	761.3 mm.	– 17.°2 C.	78° 45' 55"
—	— 26 .	⊙ 50 21 10	– 4 0	770.8 —	– 20. 7 „	„ „ 40
—	May 4 .	⊙ 54 10 20	– 4 0	774.2 —	– 16. 3 „	„ „ 42

2h = double altitudes read. I. E. = Index-Error. b = Barometer. mm.
t. = Temp. of air C.

Observations for Longitude.

1899. July 3. Lunar distances from the Sun. I. E. = — 3′ 40″.

Watch No. 5.	Kutter.	Distance.	Longitude.
h m s	h m s		h m s
5 27 16. 0	2 5 57. 5	48° 10′ 20″	4 59 43. 8
47 44. 0	26 25. 7	48 0 40	5 0 38. 6
50 11. 0	28 52. 5	47 59 50	5 0 10. 1
52 26. 5	31 8. 0	„ 59 25	4 58 54. 7
6 16 11. 0	54 52. 5	„ 48 20	5 0 2. 5
17 43. 0	56 24. 5	„ 47 50	4 59 34. 2
20 49. 0	59 30. 5	47 46 30	4 59 15. 1

Mean error of one observation = ± 32.^{s}4.

Second Winter Harbour in Havnefjord, 1899—1900.

The *Latitude* is found, from 4 meridian altitudes of the sun, to be *76° 29′.4 N.*

The *Longitude* is found from the observation of the solar eclipse on the 28th May, 1900, to be *5^{h} 36^{m} 15^{s}* or *84° 4′* W. of Greenwich.

Observations for Latitude by Sextant.

Day.	⊙ 2h.	I. E.	b.	t.	Latitude.
1899. Sept. 20 .	28° 39′ 0″	— 3′ 30″	758.7	— 3.3	76° 29′ 27″
1900. April 25 .	53 1 50	— 3 30	762.9	— 9.5	„ „ 22
— — 26 .	53 37 0	— 0 10	765.0	— 11.7	„ „ 33
— — 27 .	54 15 30	+ 0 10	770.0	— 20.8	„ „ 24

Observations for Longitude.

1900. May 27 (28) Eclipse of the Sun.

	First Contact.	Last Contact.
	h m s	h m s
Watch No. 5	20 34 0	21 43 50
Corr. to Kutter	+ 5 31 51.5	+ 5 31 51.5
Kutter—L. M. T.	— 5 31 30	— 5 31 30
L. M. T.	20 34 21.5	21 44 11.5
Longitude	84° 6′ 47″	83° 59′ 49″

The observer thinks it probable that the first contact observed is about 15 seconds too late. This would make the longitude 84° 10′ 28″.

The adopted longitude is 84° 4′ West of Greenwich.

Third Winter Harbour in Gaasefjord, 1900—1901.

The *Latitude* is found, from three meridian altitudes of the sun, to be

76° 48.′9 N.

The *Longitude* is found, by transport of chronometer on a voyage in the spring of 1900 from the second to the third winter harbour, to be $5^h\ 54^m\ 38^s$ or *88° 39.′5* West of Greenwich.

Observations for Latitude by Sextant.

Day.	⊙ 2h.	I. E.	b.	t.	Latitude.
1901. April 25 .	53° 13′ 35″	+ 30″	766.5	− 23.9	76° 48′ 56.″8
— May 31 .	70 43 10	+ 45	770.6	− 11.7	„ „ 46. 9
— June 22 .	73 49 10	+ 40	755.1	+ 1.6	„ „ 52. 6

Observations for Longitude.

Havnefjord, 1900.	June 5.	June 21.	June 10.
Watch Sverdrup—Kutter	− 0 h 9 m 38.5 s	− 0 h 9 m 18.5 s	
Kutter—L. M. T.	− 5 31 40	− 5 31 59	
Sverdrup—L. M. T.	− 5 41 18.5	− 5 41 17.5	− 5 h 41 m 18.8 s

Third Winter Harbour. Head of Gaasefjord.

Sextant. I. E. = 0. b = 760. t = 0°. 1900. June 10.

Watch Sverdrup.	2h.	L. M. T.	Sv.–L. M. T.
h m s 1 52 7 55 41	⊙ 56° 55′ 30″ 57 17 50	h m s 19 54 21.3	h m s 5 59 32.7
1 53 34 54 42	⊙ 58 7 40 15 0	19 54 36.9	31.1
1 57 12 60 28	⊙ 57 27 10 48 0	19 59 18.2	31.8
1 58 5 59 6.5	⊙ 58 35 40 42 10	19 59 1.5	34.0
Mean h m s 1 56 21.9		h m s 19 56 49.5	h m s – 5 59 32.4

Havnefjord	– 5 41 18.8
Gaasefjord—Havnefjord . . .	0 18 13.6
Havnefjord Longitude	5 36 15
Gaasefjord Longitude	5 54 28.6

The observation-station on shore at the head of Gaasefjord is situated 9.^{s}4 East of the position of the Fram in the third winter harbour. The Longitude of the Fram consequently becomes 5^{h} 54^{m} 28.^{s}6 + 9.^{s}4 or 5^{h} 54^{m} 38^{s} West of Greenwich.

Fourth Winter Harbour in Gaasefjord 1901—02.

The *Latitude* and *Longitude* were determined by the triangulation of Gaasefjord.

Latitude 76° 39′ 49″ N.

Longitude 5^{h} 54^{m} 33^{s} or *88° 38′* W. of Greenwich.

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1899.	May 5. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 3 21 10	5 7 42.0	46° 51′ 0′
I. E.	− 4′ 0″	9 26.5	59 0
b	773.5	10 26.0	47 2 10
t	19.6	11 44.0	8 40

1899.	May 5. p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	− 3 21 10	0 57 8	38° 56′ 20″
I. E.	− 4′ 0″	59 17	42 30
b	767.3	1 0 24	38 20
t	16.8	2 6	27 20
		3 6	21 0

1899.	May 6. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	− 3 21 8	4 59 28	47° 22′ 0″
I. E.	− 4′ 0″	5 0 16	26 10
b	762.8	1 8	30 20
t	17.9		

1899.	May 29. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	− 3 21 33	4 37 5.5	55° 31′ 30″
I. E.	− 3′ 50″	38 10.0	36 10
b	761.9	38 47.5	39 30
t	− 2.4		

		Watch No. 5.	⊙ 2h.
		h m s	
		4 41 23.0	56° 56′ 0″
		42 29.5	57 0 30
		43 26.5	5 0

1899.	May 29. p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	− 3 21 31	3 10 27.5	36° 37′ 0″
I. E.	− 3′ 30″	11 12.5	32 20
b	762.4	12 37.0	24 40
t	− 1.8		⊙ 2h.
		3 14 8.5	87 19 30
		14 59.0	15 40
		15 47.5	11 20

1899.	July 5. a. m.	Watch No. 5	⊙ 2h.
	h m s	h m s	
K-W	− 3 21 17	4 20 50.0	55° 49′ 20″
I. E.	− 3′ 15″	27 34.0	56 25 0
b	762.2		
t	4.7	4 29 52.0	56 36 20
			⊙ 2h.
		4 23 58.0	57 9 30
		25 38.0	17 30
		4 32 45.0	57 54 50

1899.	Oct. 1. p. m.	Chron. Kutter.	Arcturus 2h.
		h m s	
I. E.	− 3′ 40″	13 51 5.0	32° 26′ 0″
b	758.8	53 58.5	6 20
t	− 19.3	56 26.5	31 50 30

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1899.	Oct. 2. p. m.	Chron. Kutter.	Arcturus 2h.
		h m s	
I. E.	− 3′ 40″	12 58 40.5	37° 57′ 0″
b	760.7	13 2 3.0	33 30
t	− 17.6	5 29.5	8 40

1899.	Oct. 8. p. m.	Chron. Kutter.	Arcturus 2h.
		h m s	
I. E.	− 3′ 40″	12 56 52.0	35° 24′ 30″
b	758.6	58 42 0	12 40
t	− 15 4	13 0 11.0	3 0

1900.	March 9. p. m.	Chron. Kutter.	♀ (lower limb) 2h.
		h m s	
I. E.	− 3′ 0″	13 3 10.0	30° 39′ 30″
		5 47.5	21 50
		9 0.5	0 25

1900.	April 27. p. m.	Chron. Kutter.	☉ 2h.
		h m s	
I. E.	+ 5″	9 41 54	38° 45′ 30″
b	770.7	43 21	35 40
t	−20.8	44 26	28 40

1900.	April 28. a. m.	Chron. Kutter.	☉ 2h.
		h m s	
I. E.	0″	1 27 34	40° 29′ 50″
b	772.9	29 35	42 30
t	− 29.4	31 3	51 50

1900.	April 28. p. m.	Chron. Kutter.	☉ 2h.
		h m s	
I. E.	+ 5″	9 31 39	40° 26′ 30″
b	772.3	32 50	18 50
t	− 21 5	33 46	13 20

1900.	April 30. a. m.	Chron. Kutter.	☉ 2h.
		h m s	
I. E.	+ 5″	1 23 51	41° 20′ 10″
b	764.1	25 12	28 50
t	− 13.8	26 35	37 30

1900.	May 25. a. m.	Watch No. 5.	☉ 2h.
	h m s	h m s	
K-W	+ 5 31 58.5	7 5 8.5	48° 12′ 10″
I. E.	+ 10″	11 29.0	55 40
b	765.7	12 55.0	49 5 30
t	− 15.6		☉ 2h.
		7 7 51.5	49 33 50
		9 46.0	47 10
		15 14.0	50 24 20

1900.	May 25. p. m.	Watch No. 5.	☉ 2h.
	h m s	h m s	
K-W	+ 5 31 57.8	5 33 35	42° 59′ 40″
I. E.	+ 15″		☉ 2h.
		5 36 50	43 40 10

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

		Watch No. 5.	⊙ 2h.
		h m s	
		5 41 4	42° 7′ 10″
		45 39	41 35 0
			⊙ 2h.
		5 42 39	42 59 30
		44 23	47 30

1900.	May 26. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 31 55.5	7 10 25.0	49° 8′ 10″
I. E.	+ 10″	14 20.0	34 20
b	765.9		⊙ 2h.
t	− 16.3	7 11 51.5	50 20 40
		13 10.0	29 50

1900.	May 26. p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 31 54.5	4 37 1.0	49° 50′ 50″
I. E.	0″		⊙ 2h.
b	765.4	4 39 1.0	50 41 50
t	− 7.9		
			⊙ 2h.
I. E.	− 1.5″	4 40 22.0	50 32 0
		44 47.0	2 0
			⊙ 2h.
		4 41 43.0	49 19 30
		43 0.0	10 50

1900.	May 27. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 31 54.3	7 9 14.0	49° 18′ 40″
I. E.	0″	14 7.0	51 20
b	766.4	15 25.0	50 0 30
t	− 8.1		⊙ 2h.
		7 11 0	50 34 30
		12 30	44 20
		16 49	51 13 50

1900.	May 28 p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 31 52	4 38 18	50° 23′ 20″
I. E.	0″	42 35	49 54 30
b	759.6	43 45	46 30
t	− 5.4		⊙ 2h.
		4 39 21	51 19 10
		40 45	9 50
		44 50	50 42 10

1900.	June 24. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 31 33.0	7 34 40.0	55° 38′ 50″
I. E.	0″	39 1.0	56 8 20
b	760.8		⊙ 2h.
t	5.3	7 36 1.0	56 51 10
		37 30.0	57 1 0
			⊙ 2h.
		7 41 8.0	56 22 20
		46 22.0	56 50

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1900. June 24 a. m. Watch No. 5.

h m s	⊙ 2h.
7 43 9.0	57° 39′ 0″
44 48.0	49 20
	⊙ 2h.
7 48 30	57 10 50
53 0	40 50
	⊙ 2h.
7 50 9	58 25 10
51 40	34 20

1900. June 24. p. m. Watch No. 5.

	h m s
K-W	+ 5 31 32.5
I. E.	0″
b	762.5
t	5

h m s	⊙ 2h.
4 27 5	56° 0′ 55″
31 43	55 30 30
	⊙ 2h.
4 29 3	56 51 40
30 19	44 0
	⊙ 2h.
4 32 54	55 23 0
39 33	54 37 0
	⊙ 2h.
4 36 16	56 3 0
37 54	55 52 0
	⊙ 2h.
4 40 45	54 29 10
44 3	7 30
	⊙ 2h.
4 41 57	55 23 50
42 58	18 10

1900. July 28. a. m. Watch No. 5.

	h m s
K-W	+ 5 31 1.5
I. E.	+ 20″
b	758.1
t	1.3

h m s	⊙ 2h.
18 42 20	40° 34′ 50″
48 26	41 17 30
	⊙ 2h.
18 44 25	41 53 10
46 25	42 7 0
	⊙ 2h.
18 52 39	41 46 20
57 53	42 23 0
	⊙ 2h.
18 54 58	43 6 50
56 24	16 20
	⊙ 2h.
h m s	
18 59 33	42° 34′ 50″
19 4 55	43 11 50
	⊙ 2h.
19 0 48	43 46 40
3 27	44 4 30

1900. July 28. p. m. Watch No. 5.

	h m s
K-W	+ 5 31 1.5
I. E.	+ 20″
b	758.2
t	3.5

h m s	⊙ 2h.
4 36 10.5	46° 54′ 10″
39 52.5	29 30
	⊙ 2h.
4 37 59.5	47 45 0
38 58.5	39 30

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1900.	July 28. p. m.	Watch No. 5.	⊙ 2h.
		h m s	
		4 41 0.0	46° 21′ 20″
		43 43.5	4 10
			⊙ 2h.
		4 42 6.5	47 17 50
		42 52.5	12 55
			⊙ 2h.
		4 44 58	45 55 40
		48 0	35 0
			⊙ 2h.
		4 46 13.5	46 50 20
		47 12.0	43 50
1900.	August 9. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 30 57.0	19 57 20	43° 3′ 20″
I. E.	+ 25″	20 0 41	23 40
b	757.7		⊙ 2h.
t	1.1	19 58 37	44 14 0
		59 34	19 40
			⊙ 2h.
		20 1 39.0	43 30 0
		4 41.5	49 50
			⊙ 2h.
		20 2 45.5	44 40 0
		3 50.5	47 30
			⊙ 2h.
		20 5 40.5	43 55 30
		8 0.5	44 10 20
1900.	August 9. a. m.	Watch No. 5.	⊙ 2h.
		h m s	
		20 6 30.5	45° 4′ 0″
		7 12.5	8 0
1901.	March 31. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 7 0 46	19 48 53.0	25° 29′ 30″
I. E.	+ 45″	52 30.5	48 20
b	772.5		⊙ 2h.
t	− 30.6	19 50 15.0	26 41 0
		51 29.5	47 20
1901.	March 31. p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 7 0 45.5	2 4 19	25° 42′ 20″
I. E.	+ 35″	8 48	19 20
			⊙ 2h.
		2 5 56	26 38 20
		7 37	29 30
1901.	April 2. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 6 50 45.5	19 41 48.0	26° 37′ 30″
I. E.	+ 35″	42 41.0	41 50
b	762.4	43 36.5	46 55
t	− 30.5		

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index-Error. — b Barometer m. m. — t Temperature of Air, C.

1901.	April 2. p. m.	Watch No. 5.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 6 50 44	2 30 50.5	26° 47′ 30″
I. E.	+ 35″	32 1.5	40 30
b	760.5	32 54.5	36 20
t	— 26.8		

1901.	April 25. a. m.	Watch No. 5.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 54 51.5	19 58 53	39° 36′ 40″
I. E.	+ 35″	59 44	41 40
b	767.0	20 0 48	47 30
t	— 22.8	1 31	53 10

1901.	April 25. p. m.	Watch No. 5.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 54 52	3 52 41	39° 53′ 50″
I. E.	+ 35″	53 39	46 30
b	765.8	54 35	41 40
t	— 23.9	55 28	36 20

1901.	May 30. a. m.	Watch No. 5.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 56 27	20 21 36	58° 59′ 20″
I. E.	+ 45″	22 14	59 3 30
b	765.3	22 46	6 40
t	— 10.7		

1901.	May 30. p. m.	Watch No. 5.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 56 26.5	3 25 18	59° 6′ 40″
I. E.	+ 30″	25 49	3 30
b	767.3	26 26	58 59 20
t	— 9.5		

1901.	June 22. a. m.	Watch Sverdrup.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 58 27.5	21 21 51	67° 27′ 20″
I. E.	+ 42.5″	22 41	31 10
b	755.4	23 27	34 40
t	1.4	24 7	38 0
		24 46	41 50
		26 57	50 50

1901.	June 22. p. m.	Watch Sverdrup.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 58 27.5	2 25 1	67° 50′ 50″
I. E.	+ 42.5	27 15	41 50
b	754.4	27 52	38 0
t	1.8	28 30	34 4
		29 18	31 10
		30 9	27 20

1901.	July 22. a. m.	Watch Johannsen.	$\overline{\odot}$ 2h.
	h m s	h m s	
K-W	+ 5 8 38	19 38 9	45° 40′
I. E.	+ 40″	39 34	50

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: *Kutter minus Watch.* — I. E.: Index-Error. — b Barometer m. m. — t Temperature of Air, C.

		h m s	
b	759.5	19 40 58	46° 0′
t	3.7	42 32	10
		43 27	20
		45 30	30
		46 58	40

1901.	July 22. p. m.	Watch Johannsen.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 8 38	5 52 1	46° 40′
I. E.	+ 40″	53 26	30
b	760.2	54 56	20
t	4.6	56 25	10
		57 51	0
		59 18	45 50
		6 0 49	40

1902.	March 27. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 54 38	20 35 13	22° 3′ 0″
I. E.	+ 35″	37 16	13 50
b	768.0		
t	− 30.3	20 43 49	22 49 0

1902.	March 27. p. m.	Watch No. 5	⊙ 2h.
	h m s	h m s	
K-W	+ 5 54 38	3 24 9	22° 13′ 50″
I. E.	+ 35″	26 9.5	3 0
b	772.1		
t	− 19.9	3 17 41	22 49 0

1902.	April 21. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 53 53	20 42 27	41° 30′
I. E.	+ 35″	43 21	35
b	763.3	44 20	40
t	− 24.6	45 13	45
		46 16	50

1902.	April 21. a. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 53 53	20 48 2	42° 0′ 0″
I. E.	+ 35″	48 55	5 0
b	763.3	50 3	10 0
t	− 24.6	50 54	15 0
		51 57	20 0

1902.	April 21. p. m.	Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 53 53	2 54 58	42° 20′ 0″
I. E.	+ 35″	56 6	15 0
b	762.7	56 58	10 0
t	− 23.1	57 58	5 0
		58 54	0 0
		3 0 47	41 50
		1 55	45
		2 48	40
		3 40	35
		4 39	30

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1902. May 24. a. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 55 11.5	18 0 49.0	42° 15′
I. E.	+ 35″	1 32.5	20
b	763.5	2 14.0	25
t	− 11.7	2 59.5	30
		3 45.0	35
		4 28.0	40
		5 9.5	45
	h m s	h m s	
K-W	+ 5 55 15.0	19 28 19.0	52° 10′
I. E.	+ 35″	29 3.0	15
b	763.6	29 48.0	20
t	− 10.1	30 33.5	25
		31 19.5	30
		32 7.5	35
		32 55.5	40
	h m s	h m s	
K-W	+ 5 55 18.5	20 39 34.0	59° 20′
I. E.	+ 35″	40 26.0	25
b	763.6	41 24.0	30
t	−9.1	42 14.0	35
		43 14.0	40
		44 10.0	45
		45 12.0	50

1902. May 24. p. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 55 18.5	2 50 58.0	59° 50′
I. E.	+ 35″	51 54.0	45
b	764.0	52 57.5	40
t	− 6.8	53 48.0	35
		54 47.0	30
		55 43.5	25
		56 37.0	20
	h m s	h m s	
K-W	+ 5 55 21.0	4 3 17.5	52° 40′
I. E.	+ 35″	4 6.0	35
b	764.0	4 48.5	30
t	− 6.8	5 38.0	25
		6 22.0	20
		7 9.0	15
		7 52.0	10
	h m s	h m s	
K-W	+ 5 55 24.0	5 31 22.0	42° 45′
I. E.	+ 35″	32 6.0	40
b	764.1	32 53.0	35
t	− 6.2	33 30.5	30
		34 18.0	25
		35 1.5	20
		35 46.5	15

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E.: Index Error. — b Barometer m. m. — t Temperature of Air, C.

1902. June 29. a. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 45 10.2	18 57 28.0	52° 5′
I. E.	+ 1′ 5″	58 16.0	10
b	769.5	58 57.0	15
t	6.6	59 37.0	20
		19 0 22.0	25

1902. June 29. p. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 45 7.2	5 5 6.0	52° 25′
I. E.	+ 1′ 5″	5 48.0	20
b	768.9	6 31.0	15
t	6.9	7 12.0	10
		8 2.0	5

1902. July 20. a. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 53 38.5	20 53 2.0	59 55′
I. E.	+ 1′ 5″	54 0.5	60 0
b	759.3	54 47.0	5
t	5.6	55 47.0	10
		20 56 47.0	60° 15
		57 44.0	20
		58 42.5	25
		59 41.0	30
		21 0 35.0	35
		1 42.5	40
		2 32.5	45

1902. July 20. p. m.		Watch No. 5.	⊙ 2h.
	h m s	h m s	
K-W	+ 5 53 38.0	2 50 8.0	60° 45′
I. E.	+ 1′ 5″	51 3.0	40
b	760.7	52 4.0	35
t	5.9	52 55.0	30
		54 1.0	25
		54 55.0	20
		55 55.0	15
		56 51.0	10
		57 48.0	5
		58 43.0	0
		59 39.0	59 55

Observations for the Determination of the Error of Chronometer Kutter on Greenwich Mean Time.

K-W: Kutter minus Watch. — I. E: Index Error. — b Barometer m. m. — t Temperature of Air, C.

Beechy Island.

Lat. 74° 43′ N. Long. 91° 54′ W. — Place 0.5 naut. mile south of flagstaff.
Observer: BAUMANN.

Watch No. 5. Sextant.

		h		h m s
1902.	April 23.	9 a. m.	K-W =	+ 5 53 47.0
1902.	May 20.	Noon	»	5 55 2.5

1902. May 5.

Watch No. 5. h m s	⊙ 2h.
21 4 23.5	53° 50′ 0″
5 11.5	55 0
6 1.5	54 0 0
6 49.5	5 0

h m s	⊙ 2h.
21 11 10.5	54° 30′ 0″
11 54.5	35 0
12 48.5	40 0
13 36.5	45 0
14 30.5	50 0

1902. May 5.

Watch No. 5. h m s	⊙ 2h.
2 48 53.5	54° 5′ 0″
49 39.5	0 0
50 30.5	53 55 0
51 24.5	50 0

1902. May 6.

Watch No. 5. h m s	⊙ 2h.
20 19 26.5	49° 33′ 10″

I. E. + 35″
b 760 mm.
t — 15°

Results.

Greenwich Mean Time (Gr. M. T.) = Local Mean Time (L. M. T.) + Longitude.

Gr. M. T.			L. M. T.	Gr. M. T.	Kutter	Gr.-K.	Mean
			h m s	h m s	h m s	m s	m s
1899.	May	5	20 54 47.0	1 54 33.0	1 48 39.5	+ 5 53.5	
			4 45 36.8	9 45 22.8	9 39 14.2	6 8.8	+ 6 1.1
		6	20 45 22.0	1 45 18.0	1 39 6.7	6 11.3	6 11.3
		29	20 23 8.6	1 22 54.6	1 16 28.0	6 26.6	
			20 27 32.3	1 27 18.3	1 20 33.5	6 44.8	
			6 56 26.9	11 56 12.9	11 49 54.7	6 18.2	
			6 59 53.1	11 59 39.0	11 53 27.3	6 11.8	6 25.4
	July	5	20 9 54.5	1 9 40.5	1 2 55.0	6 45.5	
			20 15 32.6	1 15 18.6	1 8 35.0	6 43.6	
			20 10 33.8	1 10 19.8	1 3 31.0	6 48.8	
			20 18 34.8	1 18 20.8	1 11 28.0	6 52.8	6 47.7
1899.	October	1	8 24 14.9	14 0 29.9	13 53 50.0	6 39.9	
		2	7 32 39.5	13 8 54.5	13 2 4.3	6 50.2	
		8	7 29 15.0	13 5 30.0	12 58 35.0	6 55.0	
1900.	March	9	7 35 48.3	13 12 3.3	13 5 59.3	6 4.0	
	April	27	4 12 23.3	9 48 38.3	9 43 13.7	5 24.6	
		28	19 58 22.7	1 34 37.7	1 29 24.0	5 13.7	
			4 1 52.0	9 38 7.0	9 32 45.0	5 12.0	5 12.9
		30	19 54 10.1	1 30 25.1	1 25 12.7	5 12.4	5 12.4
	May	25	19 10 24.0	0 46 39.0	0 41 29.3	5 9.7	
			19 11 30.3	0 47 45.3	0 42 55.7	4 49.6	
			5 34 0.4	11 10 15.4	11 5 32.8	4 42.6	
			5 37 14.8	11 13 29.8	11 8 47.8	4 42.0	
			5 43 50.3	11 20 5.3	11 15 19.3	4 46.0	
			5 43 55.9	11 20 10.9	11 15 28.8	4 42.1	4 48.7
		26	19 12 52.0	0 49 7.0	0 44 18.0	4 49.0	
			19 12 59.5	0 49 14.5	0 44 26.3	4 48.2	
			4 37 33.2	10 13 48.2	10 8 55.5	4 53.7	
			4 39 20.0	10 15 35.0	10 10 55.5	4 39.5	
			4 42 59.9	10 19 14.9	10 14 29.0	4 45.9	
			4 42 49.0	10 19 4.0	10 14 16.0	4 48.0	4 47.4
		27	19 13 19.1	0 49 34.1	0 44 49.8	4 44.3	
			19 13 56.7	0 50 11.7	0 45 20.8	4 50.9	4 47.6
		28	4 41 53.7	10 18 8.7	10 13 24.7	4 44.0	
			4 42 0.9	10 18 15.9	10 13 30.7	4 45.2	4 44.6
	June	24	19 36 18.6	1 12 33.6	1 8 23.5	4 10.1	
			19 36 14.5	1 12 29.5	1 8 18.5	4 11.0	
			19 43 14.2	1 19 29.2	1 15 18.0	4 11.2	
			19 43 30.3	1 19 45.3	1 15 31.5	4 13.8	
			19 50 16.6	1 26 31.6	1 22 18.0	4 13.6	
			19 50 25.2	1 26 40.2	1 22 27.5	4 12.7	
			4 28 58.9	10 5 13.9	10 0 56.5	4 17.4	
			4 29 6.6	10 5 21.6	10 1 13.5	4 8.1	
			4 35 47.3	10 12 2.3	10 7 46.0	4 16.3	
			4 36 35.9	10 12 50.9	10 8 37.5	4 13.4	
			4 41 56.5	10 18 11.5	10 13 56.5	4 15.0	
			4 41 59.0	10 18 14.0	10 14 0.0	4 14.0	4 13.0
	July	28	18 43 54.3	0 20 9.3	0 16 24.5	3 44.8	
			18 44 2.2	0 20 17.2	0 16 26.5	3 50.7	
			18 53 46.1	0 30 1.1	0 26 17.5	3 43.6	
			18 54 19.4	0 30 34.4	0 26 42.5	3 51.9	
			19 0 48.9	0 37 3.9	0 33 15.5	3 48.4	
			19 0 42.8	0 36 57.8	0 33 9.0	3 48.8	
			4 36 34.4	10 12 49.4	10 9 3.0	3 46.4	
			4 36 57.5	10 13 12.5	10 9 30.5	3 42.0	
			4 40 54.4	10 17 9.4	10 13 23.3	3 46.1	
			4 40 57.7	10 17 12.7	10 13 31.0	3 41.7	
			4 44 57.9	10 21 12.9	10 17 30.5	3 42.4	
			4 45 9.2	10 21 24.2	10 17 44.3	3 39.9	3 46.3
	August	9	19 57 22.2	1 33 37.2	1 29 57.5	3 39.7	

Results.

Greenwich Mean Time (Gr. M. T.) = Local Mean Time (L. M. T.) + Longitude.

Gr. M. T.			L. M. T.	Gr. M. T.	Kutter	Gr.-K.	Mean
			h m s	h m s	h m s	m s	m s
1900.	August	9	19 57 24.5	1 33 39.5	1 30 2.[illegible]	+ 3 37.0	
			20 1 31.8	1 37 46.8	1 34 7.3	3 39.5	
			20 1 38.7	1 37 53.7	1 34 20.0	3 33.7	
			20 5 11.0	1 41 26.0	1 37 47.5	3 38.5	
			20 5 10.8	1 41 25.8	1 37 48.5	3 37.3	+ 3 37.6
1901.	March	31	20 58 19.1	2 52 57.1	2 51 27.8	1 29.3	
			20 58 37.1	2 53 15.1	2 51 38.3	1 36.8	
			3 14 18.0	9 8 56.0	9 17 19.0	1 37.0	
			3 14 25.6	9 9 3.6	9 7 32.0	1 31.6	1 33.7
	April	2	20 40 22.9	2 35 0.9	2 33 27.3	1 33.6	
			3 29 31.7	9 24 9.7	9 22 39.5	1 30.2	1 31.9
		25	20 2 5.2	1 56 43.2	1 55 5.5	1 37.7	
			3 55 57.0	9 50 35.0	9 48 57.8	1 37.2	1 37.5
	May	30	20 26 0.6	2 20 38.6	2 18 39.0	1 59.6	
			3 29 23.8	9 24 1.8	9 22 17.5	1 44.3	1 52.0
	June	22	21 29 41.2	3 24 19.2	3 22 25.7	1 53.5	
			2 33 34.5	8 28 12.5	8 26 28.3	1 44.2	1 48.9
	July	22	18 58 33.4	0 53 11.4	0 51 9.1	2 2.3	
			5 12 23.2	11 7 1.2	11 5 1.7	1 59.5	2 0.9
1902.	March	27	20 42 17.1	2 36 50.1	2 30 52.5	5 57.6	
			20 49 49.6	2 44 22.6	2 38 27.0	5 55.6	
			3 23 47.4	9 18 20.4	9 12 19.0	6 1.4	
			3 31 22.2	9 25 55.2	9 19 47.3	6 7.9	5 58.1
	April	21	20 50 26.0	2 44 59.0	2 38 12.4	6 36.6	
			20 56 9.4	2 50 42.4	2 43 51.2	6 51.2	
			3 3 20.6	8 57 53.6	8 50 51.8	7 1.8	
			3 9 4.1	9 3 37.1	8 56 38.8	6 58.3	6 52.0
	May	24	18 11 55.2	0 6 28.2	23 58 11.1	8 17.1	
			19 39 37.3	1 34 10.3	1 25 50.1	8 20.2	
			20 51 21.3	2 45 54.3	2 37 37.6	8 16.7	
			3 3 18.8	8 57 51.8	8 49 7.8	8 44.0	
			4 14 44.1	10 9 17.1	10 0 57.1	8 20.0	
			5 42 21.7	11 36 54.7	11 28 57.9	7 56.8	8 19.1
	June	29	18 59 14.4	0 53 47.4	0 44 6.2	9 41.2	
			5 6 32.4	11 1 5.4	10 51 39.0	9 26.4	9 33.8
	July	20	21 7 2.9	3 1 35.9	2 51 24.0	10 11.9	
			3 4 6.3	8 58 39.3	8 48 32.7	10 6.6	10 9.3

The observations on Beechy Island give

1902. May 5 . . . . . Gr.-K. = + 7 m 22 s

IV.

Observations on expeditions.

During the stay in the first winter harbour 1898—99.

Observer	Instrument	Watch	Correction to Chronometer Kutter on starting	Correction to Chronometer Kutter on return
			h m s	h m s
Sverdrup	Pocket sextant with horizon-glass	Sverdrup	1899, April 17 +3 55 36	1899, May 8 +3 55 33.5
Isachsen	Altazimuth No. 1	No. 6	1899, May 23 +3 59 28.5	1899, July 5 +3 58 55.5
Schei	Altazimuth No. 2			

Date	Observer	Object of observations	Observations	Result	Locality
1899 April 21 a. m.	Sverdrup	Long.	[On board: Bar. 9°.9 770.3 Temp. − 18°.5] Watch h m s 8 48 35.5 ⊙ 2h. 31° 50′ 50 34.5 57 52 36.5 32 9 I. E. + 4′ 54 33 20 56 24 30	h m s 78° 32′.5 λ − 5 14 10.1	Supp. lat. 79° 9′ Head of Flagler Fjord.
April 30	Sverdrup	Lat.	[On board: Bar. 13°.3 755.8 Temp. − 12°.8] ⊙ 2h. 51° 0′ I. E. + 4′	79° 5′.8	Supp. long. 80° 42′ Istmus between Flagler Fj. and Bay Fjord.
April 30 a. m.	Sverdrup	Long.	[On board: Bar. 9°.9 753.8 Temp. − 15°.7] h m s W. 8 9 15 ⊙ 2h. 33° 21′ 11 1 28 13 49 44 I. E. + 4′ 15 31 51 16 40 59	h m s 80° 47′.0 λ − 5 23 7.9	Same locality.
April 27	Isachsen	Lat.	[On board: Bar. 13°.0 767.2] Temp. − 18°.8 ⊙ 115° 7′ 295° 8′ I. E. + 0′.75	79° 5′.2	Supp. long. 76° 30′ Eskimobyen in Flagler Fj.
May 9	Isachsen	Lat.	[On board: Bar. 15°.2 766.1] Temp. − 8°.0 ⊙ 118° 11′.5 298° 12′ I. E. − 1′.125	79° 1′.9	Supp. long. 75° Cape Camperdown.

Date	Observer	Object of observations	Observations					Result	Locality
1899 June 7 a. m.	Isachsen	Long.	[On board: Bar. 20°.1 765.4] Temp. + 3°.0			Vert. Lev. r.	l.	81° 57'.0 λ − 5 h 27 m 47.9 s	At Brævandet, Braskeruds-flya.
			W. 8 h 24 m 29.5 s	⊙ 115°46'	295°47'	5	2.5		
			29 59.5	244 2	64 2	5	4.5		
			32 6	116 9	296 10				
			34 25	243 43.5	63 43.5				
			37 58	116 25.5	296 27	6.0	1.5		
			40 33	243 28	63 28	3.0	4.7		
			45 45	116 49.5	296 50	5.9	1.8		
			49 10	243 2	63 2.5	2.2	5.4		
			52 25.5	117 8.5	297 9	5.8	1.9		
			55 17.5	242 44	62 45	3.0	4.7		
			59 36	117 29	297 29	5.3	2.0		
			9 2 40.5	242 22.5	62 23	3.0	4.6		
June 7	Isachsen	Lat.	[On board: Bar. 16°.0 763.3] Temp. + 4°.0					78° 24'.8	Same locality.
			W. 1 h 20 m 4 s	⊙ 235°22'	55°23'	4.2	3.5		
			24 28	124 42	304 41.5	4.7	3.0		
June 7 p. m.	Isachsen	Lat.	[On board: Bar. 15°.4 762.9] Temp. + 4°.0					78° 24'.7	Same locality.
			W. 1 h 34 m 14.5 s	⊙ 235°23'	55°24'	2.3	5.4		
			39 59	124 40.5	304 40	5.7	2.6		
			45 8	235 26	55 25.5	3.6	3.8		
			49 50	124 35	304 36	8.0	0		
			52 49	235 29.5	55 30	3.0	4.5		
			58 55	124 31.5	304 31	4.6	2.8		
			2 3 37	235 35	55 35	1.6	5.9		
			6 39.5	124 26.5	304 26	5.0	2.5		

Date	Observer	Object of observations	Observations	Result	Locality
1899 June 7 p. m.	Isachsen	Long.	[On board: Bar. 15°.5 763.0] Temp. + 2°.5 h m s ⊙̄ r. l. W. 7 2 29 246°28′ 66°28′ 2.5 4.5 4 58 113 22.5 293 24 3.3 4.1 8 42.5 246 46 66 47 1.1 6.3 11 31 113 3 293 4 4.0 5.5 15 16 247 6 67 7 3.0 4.7 18 22 112 42.5 292 43.5 4.0 3.6 21 51 247 27 67 26 1.8 5.7 24 12.5 112 26 292 26 4.2 3.1 27 12 247 42 67 42.5 2.1 5.3 30 23 112 6 292 7.5 4.8 2.8	81° 52′.7 λ − 5 h 27 m 30.6 s	2 naut. miles from last station.
June 8	Isachsen	Lat.	[On board: Bar. 11°.8 763.5] Temp. + 5°.0 h m s W. 1 22 18 ⊙̄ 235°13′ 55°13.5′ 3.2 4.1 37 45 124 46.5 304 45.5 3.7 3.3	78° 23′.5	Same locality.
June 8	Isachsen	Lat.	[On board: Bar. 11°.8 763.5] Temp. + 5°.0 h m s W. 0 40 45.5 ⊙̄ 235°26′ 55°26′ 5.8 1.9 44 8 124 37 314 37 2.9 4.2 47 45 235 22 55 22.5 4.4 3.7 50 35 124 40 304 39 2.2 4.8 55 16 235 17 55 17.5 2.9 4.4 57 10 124 43 304 42 5.3 3.7	78° 23′.3	Same locality.
June 14—15 Midnight	Isachsen	Lat.	[On board: Bar. 13°.5 746.3] Temp. − 8°.5 h m s W. 1 24 5 ⊙̄ 257°56′ 77°56′ 4.5 3.5 28 22 102 3 282 4.5 2.5 5.5	78° 25′.3	Ellesmere Land, on the glacier.

Date	Observer	Object of observations	Observations	Result	Locality
1899 June 15	Isachsen	Lat.	[On board: Bar. 13°.2 744.0] Temp. − 3°.5 h m s ⊙̄ r. l. W. 1 25 30.5 234°47′ 54°47′.5 4.0 3.5 30 27.5 125 14 305 14 3.0 4.0	78° 23′.6	Ellesmere Land, on the glacier.
June 16	Isachsen	Lat.	[On board: Bar. 14°.0 744.5] Temp. − 3°.5 h m ⊙̄ W. 1 24 125°17′ 305°18′ 8.0 0 34 234 50 54 52 0 8.0	78° 26′.9	Ellesmere Land, on the glacier.
June 25	Isachsen	Lat.	[On board: Bar. 16°.0 766.0] Temp. − 1°.0 h m s ⊙̄ W. 1 17 29 125°22′ 305°23′ 7.0 1.0 29 0 234 8 54 38 2.0 5.5	78° 19′.1	Ellesmere Land, on the glacier.
June 29—30 Midnight	Isachsen	Lat.	[On board: Bar. 14°.8 764.4] Temp. − 3°.5 h m s ⊙̄ W. 1 22 28 102°12′ 282°12′ 4.2 4.5 25 47 257 46 77 46 7.0 1.0	78° 41′.2	Ellesmere Land, on the glacier.
June 30 a. m.	Isachsen	Long.	[On board: Bar. 15°.8 746.6] Temp. − 1°.7 h m s ⊙̄ W. 7 14 52.5 113°29′ 293°29′ 7.5 0 18 7 246 28 66 30 3.0 4.7 21 9 113 40 293 40 7.5 0 23 58 246 10.5 66 11 0 8.0 28 6 113 59 294 0 4.0 3.3 31 0.5 245 51 65 53 4.5 3.0	77° 28′ λ − 5 h 9 m 51.8 s	Supp. lat. 78° 41′ 10″ Leffert glacier.

Date	Observer	Object of observations	Observations	Result	Locality
1899 July 5 p. m.	Isachsen	Long.	[On board: Bar. 13°.0 760.6 Temp. + 6°.2] h m s W. 6 19 57 ⊙ 245° 35′ 65° 33′ r. 5.0 l. 1.6 24 38 114 15 294 15 2.5 4.2 36 40 246 23 66 22 3.4 3.4 39 12 113 31.5 293 32 1.5 4.5 43 29.5 246 42 66 43 4.1 2.8 46 26 113 11 293 12 2.2 4.5 49 44 247 0 67 0 3.2 4.0 52 44 112 53 292 53.5 3.0 3.5	74° 55′.3 h m s λ − 4 59 41.2	Supp. lat. 78° 46′ Kjøthaugen.
May 5	Schei	Lat.	[On board: Bar. 15°.6 768.9 Temp. − 17°.8] ⊙ 296° 30′ 116° 17′.75 63 1.25 243 0.25	79° 26′.7	Supp. long. 70° 30′ Norman Lockyer Island.
May 21	Schei	Lat.	[On board: Bar. 17°.3 769.1 Temp. − 1°.1] ⊙ 300° 20′.5 120° 20′ 58 51 238 51	79° 15′.6	Supp. long. 72° Victoria Head.
June 6 a. m.	Isachsen	Variation	h m s Watch 3 32 34.5 ⦶ Compass bearings S. 25° E.	123° 59′ N. + W.	Lat. 78° 23′ 24″ Long. 82° Fjorddalen, west coast of Ellesmere Land.
June 8 p. m.	Isachsen	Variation	h m s Watch 1 56 9.5 ⦶ 196° 54′ 16° 54′ 42 54.5 193 12 13 12 Magnetic needle's north end 243° 22 63° 22′	124° 21′ N. + W.	Lat. 78° 23′ 17″ Long. 81° 52′ 39″ 2 miles south of camp at Brævandet, west coast.

Date	Observer	Object of observations	Observations	Result	Locality
1899 July 5 p. m.	Isachsen	Azimuth	h m s Watch 6 19 57 ⦶ 160° 11′ 340° 13′.5 24 20 341 27 161 28 36 40 164 19 344 20 39 12 345 5 165 4 43 29.5 166 0 346 0 46 26 346 50 166 50.5 49 44 167 31 347 31.5 52 44 348 22.5 168 22 Base line C. Rutherford 48° 16′ 228° 17′ C. Camperdown 82 36 262 37 Cocked Hat Island 117 34 297 32	Point of departure 284° 59′.3 N. + O.	Lat. 78° 46′ Long. 74° 55′ 18″ Kjøthaugen, Pim Island.
July 6	Isachsen	Bearings	Outer south point N. 71° E. Outer north point N. 75 E. South point great island N. 68 E. Nearest fjord's main direction N. 110 E. Outer — » — N. 40 E. Rundfjeld N. 80 E.		Fjorddalen, west coast of Ellesmere Land.
July 7	Isachsen	Bearings	Standpoint yesterday N. 120° W. Outermost point (obs. 2 yesterday) N. 85 E. Iceberg N. 95 E.		South side of Fjorddalen.
May 5	Isachsen	Direction	Outermost eastern land (circ. 300 m. off) 123° 40′ 42′ Bache terminus 75 15 18 "Topö" 120 18 16 Point western Fj. mouth Alex. Fj. 152 24 Horizon 270 6		Cairn, eastern mouth of Alex. Fj.

Date	Observer	Object of observations	Observations						Result	Locality
1899 May 9	Isachsen	Direction	Cocked Hat Island			27°35′	207°36′.5			C. Camperdown.
						207 35	27 33.5			
			"Hatö" Alex. Fj.			94 46	274 45.5			
						274 43	94 43.5			
			Hattoppen (high mountain s. of Fram)			37 11	217 13.5			
						217 10	37 3.5			
May 22	Isachsen	Direction and Zenith distance	C. Camperdown	H. C. 137°20′	317°22′	V. C. 270°27′	90°27′			Cocked Hat Island.
				317 23.5	137 25.5	89 33	269 35			
			Cairn, C. Rutherford	68 45	248 45	268 45	88 45			
				248 50	68 51	91 15	271 17.5			
			Kjøthaugen	359 45	179 46	272 11	92 12			
				179 47	359 50	87 50	267 49			
			Iceberg in Buchanan Strait	271 0	91 2	89 24	269 24			
			Horizon	12 46	192 45	89 40	269 40			
						270 24	90 24			

During the stay in the second winter harbour 1899—1900.

Observer	Instrument	Watch	Correction to Chronometer Kutter on starting	Correction to Chronometer Kutter on return
			1900 h m s	1900 h m s
Sverdrup	Altazimuth No. 2.	Sverdrup	March 16 — 4 44 47.5	June 4 — 0 9 36.5 [1]
Schei	Pocket sextant	No. 4	March 16 — 1 56 42.5	June 3 — 1 39 42.0 [2]
Schei	Altazimuth No. 2	No. 4	July 2 + 5 35 0	July 6 + 5 35 18.0
Isachsen	Altazimuth No. 1	No. 6	March 16 + 5 56 56.0	June 21 — 5 49 27.0
Baumann	Ship's sextant with mercury horizon	No. 5	May 4 + 5 29 54.5	May 20 + 5 31 49.0
Baumann	Ship's sextant with mercury horizon	Sverdrup	June 5 — 0 9 38.5	June 21 — 0 9 18.5

[1] The watch has stopped on the voyage. For an approximate computation of the error of the watch on the voyage, the following data have been used:

On board the correction of the watch to Chron. Kutter has been:

		h m s
	March 6	— 4 45 16.0
	March 16	— 4 44 47.5
	June 21	— 0 9 18.5
	July 1	— 0 8 47.5
on the voyage	June 5	— 0 9 38.5
	June 21	— 0 9 18.5

The stopping occurred at the beginning of the voyage and therefore the correction on the 4th June has been the starting-point, and the rate computed from this moment.

[2] The watch has stopped on the voyage. For an approximate computation of the error of the watch on the voyage, the following data have been used:

On board the correction of the watch to Chron. Kutter has been:

		h m s
	March 6	— 1 58 29.0
	March 16	— 1 56 42.5
	June 21	+ 5 33 34.0
	July 1	+ 5 34 31.5
on the voyage	June 5	+ 5 32 30.5
	June 21	+ 5 33 34.0

The stopping occurred at the beginning of the voyage and therefore the correction on the 3d June has been the starting-point, and the rate computed from this moment.

Date	Observer	Object of observations	Observations	Result	Locality
1900 April 26	Sverdrup	Lat.	[On board: Bar. 18°.2 765.0 Temp. – 11°.7] $\overline{\odot}$ 246°9′ 66°9′ 294 9.5 114 8.5	79° 50′.6	Supp. long. 95° Ellesmere Land's west coast, Uveirsleiren.
May 2	Sverdrup	Lat.	[On board: Bar. 13°.4 766.0 Temp. – 11°.7] $\overline{\odot}$ 295°24′.5 115°25′ 244 56 64 54.5	80° 27′.7	Supp. long. 100° 5.1 miles North of Cape Nordvest.
May 5	Sverdrup	Lat.	[On board: Bar. 18°.0 759.6 Temp. – 2°.6] $\overline{\odot}$ 295°48′ 115°47′.5 64 30 244 29.5	80° 55′.7	Supp. long. 99° Det Længste.
May 7 a. m.	Sverdrup	Long.	[On board: Bar. 13°.0 758.0 Temp. – 6°.2] Watch 2 h 30 m 49 s $\overline{\odot}$ 248° 5′ 68° 5′ 35 15.5 292 24 112 23.5 40 45 292 33 112 33.5 44 38 247 35 67 35	94° 52′.2 λ – 6 h 19 m 28.8 s	Supp. lat. 80° 22′.6 Cape Nordvest.
April 18 p. m.	Schei	Long.	[On board: Bar. 18°.3 755.0 Temp. – 13°.6] Watch 0 h 49 m 17 s $\underline{\odot}$ 2h. 26°50′.5 53 46 24 I. E. + 2′ 56 24 2.5	91° 21′.4 λ – 6 h 5 m 25.4 s	North end of N. Kent.
April 19	Schei	Lat.	[On board: Bar. 16°.2 759.6 Temp. – 16°.5] $\underline{\odot}$ 2h. 48°14′.5 I. E. + 2′	76° 50′.1	Supp. long. 91° 39′ Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 April 26 a. m.	Schei	Long.	[On board: Bar. 19°.0 761.8 Temp. − 15°.5] Watch 2 h m s 37 53 ⊙ 2h. 32° 14′ 39 38 32 I. E. + 2′ 52 58 33 49	90° 1′.8 λ − 6 h m s 4 7.0	Southern island, Point 2 (Graham Island?).
April 26	Schei	Lat.	[On board: Bar. 18°.2 765.0 Temp. − 11°.7] ⊙ 2h. 52° 15′.5 I. E. + 2′	77° 9′.7	Supp. long. 91° 21′ Same place.
April 27	Schei	Lat.	[On board: Bar. 16°.7 766.7 Temp. − 13°.6] Watch 7 h m s 39 2.5 ⊙ 2h. 53° 47′ I. E. − 2′	77° 22′.8	South side of northern island (Point 3).
May 4	Schei	Lat.	[On board: Bar. 10°.2 761.4 Temp. − 7°.4] Watch 6 h m s 43 39 ⊙ 2h. 55° 32′ 46 21 41.5 I. E. + 2′	77° 29′.9	North-western part of Graham Island.
May 4 p. m.	Schei	Long.	[On board: Bar. 14°.1 760.8 Temp. − 6°.1] Watch 11 h m s 52 50 ⊙ 2h. 42° 8′ 55 58 41 54 I. E. + 2′	91° 42′.3 λ − 6 h m s 6 49.1	Same place.
May 5	Schei	Lat.	[On board: Bar. 7°.8 757.3 Temp. − 3°.5] Watch 7 h m s 4 59 ⊙ 2h. 56° 33′ I. E. + 2′	77° 34′.3	North end of Graham Island.
May 5 p. m.	Schei	Long.	[On board: Bar. 13°.0 759.5 Temp. − 2°.6] Watch 11 h m s 56 45 ⊙ 2h. 42° 17′ 58 40 4.5 59 57 41 57 I. E. + 2′ 0 5 35 30	91° 46′.4 λ − 6 h m s 7 5.6	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 10 a. m.	Schei	Long.	[On board: Bar. 12°.5 768.7 Temp. – 10°.8] Watch 2 h 17 m 35 s ⊙ 2h. 38° 58′ 19 19 39 3 I. E. – 7′ 20 54 10	89° 29′.3 λ – 5 h 57 m 57.2 s	Hyperitodden.
May 10	Schei	Lat.	[On board: Bar. 13°.7 769.2 Temp. – 6°.6] ⊙ 2h. 58° 36′ I. E. – 3′	78° 7′.6	Supp. long. 90° Same plaee.
May 11	Schei	Lat.	[On board: Bar. 13°.0 770.0 Temp. – 12°.0] ⊙ 2h. 58° 52′.5 I. E. – 7′	78° 17′.1	Supp. long. 90° Centre of Ulvingen.
May 13	Schei	Lat.	[On board: Bar. 15°.5 758.1 Temp. – 9°.7] ⊙ 2h. 59° 27′ I. E. – 2′	78° 27′.4	Supp. long. 90° Björnesundet.
May 22	Schei	Lat.	[On board: Bar. 19°.7 763.2 Temp. – 9°.3] ⊙ 2h. 64° 35′ I. E. – 2′	77° 53′.0	Supp. long. 90° Northeast side of Björnekap-landet.
May 30	Schei	Lat.	[On board: Bar. 19°.7 760.2 Temp. – 0°.9] ⊙ 2h. 70° 26′ I. E. – 5′	76° 22′.0	Supp. long. 88° 30′ Bjørneborg.
July 4	Schei	Lat.	[On board: Bar. 11°.8 753.9 Temp. + 4°.6] ⊙ 54° 8′ 234°7.75′ 306 10 126 8.5	76° 38′.0	Supp. long. 84° Havnefjorden, East of Sylene.
July 4 p. m.	Schei	Long.	[On board: Bar. 12°.0 754.3 Temp. + 7°.0] Watch 4 h 51 m 38 s ⊙ 64° 5′ 244° 4′.5 59 13 295 50.5 115 49.5	84° 31′.6 λ – 5 h 38 m 6.2 s	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 April 6	Isachsen	Lat.	[On board: Bar. 15°.9 767.9] Temp. − 35°.0 h m r. l. Watch 0 10 ⊙ 108°43′ 288°44′ 5.9 4.0 251 15.5 71 16 5.4 4.6	78° 3′.6	Björneleiren, South-east of Cape Sydvest.
April 6 p. m.	Isachsen	Long.	[On board: Bar. 18°.2 770.7] Temp. − 33°.0 h m s Watch 5 5 33 ⊙ 260°31′ 80°32′ 1.8 8.0 10 58.5 99 14 279 15 6.0 3.6 12 59 7 8 14 28 261 5 81 4 7.0 2.5 18 24 9 9 21 28 98 43 278 43 7.0 2.9	90° 12′.0 λ − 6 h 0 m 48.1 s	Same place.
April 13	Isachsen	Lat.	[On board: Bar. 19°.0 761.5] Temp. − 24°.5 h m Watch 0 15 ⊙ 110°56′ 290°57′ 8.0 0.5 249 5 69 5 6.9 2.8	78° 27′.6	Langfredagsleiren.
April 13 p. m.	Isachsen	Long.	[On board: Bar. 22°.4 762.3] Temp. − 25°.2 h m s Watch 5 35 30 ⊙ 100°57′ 280°59′ 4.5 5.0 38 42 259 11 79 12 4.2 4.8 41 8 19 18 43 24 100 33 280 34 3.0 6.5 49 35 259 45 79 44 5.9 3.3 51 30 100 9 280 10.5 3.0 6.0	93° 31′.4 λ − 6 h 14 m 5.5 s	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 April 20 p. m.	Isachsen	Long.	[On board: Bar. 13°.0 763.5] Temp. — 24°.0 h m s ⊙̄ r. l. Watch 6 4 4 102° 30′ 282° 31′ 1.2 8.0 10 25 257 46 77 46 5.5 5.5 16 9 101 56 281 58 9.0 0.2 20 22 258 16 78 15 5.9 3.5 25 3 101 30 281 31 5.8 3.5 29 48 258 45 78 44 8.0 0 33 2 101 8 281 8 7.0 2.0 37 4.5 259 2.5 79 3 0 8.0	97° 8′.3 λ — 6 h 28 m 33.1 s	Supp. lat. 78° 35′ North side of Amund Ringnes's Land.
April 29	Isachsen	Lat.	[On board: Bar. 17°.8 768.2] Temp. — 8°.0 h m ⊙̄ Watch circ. 12 18 244° 13′ 64° 13′ 115 48 295 48 7.0 1.3	79° 0′.3	Cape Levvel.
May 11 p. m.	Isachsen	Long.	[On board: Bar. 12°.0 769.0] Temp. — 10°.0 h m s ⊙̄ Watch 5 20 27 251° 25′ 71° 25′ 2.3 6.0 22 45 108 30 288 30 9.0 0 25 42 251 38 71 37 0 8.0 29 3 108 12 288 13 8.0 0 32 21 251 57 71 58 1.0 7.2 35 24 107 54 287 57 7.5 0.5	87° 1′.0 λ — 5 h 48 m 4.0 s	1st Moskuskamp.
May 12	Isachsen	Lat.	[On board: Bar. 16°.7 764.3] Temp. — 11°.0 h m s ⊙̄ Watch 11 51 10 119° 30′ 299° 30′ 8.0 0 0 33 15 . 7 7	78° 56′.4	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 18	Isachsen	Lat.	[On board: Bar. 12°.3 760.1] Temp. − 8°.0 h m s — r. l. Watch 11 25 26 ⊙ 239° 6′ 59° 6′ 4.5 3.7 30 22 6 6 2.5 5.6 120 48 300 47	79° 0′.7	North side of Bay's Fjord.
May 28 a. m.	Isachsen	Long.	[On board: Bar. 10°.0 760.8] Temp. − 12°.0 h m s Watch 5 47 20 ⊙ 111°48′ 291°50′ 8.0 0 50 4 248 7 68 7 0 8.0 53 17 112 6 292 7 8.0 0 54 54 247 48 67 50 0 8.0 57 26 112 18 292 19 8.0 0 6 0 23 247 34 67 34 0 8.0	88° 5′.0 λ − 5 h 52 m 19.8 s	Mouth of Evreka Sound.
May 28	Isachsen	Lat.	[On board: Bar. 16°.1 760.4] Temp. − 8°.0 h m s Watch 11 34 5 ⊙ 236°25′.5 56°26′ 4.5 3.5 42 50 123 40 303 40 8.0 0 46 25 236 26.5 56 26 3.0 4.0 0 2 35 127 37 303 37 8.0 0	78° 8′.5	Same place.
June 14	Isachsen	Lat.	[On board: Bar. 17°.0 756.2] Temp. + 2°.5 h m s Watch 11 12 21 ⊙ 232°54′ 52°54′ 23 33 50 50 35 20 41 41 42 8 41 41 0 8.0 127 7 307 7 0 8.0	78° 20′.5	Björneborg.

Date	Observer	Object of observations	Observations	Result	Locality
1900 June 17	Isachsen	Lat.	[On board: Bar. 14°.9 754.3] Temp. + 3°.0 Watch 11 h 35 m ⊙ 232°40′ 52°40′ r. 2.6 l. 4.4 127 23 307 23 3.0 3.8	76° 19′.0	West Sandör.
June 18	Isachsen	Lat.	[On board: Bar. 16°.8 752.1] Temp. + 4°.0 Watch 11 h 44 m 16 s ⊙ 127°24′.5 307°25′ 8.0 0 47 38 232 40.5 52 42 0 8.0	76° 17′.2	Sydkap.
June 18 p. m.	Isachsen	Long.	[On board: Bar. 14°.6 753.9] Temp. + 2°.5 Watch 5 h 31 m 56 s ⊙ 247°26′ 67°25′ 8.0 0 34 35 112 27 292 26 0 8.0 37 56 247 46 67 45 4.3 2.4 40 38 112 6 292 7 0 7.3	84° 36′.3 λ − 5 h 38 m 25.0 s	Same place.
August 11	Isachsen	Lat.	[On board: Bar. 17°.3 754.8 Temp. − 4°.6] ⊙ 240°37′ 60°36′ 119 24 299 24	76° 9′.9	Supp. long. 90° 32′.5 Nabben, North Devon.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 10	Baumann	Lat.	[On board: Bar. 767.5 Temp. − 6°.6] Watch 11 h 57 m 34 s ⊙ 2h. 60° 59′ 10″ I. E. − 10″ 0 0 0.5 ⊙ 62 3 20 1 46.5 ⊙ 60 59 25 5 8.5 ⊙ 62 7 0 10 4.5 ⊙ 61 4 30 12 29.5 ⊙ 62 9 0 24 48 ⊙ 61 5 20 27 15 ⊙ 62 10 10 28 43 ⊙ 61 5 10 29 54 ⊙ 62 9 0 31 58 ⊙ 61 4 0 34 48 ⊙ 62 8 0	76° 50′.9	Lands End.
May 10 p. m.	Baumann	Long.	[On board: Bar. 767.8 Temp. − 5°.4] Watch 5 h 42 m 31.5 s ⊙ 2h. 39° 10′ 20″ I. E. − 10″ 44 2.5 0 20 45 51.0 38 47 0 47 20.5 37 20 48 38.5 29 10 50 9.5 18 30	89° 32′ λ − 5 h 58 m 9.4 s	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 11	Baumann	Lat.	[On board: Bar. 768.4 Temp. − 12°.0]	76° 50′.8	Same place.
			h m s Watch 11 39 49.5 ⊙ 2h. 61°11′ 0″ I. E. + 25″		
			43 51.5 ⊙ 62 19 50		
			45 54.5 ⊙ 61 18 40		
			47 21.5 ⊙ 62 24 0		
			54 25.5 ⊙ 61 27 40		
			55 53.5 ⊙ 62 31 40		
			57 53 23 0		
			58 42 ⊙ 61 29 40		
			0 3 35 32 0		
			5 49.5 ⊙ 62 37 30		
			8 34 39 30		
			9 35 ⊙ 61 36 0		
			13 31.5 36 30		
			15 7.5 ⊙ 62 40 20		
			16 20.5 41 0		
			17 29.5 ⊙ 61 37 30		
			19 16.5 37 20		
			20 19.5 ⊙ 62 41 0		
			21 25 41 0		
			22 30.5 ⊙ 61 36 50		
			24 18.5 36 40		
			26 19.5 ⊙ 62 40 0		
			27 24.5 40 0		
			28 21 ⊙ 61 36 0		
			30 19.5 35 0		
			31 7.5 ⊙ 62 38 30		
			33 30 37 0		
			35 7.5 ⊙ 61 33 0		

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 11 p. m.	Baumann	Long.	[On board: Bar. at 4 p. m. 767.8 Temp. at 4 p. m. −10°.5 4.30 767.7 4.30 −10°.7] h m s Watch 3 59 51.5 ⊙ 2h. 49° 35′ 20″ I. E. 0 4 2 15.5 ⊙ 50 25 30 3 44.5 17 0 7 42.5 ⊙ 48 49 50 10 9.5 35 0 11 57.5 ⊙ 49 28 10 13 37 17 40 15 11.5 ⊙ 48 4 50 17 0 47 53 10 18 48.5 ⊙ 48 46 30 20 35.5 34 50 21 40.5 ⊙ 47 25 10 23 7.5 15 0 24 9.5 ⊙ 48 13 10 25 33.5 4 50 26 57 ⊙ 46 52 0 29 0 38 30 30 38.5 ⊙ 47 31 50 31 33 27 30 33 42.5 ⊙ 46 9 0	89° 33′.0 λ − 5 h 58 m 12 s.1	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 12 a. m.	Baumann	Long.	[On board: Bar. 763.4 Temp. − 14°.0]	89° 32′.6 λ − 5 h 58 m 10.5 s	At Lands End.
			Watch 9 h 28 m 49.5 s ⊙ 2h 54° 38′ 20″ I. E. − 22″.5		
			31 20.5 ⊙ 55 54 50		
			33 25.5 ⊙ 56 4 40		
			34 32.5 ⊙ 55 7 20		
			35 29.5 11 50		
			36 51.5 ⊙ 56 20 40		
			37 48.5 26 0		
			39 10.5 ⊙ 55 28 30		
			39 58.5 32 30		
			41 13.5 ⊙ 56 42 0		
			42 40.5 48 40		
			43 27.5 ⊙ 55 48 0		
			44 50 54 30		
			46 3.5 ⊙ 57 4 20		
June 8 a. m.	Baumann	Long.	[On board: Bar. 762.0 Temp. at 7.45 a. m. + 2°.3 8 + 2°.6]	88° 4′.1 λ − 5 h 52 m 16.4 s	Bjørneborg.
			Watch 1 h 49 m 33.5 s ⊙ 2h. 56° 58′ 40″ I. E. − 23″		
			52 1.5 ⊙ 58 18 40		
			55 23.5 ⊙ 57 36 40		
			57 1 ⊙ 58 51 10		
			58 34.5 59 0 50		
			59 20 ⊙ 58 2 30		
			2 0 38 9 30		
			1 46.5 ⊙ 59 20 40		
			2 35.5 26 30		
			3 48 ⊙ 58 30 20		
			4 35.5 35 30		
			6 10.5 ⊙ 59 49 10		
			7 43.5 59 0		

Date	Observer	Object of observations	Observations	Result	Locality
1900 June 9	Baumann	Lat.	[On board: Bar. 760.0 Temp. + 2°.0] Watch 6 h 0 m 0 s ⊙ 2h. 72° 23′ 20″ I. E. 0 3 5 23 0 6 25 22 30	76° 30′.5	Southern Isthmus between Gaasefjord and Hvalrosfjord.
June 9 p. m.	Baumann	Long.	[On board: Bar. 760.0 Temp. + 2°.0] Watch 10 h 21 m 18.5 s ⊙ 2h. 56° 26′ 45″ I. E. 0 22 43 ⊙ 55 15 20 23 44 8 0 24 44.5 ⊙ 56 4 0 26 43 55 50 50 27 38 ⊙ 54 41 55 29 9.5 31 50 30 15 ⊙ 55 27 30 31 16 20 20 32 10 ⊙ 54 11 20 33 10 4 50 34 16.5 ⊙ 55 1 0	88° 49′.6 λ − 5 h 55 m 18.4 s	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 June 10 a. m.	Baumann	Long.	[On board: Bar. 760.0 Temp. 0°] h m s Watch 1 46 21.5 ⊙ 2h. 56° 18′ 45″ I. E. 0 48 36 ⊙ 57 35 30 49 55 44 10 50 56.5 ⊙ 56 47 40 52 7 55 30 53 34 ⊙ 58 7 40 54 42 15 0 55 41 ⊙ 57 17 50 57 12 27 10 58 5 ⊙ 58 35 40 59 6.5 42 10 2 0 28 ⊙ 57 48 0	88° 37′.3 λ − 5 h 54 m 29 s.0	Head of Gaasefjord.
June 10	Baumann	Lat.	[On board: Bar. 760.0 Temp. + 2°.0] h m s Watch 5 43 26 ⊙ 2h. 71° 48′ 50″ I. E. 0 46 36 ⊙ 72 54 10 51 54 54 50 54 3 ⊙ 71 52 30 56 40 52 40 57 41 ⊙ 72 55 30 58 39.5 55 30 59 57 ⊙ 71 52 40 6 5 26.5 52 0 6 16 ⊙ 72 55 0 7 35.5 55 0 8 39 ⊙ 71 51 30 Obs. No. 2 is left out of consideration.	76° 50′.5	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1900 June 17	Baumann	Lat.	[On board: Bar. 752.5 Temp. + 0°.6]	76° 21'.1	Bjørneborg.
			Watch h m s 5 37 47 ⊙ 2h. 73°28' 30" I. E. 0		
			38 59 ⊙ 74 32 20		
			40 26 33 0		
			41 32 ⊙ 73 30 30		
			42 28 31 20		
			43 27 ⊙ 74 34 55		
			44 37 35 30		
			45 50 ⊙ 73 33 0		
			47 10 33 30		
			48 12 ⊙ 74 37 0		
			49 17 37 10		
			50 39 ⊙ 73 35 0		
			52 48 35 30		
			54 15 ⊙ 74 37 30		
			55 40 37 50		
			56 44 ⊙ 73 35 30		
			57 37 35 50		
			59 2 ⊙ 74 38 50		
			6 0 18 38 40		
			1 21 ⊙ 73 35 30		
			3 0 34 50		
			3 56 ⊙ 74 38 0		
			5 24 37 40		
			6 32 ⊙ 73 34 20		
			7 27 34 0		
			8 26 ⊙ 74 37 0		
			9 29 36 30		
			10 27 ⊙ 73 33 0		

Date	Observer	Object of observations	Observations	Result	Locality
1900 June 20 a. m.	Baumann	Long.	[On board: Bar. 758.4 Temp. + 0°.9] h m s Watch 1 9 55.5 ⊙ 2h. 55° 3′ 0″ I. E. 0 11 20 ⊙ 56 15 10 12 39 24 30 14 5 ⊙ 55 30 20 15 20 39 50 16 17 ⊙ 56 49 10 17 22 55 50 18 21.5 ⊙ 55 59 40 19 37 56 8 30 20 22 ⊙ 57 16 40 21 26 24 30 22 32.5 ⊙ 56 28 20	84° 34′.5 λ − 5 h 38 m 18 s.0	Lat. 76° 17′ 14″ (Isachsen) Sydkap.
May 7 a. m.	Sverdrup	Magn. Decl.	h m s Watch 3 2 40 ◐ N. 90° W.	142° 17′ N. to W.	Lat. 80° 22′ 35″ Long. 94° 52′ 12″ Cape Nordvest.
April 13 p. m.	Isachsen	Magn. Decl.	h m s Watch 7 0 53 ◐ N. 64° E.	139° 17′ N. to W.	Lat. 78° 27′ 37″ Long. 93° 31′ 23″ Langfredagsleiren.
July 4 p. m.	Schei	Azimuth	h m s Watch 4 51 38 ◐ 136° 57′.5 316° 53′.5 59 13 318 43.5 138 44.5 Before ⊙ alt. To Top of the pointed mountain 57° 5′ 237° 3′.5 After — — — — 237 2 57 2	Zero (Point): 301° 12′ N. to E.	Lat. 76° 38′ 1″ Long. 84° 31′ 33″ Havnefjorden, East of Sylene.
April 6 p. m.	Isachsen	Azimuth	h m Watch 0 10 ◐ 194° 40′ Cape Sydvest 300 45	348° 34′ N. to E.	Lat. 78° 3′ 35″ Long. 90° 12′ 2″ Bjørneleiren.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 28 Noon	Isachsen	Azimuth	h m s Watch 11 34 5 ⦶ 86°58′ 46 25 269 35 0 2 35 94 0 Outermost western point farthest 172°40′ Innermost western — 214 35 Outer isthmus 249 20 Tan. eastern side of Fjord to N. 282 50 Eastern point Fj. mouth 30 5 — — Bay 38 55 48 35 Between the last two only faint indications of land. A nearer point eastern bay 51 0 A still nearer — — 53 5 Outermost point to S. 86 50	92° 54′ N. to E.	Lat. 78° 8′ 32″ Long. 88° 4′ 57″ Mouth of Eureka Sund.
June 18 a. m.	Isachsen	Azimuth	h m s Watch 11 44 16 ⦶ 110°20′ 47 38 291 5 Tan. little Sandörkap 385°15′ Rock with steep shell E. of Sydkap 112 58 Sound W. of island near "Fram" 174 15	255° 24′ N. to E.	Lat. 76° 17′ 12″ Long. 84° 36′ 15″ Sydkap.
May 5	Sverdrup	Bearings	To point from which bearings taken yesterday S. 22 E. To south and west points of land to S. N. 25 W. To the Fjord to E. N. 88 W. Deviation through local attraction.		Peilingsöen.
April 6	Isachsen	Direction	⦶ in the meridian 194°40′ Cape Sydvest 300 45		Björneleiren.

Date	Observer	Object of observations	Observations		Result	Locality
1900 May 18	Isachsen	Direction	☉ in the meridian	306°24′		North side of Bay's Fjord.
			Gretas Øer	33 37 / 39 51		
			Tan. western land	41 15		
June 14	Isachsen	Direction	☉ in the meridian	285°11′		Björneborg.
			East point	212 42		
			West —	10 40		
June 17	Isachsen	Direction	☉ in the meridian	68°22′		W. Sandör.
			Tan. to east land	0 40		
May 26	Isachsen	Direction	Bay No. 1	181°30′		E. side of fjord.
			"Moskusodden"	216 20		
			Tan. west side of Øen	222 10		
			- east land to North	222 30		
			- - Fjord mouth to S.	29 10		
			West point, inlet to Fjord	60 0		
			1st "Eide"	82 22		
			2nd —	120 10		
June 15	Isachsen	Direction	Tan. west point	178°19′		Björneborg.
			South Tan. N. Devon	155 0		
			West - to land (island?)	146 54		
			East - — —	145 47		
			West point	20 15		
			Island?	140 25		
			East end of land or island	152 25		
			This land then runs W. (behind N. Devon?)			

Date	Observer	Object of observations	Observations			Result	Locality
1900 June 17	Isachsen	Direction	Stormkap		91° 5′		West southern (little) Sandör.
			Inner —		93 10		
			Baadsfjordsnuten		94 26		
			East inlet Baadsfjord		106 25		
			Western North Sandör		123 22		
			Cape on West —		272 40		
			Tan. Great Sandör		288 0		
June 19	Isachsen	Direction	Sydkap		101°50′		S. end of large island in fjord near Fram.
			Tan. SE. corner of island		248 0		
			Stordalen		284 40		
			Tan. land of western fjord		332 25		
			— Red Cone		335 35		
			Island?		338 25		
			— ?		347 20		
August 11	Isachsen	Direction	Cape on N. Devon	circ. 25′	209°26′		Lat. 76° 10′ Long. 90° 32.′5 C. Devon.
			— - -	» 15	215 3		
			E. end of island (?)	» 6	231 50		
			W. end -	» 5½	250 47		
			E. end of island (?)	» 3½	266 55		
			Highest point of small island	» 4½	304 45		
			W. end of island	» 6	319 52		
			Highest point, small island	» 5½	330 20		
			Peninsula and both arms of fjord		350 30		
			Tan. (SE.) N. Devon	circ. 6	140 10		
			Baadsfjordsnuten?		141 0		

During the stay in the third winter harbour 1900—1901.

Observer	Instrument	Watch	Correction to Chronometer Kutter at starting			Correction to Chronometer Kutter on return		
			1901		h m s	1901		h m s
Sverdrup	Altazimuth No. 2 og Pocket sextant with glass horizon	Sverdrup	April	8	− 5 58 40.0	June	18	+ 5 58 38.0
Isachsen	Altazimuth No. 1	No. 6	April	8	+ 5 54 25.5	June	7	− 5 53 26.5
Isachsen	Altazimuth No. 1	No. 6 and [1] Sverdrup	July July	11 18	− 5 45 17.7 + 5 56 37.5	Aug. Aug.	7 7	− 5 38 57.0 + 5 55 8.5
Fosheim	Altazimuth No. 2	No. 4	April	8	+ 5 53 10.0	June	13	− 5 53 46.5

[1] During the journey the following comparisons were made between the watches:

	No. 6	Sverdrup
	h m s	h m s
July 20 p. m.	10 45 0	11 4 57.5
July 30 a. m.	7 24 0	7 46 48.5

The observations were made with watch No. 6, but the results corrected according to the rate of Sverdrup's watch.

Date	Observer	Object of observations	Observations	Result	Locality
1901 April 16	Sverdrup	Lat.	[On board: Bar. 14°.8 767.5] Temp. at 9 a. m. — 30°.2 4 p. m. — 28°.0 ⊙ 247°24′ 67°23′ 112 47.5 292 48	77°39′.8	Supp. long. 83°15′ About 25 miles N. of Depot Pt. in Vendom Fjord.
April 22	Sverdrup	Lat.	[On board: Bar. 17°.7 774.1] Temp. — 24°.6 ⊙ 294°45′.5 114°45′ 65 26 245 25.5	77°46′.6	Supp. long. 85°30′ 6 miles south of mouth of Trold Fjord. 6 miles off place of camping.
April 26	Sverdrup	Lat.	Bar. 764.0 Temp. at 6.15 a. m. — 23°.5 6 p. m. — 22°.1 ⊙ 294°30′ 114°28′ 65 22.5 245 21	78°40′.2	Supp. long. 86°6′ Head of Trold Fjord.
April 26 p. m.	Sverdrup	Long.	Bar. 764.0 Temp. at 6 p. m. – 22°.1 h m s W. 4 22 41 ⊙ 287°9′ 107°8′ 28 35 72 55 252 56	85°42′.9 λ — h m s 5 42 51.5	Same place.
April 28 p. m.	Sverdrup	Long.	[On board: Bar. 16°.4 765.1] Temp. at 4.15 p. m. — 21°.3 h m s W. 4 29 44 ⊙ 287°27′ 107°26′.5 32 34 20 20 34 55 12 11 38 1 73 6.5 253 6 40 35 12.5 13 42 48 19 19	85°30′ λ — h m s 5 40 11.8	Supp. lat. 78°47′ Head of Korsfjorden, Troldfjordeidet.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 1	Sverdrup	Lat.	[On board: Bar. 16°.8 763.0] Temp. at 7.30 a. m. — 21°.0 4.30 p. m. — 18°.0 $\overline{\odot}$ 296°0′ 116°0′ 244 3 64 2	79°20′5	Supp. long. 90° About 30.6 miles NNW of the place of descension on the sea ice in Korsfjorden.
May 1 p. m.	Sverdrup	Long	[On board: Bar. 18°.2 763.8] Temp. at 4.30 p. m. — 18°.0 h m s W. 4 9 6 $\overline{\odot}$ 70°54′ 250°54′ 13 16 289 4 109 3 15 42 288 57 108 57 19 14 71 22.5 251 22.5 22 5 28.5 28 26 39 288 28 108 27	85°43′.6 λ — h m s 5 42 54.2	Supp. lat. 79°30′ In the Sound, western Land.
May 12	Sverdrup	Lat.	Bar. 764.0 Temp. at 7 a. m. — 16°.0 5 p. m. — 14°.0 $\underline{\odot}$ 54°45′ I. E. — 1′	80°29′.4	Supp. long. 87°36′ Smørgrautberget about 38 miles NNW of Adskillelsens Leir.
May 12 p. m.	Sverdrup	Long.	Bar. 764.0 Temp. at 7 a. m. — 16°.0 5 p. m. — 14°.0 h m s W. 4 54 27 $\underline{\odot}$ 2h. 39°21′ I. E. 0′ 55 12.5 19 56 6 15 57 5 9.5 54 5	87°15′.2 λ — h m s 5 49 0.8	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 17 a. m.	Sverdrup	Long.	Bar. 772.4 Temp. — 14°.9 h m s W. 6 55 37.5 ⊙ 2h. 43°55′ I. E. 0′ 56 37 59 57 55 44 6 59 19.5 12 7 0 16 17 1 22.5 22	86°46′.2 λ — h m s 5 47 4.7	Supp. Lat. 79°48′.3 Camp. No. 25, 11.5 miles NE of next latitude.
May 17	Sverdrup	Lat.	Bar. 772.4 Temp. at 7 a. m. — 14°.9 5 p. m. — 10°.8 ⊙ 2h. 58°46′ I. E. 0′	79°40′.2	Supp. long. 87°9, Ulveleiren.
May 17 p. m.	Sverdrup	Long.	Bar. 769.7 Temp. — 10°.8 h m s W. 5 38 35 ⊙ 2h. 37°57′ I. E. 0′ 39 45 47 41 11 40 42 12 35 43 1 30	86°49′.8 λ — h m s 5 47 19.1	Same place.
May 19	Sverdrup	Lat.	Bar. 760.0 Temp. at 9 a. m. — 7°.7 5 p m. — 7.7 ⊙ 2h. 59°41′ I. E. 0′	79°39′.0	Supp. long. 84°54′ Camp. No. 27, 1st Depot about 20 miles E of Ulveleiren.
May 20 p. m.	Sverdrup	Long.	Bar. 762.6 Temp. — 9°.7 h m s W. 4 59 11 ⊙ 2h 42° 3′ I. E. + 1′ 5 0 9.5 41 57 1 6 51.5 2 4.5 48 3 3 42	84°51′.6 λ — h m s 5 39 26.2	Supp. lat. 79°27′.7 16 miles SE from 1st depot.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 25	Sverdrup	Lat.	Bar. 767.0 Temp. at 6 a. m. — 14°.5 ⊙ 2h. 63°15′ I. E. 0′	79°3′.4	Supp. long. 86°33′ 2.2 miles north of NW point, Storøen.
May 25 p m.	Sverdrup	Long.	Bar. at 6 a. m. 767.0 Temp. at 6 a. m. — 14°.5 h m s W. 5 50 6 ⊙ 2h. 39°43′ I. E. 0′ 51 9.5 39 56 35 52 43.5 31 53 35 25 55 3.5 17	86°13′.4 λ — h m s 5 44 53.4	Supp. lat. 78°57′.3 SW point of Storøen, 6.1 miles S of last meridian alt.
June 3 a. m.	Sverdrup	Long.	Bar. at 6 a. m. 749.1 Temp. at 6 a. m. — 3°.3 h m s W. 6 35 6 ⊙ 2h. 47°25′ I. E. + 1 36 13 29.5 37 3 34.5 48 39.5 38 56 46 40 10.5 52	88°45′.1 λ — h m s 5 55 0.4	Supp. lat. 78°42′.3 Camp. No. 37, 11.6 miles from mer. alt. 3rd June.
June 3	Sverdrup	Lat.	Bar. at 6 a. m. 749.1 Temp. at 6 a. m. — 3°.3 ⊙ 2h. 66°37′ I. E. 0′	78°44′.8	Supp. long. 88°30′ 20.6 miles from head of Skaare Fjord.
June 4	Sverdrup	Lat.	Bar. at 7 a. m. 752.7 Temp. at 7 a. m. — 5°.5 6 p. m. 750.0 5 p. m. — 3°.4 ⊙ 2h. 67°17′ I. E. + 3′	78°30′.6	Supp. long. 88°30′ East side of Bjørnesundet.

Date	Observer	Object of observations	Observations	Result	Locality
1901 June 6	Sverdrup	Lat.	Bar. at 7.15 a. m. 750.6 Temp. 7.15 a. m. — 5°.2 5 p. m. 748.6 5 p. m. — 2.2 ⊙ 2h. 68°12′ I. E. + 3′	78°16′.4	Supp. 89°15′ 6.4 miles N of Hyperitodden in Gletscher Fj.
June 7 a. m.	Sverdrup	Long.	Bar. at 6 p. m. 756.3 Temp. at 6 p. m. — 2°8 W. 6 h 46 m 56 s ⊙ 2h. 49°18′.5 I. E. 0′ 47 58 24.3 48 46 28 49 36 37 50 32 42 51 29 48 52 18.5 51 7 13 21.5 51 55 14 58 52 6 16 5 12.5 17 3 20 47 23 18 34.5 28	89°12′.1 λ — 5 h 56 m 48.5 s	Hyperitodden, about 1 mile N of the point west side. Distance between this place and Schei's last year is 1 mile N—S.
June 7	Sverdrup	Lat.	Bar. at 6 p. m. 756.3 Temp. at 6 p. m. — 2°.8 ⊙ 2h. 68°31′ I. E. 0′	78°14′.5	Supp. long. 89°15′ Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1901 June 7 p. m.	Sverdrup	Long.	Bar. at 6 p. m. 756.3 Temp. at 6 p. m. — 2°.8 h m s W. 5 16 13 ⊙ 2h. 47°43′.5 I. E. + 0′ 57 40 17 42 37.5 18 29.5 33 19 21 26.5 20 33 21.5 21 21 10.5 37 12.5 45 38 I. E. + 1′ 38 23 30 40 12.5 18 41 43.5 10 42 35 1	88° 41′.7 λ — 5 54 46.8 (h m s)	Same place (observed across snowless land).
April 13 p. m.	Isachsen	Long.	[On board: Bar. 13°.0 759.1] Temp. — 32°.0 h m s W. 5 19 59 ⊙ 258° 7′ 78° 8′ r. 5.2 l. 4.0 23 28 101 43 281 43 6.8 2.5 25 45.5 36 36 6.8 2.5 28 29 258 34 78 32.5 4.0 5.0 32 23.5 101 9 281 9 4.8 4.7	92° 7′.7 λ — 6 8 30.7 (h m s)	Cape Sydvest.
April 14	Isachsen	Lat.	[On board: Bar. 13°.7 759.1] Temp. — 32°.0 h m s W. 11 47 13 ⊙ 248° 36′ 68° 36′ 5.6 3.4 3 42 32 32 5.5 3.6 8 17.5 111 30 291 28 4.7 4.5 20 41 29 27 4.7 4.5	78° 10′.6	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1901 April 24	Isachsen	Lat.	[On board: Bar. 16°.3 771.2] Temp. — 22°.5 h m s ⊙̄ r. l. W. 0 37 37 115° 8′ 295° 8′ 3.4 5.9 43 13 244 50.5 64 50.5 2.4 6.7 47 48 51 51.5 2.4 6.7	77°58′.5	On the ice 9.1 miles WSW of Bjørneleiren on Amund Ringnes' Land.
April 25 p. m.	Isachsen	Long.	[On board: Bar. 15°.4 765.0] Temp. — 20°.5 h m s ⊙̄ W. 5 49 12.5 254° 8′ 74° 8′ 7.5 1.5 52 6 105 43.5 285 45 6.0 2.5 54 32 36.5 35.5 6.0 2.5 56 54 254 30 74 28 5.0 4.0 59 24 40 38 5.0 4.0 6 1 56 105 17 285 16 2.0 6.0	100°24′.6 λ — 6 h 41 m 38 s.4	Supp. lat. 77°55′.5 at Danskesundet.
April 27	Isachsen	Lat.	[On board: Bar. 14°.9 763.4 Temp. — 19°.9] h m s ⊙̄ W. 0 30 0 244° 1′ 64° 2′ 5.0 3.0 41 5.5 243 58 63 58 6.0 2.0 45 29.5 116 3 296 3 6.0 2.0	78° 2′.9	At Cape Thorstein.
April 30	Isachsen	Lat.	[On board: Bar. 16°.2 766.4] Temp. — 18°.0 h m s ⊙̄ W. 0 45 58 243° 15′ 63° 15′ 5.0 4.0 51 27 14 14 5.0 4.0 54 27.5 116 48 296 49 3.2 5.0	78° 14′.4	
May 2	Isachsen	Lat.	[On board: Bar. 15°.0 766.8] Temp. — 11°.8 h m s ⊙̄ W. 0 37 5 117° 0′ 297° 1′ 4.5 4.0 50 46.5 3 4 2.5 6.0 53 42 242 55 62 56 6.0 2.5 10 35 57 57 6.0 2.5	78° 33′.4	The point south of Dyrebugten.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 2 p. m.	Isachsen	Long.	[On board: Bar. 16°.9 765.5] Temp. — 20°.3 h m s ⊙ r. l. W. 6 1 5.5 ⊙ 252° 1′ 72° 0′ 6.0 1.5 3 51.5 107 55 287 55 8.0 0.0 6 0 46.5 48.5 5.0 4.5 8 50 252 21 72 22 4.0 4.0 11 28 30 30 4.0 4.0 13 56.5 107 24 287 24 5.0 4.0	104° 31′.6 λ — 6 h 58 m 3.9 s	Dyrebugten.
May 5	Isachsen	Lat.	[On board: Bar. 17°.8 767.7] Temp. — 18°.8 h m s W. 0 50 35 ⊙ 242° 22′ 62° 23 3.0 5.0 53 37.5 117 41 297 42 4.3 4.0 1 0 35 40 40.5	78° 51′.3	The point N. of Dyrebugten Isachsen's Land.
May 12	Isachsen	Lat.	[On board: Bar. 16°.0 764.3] Temp. — 17°.0 h m s W. 0 39 21 ⊙ 241° 3′ 61° 3′ 4.5 4.0 51 28 1 2 4.5 4.0 53 48 119 2 299 1 4.5 4.0 58 49 2 2 4.5 4.0 1 0 20.5 241 2 61 2 4.5 4.0 4 35 3 3	79° 23′.7	East of Cape Isachsen.
May 16	Isachsen	Lat.	[On board: Bar. 13°.0 771.2] Temp. — 17°.0 h m s W. 0 36 36 ⊙ 239° 51′ 59° 53′ 4.5 3.5 40 12 120 10 300 8 3.5 5.0 46 38 8 10 3.5 5.0 49 1 239 52 59 53 5.0 3.0 54 6 51 52.5 5.0 3.0	79° 12′.9	On Kristoffer's Peninsula.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 17 p. m.	Isachsen	Long.	[On board: Bar. 13°.7 770.1] Temp. — 16°.5 h m s ⊙̄ r. l. W. 6 5 43 249° 13′ 69° 13′ 6.5 2.0 8 5 110 41 290 41 2.0 6.0 10 13 34.5 34.5 2.0 6.0 11 51 249 29 69 30 4.0 4.5 17 40 46 47 3.5 4.5 19 28 110 9 290 10 4.0 4.0	101° 20′.1 λ — 6 h 45 m 20.3 s	Supp. lat. 79° 3′.1 Kristoffer's Peninsula.
May 18	Isachsen	Lat.	[On board: Bar. 12°.9 761.9] Temp. — 8°.0 h m s W. 0 44 22 ⊙̄ 239° 5′ 59° 5′ 3.5 4.5 47 57 5.5 6 3.5 4.5	78° 53′.2	At cape Kairo.
May 19	Isachsen	Lat.	[On board: Bar. 15°.8 757.7] Temp. — 7°.0 h m s W. 0 34 0 ⊙̄ 238° 46′.5 58° 45′.5 4.0 4.0 38 57 121 16 301 15 4.5 3.5 45 48 15 14 4.5 3.5	78° 46′.9	SE of cape Kairo.
May 20	Isachsen	Lat.	[On board: Bar. 16°.7 762.5] Temp. — 12°.5 h m s W. 0 22 57 ⊙̄ 338° 20′.5 58° 21′ 2.5 5.5 32 5 19.5 18.5 4.0 4.0 34 30 121 44 301 44 5.0 3.0 38 10 42.5 42.5 5.0 3.0	78° 32′.0	In Hassel's »Sund«.

Date	Observer	Object of observations	Observations	Result	Locality
1900 May 24	Isachsen	Lat.	[On board: Bar. 16°.6 769.2] Temp. — 14°.3 h m s ⊙ r. l. W. 0 5 36 ⊙ 237° 49'.5 57° 50'.5 4.5 4.0 15 3 48 50 4.5 4.0 21 34 47.5 49 6.0 2.5 24 41 122 15 302 16 4.0 4.0 31 47 14 15 4.0 4.0	78° 48'.0	East of cape Sverre.
May 24 p. m.	Isachsen	Long.	[On board: Bar. 15°.1 770.1] Temp. — 14°.5 h m s ⊙ W. 6 10 57 ⊙ 248° 58' 68° 58' 5.0 3.5 13 27 110 57 290 58.5 5.3 3.0 16 0.5 50 50.5 5.3 3.0 18 19 249 18 69 18 1.5 6.5 21 35 29.5 29 1.5 3.0 23 42.5 110 28 290 29 6.0 2.0	96° 56'.3 λ — 6 h 27 m 45 s.0	Supp. lat. 78° 45' 7 miles east of preceding lat.
May 30 a. m.	Isachsen	Long.	[On board: Bar. 14°.2 765.2] Temp. — 12°.0 h m s ⊙ W. 7 27 3 ⊙ 116° 3' 296° 2' 3.0 5.0 30 5 243 52 63 53 4.4 4.0 33 28 43.5 44 4.0 4.0 35 49 116 28 296 27 2.5 5.5 38 58.5 38 37 3.3 4.5 41 27.5 243 21 63 22 3.3 4.7	91° 38'.0 λ — 6 h 7 m 52 s.0	Cape Sydvest.
May 30	Isachsen	Lat.	[On board: Bar. 14°.8 766.1] Temp. — 11°.5 h m s ⊙ W. 0 6 9.5 ⊙ 123° 54' 303° 53' 6.0 2.0 14 18 53 52 6.0 2.0 16 14 236 12 56 13 5.0 3.0	78° 10'.4	Same place.

Date	Observer	Object of observations	Observations					Result	Locality
1901 May 30 p. m.	Isachsen	Long.	[On board: Bar. 16°.5 767.4]		Temp. — 10°.0			92° 13′.5 λ — 6 h 8 m 54 s.0	Same place.
			h m s			r.	l.		
			W. 4 30 36	⊙ 243°57′	63°57′	3.5	4.5		
			32 59.5	116 1	296 0	7.0	1.0		
			35 55	115 51	295 50	4.8	3.5		
			38 15.5	244 19	64 20	3.5	4.5		
			40 56	27	28	4.0	4.0		
			43 16	115 28.5	296 29	5.3	2.7		
June 4 p. m.	Isachsen	Long.	[On board: Bar. 16°.2 753.0]		Temp. — 6°.0			90° 51′.9 λ — 6 h 3 m 27 s.4	Supp. lat. 77°9′.6 South point of Buckingham Island.
			h m s						
			W. 5 45 18.5	⊙ 112°40′	292°39′	3.2	4.6		
			48 22	247 36	67 35	3.3	4.5		
			50 9	40	42	3.3	4.5		
			51 50	112 18	292 17	4.2	3.8		
			53 37.5	12	12	4.2	3.8		
			55 18	247 57	67 58	4.0	4.0		
June 5	Isachsen	Lat.	[On board: Bar. 16°.7 757.5]		Temp. — 4°.8			76° 58′.9	Sandy beach at Nordstrand.
			h m s						
			W. 11 57 28	⊙ 125°54′	305°54′	8.0	0.0		
			0 0 34	234 12	54 14	4.2	3.8		
			4 52	13.5	15	4.2	3.8		
July 13 a. m.	Isachsen	Long.	[On board: Bar. 13°.9 760.0]		Temp. + 4°.6			89° 32′.5 λ — 5 h 58 m 10 s.0	South side of river, about 2 miles N. of Land's End.
			h m s						
			W. 7 37 27	⊙ 117°48′	297°49′	4.0	4.0		
			41 1.5	242 6	62 7	4.0	4.0		
			43 54	241 56	61 56	4.0	4.0		
			47 32	118 20	298 18	3.5	4.0		
			50 26	28	28	3.5	4.0		
			52 49	241 28	61 29	3.0	3.0		

Date	Observer	Object of observations	Observations	Result	Locality
1900 July 13	Isachsen	Lat.	[On board: Bar. 14°.3 760.0] Temp. + 6°.1 h m s W. 11 5 9 ⊙ 235° 0′ 55° 0′ 3.2 3.8 44 46 234 45.5 54 46 3.2 3.8 48 5 125 21 305 21 3.4 3.5 0 0 31 20 18 3.4 3.5	76° 51′.7	Same place.
July 14 Midnight	Isachsen	Lat.	[On board: Bar. 12°.8 760.0] Temp. + 2°.5 h m s W. 11 22 53 ⊙ 98° 45′ 278° 46′ 4.4 3.0 47 6 42 42 4.4 3.0 49 23 261 24.5 81 25 5.9 1.5 56 8 24 23.5 5.9 1.5	76° 38′.1	Station »Spækkassen«.
July 15 a. m.	Isachsen	Long.	[On board: Bar. 12°.5 756.9] Temp. + 6°.3 h m s W. 7 30 39 ⊙ 242° 51′ 62° 52′ 3.3 4.0 36 55 117 24 297 24 5.6 1.3 36 3 30 31 5.6 1.3 37 40 242 31 62 30 4.8 2.0 39 42 24 23 3.2 4.0 42 35 117 52 297 51 3.5 3.3 46 59 118 5 298 5 3.5 3.3 49 37 241 51 61 51 4.4 2.8	89° 49′.9 λ − 5 h 59 m 19.5 s	Cape Dønninghausen.
July 15	Isachsen	Lat.	[On board: Bar. 13°.0 756.9] Temp. + 5°.0 h m s W. 0 19 43 ⊙ 125° 13′ 305° 12′ 3.5 3.3 24 57 234 57 54 57 4.0 2.9 27 10 235 0 58 4.0 2.9 30 7 305 4 125 5 1.0 6.0 32 56 3 4 1.0 6.0 36 18 55 5 235 6 4.0 3.0	76° 32′.1	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 16	Isachsen	Lat.	[On board: Bar. 12°.1 755.7] Temp. + 2°.8 h m s ⊙̄ r. l. W. 11 11 9 234°54′ 54°55′ 3.7 3.6 18 50 125 15 305 14 3 5 4.0 47 14 21 20 4.7 2.7 50 36 234 46 54 47 4.2 3.3 47 47 4.2 3 3 56 24 125 18 305 18 5.0 2.3	76°24′.4	Vendom Cape.
July 16 p. m.	Isachsen	Long.	[On board: Bar. 15°.9 757.0] Temp. + 2°.4 h m s ⊙̄ W. 3 27 20 118°56′ 298°57′ 5.5 2.2 30 4 241 19 61 18 3.2 4.7 31 59 24 24 3 2 3.2 33 31 118 36.5 298 37 5.2 2.2 35 39 29 30 5.2 2.2 36 58 241 41 61 42 4.1 2.5	89°20′.3 λ − 5 57 21.1 (h m s)	Same place.
July 17	Isachsen	Lat.	[On board: Bar. 16°.3 757.3] Temp. + 4°.0 h m s ⊙̄ W. 11 47 46 234°53′.5 54°55′ 5.5 2.0 50 56 125 12 305 12 3.8 3.5 56 22 10 10.5 3.8 3.5 59 34 234 55 54 56 4.7 2.8	76°22′.4	Cape W. of Hvalros Fjord.

Date	Observer	Object of observations	Observations					Result	Locality
1901 July 17	Isachsen	Long.	[On board: Bar. 17°.2 757.5]		Temp. + 5°.0			88° 59'.0 λ − 5 h 55 m 51.9 s	Same place.
			h m s			r.	l.		
			W. 1 27 11	⊙ 236°24'.5	56°25'				
			28 57	27.5	28.5				
			30 23	30	31				
			31 30	32.5	33				
			33 13	24.5	35				
			34 31	37	38	4.5	3.5		
			38 2	123 22.5	303 22.5				
			39 41	18.5	18				
			41 23	15	15				
			43 13	12	12				
			44 30	8	9				
			46 1	6.5	6.5	7.3	0		
July 17 p. m.	Isachsen	Long.	[On board: Bar. 16°.7 757.0]		Temp. + 5°.0				
			h m s					h m s	
			W. 4 24 16	⊙ 244°33'	64°34'	4.0	3.2	88° 47'.7 λ − 5 55 10.7	Maagebergsbugten.
			26 26	42	41				
			27 46	46	44				
			28 50	48.5	48				
			29 58	53	53.5				
			31 11	57	56				
			34 22	114 58.5	294 58	5.0	2.3		
			40 43	37.5	36				
			41 59	33	32				
			44 40	24	23				
			45 58	20	18				

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 18	Isachsen	Lat.	[On board: Bar. 15°.2 756.0] Temp. + 5°.0 h m s ⊙ r. l. W. 11 43 41 ⊙ 235°4'.5 55° 4' 4.3 2.8 45 43 125 4 305 3 3.5 3.4 48 32 3.5 2.5 3.5 3.4 50 17 235 3.5 55 4.5 2.5 4.7 52 48 2.5 3.5 2.5 4.7	76° 21'.5	Same place.
July 21 a. m.	Isachsen	Long.	[On board: Bar. 14°.8 757.4] Temp. + 1°.0 h m s W. 6 59 11.5 ⊙ 245°22'.5 65°23'.5 5.2 2.2 7 0 38 18 18.5 2 8 14 13.5 3 34 9 9 4 43.5 5 5 5 32.5 3 3 7 44.5 115 9 295 8 0.5 6.8 9 51 13 12.5 10 15 17 17 11 12 22 21 12 11.5 23.5 24 13 23 29 27	89° 18'.2 λ − 5 h 57 m 12.0 s	St. Helena.
July 21	Isachsen	Lat.	[On board: Bar. 17°.0 758.6] Temp. + 3°.0 h m s W. 11 32 54 ⊙ 235°29'.5 55°30'.5 4.4 2.0 34 45 124 36 304 35 3.0 4.2 36 30.5 35.5 34 3.0 4.2 39 46.5 36 33 3.0 4.2 41 57 235 29 55 29.5 4.4 2.0 46 19 28.5 29.0 4.4 2.0 49 24 124 36.5 304 35.5 3.0 4.2	76° 15'.0	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 21 p. m.	Isachsen	Long.	[On board: Bar. 15°.4 759.3] Temp. + 2°.5 h m s ⊙ r. l. W. 4 32 45 ⊙ 114°30′ 294°28′ 3.8 3.8 34 51 245 45 65 45 4.0 3.7 36 48 50 51 4.0 3.7 39 2 294 8.5 114 9 7.0 0.0 46 34 113 39 293 40 5.0 2.5 48 35 246 31 66 32 2.2 5.2	89° 20′.4 λ − 5 h 57 m 21.4 s	Same place.
July 29 p. m.	Isachsen	Long.	[On board: Bar. 19°.2 756.6] Temp. + 3°.5 h m s W. 2 16 55 ⊙ 120° 7′.5 300° 7′ 3.1 3.9 20 39 240 8 60 7 2.1 4.9 35 42 46.5 45 37 39 51 49 2.4 4.6 41 7 119 6 299 7 43 0 1.5 3 3.3 3.8 46 44 118 53 298 52 49 56 42.5 42.5 3.8 3.5 54 55 241 38 61 37 3 5 21 242 9 62 7 5.0 2.0 7 12 13.5 12 9 29 22 20 14 38 117 31.5 297 30.5 3.0 4.0	91° 11′.0 λ − 6 h 4 m 44.1 s	Supp. lat. 75° 58′.0 At the head of Viksfjord.

Date	Observer	Object of observations	Observations					Result	Locality
1901 July 30 a. m.	Isachsen	Long.	[On board: Bar. 16°.8 758.2] Temp. + 5°.0					91° 10'.1 λ − 6 h 4 m 40.5 s	Same place.
			h m s			r.	l.		
			W. 6 57 58.5	⊙ 247° 37'	67° 37'				
			58 59	35	34				
			7 0 4	30	30				
			59	27	27				
			1 46	25	24.5				
			2 44.5	22	22	4.5	2.8		
			4 51.5	112 53	292 53				
			6 52	113 0	293 0				
			7 35	3	3				
			8 21	6	6				
			9 31	10	10	6.5	0.7		
			11 6.5	16	16	5.5	1.5		
			13 0	246 45	66 45	3.8	3.5		
			16 13	33	33	4.1	3.0		
			18 15	113 40	293 40	4.0	3.4		

Date	Observer	Object of observations	Observations					Result	Locality
1901 July 31 a. m.	Isachsen	Long.	[On board: Bar. 14°.0 758.8]		Temp. + 4°.7			90° 3'.8 λ — 6 h 0 m 15.3 s	At Baadodden.
			W. 6 h 36 m 46 s	☉ 111° 16'	291° 15'	r. 5.0	l. 2.2		
			37 51	20	19				
			38 43.5	24	23				
			39 54	28	27				
			40 43	30	30				
			41 27	33	32				
			42 27	37	36.5				
			43 15.5	40	39				
			46 35.5	248 14	68 14				
			47 37	10	11				
			48 50	6	6				
			49 36	4	4				
			50 28	2	2				
			51 32	247 57	67 56				
			52 43.5	52	53				
			54 1	48	49	4.4	3.0		
			56 24	40	42	3.3	4.0		
			58 55.5	112 35	292 34	4.2	3.0		

Date	Observer	Object of observations	Observations					Result	Locality
1901 July 31	Isachsen	Lat.	[On board: Bar. 17°.3 758.9] Temp. + 6°.0					75° 59′.1	Same place.
			h m s			r.	l.		
			W. 11 40 33	⊙	122° 42′	302° 42′	4.3	3.0	
			42 51		237 26	57 25	3.5	3.8	
			52 22		27	26	3.5	3.8	
			54 36		122 41	302 40	4.3	3.0	
August 3	Isachsen	Lat.	[On board: Bar. 16°.2 758.3] Temp. + 3°.5					76° 28′.8	Supp. long. 89°54′.6 Exkrementodden.
			h m s						
			W. 11 57 36	⊙	121° 24′	301° 24′	1.8	4.0	
			59 35		238 42	58 43	0.0	7.5	
			0 3 31		45.5	44	0.0	7.5	
August 6	Isachsen	Lat.	[On board: Bar. 19°.0 763.6] Temp. + 0°.5					76° 53′.3	Nordstrand.
			h m s						
			W. 11 26 40	⊙	239° 53′	59° 53′	4.3	3.2	
			40 6		54	54	4.3	3.2	
			43 4		120 13	300 13	3.1	4.2	
			51 23		12	11	3.1	4.2	
August 6 p. m.	Isachsen	Long.	[On board: Bar. 16°.9 762.8] Temp. + 0°.5					89° 31′.5 λ − h m s 5 58 5.8	Same place.
			h m s						
			W. 4 36 6	⊙	249° 50′	69° 49′	2.5	5.3	
			37 42		54	55			
			39 10		250 0	70 0			
			40 31		4	3			
			43 18		109 52	289 51			
			44 44		48	47			
			45 51		45	45			
			47 16		41	38			
			48 56		34	34	5.0	2.8	

Date	Observer	Object of observations	Observations	Result	Locality
1901 April 24	Fosheim	Lat.	[On board: Bar. 16°.3 771.2] Temp. — 25°.0 ⊙ 295° 1'.5 115° 0' 65 9 2 5 8.5	78° 10'.3.	Supp. long. 85° 30' West side of Troldfjord.
April 29 a. m.	Fosheim	Long.	Bar. 765.0 Temp. at 12 noon — 21°.5 h m s W. 7 18 38 ⊙ 70° 47' 250° 47' 23 5 289 36 109 36.5 26 39 47.5 45 30 28 70 13.5 250 14 33 7 10 11.5 38 20 290 16.5 110 16	84° 9'.8 λ — 5 h 36 m 38.8 s	Supp. lat. 78° 47' On Troldfjordeidet.
April 29	Fosheim	Lat.	Bar. 765.0 Temp. — 21°.5 ⊙ 295° 57'.5 115° 56'.5 64 12 244 11.5	78° 49'.7	Supp. long. 84° 20' In Bay's Fjord, north of Troldfjordeidet.
May 3	Fosheim	Lat.	Bar. at 6.45 a. m. 763.9 Temp. at 6.45 a. m. — 20°.0 5 p. m. 764.4 5 p. m. — 16°.0 ⊙ 296° 9'.5 116° 9' 64 0 244 0	79° 50'.6	Supp. long. 88° 30' At Blaamanden.
May 4	Fosheim	Lat.	[On board: Bar. 17°.6 766.5] Temp. at 6 a. m. — 20°.6 5.30 p. m. — 15°.0 ⊙ 63° 54' 243° 53' 296 16.5 116 16.5	80° 1'.2	Supp. long. 87° South of Slidrefjorden.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 6 a. m.	Fosheim	Long.	[On board: Bar. 12°.4 769.3] Temp. at 7.30 a. m. — 20°.4 h m s W. 7 12 3.5 ⊙̄ 69° 50'.5 249° 50' 14 55.5 290 29.5 110 28.5 17 56.5 35 34.5 22 5.5 69 26.5 249 25 24 18.5 24.5 23 30 48.5 291 3 111 1.5	86° 28'.6 λ — 5 h 45 m 54.4 s	Supp. lat. 80° 15' South of Isfjeldodden.
May 6	Fosheim	Lat.	[On board: Bar. 16°.5 769.4] Temp. at 7.30 a. m. — 20°.4 4 p. m. — 15.2 ⊙̄ 63° 36' 243° 36' 296 33 116 32.5	80° 18'.6	Supp. long. 86° 30' On Isfjeldodden.
May 9	Fosheim	Lat.	[On board: Bar. 15°.8 765.0] Temp. at noon — 16°.0 ⊙̄ 62° 47' 242° 45'.5 297 25 117 24	80° 17'.1	Supp. long. 86° Mouth of Cañon Fjord.
May 9 p. m.	Fosheim	Long.	[On board: Bar. 19°.2 765.9] Temp. at 6 p. m. — 19°.0 h m s W. 4 25 54.5 ⊙̄ 290° 7'.5 110° 9'.5 30 37.5 70 9 250 8.5 36 35.5 27 25.5 39 19 289 40.5 109 38	83° 36'.2 λ — 5 h 34 m 24.6 s	Supp. lat. 80° 12' In Cañon Fjord.
May 10	Fosheim	Lat.	[On board: Bar. 15°.0 766.6] Temp. at noon — 14°.8 ⊙̄ 62° 23'.5 242° 22' 297 50 117 49	80° 8'.7	Supp. long. 86° In Cañon Fjord.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 13	Fosheim	Lat.	[On board: Bar. 15°.2 765.0] Temp. at noon — 8°.3 $\overline{\odot}$ 299° 1'.5 119° 0'.5 61 11 241 11.5	79° 43'.0	Supp. long. 85° 40' Head of Cañon Fjord.
May 17	Fosheim	Lat.	[On board: Bar. 15°.9 771.3] Temp. at 12.30 p. m. — 8°.4 $\overline{\odot}$ 60° 22'.5 240° 21' 299 48 119 46.5	79° 51'.8	Supp. long. 82° 30' Ulvedalen in Cañon Fjord.
May 17	Fosheim	Long.	[On board: Bar. 15°.0 771.1] Temp. at 8 p. m. — 10°.6 h m s W. 4 22 16 $\overline{\odot}$ 292° 3'.5 112° 2' 23 59.5 291 57 111 57 25 54 52.5 52 29 13.5 68 27.5 248 26.5 31 24.5 32 32.5 33 17 37.5 38 36 1.5 291 26 111 25	82° 7'.9 λ — h m s 5 28 31'.5	Same place.
May 28 p. m.	Fosheim	Long.	[On board: Bar. 15°.6 765.6] Temp. at 9 a. m. — 10°.2 h m s W. 4 20 14.5 $\overline{\odot}$ 294° 52' 114° 50' 26 16.5 65 41 245 40 32 5.5 52 51 36 14.5 294 9 114 8 38 30.5 1.5 0 41 35.5 66 20 246 19.5	85° 1'.4 λ — h m s 5 40 5'.7	Supp. lat. 79° North of Hatø.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 29	Fosheim	Lat.	[On board: Bar. 19°.0 770.6] Temp at 5 a. m. — 11°.6 10 p. m. — 12°.7 $\overline{\odot}$ 303° 1′ 123° 0′ 57 13.5 237 14	78° 59′.4	Supp. long. 83° 30′ In Bay's Fjord.
June 1 a. m.	Fosheim	Long.	[On board: Bar. 11°.0 758.5] Temp. at 8.30 a. m. — 5°.7 h m s W. 7 16 53.5 $\overline{\odot}$ 296° 42′ 116° 40′.5 19 48 48.5 47 22 36.5 58 56 29 19 62 59 242 58 31 45.5 54 52.5 34 28.5 43.5 42.5	86° 55′.6 λ — h m s 5 47 42.3	East side of Evreka Sund.
June 1	Fosheim	Lat.	[On board: Bar. 15°.9 756.5] Temp. at 8.30 a. m. — 5°.7 $\overline{\odot}$ 213° 42.5 123° 41′ 56 20.5 236 20	78° 38′.4	Supp. long. 87° 18′ Same place.
June 3	Fosheim	Lat.	[On board: Bar. 18°.1 751.6] Temp. at 5 p. m. — 4°.2 $\overline{\odot}$ 304° 22′.5 124° 22′ 55 42 235 41	78° 14′.4	Supp. long. 88° Evreka Sund.
June 4	Fosheim	Lat.	[On board: Bar. 16°.9 753.0] Temp. at 10 a. m. — 6°.2 $\overline{\odot}$ 304° 41′ 124° 40′ 55 30.5 235 30	78° 6′.9	Supp. long. 87° In Harenes Fjord.
June 5 a. m.	Fosheim	Long.	[On board: Bar. 13°.6 756.3] Temp. at 7 a. m. — 4°.9 h m s W. 6 53 41.5 $\overline{\odot}$ 296° 7′ 116° 6′ 56 5.5 14 13 57 42.5 18 17.5 7 0 5.5 63 47.5 243 47 2 10.5 42 41 3 59 35.5 35	87° 44′.3 λ — h m s 5 50 57.3	Supp. lat. 77° 50′ On Gaasenes.

Date	Observer	Object of observations	Observations	Result	Locality
1901 June 8 a. m.	Fosheim	Long.	[On board: Bar. 15°.7 759.1] Temp. at noon – 2°.3 h m s W. 7 15 26.5 ⊙̄ 297° 33′ 117° 32′ 17 21.5 37.5 36 19 7.5 44 42.5 22 16.5 62 19 242 18.5 24 18.5 10.5 11.5 25 44 7 7.5 30 33.5 298 18 118 17	87° 56′.9 λ – 5 51 47.6 (h m s)	Supp. lat. 77° 33′ South of Little Björnekap.
June 9	Fosheim	Lat.	[On board: Bar. 18°.5 764.7] Temp. at 5 a. m. – 9°.7 10 p. m. – 9°.0 ⊙̄ 306° 0 125° 58′.5 54 14 244 12.5	77° 19′.5	Supp. long. 87° 45′ SW. of Great Björnekap.
June 17 p. m.	Sverdrup	Magn. Decl.	h m s W. 5 55 44 ◐ 81° 0′ oblique azimuth N. of ⊙. Promontory where we dined May 16th. Bearings S 53 E.	129° 31′ N. to W.	Lat. 79° 40′ 10″ Long. 86° 49′ 48″, Ulveleiren.
April 29 a. m.	Fosheim	Magn. Decl.	h m s W. 7 18 38 ◐ N 52°.5 W. S 53° E. 23 5 53¼ 54 26 39 54½ 55 30 28 55⅓ 56 33 7 55½ 56 38 20 57 57¾	120° 9′ N. to W.	Lat. 78° 47′ 0″ Long. 84° 36′ 20″ On Troldfjordeidet.
May 9 p. m.	Fosheim	Magn. Decl.	h m s W. 4 25 54.5 ◐ 202° 25′.5 22° 24′ 30 37.5 23 49 203 47 Cape to NE, N side of Greely Fjord 164 13 344 28 Comp. S. 19.5 E.	121° 32′ N. to W.	Lat. 80° 12′ 0″ Long. 83° 36′ 9″ In Cañon Fjord.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 17 p. m.	Fosheim	Magn. Decl.	h m s W. 4 36 1.5 ◐ 271° 9'.5 91° 9' To west side of high mountain in north, to right of ⊙ 27° 0' 206° 57' Comp. S 40.5 E.	121° 31' N. to W.	Lat. 79° 51' 50" Long. 82° 7' 53" Cañon Fjord.
May 28 p. m.	Fosheim	Magn. Decl.	h m s W. 4 20 14.5 ◐ 136° 12' 316° 11' 26 16.5 318 10 138 9.5 To Top »Midtøie« (to left of ⊙) 211° 25' 31 23 Comp. N 85.5 W.	123° 1' N. to W.	Lat. 79° 0' 0" Long. 85° 1' 26" N. of Hatø.
June 8 a. m.	Fosheim	Magn. Decl.	h m s W. 7 25 44 ◐ 30 33.5 342° 17' 167° 18.5 163 27 343 26 To Björnekap 216 15 26 14 Comp. N 79 W.	116° 53' N. to W.	Lat. 77° 33' 0" Long. 87° 56' 54" On Gaasenes.
May 3 p. m.	Sverdrup	Azimuth	h m s W. 4 39 29.5 ◐ 358° 42' 178° 42'.5 45 9 179 55 359 55.5 48 38 180 47.5 0 48 54 15 2 21 182 20 South point on east land 84° 28' 264° 28' North — — — — 280 0 100 0 Northernmost — — — — 259 2 79 2	Zero: 258° 55' N. to E.	Lat. 79° 50' 35" Long. 86° 40' 17" W. of Blaamanden.
May 17 p. m.	Sverdrup	Azimuth	h m s W. 5 55 44 ◐ 81° 0' oblique azimuth N. of ⊙ The point, where we dined 16th June.	Promontory 357° 29' N. to E.	Lat. 79° 40' 10" Long. 86° 49' 48" Ulveleiren.

Date	Observer	Object of observation	Observations	Result	Locality
1901 April 25 p. m.	Isachsen	Azimuth	h m s W. 5 49 12.5 ⦶ 140° 25′ 52 6 321 10 54 32 45 56 54 142 20 59 24 143 5 6 1 56 323 21 Our last course today about 160° 0′; the land is low.	Zero: 299° 55′ N. to E.	Lat. 77° 55′ 28″ Long. 100° 24′ 36″ In Danskesundet.
April 27 Noon	Isachsen	Azimuth	h m s W. 0 30 0 ⦶ 284° 5′ 41 5.5 286 50 45 29.5 109 0 Land farthest north 73° 10′.	72° 12′ N. to E.	Lat. 78° 2′ 53″ On Cape Thorstein.
April 30 Noon	Isachsen	Azimuth	h m s W. 0 45 58 ⦶ 279° 20′ 51 27 280 45 54 27.5 101 45 Our course today 42° 8′.	78° 46′ N. to E.	Lat. 78° 14′ 23″
May 2 Noon	Isachsen	Azimuth	h m s W. 0 50 46.5 ⦶ 33° 30′ 53 42 214 40 Promontory in E. 99° 0′ Promontory in N. 71 10 Eastend of land in north 38 0 Westend — — 14 40	315° 24′ N. to E.	Lat. 78° 23′ 26″ Long. 104° 30′ 59″ In Dyrebugten.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 2 p. m.	Isachsen	Azimuth	h m s W. 6 1 5.5 ⦶ 100° 35′ 3 51.5 281 25 6 0 55 8 50 103 5 11 28 10 13 56.5 283 52 To westend of land farthest north 354° 52′ To eastend of — — — 3 10 Tan. to land E. of us 33 30 High cape in north 37 20 Promontory in ENE. 86 45 South end of this peninsula (?) 106 50 Promontory WSW (our course today) 252 30 About 5° W of high cape to N is an even piece of high land with precipitous side facing E, extending about 10° westwards.	339° 23′ N. to E.	Lat. 78° 33′ 26″ Long. 104° 30′ 59″ In Dyrebugten.
May 19 Noon	Isachsen	Azimuth	h m s W. 0 45 48 ⦶ 347° 45′ East of ⊙ : our course today 302° 45′ West of ⊙ : our camp last night 84 45 Conical mountain within camp 71 0	194° 49′ N. to E.	Lat. 78° 46′ 56″ SE. of cape Kairo.
May 20 Noon	Isachsen	Azimuth	h m s W. 0 22 57 ⦶ 274° 10′ 32 5 276 40 34 30 97 30 Point to north 293° 45′. Land farthest NE. 335 45	82° 57′ N. to E.	Lat. 78° 31′ 59″ In Hassel's "Sund".

Date	Observer	Object of observations	Observations	Result.	Locality
1901 May 24 p. m.	Isachsen	Azimuth	h m s W. 6 10 57 ⦶ 74°25′ 13 27 255 5 16 0.5 45 18 19 76 10 21 35 55 23 42.5 257 30 Tan. to land on south side in west 262° 5′ Unknown land farthest north 355 0 Land to north 10 15 Our course from lat. today (cf. 1st obs.) 268 50	17°54′ N. to E.	Lat. 78°45′ 0″ Long. 96°56′15″
May 30 a. m.	Isachsen	Azimuth	h m s W. 7 27 3 ⦶ 190°28′ 30 5 10 6 33 28 11 58 35 49 192 43 38 58.5 193 28 41 27.5 13 59 Mt. Nicolay, N. Cornwall highest S. part 138°20′ 318°22′ 318 25 138 26	96°42′ N. to E.	Lat. 78° 10′38″ Long. 92° 6′44″ Cape Sydvest.
May 30 p. m.	Isachsen	Azimuth	h m s W. 4 30 36 ⦶ 156° 5′ 32 59.5 336 45 35 55 337 30 38 15.5 157 55 40 56 158 40 43 16 339 25 Trend of coast between cape Sydvest and promontory farther north is 22°45′. Mt. Nicolay or Graham Island can be seen to the south.	276°43′ N. to E.	Lat. 78° 10′38″ Long. 92° 6′44″ Cape Sydvest.

Date	Observer	Object of observations	Observations	Result	Locality
1901 June 4 p. m.	Isachsen	Azimuth	h m s W. 5 45 18.5 ⦶ 125°25′ 48 22 305 55 50 9 306 25 51 50 126 55 53 37.5 127 25 55 18 307 35 North tan. S. island, Buckingham Island 0°40′ Highest nearest part of North island (Graham Island) 36 35 East tan. North island 97 45 — — South island 269 50	327°56′ N. to E.	Lat. 77° 9′34″ Long. 90°51′51″ SE. point of Buckingham I.
June 5 Noon	Isachsen	Azimuth	h m s W. 11 57 28 ⦶ 282°45′ 0 0 34 93 25 4 52 94 40 Tan. land in south 147°15′ Most visible part of Gr. Island 233 40 Large icebergs in north 288 10 Tan. land in north 292 20 Uppermost ledge in mountain W. of divide 58 10	86°57′ N. to E.	Lat. 76°58′56″ Sandøren at Nordstrand.
July 13 a. m.	Isachsen	Azimuth	h m s W. 7 37 27 ⦶ 37°15′ 41 1.5 217 59 43 54 218 45 47 32 39 45 50 26 40 30 52 49 221 0 Lands End. (Promontory not quite visible at sea-level) 325°27′ Promontory north of river 143 9	255° 5′ N. to E.	Lat. 76°51′45″ Long. 89°32′30″ South side of river 2 miles N. of Lands End.

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 15 a. m.	Isachsen	Azimuth	h m s W. 7 30 39 ⦶ 343°53′ 39 42 346 13.5 46 59 168 10 49 37 348 44 Skredbugten N. Kent 359°50′ Lerbugten — 30 59 Tan. — 47 20 Land's End 60 50 Spækkassen 72 39	126°14′ N. to E.	Lat. 76°32′6″. Long. 89°49′53″. Cape Dønninghausen.
July 16 Noon.	Isachsen	Azimuth	h m s W. 11 11 9 ⦶ 311°40′ 18 50 134 0 Tan. the land in E. (other side of the bay) 90° 4′ Eastside of St. Helena 135 10 Westside of — 28 Tan. Cape Vera 140 17 Nevé I (from E.) 144 13 — II 146 30 — III 149 43 Eastend of glacier, N. Devon. 173 30 Westend — 192 25 Northside of Norfolk Inlet (south point of cape, Harrison Island?) 236 33 Tan. Kalven 239 7	38°30′ N. to E.	Lat. 76°24′22″. Long. 89°20′17″. Vendomkap.

Date	Observer	Object of observations	Observations		Result	Locality
1901 July 17 p. m.	Isachsen	Azimuth	h m s W. 1 27 11 28 57 30 23 31 30 33 13 34 31 38 2 39 41 41 23 43 13 44 30 46 1	⦶ 75° 8′ 41 76 3 19 49 77 14 258 15.5 45 259 14 44 260 5 30	313° 50′ N. to E.	Lat. 76° 22′ 24″. Long. 88° 57′ 59″. Vestre Hvalroskap.
			Cape Vera Bjørneborgskap Østre Hvalroskap Hvalros Fjord's direction about	250° 29′ 148 22.5 147 41 60 50		
July 17 p. m.	Isachsen	Azimuth	h m s W. 4 24 16 26 26 27 46 28 50 29 58 31 11 34 22 40 43 41 59 44 40 45 58	⦶ 91° 3′ 56.5 92 18 35 49 93 9 274 0 275 36 55 276 33 56.5	344° 25′ N. to E.	Lat. 76° 21′ 28″. Long. 88° 47′ 41″. Maagebergsbugten

Date	Observer	Object of observations	Observations				Result	Locality
1901			Cape west of Maagebergsbugten			245°23′		
			Cape Vera			236 51		
			Havhestberget			235 5		
			Tan. N. Devon			234 30		
			Cape on N. Devon			229 48		
			Farthest headland (Bjørneborg)			119 16.5		
			Cape west of Bjørneborg			118 18		
			— — —			117 30		
July 21 a. m.	Isachsen	Azimuth	h m s W. 6 59 11.5	⦶ 264°16′			198°49′ N. to E.	Lat. 76° 15′25″. Long. 89° 16′30″. St. Helena.
			7 0 38	37				
			2 8	265 2				
			3 34	21				
			4 43.5	38				
			5 32.5	50				
			7 44.5	86 31				
			9 51	46.5				
			10 15	87 8				
			11 12	25.5				
			12 11.5	39.5				
			13 23	55				
			18 57	89 19.5				
			21 20	269 50				
			Cape, N. Devon		341°32	161°30′		
			Tan. nearest cape, N. Devon		353 40	173 32		
July 21 p. m.	Isachsen	Azimuth	h m s W. 11 0 58	⦶ 161° 10′.5	341°10′		174° 36′ N. to E.	Lat. 76° 15′25″. Long. 89° 16′30″. St. Helena.
			4 12	341 57	161 57			

Date	Observer	Object of observations	Observations			Result	Locality
1901			Before Cape Vera	125°44′	305°45′		
			Tan. N. Devon in Cardigan Str.	137 4	317 4.5		
			Tan. N. Kent, Card. Str.	139 1.5	319 2		
			Westside of Kalven	151 46	331 44		
			Eastside of —	169 12.5	349 13		
			Exkrementodden	27	29		
			Vendomkap	180 1.5	360 1		
			Point (Cape) W. of Jammerbugten	188 7	8 9		
			Cape east of — —	202 23	22 25		
			— west of Hvalros Fj.	211 52.5	31 54		
			— east of —	227 34	47 36		
			— west of Gaase Fjord	230 36	50 33		
			Tan. Maageberget	233 38	53 40		
			Cape east of Gaase Fjord	243 57	63 59		
			— — — — —	245 29	65 31		
			— — — — —	248 55	68 57		
			— — — — —	252 14	72 16		
			Bjørneborgskap	254 53	74 55		
			Outer (W) Stormkap	259 51	79 53		
			Baadsfjordsnuten	265 29	85 31		
July 29 a. m.	Isachsen	Azimuth	h m s W. 2 16 53 20 39 46 44 49 56 54 55 3 5 21 7 12 9 29 14 38	⦶ 39°20′ 220 19 47 22 48 10 229 25 232 8 38 233 14 54 59		181°14′ N. to E.	Lat. 75°58′0″. Long. 91°10′35″. At head of Viksfjord.

Date	Observer	Object of observations	Observations			Result	Locality
1901			Headland on southside of Lerbugten	326° 32′	146° 32′		
				146 29	326 30		
July 30 a. m.	Isachsen	Azimuth	h m s W. 7 16 13 ⦶	199° 18′		87° 2′ N. to E.	Lat. 75° 58′ 0″. Long. 91° 10′ 35″. Same place.
			18 15	19 55			
			Headland on other side of bay to south		60° 50′		
July 31 a m.	Isachsen	Azimuth	h m s W. 6 36 46 ⦶	77° 13′		20° 41′ N. to E.	Lat. 75° 59′ 3″. Long. 90° 3′ 50″. On Baadodden.
			38 43.5	43			
			39 54	78 0			
			40 43	12			
			41 27	22.5			
			42 27	37			
			43 15.5	50			
			46 35.5	259 34			
			47 37	48			
			48 50	260 4			
			49 36	16			
			50 28	30			
			51 32	45			
			52 43.5	261 3			
			54 1	21			
			56 24	58			
			58 55.5	82 45			
			Havhestberget		17° 10′		

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 31 a. m.	Isachsen	Azimuth	h m s W. 9 25 7 ⦶ 181°34′ 1°35′ 26 58 1 57 181 56 Western Middagsodde 106° 3′ Eastern — 126 38 Station 1, peninsula at head of fjord 129 45 Tan. Forlandet 185 53 Steep cliff 177 10 „Nabben" (Obs. st. last year) 217 16 Havhestberget 264 12	139°38′ N. to E.	Lat. 75°59′3″ Long. 90°3′50″ Station Hvalbenet.
August 3 p. m.	Isachsen	Azimuth	h m s W. 0 3 31 ⦶ 210°40′ Kalven, N.E. point 263°47′ Tan. Pr. Edw. Pt., SE. point of N. Kent 283 35 N. Kent's SE. point 305 30 Creek, E. side of N. Kent 325 10 Tan. Cape Dønninghausen 348 25 Vendomkap 168 30 St. Helena 188 28 Tan. S.E. corner of small island 189 20	334°43′ N. to E.	Lat. 76°28′48″ Long. 89°54′36″ Exkrementodden.
August 6 p. m.	Isachsen	Azimuth	h m s W. 4 36 6 ⦶ 94°38′ 37 42 95 2 39 10 25 40 31 43 44 44 276 52 45 51 277 8 47 16 30 Tan. N. Kent 265°52′ Mouth of river in S.W. 253 4 Highest peak at Land's End 239 14	343°21′ N. to E.	Lat. 76°53′21″ Long. 89°31′27″ about 2′ N. of Elveodden from 13 July.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 9 p. m.	Fosheim	Azimuth	h m s W. 4 25 54.5 ◑ 202°25′.5 22°24′ 30 37.5 23 49 203 47 Isfjeld to right of ⊙ 63°13′ 243°13′.5 Cape to NE., N. side of Greely Fj. 164 13.5 344 28 Eastern cape 254 26 74 25.5 Cape to SE. 270 16 90 14.5 Western cape (Cape With) 276 42 96 40.5	234°44′ N. to E.	Lat. 80°12′0″ Long. 83°36′9″ In Cañon Fjord.
May 17 p. m.	Fosheim	Azimuth	h m s W. 4 36 1.5 ◑ 271°9′.5 91° 9′ W. side of high mountains in north 27° 0′ 207°57′	351°1′ N. to E.	Lat. 79°51′50″ Long. 82°7′53″ Ulvedalen, Cañon Fjord.
May 28 p. m.	Fosheim	Azimuth	h m s W. 4 20 14.5 ◑ 136°12′ 316°11′ 26 16.5 318 10 138 9.5 Hill Midtøen (to the left of ⊙) 211°25′ 31°23′ NE. point and cape 179 2 258 58	300°5′ N. to E.	Lat. 79°0′0″ Long. 85°1′26″ North of Hatø.
June 8 a. m.	Fosheim	Azimuth	h m s W. 7 25 44 ◑ 342°17′ 162°18′.5 30 33.5 163 27 343 26 Bjørnekap 216°15′ 36°14′	307°53′ N. to E.	Lat. 77°33′0″ Long. 87°56′54″ South of Little Bjørnekap.
May 2	Sverdrup	Bearings	Middagsodden, western land S. 82° W. Northwestern cape, where the fjord seems to trend northwards N. 83° E.		Evreka Sund, western land.
June 2	Sverdrup	Bearings	Camp No. 35 N. 66° W.		Camp No. 37.
June 3	Sverdrup	Bearings	The low point in the fjord S. 64° E.		Moskusodden.

Date	Observer	Object of observations	Observations	Result	Locality
1901 May 9	Sverdrup	Bearings	Bjørnekap N. 51° W. The low land stretching far westwards and SW from this point. The longest sandy beach probably runs about 8′ out from the mountain.		The mountain in the north of Bjørnekaplandet, where the fossils were found.
April 24	Isachsen	Direction	☉ in the meridian 329° 19′ Bjørneleiren 215 12 Low promontory in WSW. 35 12		On the ice 9.1 miles WSW of Bjørneleiren.
May 5	Isachsen	Direction	☉ in the meridian 144° 47′.5 Headland farthest south 187 50 Nearest headland to N. 344 50 Both about 3′ off		
May 24	Isachsen	Direction	☉ in the meridian 34° 30′ Tan. land in W. 116 10 — western land in N. 248 35		East of Cape Sverre.
May 26	Fosheim	Bearings	Northeastern Cape N. 73° W. Southwestern — S. 13° W.		Camp No. 45, Veslefjord.
May 28	Fosheim	Bearings	Hill, NW. island N. 87°.5 W. South end of southern island N. 37° W.		North of Hatø.
May 30	Fosheim	Bearings	South-east fj. S. 62° W.		Midtøen.
May 31	Fosheim	Bearings	Trend of sound from Storøen to Station S. 15° W. Tan. on W. side S. 37° W.		Promontory on eastern land at bend southwards, between camps 50 and 51.

Date	Observer	Object of observations	Observations	Result	Locality
1901 June 4	Fosheim	Bearings	Sound SW. Cape — Hyperitodden N. 40° W. Northern direction of sound S. 56° E. Last bearings S. 46°.5 E.		Between camps 53 and 54, 12.1 miles from 53.
June 7	Fosheim	Bearings	Headland in north, where we reached the beach S. 29°.5 E. Bjørnekap N. 79° W.		Camp No. 57, N. of Bjørnekap.
June 9	Fosheim	Bearings	Bjørnekap S. 16°.5 W.		Camp No. 58, about 6 miles S.W. of Bjørnekap.
July 29 a. m.	Isachsen	Direction and Zenithdistance	Tan. Forlandet, seen last year from „Nabben" H. C. 347° 56′ Tan. Baadlandet 355 52 175° 50′ — 3. promontory most westerly 4 0 V.C. 87° 29′ 267° 30′ — 2. promontory (central) 6 25 89 0 — 1. — most easterly 8 10 19 18 Headland on the south side of Leirbugten 83 40 Head of Teltfjord 149 45 Middle of Lake 171 52 At head of fjord, N. of peninsula. 190 30		Summit of high peninsula at head of fjord in Vestfjorden.

Date	Observer	Object of observations	Observations	Result	Locality
1901 July 30	Isachsen	Direction and Zenithdistance	Station of yesterday morning, summit of high peninsula H. C. 113°49′ 293°50′ V. C. 268°7′.5 Tan. Forlandet (See Obs. 1 yesterday) 266 21 86 21 Tan. Baadlandet (See Obs. 2 yesterday) 279 16 99 16 99 10 279 9		Western Middagsodde.
July 31	Isachsen	Direction	Cape on N. Devon, about 20 miles off, guessed 43°52′ A more distant cape 39 50 Cape Vera 301 30 „Nabben" 246 45		At Baadodden.
August 3	Isachsen	Direction	Tan. N. Kent 217°35′ Land's End 227 34 Spækkassen 239 20 Tan. land southwards towards Exkrementbugt 353 25 Exkrementodden 4 13 Tan. SE. end of Kalven 10 54 — NE. — - — 23 47 SW. corner of Kalven 38 28 Middle of mountain between the 2 glacier branches, N. Devon 40 43 Tan. S.E. corner, N. Kent 43 45 Indentation on N. Kent (of 4. Obs.) 107 35		Cape Dønninghausen.

Date	Observer	Object of observations	Observations		Result	Locality
1901 September 15	Isachsen	Direction	Tan. Point E. of Jammerbugten	115° 43′		Headland W. of Jammerbugten.
			Highest part of St. Helena	188 12		
			Tan. NW. part of St. Helena	188 52		
			Tan. North Devon	191 13		
			Eastern nevé, N. Devon (W. of top — nevé)	196 23		
			—»— No 2	198 58		

During the stay in the fourth winter harbour 1901—1902.

Observer	Instrument	Watch	Correction to Chronometer Kutter at starting			Correction to Chronometer Kutter on return		
			1902		h m s	1902		h m s
Sverdrup	Altazimuth No. 2.	Sverdrup	April	1	+ 5 44 59.5	June	16	+ 5 31 52.0
Isachsen	Altazimuth No. 1	No. 4	April	1	— 5 13 23.0	April	18	— 5 12 11.5
Isachsen	Altazimuth No. 1	No. 4	April	23	— 5 11 30.5	May	22	— 5 9 17.5
Isachsen	Altazimuth No. 1	Sverdrup	July	7	+ 5 44 14.5	Aug.	5	+ 5 40 26.5
Baumann	Ship's sextant with mercury horizon							

Date	Observer	Object of observations	Observations	Result	Locality
1902 April 28	Sverdrup	Lat.	Bar. at 6 a. m. 756.0 Temp. at 6 a. m. — 17°2 6.30 p. m. 757.0 6.30 p. m. — 13.°0 $\overline{\odot}$ 66°30′ 246°30′ 293 42 113 42	80° 43′.1	Supp. long. 86°30′ Camp No. 22.
May 2	Sverdrup	Lat.	Bar. at 8 a. m. 766.0 Temp. at 8 a. m. — 13°.8 4 p. m. 763.0 4 p. m. — 13.°2 $\overline{\odot}$ 294° 41′ 114° 41′ 245 29 65 29	80° 57′.2	Supp. long. 91°0′
May 5	Sverdrup	Lat.	Bar. 762.0 Temp. — 17°.5 $\overline{\odot}$ 65° 1′ 245° 0′ 295 12 115 11	81° 20′.6	Supp. long. 92° 8.3 miles NNW of camp No. 28.
May 8	Sverdrup	Lat.	Bar. 763.0 Temp at 10 a. m. — 18°.2 4 p. m. — 17°.0 $\overline{\odot}$ 64° 26′.5 244° 26′ 295 46.5 115 45	81° 36′.9	Supp. long. 95° Camp No. 30.
May 8	Sverdrup	Long.	Bar. 760.4 Temp. — 17°.0 h m s W. 4 52 25 $\overline{\odot}$ 69° 48′.5 249° 48′ 54 25.5 52.5 52 56 23 57 57 59 0 290 9 110 8 5 1 31 4 2.5 3 16 289 58.5 109 58	92° 21′.5 λ — h m s 6 9 25.9	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 11	Sverdrup	Lat.	Bar. at 7 a. m. 773.4 Temp. at 7 a. m. — 21°.4 4 p. m. 772.0 4 p. m. — 17°.0 $\overline{\odot}$ 62° 58′ 242° 59′ 297 12.5 117 11.5	80° 57′.6	Supp. long. 94° 30′ Camp No. 33.
May 11 p. m.	Sverdrup	Long.	Bar. 772.0 Temp. — 17°.0 h m s W. 5 13 14.5 $\overline{\odot}$ 69° 42′ 249° 41′ 15 42 48 48.5 18 43 55 55 23 32 290 7 110 6 25 45 2.5 2 27 42 289 55.5 109 55.5	91° 35′.2 λ — h m s 6 6 20.9	Same place.
May 15 a. m.	Sverdrup	Long.	Bar. 760.0 Temp. at 8 a. m. — 16°.0 11 p. m. — 20°.2 h m s W. 8 22 0 $\overline{\odot}$ 66° 5′.5 246° 5′ 23 41 1.5 1.5 27 1.5 65 54 245 54 31 19 294 24.5 114 25 34 47 30 31 37 50 40 39	89° 35′.7 λ — h m s 5 58 22.6	Camp No. 36.
May 15	Sverdrup	Lat.	Bar. 760.0 Temp. at 8 a. m. — 16°.0 11 p. m. — 20°.2 $\overline{\odot}$ 61° 33′ 241° 33′.5 298 35 118 36	80° 32′.6	Supp. long. 90° Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 16—17 Midnight	Sverdrup	Lat.	Bar. 765.5 Temp. 16 May 9 a. m. — 16°.1 17 May 9 a. m. — 19°.8 $\overline{\odot}$ 100° 2'.5 280° 3 80 0 260 0	80° 32'.7	Supp. long. 88° Camp No. 38.
May 17 a. m.	Sverdrup	Long.	Bar. 765.5 Temp. at 9 a. m. — 19°.8 W. h m s 7 42 1 $\overline{\odot}$ 66° 48'.5 246° 48' 43 39.5 45 44 44 56 42 41 47 15 293 34 113 32.5 49 49 40.5 40 51 39 44 44.5	87° 29'.2 λ — h m s 5 49 56.6	Same place.
May 24	Sverdrup	Lat.	[On board: Bar. 15°.2 764.1 Temp. — 6°.1] $\overline{\odot}$ 58° 51'.5 238° 50' 301 17 121 16.5	79° 45'.7	Supp. long. 86° 42' Camp No. 43, Adskillelsens leir.
May 24 p. m.	Sverdrup	Long.	[On board: Bar. 15°.2 764.1 Temp. — 6°.1] W. h m s 5 18 20 $\overline{\odot}$ 67° 37' 247° 37' 20 59 43 43 23 21 47 46.5 28 47 292 10 112 8 31 32 2 1.5 33 15.5 291 54 111 53	86° 40'.3 λ — h m s 5 46 41.1	Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 25	Sverdrup	Lat.	Bar. 759.0 Temp. − 3°.8 $\overline{\odot}$ 58°36′ 238°35′.5 301 32 121 31	79°42′.0	Supp. long. 87° Camp No. 44.
May 26 a. m.	Sverdrup	Long.	Bar. 762.0 Temp. − 5°.2 W. h m s 8 41 29 $\overline{\odot}$ 61°56′.5 241°55′.5 44 25.5 50 50 47 26 45 44 50 49 298 31.5 118 30 55 17 40.5 40 57 8 45.5 45	85°7′.4 λ − h m s 5 40 29.7	Camp No. 45.
May 26	Sverdrup	Lat.	Bar. 762.0 Temp. − 5°.2 $\overline{\odot}$ 58°12′.5 238°13′ 301 56.5 121 55.5	79°28′.8	Supp. long. 86° Same place.
May 29—30 Midnight	Sverdrup	Lat.	Bar. 769.0 Temp. − 4°.2 $\overline{\odot}$ 281°1′.5 101°0′.5 79 9.5 259 9	78°57′.2	Supp. long. 82° Vidjeøren, Bay's Fjord.
May 30	Sverdrup	Long.	Bar. 762.0 Temp. − 1°.6 W. h m s 7 38 0 $\overline{\odot}$ 63° 9′.5 243° 8′ 40 28.5 5 3.5 42 10 62 57.5 242 57 46 3.5 297 21.5 117 21.5 50 12.5 31.5 31 52 41 40 39	82°15′.4 λ − h m s 5 29 1.5	Same place.

Date	Observer	Object of observations	Observations	Result.	Locality
1902 May 31	Sverdrup	Lat.	Bar. at 7 a. m. 656.0 Temp. at 7 a. m. — 0°.2 2 p. m. 755.0 2 p. m. + 1°.0 $\overline{\odot}$ 56° 55.5 236° 54′ 303 13.5 123 12.5	78° 59′.4	Supp. long. 84° Hatøen.
May 31 p. m.	Sverdrup	Long.	[On board: Bar. 15°.2 759.0 Temp. — 0°.7] h m s W. 4 50 14 $\overline{\odot}$ 65° 13′ 245° 12′.5 52 35 18.5 18.5 54 36.5 24 24.5 57 59 294 32.5 114 32 5 1 22 24.5 23 3 54 15.5 15	85° 16′.3 λ — h m s 5 41 5.0	Same place.
June 1 p. m.	Sverdrup	Long.	Bar. 753.1 Temp. + 1°.0 h m s W. 6 1 20 $\overline{\odot}$ 68° 10′.5 248° 10′ 3 6.5 16 15.5 5 11 21.5 21 8 19 291 41 111 40 10 40 32 32 14 19.5 22.5 21.5	86° 16′.3 λ — h m s 5 46 53.0	Camp No. 53, the depot.
June 1—2 Midnight	Sverdrup	Lat.	Bar. June 1 8 a. m. 753.1 Temp. June 1 8 a. m. + 1°.0 June 2 8 p. m. 760.6 June 2 8 p. m. — 0°.8 [Midnight 756.6] $\overline{\odot}$ 281° 23′ 101° 22′ 78 46.5 258 45	78° 53′.8	Supp. long. 86° 30′ Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1902 June 2 a. m.	Sverdrup	Long.	Bar. 760.0 Temp. − 0°.8 h m s W. 5 52 44 ⊙ 294°28′.5 114°28′ 54 52 35 34 56 39 41.5 40.5 59 37 65 21.5 245 20 7 1 39.5 14.5 13.5 4 6.5 7 6.5	86° 47′.2 λ − 5 h 47 m 8.8 s	Same place.
June 2	Sverdrup	Lat.	Bar. 760.0 Temp. − 0°.8 ⊙ 56°35′ 236°34′.5 303 35.5 123 34	78° 50′.2	Supp. long. 86° 30′ Same place.
June 6 a. m.	Sverdrup	Long.	[On board: Bar. 13°.0 764.7 Temp. + 1°.6] h m s W. 7 29 18 ⊙ 63° 42′ 243° 41′ 31 13 36 35 33 53.5 28.5 28 36 51 296 50 116 50 39 22.5 57 56 41 51 297 4.5 117 3.5	88° 29′.5 λ − 5 h 53 m 58.1 s	Camp No. 57.
June 6	Sverdrup	Lat.	Bar. at 7 p. m. 762.3 Temp. at 7 p. m. + 2°.0 ⊙ 55°29′.5 235°27′.5 304 40.5 124 39	78° 18′.2	Supp. long. 88° Same place.

Date	Observer	Object of observations	Observations	Result	Locality
June 8 a. m.	Sverdrup	Long.	Bar. 760.2 Temp. + 5°.2 h m s W. 8 24 42 ⊙̄ 60°37'.5 240°36' 26 38.5 32 31 28 38 28.5 26.5 32 29 299 51 119 49.5 34 54 57 56 37 38 300 5.5 120 4	88° 11'.6 λ − 5 h 52 m 46.2 s	Camp No. 59, North side of Bjørnekaplandet.
June 8	Sverdrup	Lat.	Bar. 760.2 Temp. + 5°2 ⊙̄ 54°49'.5 234°48'.5 305 21 125 19	77° 50'.3	Supp. long. 87° Same place.
July 11	Sverdrup	Lat.	[On board: Bar. 16°.3 764.8 Temp. + 5°.1] ⊙̄ 54° 9'.5 234° 8'.5 306 2.5 126 1.5	77° 24'.1	Supp. long. 87° Camp No. 62, Great Bjørnekap.
July 11 p. m.	Sverdrup	Long.	[On board: Bar. 17°.0 764.8 Temp. + 4°.8] h m s W. 6 40 8 ⊙̄ 68°55'.5 248°55' 42 26 69 3 249 2 44 47 10 10 47 25 290 50 110 49 49 35 44 43 51 10 38 37	87° 57'.0 λ − 5 h 51 m 47.8 s	Same place.
April 10	Isachsen	Lat.	[On board: Bar. 14°.6 763.2 Temp. − 30° 4] h m s r. l. W. 10 32 36 ⊙̄ 248° 3' 68° 3' 4.1 5.0 40 29 111 58 291 58 3.8 5.8 45 15 56 56 3.8 5.8	76° 8'.5	Cone Island.

Date	Observer	Object of observations	Observations					Result	Locality
1902 April 10 p. m.	Isachsen	Long.	[On board: Bar. 15°.2 764.6 Temp. — 29°.8]					81° 49'.3 λ — 5 h 27 m 17.2 s	Same place.
						r.	l.		
			W. 4 h 39 m 31 s	⊙ 262° 14'	82° 14'	6.9	2.5		
			41 35	23	23				
			42 40	26	27				
			43 57	30	30				
			45 7	34	34				
			48 6	97 17	277 17				
			49 41	11	11				
			51 5	7	8				
			52 11	3	3				
			53 24	0	0	7.3	2.2		
April 13 p. m.	Isachsen	Long.	[On board: Bar. 15°.8. 778.6 Temp. — 24°.3]					84° 11'.0 λ — 5 h 36 m 43.9 s	Supp. lat. 76° 25' South point of Skreia.
			W. 4 h 22 m 6 s	⊙ 259° 41'	79° 42'				
			23 31	46	48				
			24 40	50	52				
			25 41	53	54				
			26 57	58	80 0	7.0	2.5		
			30 12	99 52	279 53				
			31 47	47	47				
			32 54	43	43				
			33 49	41	40				
			34 56	36	36	3.6	5.8		
May 5	Isachsen	Lat.	[On board: Bar. 16°.5 761.4] Temp. at 9.30 a. m. — 14°.0					75° 38'.0	At Bjørnekosset.
			W. 10 h 57 m 24 s	⊙ 239° 16'	59° 15'	5.0	3.8		
			11 2 2	18	16	5.0	3.8		
			5 23	120 45	300 45	6.0	2.7		
			9 32	42	42	6.0	2.7		

Date	Observer	Object of observations	Observations					Result	Locality
1902 May 5 p. m.	Isachsen	Long.	[On board: Bar. 15°.5 761.9] Temp. − 14°.7					85° 48′.9 λ − 5 h 43 m 15.5 s	Same place.
			W.	3 h 52 m 16 s	⊙ 250° 54′	70° 54′	r. l.		
				54 20	251 0	71 0			
				55 44	6	6			
				56 42	10	10			
				57 39	15	15	4.2 4.0		
				4 1 20	108 32	288 32			
				3 20	26	26			
				5 2	20	20			
				6 56	14	14			
				8 7	8	8	2.4 5.8		
May 9 a. m.	Isachsen	Long.	[On board: Bar. 11°.9 771.4] Temp. − 18°.1					87° 8′.3 λ − 5 h 48 m 33.2 s	Venteleiren.
			W.	6 h 46 m 40 s	⊙ 245° 55′	65° 52′			
				48 25	49	48			
				49 54	43.5	43			
				51 19	40	38			
				52 44	35	32			
				53 56	28	26	8.0 0.0		
				59 14	114 50	294 49			
				7 0 47	57	55			
				2 4	115 0	58			
				3 12	4	295 3			
				4 25	8	7			
				5 37	10	10	5.8 2.3		

Date	Observer	Object of observations	Observations					Result	Locality
1902 May 9	Isachsen	Lat.	[On board: Bar. 14°.6 772.4] Temp. − 14°.5					75°39′.7	Same place.
			h m s			r.	l.		
			W. 10 19 7	⊙	238°15′	58°15′	6.5 1.7		
			22 3		14	14	6.5 1.7		
			38 30		8.5	9.5	6.5 1.7		
			43 6		8	9	6.5 1.7		
			45 43		8	9	6.5 1.7		
			48 37		121 52.5	301 52	4.5 3.9		
			52 57		52	51.5	4.5 3.9		
			57 50		51.5	51	4.5 3.9		
May 9 p. m.	Isachsen	Long.	[On board: Bar. 15°.3 772.9] Temp. − 13°.8					87° 8′.5 λ − 5 h 48 m 33.8 s	Same place.
			h m s						
			W. 2 46 27	⊙	245°41′	65°41′			
			47 56		45	45			
			49 20		51	51			
			50 50		55	56			
			52 8		246 0	66 0			
			53 43		6	6	4.3 4.5		
			56 10		113 48	293 48			
			57 49		41	42			
			59 2		37.5	37.5			
			3 0 35		32	32			
			1 44		27	27			
			3 13		23	23	5.5 3.0		

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 11	Isachsen	Lat.	[On board: Bar. 14°.8 771.1] Temp. — 9°.0 h m s W. 10 33 3 ⊙̄ 122°25′ 302°25′ r. 4.5 l. 4.0 37 49 237 34 57 35 1.0 6.8 46 3 33 35 5.8 2.3 51 1 122 27.5 27.5 3.5 4.2 55 6 27 27 3.5 4.2	75° 36′.6	
May 17 p. m.	Isachsen	Long.	[On board: Bar. 15°.0 770.5] Temp. — 12°.0 h m s W. 3 1 28 ⊙̄ 244°47′ 64°48′ 2 50 52 52 4 10 55 55 4 51 59 59 5 30 245 0 65 0 6 19 3 3 5.3 2.6 9 19 114 49.5 294 49.5 11 9 43.5 43.5 12 2 40 40 12 56 36 36 13 40 33 33 14 36 30 30 4.3 4.0	87° 45′.6 λ — 5 h 51 m 2.3 s	Stormkap.

Date	Observer	Object of observations	Observations					Result	Locality
1902 May 18 a. m.	Isachsen	Long.	[On board: Bar. 12°.0 768.6] Temp. − 12°.8					87°45′.3 λ − 5 h 51 m 1.1 s	Same place.
						r.	l.		
			W. 6 h 43 m 53 s	☉	244°12′.5	64°12′.5			
			45 56		6	6			
			47 26		1	1			
			48 36		243 57.5	63 57.5			
			50 15		53	53			
			51 25		50	50	1.5	7.0	
			53 45		116 21.5	296 21.5			
			55 14		25.5	25.5			
			56 16		30	30			
			57 10		32	32			
			58 28		36	36			
			59 45		41	41	6.8	2.7	
May 18	Isachsen	Lat.	[On board: Bar. 15°.2 767.5] Temp. − 10°.8					76°18′.3	Same place.
			W. 10 h 26 m 28 s	☉	123°22′.5	303°22′.5			
			30 36		24	24			
			33 19		25.5	25.5			
			35 6		25.5	25.5	2.8	5.4	
			40 59		236 35	56 35			
			47 4		35	35	5.2	3.3	
			52 5		123 27.5	303 27.5			
			55 52		27	27	5.2	3.0	
			11 1 51		236 36.5	56 36.5	4.7	3.5	
			6 38		123 25.5	303 25.5	6.7	1.5	

Date	Observer	Object of observations	Observations	Result	Locality
1902 July 12 a. m.	Isachsen	Long.	[On board: Bar. 12°.8 760.0] Temp. + 4°.8 h m s ⊙ r. l. W. 7 49 31 242°23′ 62°23′ 3.0 51 37 18 18 52 31 15 15 53 20 13 13 54 6 10 10 56 54 118 0 298 0 3.4 4.0 58 11 5 5 59 15 8 8 53 10 10 8 0 40 12 12	89° 15′.5 λ — h m s 5 57 1.8	St. Helena.
July 12	Isachsen	Lat.	[On board: Bar. 12°.8 759.5] Temp. + 6°.5 h m s ⊙ W. 11 45 25 234°3′.5 54° 3′.5 7.4 0.0 54 32 0 0 5.0 1.5 0 5 19 233 57 53 57 3.8 3.2 8 18 57 57 3.8 3.2 9 59 126 5.5 306 5.5 7.8 0.0 17 32 4 4 3.0 4.0	76° 15′.9	Same place.

Date	Observer	Object of observations	Observations					Result	Locality
1902 July 12 p. m.	Isachsen	Long.	[On board: Bar. 13°.0 759.3] Temp. + 9°.6					89° 12′.2 λ − 5 h 56 m 48 s.8	Same place. Highest point of island.
						r.	l.		
			W. 3 h 55 m 52 s	⊙	240° 43′.5	60° 43′.5			
			57 9		49	49			
			58 5		51	51			
			59 16		54	54			
			4 0 7		58	58	3.0	4.0	
			3 30		118 54.5	298 54.5			
			5 23		49.5	49.5			
			6 11		46.5	46.5			
			6 49		44	44			
			7 25		42	42	6.0	1.4	
July 19	Isachsen	Lat.	[On board: Bar. 12°.6 755.5 Temp. + 10°.6]					76° 21′.4	Last camp on N. Devon.
			W. 0 h 7 m 57 s	⊙	235° 9′.5	55° 9′.5	4.0	3.5	
			12 26		9.5	9.5	4.0	3.5	
			14 29		124 53	304 53	3.0	3.9	
			19 45		52	52	3.0	3.9	
July 20	Isachsen	Lat.	[On board: Bar. 12°.0 760.1 Temp. + 4°.0]					76° 28′.6	Djæveløen, Cardigan Strait.
			W. 11 h 58 m 58 s	⊙	235° 30′	55° 30′	6.5	1.9	
			0 11 40		27	27	3.1	4.3	
			15 18		124 35	304 35	4.0	3.1	
			20 41		34	34	4.0	3.1	

Date	Observer	Object of observations	Observations	Result	Locality
1902 April 30	Baumann	Lat.	[On board: Bar. 758.7] Temp. — 10°.0 $\overline{\odot}$ 2h. 57°49′20″ I. E + 35″	76°1′.5	Supp. long. 93°45′
May 2	Baumann	Lat.	[On board: Bar. 765.9] Temp. — 13°.5 $\overline{\odot}$ 2h. 59°47′45″ I. E. + 35″	75°38′.9	Supp. long. 93°45′
May 4	Baumann	Lat.	[On board: Bar. 763.0] Temp. — 20°.0 $\overline{\odot}$ 2h. 62°26′35″ I. E. + 35″	74°54′.7	Supp. long. 93°45′
May 8 a. m.	Sverdrup	Azimuth	h m W. 9 45 $\overline{\odot}$ 66°15′ 246°15 ⦶ 103°30′ 294 1.5 114 1 284 28 Mountain in N., from which bearings are taken 163° 2′	217°20′ N. to E.	Lat. 81°36′52″ Camp No. 30.
May 8 p. m.	Sverdrup	Azimuth	h m Supp. 5 25 $\overline{\odot}$ 70°45′ 250°45′ ⦶ 250°51′ 289 35 109 35 72 2 Westernmost land in SW 224°40′.5 NW. point of black cliff, same land 211 14 Western point of Bergholmen 179 21	185°33′ N. to E.	Lat. 81°36′52″ Same place.
May 10 a. m.	Sverdrup	Azimuth	h W. 7 $\overline{\odot}$ 71° 5′.5 251° 4′.5 ⦶ 187°51′ 289 14 109 4 8 32 N. end of western land, island 191° 0′. NW. point of Bergholmen 63 51	89°7′ N. to E.	Lat. about 81°23′ Camp No. 31.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 11 p. m.	Sverdrup	Azimuth	h m s W. 5 13 14.5 ⦶ 234°55′ 15 42 235 26.5 18 43 236 20 23 32 57 25 25 45 58 27 42 58 25 Bergholmen 150°39′ Hvidberget 298 10 Cape No. 1 223 25 — — 3 273 27 — — 2 263 33 Reversed, Hvidberget 119 5.5	202°12′ N. to E.	Lat. 80°57′38″ Long. 91°35′14″ Camp No. 33.
May 15 a. m.	Sverdrup	Azimuth	h m s W. 8 23 41 ⦶ 71°32′ 27 1.5 72 26 31 19 253 23 34 47 254 16 37 50 255 0 Cape No. 1 124°36′ — — 2 139 1 — — 3 192 27 Cape on north side of large bay, Apr. 30 207 21 Tan. Blaafjeldet 220 15	228°59′ N. to E.	Lat. 80°32′37″ Long. 89°35′39″ Camp No. 36.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 16 p. m.	Sverdrup	Azimuth	h m s W. 4 39 35 ⦶ 64° 50′ 41 49 65 25 44 30.5 66 5 48 36 247 5 52 32 54 55 4 248 30 Hvidberget 285° 47′ Cape on north side of large bay 3 37 Cf. Tan. to Blaafjeld May 15, 1902 68 25 Cape No. 3 331 2 — — 2 321 15 Cape on east side below Hareuren, Harefjord 22 14 Round hill N. and E. of Isfjeldodden 100 12	8° 14′ N. to E.	Lat. 80° 32′ 40″ Long. 87° 29′ 9″ Camp No. 38.
May 24 p. m.	Sverdrup	Azimuth	h m s W. 5 18 20 ⦶ 27° 25′ 20 59 28 3 23 21 41 28 47 209 45 31 32 210 27 33 45.5 211 1 Smørgrautberget 292° 53′ 17th May camp 1901, Ulveleiren 146 10 1st Depotkap 80 9 Point N. of Bagfjorden, camp No. 45 76 53	56° 28′ N. to E.	Lat. 79° 45′ 42″ Long. 86° 40′ 17″ Camp No. 43, Adskillelsens leir, Blaamanden.

Date	Observer	Object of observations	Observations		Result	Locality
1902 May 26 a. m.	Sverdrup	Azimuth	h m s W. 8 41 29 ☉ 191° 33′ 44 25.5 192 27 47 26 193 6 50 49 13 56 55 17 14 55 57 8 15 25 Maiodden 63° 50′ Headland on east side 59 12 Depotodden 194 50		116° 52′ N. to E.	Lat. 79° 28′ 51″ Long. 85° 7′ 26″ Camp No. 45.
May 30 a. m.	Sverdrup	Azimuth	h m s W. 7 38 0 ☉ 240° 42′ 40 28.5 241 18 42 10 45 46 3.5 62 32 50 12.5 63 35.5 52 41 64 14 "Tommen" 347° 58′ Headland on north side, inner fjord 331 2 Top of "Klampen", south side 188 10.5 Cape on north side, 4.2 miles off 195 6		53° 45′ N. to E.	Lat. 78° 57′ 15″ Long. 82° 15′ 23″ Camp No. 50, Vidjeøren.
May 31 p. m.	Sverdrup	Azimuth	h m s W. 4 50 14 ☉ 132° 12′ 52 35 51 54 36.5 133 18 57 59 313 52 5 1 22 314 42 3 54 315 21.5		306° 14′ N. to E.	Lat. 78° 59′ 23″ Long. 85° 16′ 15″ Camp No. 52.

Date	Observer	Object of observations	Observations	Result	Locality
1902			NE. corner of Storøen 4° 45′ N. point of — 15 15 South corner of — 306 25.5 Promontory at camp No. 33 — 1901 296 31 Highest summit of main land S. of peninsula, set from Maiodden 265 35 Highest part of the largest of the 3 islands ascended by Fosheim, 1901 172 20		
June 1 p. m.	Sverdrup	Azimuth	W. 6 h 1 m 20 s ⦶ 244° 30′ 3 65 56 5 11 245 25.5 8 19 65 58.5 10 40 66 35 14 19.5 67 28.5 Headland on south side of the sound, set from Hatøen 165° 29′ Extreme point of east land in Storfjorden[1]) 174 11 Extreme south of Ulvingen 180 0 Schei's old camp, Mer. Alt. June 4, 1901 186 52 Headland in Skaarefjord 190 58 Hvidsundfjord[2]), odden 286 45 NW. point of Storøen 359 17	210° 2′ N. to E.	Lat. 78° 55′ 13″ Long. 86° 43′ 15″ Camp No. 53, Depot.

[1]) Storfjord = Evreka Sund.
[2]) Hvidsundfjord = Whitsundaybugt.

Date	Observer	Object of observations	Observations	Result	Locality
1902 June 6 a. m.	Sverdrup	Azimuth	h m s W. 7 29 18 ⦶ 118° 34′ 31 13 119 1.5 33 53.5 53.5 36 51 300 13 39 22.5 53.5 41 51 301 30 Extreme west of Bjørnekaplandet 3° 25′ Southeast cape in Storfjord, low cape 331 3 North point in Harefjord 309 40 Most southerly point on east side, set from the depot 224 23	76° 19′ N. to E.	Lat. 78° 18′ 13″ Long. 88° 29′ 32″ Camp No. 57.
June 8 a. m.	Sverdrup	Azimuth	h m s W. 8 24 42 ⦶ 310° 5′ 26 38.5 35 28 38 311 6 32 29 131 55 34 54 132 31 37 38 133 14 Hyperitodden 337° 27′ South side of Ulvingen 357 8 Southernmost headland on east side of Storfj. 25 48 Western cape in Troldfjord 52 41 Litle Bjørnekap 197 30 Top of Ammonitberget, Obs. point 1901 110 2	348° 47′ N. to E.	Lat. 77° 50′ 16″ Long. 88° 11′ 33″ Camp No. 59, north side of Bjørnekaplandet.

Date	Observer	Object of observations	Observations		Result	Locality
1902 June 11 p. m.	Sverdrup	Azimuth	h m s W. 6 40 8 ☉ 305°51′ 42 26 306 24 44 47 307 0 47 25 127 26 49 35 57 51 10 128 22 Little Bjørnekap Beach off Bjørnekap Beach to south of Great Bjørnekap	 193°20′ 183 3 18 35	156°55′ N. to E.	Lat. 77°24′ 9″ Long. 87°56′57″ Camp No. 62, Great Bjørnekap.
April 8 p. m.	Isachsen	Azimuth	h m s W. 5 14 33 ☉ 276°46′ 16 29 277 13 17 44 31 19 4 52 20 4 278 7 22 49 98 42 25 40 99 26 26 50 45 28 37 100 11 29 42 26 Extreme point of land at entrance to Havnefjord Direction to west bay of fj. at Cone Isl. Direction to our camp of autumn 1899 Tan. south of Smith Island	 122°54′ 159 10 181 32 282 43	184°23′ N. to E.	Lat. 76° 8′ 30″ Long. 81°49′18″ Cone Island.

Date	Observer	Object of observations	Observations		Result	Locality
1902 April 10 p. m.	Isachsen	Azimuth	h m s W. 4 39 31 ⦶ 145°48′ 41 35 146 19 42 40 38 43 57 56 45 7 147 12 48 6 327 46 49 41 328 20 51 5 48 52 11 53 53 24 329 12 Tan. south side of Smith I.	 159°46′	307°7′ N. to E.	Lat. 76° 8′30″ Long. 81°49′18″ Same place.
April 13 p. m.	Isachsen	Azimuth	h m s W. 4 22 6 ⦶ 187°24′ 23 31 43·5 24 40 188 0 25 41 15 26 57 34 30 12 9 28 31 47 45 32 54 10 2 33 49 15 34 56 32 Tan. to the land west of fjord in east Tan. to promontory at entrance to bay, Cone I. Tan. to highest point of Cone Island, nearly coincident with tan. to Smith Island South tan. to Cone Island Tan. to land in west (westernmost cape in S.) Tan. Østre Sydkap, east of the valley	 195°14′ 198 9 213 1 17 324 18 327 19	259°34′ N. to E.	Lat. 76°25′0″ Long. 84°10′59″ South point of Skreia.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 5 Noon	Isachsen	Azimuth	h m s W. 11 9 32 ⦶ 328°10′ Headland set May 3, most distant headland W. 17°5′	219°15′ N. to E.	Lat. 75°38′2″ Long. 85°48′53″ At Bjørnekosset.
May 5 p. m.	Isachsen	Azimuth	W. 3 52 16 ⦶ 110°49′ 54 20 111 20 55 44 41 56 42 55 57 39 112 9 4 1 20 293 5 3 20 30 5 2 58 6 56 294 30 8 7 42 Station of May 3, just south of southern island 93°48′ Headland just beyond station May 3 97 20 Deepest part of bay 108 0 Tan. point (set from st. of May 3) 296 10	330°59′ N. to E.	Lat. 75°38′2″ Long. 85°48′53″ Same place.
May 9 a. m.	Isachsen	Azimuth	h m s W. 6 46 40 ⦶ 310°30′ 48 25 58 49 54 311 20 51 19 43 52 44 312 4 53 56 23 59 14 133 45 7 0 47 134 10 2 4 29 3 12 47 4 25 135 5 5 37 23	344°27′ N. to E.	Lat. 75°39′42″. Long. 87°8′23″ Venteleiren.

Date	Observer	Object of observations	Observations	Result	Locality
1902			Cape to south-east 139° 15′ Series of large bays or fjords from this cape and westwards to 159 46 Steep mountain to south 207 20 Cape in SW. (west of it a large bay) 260 18 Cape inside the bay 269 47 — — — 277 40 — — — (the cape S. of St. Helena ?) 281 30 — — — 283 35 Baadsfjordsnuten 22 50 Our general course during the 3 last days' sledging 102 27		
May 9 Noon	Isachsen	Azimuth	h m s W. 10 38 30 ◐ 13° 2′ 43 6 14 20 45 43 15 2 48 37 195 55 52 57 197 8 57 50 198 30 Baadsfjordsnuten 22° 47′ Extreme land of N. Devon to E. ("Øerne") 107 50	344°26′ N. to E.	Lat. 75°39′42″ Long. 87°8′23″ Same place.

Date	Observer	Object of observations	Observations	Result	Locality
1902 May 9 p. m.	Isachsen	Azimuth	h m s W. 2 46 27 ⦶ 80° 5′ 47 56 29 49 20 51 50 50 81 13 52 8 33 56 10 262 35 57 49 59 59 2 263 15 3 0 35 42 1 44 58 3 13 264 23 Extreme land of N. Devon to E. 102°45′ Tan. cape in SE. 140 10 Baadkappet 290 10	344°27′ N. to E.	Lat. 75°39′42″ Long. 87°8′23″ Same place.
May 11 Noon	Isachsen	Azimuth	h m s W. 10 33 3 ⦶ 343°25′ 37 49 164 42 46 3 167 0 51 1 348 35 Distinct valley in SW. direction 45°47′ Distinct depression farther north (south of this lies a cape; see May 9, a. m., sight 5) 62 50 Cape north of this (see May 9, a. m., sight 7) 74 45 — — — (see May 9, a. m., sight 7) 80 0 A cape 90 40 Tan. headland to E. (dist. about 2 miles) 253 30	192°14′ N. to E.	Lat. 75°36′36″

Date	Observer	Object of observations	Observations			Result	Locality
1902 May 18 a. m.	Isachsen	Azimuth	h m s W. 6 43 53	⦶ 241°50′		51°47′ N. to E.	Lat. 76°18′18″ Long. 87°45′26″ Stormkap.
			45 56	242 22			
			47 26	45			
			48 36	243 3			
			50 15	27			
			51 25	45			
			53 45	64 28			
			55 14	50			
			56 16	65 5			
			57 10	20			
			58 28	41			
			59 45	66 0			
			Tan. south side of peninsula on N. Devon		199°25′		
July 12 p. m	Isachsen	Azimuth	h m s W. 4 17 37	⦶ 254°57′	74°57′	173°4′ N. to E.	Lat. 76°15′25″ Long. 89°16′30″ St. Helena.
			22 6	76 3	256 3		
			Tan. peninsula, North Devon		22°45′		
			East tan. Baadkappet		17 18		
			Tan. cape S. of St. Helena (previously seen from Baadkappet)		7 32		
			Tan. to cape, N. Devon		0 30		
			— Baadsfjordsnuten		269 25		
			— Stormkap		263 55		
			— Bjørneborgskappet		261 15		
			— Maageberget		234 32		
			— Vendomkap		188 48		
			— Prince Edward's Point on North Kent		140 43		
			— West side of Cardigan Strait		138 45		
			— Cape Hawes		129 3		

Date	Observer	Object of observations	Observations		Result	Locality
1902 July 19 Noon	Isachsen	Azimuth	h m s W. 0 7 57 ⦶ 252° 28′ 14 29 74 6 19 45 75 32		106° 8′ N. to E.	Lat. 76° 21′ 27″ Last camp on N. Devon.
			Tan. north side of Harrison Island (?)	220° 51′		
			Highest point of island	230 6		
			Tan. North Kent in north	239 3		
			— SW. corner of North Kent	272 31		
			— SE. corner of North Kent	297 45		
			Exkrementodden coincides with north tan. to Kalven	309 5		
			Tan. Vendomkap	328 15		
			— Maageberget	338 50		
			— Stormkap	344 45		
July 20 Noon	Isachsen	Azimuth	h m s W. 11 58 58 ⦶ 87° 52′ 0 11 40 91 28 15 18 272 28 20 41 274 1		268° 1′ N. to E.	Lat. 76° 28′ 37″ Djæveloen, Cardigan Strait.
			Sight to last camp	66° 54′		
April 14 a. m.	Isachsen	Direction	Tan. south end of Skreia	98° 30′		Lille Sydkap (easternmost of the 30 apes).
			Dir. to Stordalen	99 45		
			Dir. to the valley to the east	115 5		
			Tan. to land west of fjord, east of Havnefj.	124 35		
			Headland on eastern side of that fjord	130 40		
			Headland at entrance to Cone Bay	133 0		
			Tan. south side of Cone I. (not quite distinct)	146 25		

Date	Observer	Object of observations	Observations		Result	Locality
1902 April 16	Isachsen	Direction	Tan. Colin Archer's Halvø	182° 35′		Stormkap.
			Lille Stormkap	354 5		
			Tan. Baadsfjordsnuten	19 15		
			— cape (high land inside Store Sandor)	24 30		
May 16	Isachsen	Direction	Bjørneborg	89° 28′		
			Stormkap	95 46		
			Lille Stormkap	101 25		
			Baadsfjordsnuten	119 20		
			Cape nearly due SW. of Bjornekosset	221 38		
			Steep mountain SW. of 1st Bjørneleir	239 32		
			Approx. direction of 2nd Bjørneleir	246 12		
			Cape, formerly assumed S. of St. Helena	314 36		
			A cape	329 18		
			—	4 49		
May 16	Isachsen	Direction	Bjørneborg	113° 53′		10.2 miles from last station.
			Stormkap	124 45		
			Lille Stormkap	131 15		
			Baadsfjordsnuten	153 12		
			Cape SW. of Bjørnekosset (cf. last obs. 5)	273 0		
			A cape	331 38		
			Deepest part of bay (land is barely visible in the background)	341 35		
			A cape	8 0		
			—	19 58		
			—	29 25		
			Tan. to the most northerly part of N. Devon in west	67 54		

Date	Observer	Object of observations	Observations		Result	Locality
1902 May 21	Isachsen	Direction	Tan. east side of peninsula, N. Devon	237° 3′ 57°6′		Østre Gaasefjordskap (st. 1).
			Middle of top-nevé	240 45		
			St. Helena's highest point (an immense iceberg?)	243 43		
			Nevé, west of top-nevé	244 38		
			— — above	247 27		
			— — —	249 38		
			— — —	251 45		
			— — —	254 15		
			Two last nevés face more or less NE.			
			East border of Storbræen, N. Devon	262 30		
			Tan. Maageberget	265 13		
			Deepest part of bay S. of Yttereidet, Gaasefjord	314 30		
			Station Yttereidet, near Hvalrosfj.	344 28		
			Highest point of Olsen's Ø	4 50		
			Headland S. of Borgen, E. side of Gaasefj.	14 52		
			Tan. peninsula	16 17		
			Highest point of peninsula	20 50		
			Isthmus east of peninsula	28 20		

Date	Observer	Object of observations	Observations		Result	Locality
1902 May 21	Isachsen	Direction	Tan Østre Gaasefjordskap	224° 17′		West end of peninsula, st. 2. Dist. by odometer from st. 1 = 3 17 miles.
			Highest point of Olsen's Ø	238 18		
			Tan. to Maageberget (crosses west part of island)			
			Tan. west side of island	256 8		
			Deepest part of bay	281 30		
			Lowest part of Yttereidet	339 42		
			1st cape north of Yttereidet in Gaasefjord	20 5		
			Tan. western land (south of Indereidet)	30 10		
			Tan. Borgen	32 11		
			Highest part of Borgen	34 27		
			Headland S. of Borgen, east side of Gaasefj.	42 5		
			Between obs. 7 and 8, a bay. Last obs. probably to the headland to which the open water extended in the summer of 1901.			
May 22	Isachsen	Direction	Tan. peninsula	297° 45′		Vestre Borgodde (st. 3). Dist. by odometer from st. 2 = 8.8 miles.
			East end of island	299 20		
			East cape points a little west of east end of island			
			Tan. western land	299 52		
			South side of Indereidet	340 50		
			Headland on west side of fjord	75 25		
			Headland	99 30		
			Tan. Middagskollen	119 0		
			Highest point of Middagskollen	122 50		
			Fram	133 5		
			Highest part of mountain at the gap aft on the port side of the Fram	137 50		

Date	Observer	Object of observations	Observations		Result	Locality
1902 July 20	Isachsen	Direction	St. Helena	314° 15′		Highest point of Djævelø
			Extreme edge of glacier, N. Devon (in a line with the camp)	319 2		
			Previous camp (Lat. July 19)	343 45		
			Tan. peninsula, Norfolk Inlet	15 51		
			West nevé, Norf. Inl. (in a line with the isthmus across peninsula)	58 15		
			Mouth of river, north side of lake	97 49		
			Highest part of mountain W. of gap on west (about 20° W. of Belcher's cairn)	112 40		
			Tan. North Devon on N.	150 35		
			Tan. North Kent on N.	179 14		
			Tan. North Kent on S.	305 55		
			Nevé or glacier, North Kent	205 55		
			Tan. cape Hawes	315 10		
			From camp (west end of island) St. Helena is clear of tan. to N. Devon. From the top of the island, the highest part of Graham I. shows well clear of north point of North Kent.			

Date	Observer	Object of observations	Observations		Result	Locality
1902 July 31	Isachsen	Direction	Deepest part of bay, N. Kent, Helvedesporten	304° 19′		South-east corner of N. Kent.
			Bay farther north (abreast of Renbugten)	329 40		
			Tan. east end of North Kent on N.	342 25		
			Tan. Dønninghausen	345 52		
			Tan. headland N. of Exkrementbugten (beginning of steep cliff)	34 42		
			Middle of Exkrementbugten	61 25		
			Exkrementodden	83 40		
			Tan. headland N. of Kobbebugten	95 22		
			Tan. Vendomkap	108 25		
			Tan. east side of Kalven (2 headlands in a line)	110 40		
			Tan. west side of Kalven	155 30		
			Middle of great (eastern) glacier, N. Devon	158 2		
			The two glaciers on N. Devon between	154 30		
			and	174 10		
			The steep mountain between the glaciers	162 10		
July 31	Isachsen	Direction	Tan. Vendomkap	353° 9′		50 metres west of previous place.
			Nevé, N. Devon	56 54		
			Camp, N. Devon, July 19	90 10		
			Tan. south side of N. Kent	92 35		

Date	Observer	Object of observations	Observations		Result	Locality
1902 August 1	Isachsen	Direction	Tan. Exkrementodden	12° 52′		Vendomkap.
			Tan. Vestre Jammerodde	177 8		
			Cairn on St. Helena (the highest point of the island)	223 16		
			Tan. peninsula, N. Devon	227 35		
			Tan. cape Hawes (the low land)	238 8		
			Middle of great (eastern) glacier, N. Devon	266 48		
			The steep mountain between the glaciers, N. Devon	271 40		
			Nevé, N. Devon	299 45		
			Camp, N. Devon, July 19	305 5		
			Tan. north side of Norf. Inl. (S. low headland, Harrison Island)	322 45		
			South tan. Kalven	326 30		
			North — —	353 20		
			South-east corner of N. Kent (st. of yesterday)	354 55		
			The two glaciers on N. Devon between	260 40		
			and	279 50		

V.

Isachsen's Triangulation of Gaase Fjord 1902.

The base-line A—B was measured twice with a 20-metres long steel tape. Its length was 1496 555 metres ± 0.05 metre.

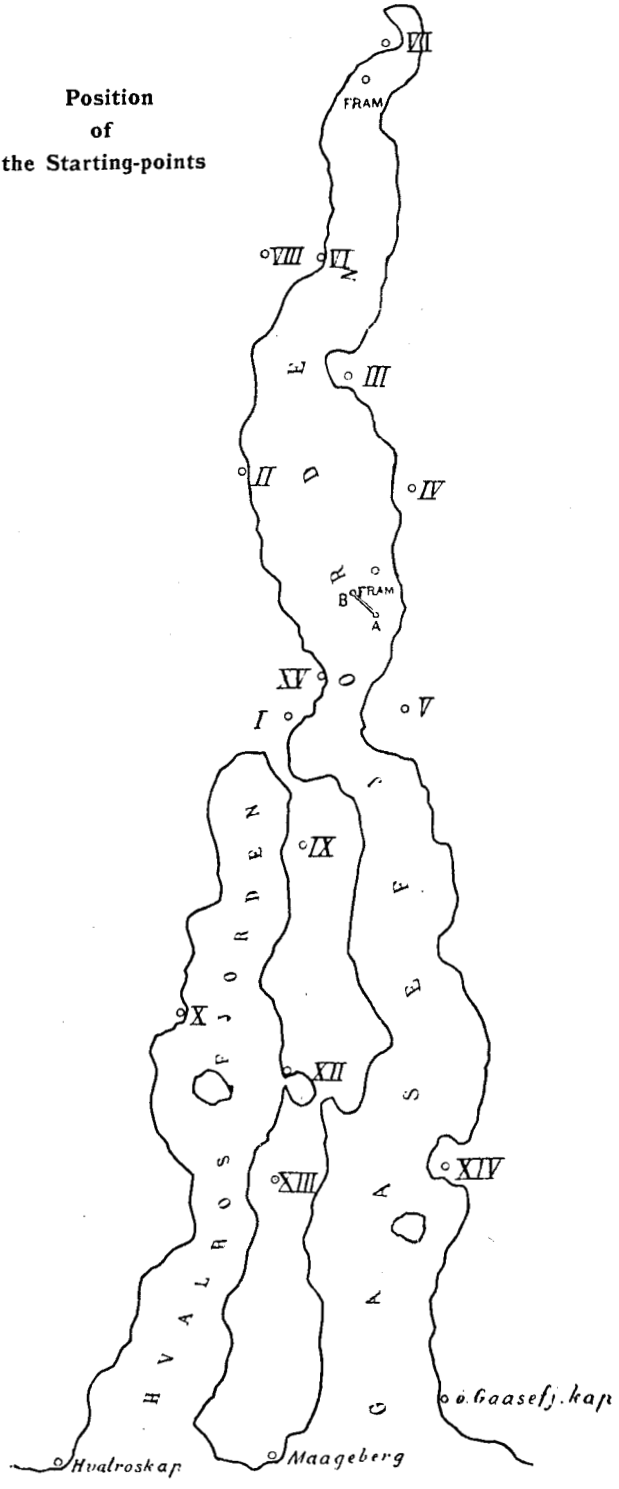
The main mast of the Fram in her winter haven of 1902 (Lat. 76°39′49″, Long. 88°38′15″) was taken as the origin for the rectangular system of co-ordinates. The positive X axis lay due N, the positive Y axis due E. The orientation of the net was found by the aid of Baumann's determination of the azimuth of the levelling-staff.

Instruments: Plane Table and Altazimuth No. 1.

Results.

Station	Co-ordinates Y		Co-ordinates X		Altitude	
Base-line A	− 64.7 m		− 1862.7			
— B	− 1454.7		− 1308.0			
Cairn IV	+ 958 3		+ 2768.4		+ 500.0 m	± 2.0
— II	− 4904 0		+ 3416.5		+ 19.1	± 0.9
— V	+ 78.0		− 5721.7		+ 316.7	± 2.7
Starting-point	+ 423.1		+ 43.7			
Cairn I	− 3086.7	± 2.4	− 5189 1	± 2.2	+ 253.8	± 1.6
— III	− 1231.8	± 1.9	+ 6678.6	± 2.0	+ 146.1	± 1.3
— IX	− 2875.9	± 0.6	− 9828.6	± 1.9	+ 273.3	± 2.6
Station XV	− 2116.1	± 3.2	− 3911.1	± 8.9		
Cairn X	− 7165.8		− 15557 9			
— VI	− 2214.2		+ 10815.9			
— VII	+ 280.8		+ 18397.9			
— VIII	− 4123.3		+ 10928.3			
— XIII	− 3857.9		− 21462.4			
— XII	− 3523.8		− 17712.4			
— XIV	+ 2125.4		− 21181.4			

Position of the Starting-points



Observed Directions.

Starting-point	Horizontal Circle	Hor. Level r.	Hor. Level l.	Vertical Circle		Vert. Level r.	Vert. Level l.	Sight towards
Base-line A	346° 50′			266° 52′	86° 54′			Cairn I, west side.
	82 5			269 55	89 54			Cairn II, west side, beneath high mountain.
	116 35			269 33	89 34			Cairn III.
	126 35							Fram's main mast.
	317 5	0.0	8.0	96 0	276 3	0.0	8.0	Cairn IV, aft on port side.
	137 3	8.0	0.0	264 2	86 2	6.8	0.8	
	56 21							Base-line B.
Base-line B	203 43							Base-line A.
	295 46			266 23	86 22			Cairn I.
	115 47	0.0	8.0	93 12	273 15	0.0	8.0	
	93 44			269 0	89 0			Cairn III.
	273 38							
	140 0							Fram.
	122 35	0.5	6.3	264 3	84 3	5.0	2.5	Cairn IV.
	302 36	8.0	0.0	96 2	276 4	3.1	4.5	
Cairn IV	96 7			274 43.5	94 43.5			Cairn II.
	150 32			274 32	94 32			Cairn III.
	356 56							Highest part of peninsula.
	358 8			271 17	91 17			Tan. west side of peninsula.
	359 6	3.0	3.1	271 4.5	91 4.5	2.9	4.1	Østre Gaasefjordskap.
	179 1 359 1	0.0	8.0	89 6	269 6	3.2	3.5	
	359 8			271 10.5	91 10.5			Tan. east side of island.
	2 4			271 9.5	91 9.5			Tan. west side of island.
	12 8			273 33	93 33			Tan. west side of Borgen.
	3 23			276 43	96 43			Most easterly part of bay between the Fram and Borgen.
	17 22							Tan. Hvalroskap (not quite visible at sea level).
	20 4			271 21.5	91 21.5			W. tan. to island in Hvalrosfjord.

Observed Directions.

Starting-point	Horizontal Circle	Hor. Level r.	Hor. Level l.	Vertical Circle		Vert. Level r.	Vert. Level l.	Sight towards
Cairn IV	21° 28′							E. side of Indereidet. See cairn I, sight 3.
	23 45			271 26	91 26			Tan. cape on west side of Hvalrosfjord.
	25 13			271 51	91 51			Cape on west side of Hvalrosfjord.
	24 26			273 52.5	93 52.5			Narrow point below cairn I.
	40 55							Headland on west side.
	139 50			274 14	94 14			Mouth of river, Skrapdalen.
	145 46			275 25	95 25			Tan. to Middagsodden.
	149 50			277 10	97 10			Deepest part of bay S. of Middagsodden.
	23 10							Headland on the Fram's stern.
	5 44			271 18	91 18			Cairn V, Borgen.
	18 55			279 38	99 38			Fram.
	about 106							Centre of the cairn. Distance from the instrument = 1 metre.
Cairn II	213 43	7.5	0.0	270 4.5		8.3	0.0	Cairn VI, west side.
	288 28			265 21				Tan. Middagsodden. See cairn IV, sight 18.
	317 7							Fram.
	343 39	4.0	3.8	268 23		4.3	3.0	Cairn V.
	164 39	4.0	3 8	91 37		5.2	2.2	
	about 85							Centre of the cairn. Distance from the instrument = 1 metre.
Cairn III	243 3							Tan. land, west side of fj. S. of Borgen.
	244 11			270 43.5				Vestre Borgodde.
	251 6			270 7.5				Headland, west side opposite the Fram.
	53 5			271 51				Cairn VI.
	72 58			271 5				Headland SE of Fram 1901, also direction towards head of fjord.
	73 48	1.6	4.7	270 46		2.5	4.3	Cairn VII.
	217 11.5	8.0	0.0	265 28	85 28	8.0	0.0	Cairn IV.

Observed Directions.

Starting-point	Horzontal circle	Hor. Level r.	Hor. Level l.	Vertical Circle	Vert. Level r.	Vert. Level l.	Sight towards
Cairn III	236° 1'.5	8.0	0.0	271° 13'	2.5	4.6	Fram.
	55 51	0.0	8.0	88 46	5.0	2.1	
	255 20			269 32			Cairn I.
	294 50			271 30			Cairn II.
	about 15						Centre of the cairn. Distance from the instrument = 1 m.
Cairn VIII	113 6	4.2	2.4	269 57	3.2	3.8	Cairn IV.
	292 58			90 8.5			
	124 33	4.2	2.4	272 19	3.2	3.8	Fram.
	304 27.5	3.0	3.2	87 43	1.9	5.1	
	151 9			273 28.5			Cairn II.
	331 4			86 35			
	313 20			88 24			Søndre Borgodde.
	313 25						Vestre Borgodde.
	315 8						West point of peninsula.
	315 15						Tan. land on W, south of Borgen.
	311 6						Cairn V. Indistinct.
	271 22			270 41			South tan. Buckingham Island.
	91 5						
	280 12						North tan. Buckingham Island.
	282 55						South tan. Graham Island.
	307 3						North tan. Graham Island. Indistinct.
	335 5 155 12.5	4.0	2.3	270 33	3.2	3.8	Summit of Bjørnekap towards west.
	155 3	7.0	0.0	89 26	3.0	4.0	
	337 0						Kreppa at Indereidet.
	320 49						Hyperitodden.
	324 20						Land between Ulvefjord and Storfjord.
	328 53						East mouth of Storfjord.
	332 35						Tan. beach below Bjørnekap. Perhaps but a part of the beach. The four last sights are not quite certain.

Observed Directions.

Starting-point	Horizontal Circle	Hor. Level r.	Hor. Level l.	Vertical Circle	Vert. Level r.	Vert. Level l.	Sight towards
Cairn VI	127°22′.5	2.0	4.5	266°41′.5	5.5	2.0	Cairn IV.
	136 16			268 3			Cairn. III.
	316 15	6.0	0.5	91 54	3.3	4.2	
	169 35			269 54.5			Cairn II.
	347 50	7.3	0.0				Cairn VII (about 200 metres west of cairn VI, lie in a line: Middagsodden, Vestre Borgodde, east end of the island, and Ø. Gaasefjordskap).
	167 48	5.4	2.1				
	about 190						Centre of the cairn. Distance from the instrument = 1 m.
Cairn I	266 56	8.0	0.0	268 29	4.1	3.1	Cairn IV.
	86 54	2.3	4.3	91 35	6.0	1.4	
	270 49	8.0	0.0	272 6.5	4.1	3.1	Fram.
	90 45	2.6	3.9	87 36	3.5	3.8	
	339 35	6.0	0.5	268 58.5	4.1	3.1	Cairn V.
	159 32	3.1	3.2	91 4	3.5	3.8	
	327 34						Vestre Borgodde.
	14 50	3.0	3.5	272 7	4.1	3.1	Headland by eastern valley.
	59 31	7.8	0.0	271 25.5	5.0	2.4	Tan. headland on east side.
	32 34	7.5	0.0	273 15	4.5	2.9	Tan. land on W.
	66 1	8.0	0.0	270 56	4.0	3.0	Headland, east side of Hvalrosfjord, south of Yttereidet. In the same sight a still more southerly point.
	68 28						Tan. North Devon.
	69 45	3.0	3.5	271 5.5	6.0	1.3	Tan. east side of island in Hvalrosfjord.
	249 43	8.0	0.0	88 58	4.0	3.5	
	75 21	4.5	2.0	271 7	3.2	4.2	Tan. west side of island in Hvalrosfjord.
	82 21	5.3	1.1	271 15	3.3	4.0	Cairn X.
	262 10	8.0	0.0	88 47	4.3	3.0	
	82 26						Tan. low cape on west side.

Observed Directions.

Starting-point	Horizontal Circle	Hor. Level r.	Hor. Level l.	Vertical Circle	Vert. Level r.	Vert. Level l.	Sight towards
Cairn I	56° 17′	3.0	3.5	90 42	3.0	4.4	Cairn VIII.
	236 21	8.0	0.0				
	248 56	8.0	0.0				Cairn III.
	68 53						
	about 30						Centre of the cairn. Distance to the instrument = 1 m.
Cairn IX	135 40	8.0	0.0	272° 5′	1.9	5.0	Cairn X.
	314 21	0.7	5.5	87 54	6.0	1.0	
	116 1	8.0	0.0	271 39	3.0	3.0	Tan. east side of island in Hvalrosfjord.
	295 45	2.5	3.7	88 20	3.0	3.5	
	120 0	8.0	0.0	271 43	4.5	2.3	Near the middle of the island in Hvalrosfjord.
	299 46	2.7	3.5	88 18	4.0	2.9	
	275 50	0.0	6.0	270 15	5.5	1.2	Cairn I.
	95 46			89 42			
	294 45	3.6	2.5	271 31	1 0		Fram.
	114 40	8.0	0.0	88 25	1.6	5.3	
	295 20	1.3	4.5	269 5	4.5	2.2	Cairn IV.
	115 20	8.0	0.0	90 54	1 0	6.0	
Cairn X	243 10						Cairn XII.
	144 2	1.7	4.8	268 47	4.5	2.3	Cairn I.
	323 57	8.0	0.0	91 15	3.0	4.0	
	146 28						Cairn IV.
	325 57	8.0	0.0	91 22	3.0	4.0	
	159 23	8.0	0.0	267 58	7.8	0.0	Cairn IX.
	141 33						Low cape on west side.
Cairn XIII	313 47	1.4	4.6	273 48	2.5	4.0	Cairn XII.
	133 39	8.0	0.0	86 11.5	2.0	4.9	
	313 31	2.0	4.0	269 51	3.0	3.7	Cairn IX.
	279 26	2.0	3.9	272 4.5	2.5	4.0	Cairn X.

Observed Directions.

Starting-point	Horizontal Circle	Hor. Level r.	Hor. Level l.	Vertical Circle	Vert. Level r.	Vert. Level l.	Sight towards
Cairn XIII	299° 31′	2.5	3.4	271° 23′	3.8	3.0	Tan. low cape on west side. See cairn I, sight 13.
	276 16	1.2	4.1	274 33	4.0	2.7	East corner of the island in Hvalrosfjord.
	171 32	8.0	0.0	271 40	7.3	0.0	Tan. Hvalroskap.
	170 53						Cape Hawes, N. Devon.
	161 31	2.5	3.1	270 40	0.9	5.9	Tan. west side of St. Helena.
	159 59	2.4	3.5	270 40	1.0	5.5	Tan. east side of St. Helena.
	161 0						Highest part of St. Helena.
	158 51	2.5	4.3				Peak, N. Devon.
	157 29	2.5	4.3				Tan. N. Devon.
	138 37.5	3.3	2.5				Tan. cape on N. Devon. (Cape south of St. Helena?)
	36 1						Highest part of peninsula to Gaasefjord.
Cairn XII	254 14	7.5	0.0	266 7	3.4	3.5	Cairn XIII.
	74 9	8.0	0.0	93 48	0.0	6.5	
	30 47						About the highest point of the island in Gaasefjord.
	95 16	8.0	0.0				Peak, N. Devon.
	276 45	3.5	2.5				Highest point of St. Helena.
	9 45	0.0	8.0	269 57	2.6	4.0	Cairn X.
	50 0						Low cape, Hvalrosfjord.
Cairn XIV	68 48	0.5	6.0				Cairn XIII.
	248 45	8.3	0.0				
	158 42	3.5	3.5				Cairn IV.
	338 40	3.8	2.5				
	14 9	6.0	0.5	270 51	1.0	6.0	Tan. Maageberget.
	355 30	8.0	0.0				A cape on N. Devon. See cairn XIII, sight 13.
Cairn IX	281 0	4.0	2.5	270 12	4.5	2.5	Cairn XIII.
	100 59	8.0	0.0	89 46.5	2.0	5.4	
	92 21	8.0	0.0	270 18	4.5	2.5	Cairn I.
	272 19	7.5	0.0	89 42	7.3	0.0	

Observed Directions.

Starting-point	Horizontal Circle	Hor. Level		Vertical Cirele	Vert. Level		Sight towards
Station XV	333°40′	5.7	1.5				Peninsula.
	153 38	5.2	1.3				
	145 2						Headland on east side.
	192 20						Tan. low cape in Hvalrosfjord.
	172 46.5	8.0	0.0				Cairn III.
	352 14						
	192 11	8.0	0.0				Cairn IV.
	12 6	3.9	2.6				
	195 55						Fram.
	15 50	3.0	3.8				
	354 48	4.0	2.5	267 26	4.4	2.7	Cairn IX.
	174 44	8.0	0.0	92 35	3.8	3.5	
Starting-point	64 30			244 43			Mark.
	244 28			64 42			
	86 49			266 47.5			Cairn V (A).
	267 2			87 0			
	101 52			281 50			Cairn IX (B).
	282 5.5			102 4			
	117 14.5			297 13			Cairn I (C).
	297 28.5			117 28			
	167 32.5			347 29.5			Fram.
	347 43.5			167 43			
	205 44.5			25 43			Cairn II (D)
	25 57			205 55			

Azimuth of the Mark 18°52′.5 S. to E.

Notes on the Maps.

As stated on the accompanying map of the field of work of the 2nd Norwegian Polar Expedition in the Fram, the shaded parts of the map are the regions that have been explored by the Expedition.

The rest of the map is drawn from the English Admiralty Charts, "275, Smith Sound, and Kennedy and Robeson Channels", and "[1158] Discoveries in the Arctic Sea".

For the assistance of the reader, a translation and explanation are given below of the names found on the maps accompanying this work.

Norwegian:	*English:*
Berg	Mountain
Botn	Cirque, coomb, corrie
Bræ	Glacier
Bugt	Bay
By	Town
Dal	Valley
Eide	Isthmus
Elv	River
Fjeld	Mountain
Fly (Flya)	Moor
Fos	Cataract, waterfall
Halvø	Peninsula
Hammer	Crag
Haug	Hill
Hav	Sea
Havn	Haven, harbour
Holme	Small island, holm
Hus	House
Jøkel	Glacier
Kap	Cape
Kolle	Round-topped hill

Leir	Camp
Li	Wooded slope
Nab	Knoll
Nut	Mountain-top
Næs (nes)	Ness, headland
Odde	Tongue of land, point
Polle	Small round fjord, creek
Port	Gate
Sand	Sand
Sjø	Sea, lake
Sund	Sound
Strand	Shore
Tange	Tongue of land
Teltplads	Camping-ground
Ur	Talus
Vand	Water, lake
Vik	Inlet, core
Ø	Island
Ør	Low land at the mouth of a river

Nord (nordre)	North
Syd (sør, søndre)	South
Øst (østre)	East
Vest (vestre)	West
Stor (store)	Great
Liden (lille, vesle)	Little
Hvid (eller hvit)	White
Sort (eller svart)	Black
Rød	Red
Blaa	Blue
Indre	Inner
Ydre	Outer
Øvre	Upper
Nedre	Lower

Adskillelsens leir.	Separation Camp
Alpelandet	Alpine land
Baad (in Baadodden, Baadhuset, Baadsfjorden)	Boat (in Baadodden, Baadhuset, Baadsfjorden)

Baas (in Oksebaasen)	Stall (in Oksebaasen)
Bogen (in Grytebogen)	The bend (in Grytebogen)
Bjørn (in Bjørnebugten, Bjørneborg, Bjørneleiren, Bjørnesundet)	Bear (in Bjørnebugten, Bjørneborg, Bjørneleiren, Bjørnesundet)
Bjørnesvingen	A place where the bear turns, alters its course
Blind (in Blindfjorden)	Blind (in Blindfjorden)
Borg (in Borgen, Borgodden)	Castle (in Borgen, Borgodden)
Danskesundet	Danish Sound
De to kratere	The two craters
Djævel (in Djæveløen)	Devil (in Djæveløen)
Dyr (in Dyrebugten)	Deer (in Dyrebugten)
Falk (in Falkodden)	Falcon (in Falkodden)
Flatsund	Flat Sound
Fugl (in Fugleø, Fuglefjord)	Bird (in Fugleø, Fuglefjord)
Gaas (in Gaasefjorden, Gaasebugten, Gaasedalen, Gaasenesset)	Goose (in Gaasefjorden, Gaasebugten, Gaasedalen, Gaasenesset)
Gibs (in Gibsfjorden)	Plaster (in Gibsfjorden)
Gletscher (in Gletscherfjorden)	Glacier (in Gletscherfjorden)
Gris (in Grisefjorden)	Pig (in Grisefjorden)
Gryta	The Pot
Hare (in Harelien, Harefjorden, Harenesset, Hareuren)	Hare (in Harelien, Harefjorden, Harenesset, Hareuren)
Hat (in Hatøen)	Hat (in Hatøen)
Havhest (in Havhestberget)	Sea-horse (in Havhestberget)
Heks (in Heksefjeld)	Witch (in Heksefjeld)
Helvedesporten	Hell Gate
Hoved (in Hovedøen)	Chief (in Hovedøen)
Hvalbenet	Whale-bone
Hvalros (in Hvalrosfjorden, Hvalroskap)	Walrus (in Hvalrosfjorden, Hvalroskap)
Høgda (in Sandhøgda)	Height (in Sandhøgda)
Isfjeld (in Isfjeldodden)	Iceberg (in Isfjeldodden)
Jammer (in Jammerbugten, Jammerodden)	Lamentation (in Jammerbugten, Jammerodden)
Kadaver (in Kadaverdalen)	Corpse (in Kadaverdalen)
Kalven	The calf
Kjød (in Kjøthaugen)	Meat (in Kjøthaugen)
Klampen (Klumpen)	The lump
Kobbe (in Kobbebugten)	Seal (in Kobbebugten)

Koss (in Bjørnekosset)	Small icebergs or floes heaped-up by screwing ("skrukoss").
Kringsjaa	Look-out
Lands Lokk	Land's End
Langfredag (in Langfredagsleiren, Langfredagsbugten)	Good Friday (in Langfredagsleiren, Langfredagsbugten)
Ler (in Lerbugten)	Clay (in Lerbugten), a bay in which there is much clay
Levvel (in Kap Levvel)	Farewell (in Kap Levvel)
Maageberg	Seagull Rock
Mai (in Maiodden)	May (in Maiodden)
Middag (in Middagskollen, Middagsodden)	Dinner (in Middagskollen, Middagsodden)
Mos (in Mosviken)	Moss (in Mosviken)
Moskus (in Moskusfjorden, Moskusleiren)	Musk (in Moskusfjorden, Moskusleiren)
Møkkafjorden	Muck Fjord
Okse (in Oksebaasen)	Ox (in Oksebaasen)
Paaske (in Paaskelandet)	Easter (in Paaskelandet)
Peilingsøen	Bearings Island
Rastodden	Rest Point, a point where a rest was taken
Ren (in Renbugten, Rendalen, Rensfjorden)	Reindeer (in Renbugten, Rendalen, Rensfjorden)
Saata (in Saatebræen)	Haycock (in Saatebræen)
Skagen	The promontory (the Scaw)
Skjærtorsdag (in Skjærtorsdagskappet)	Maundy Thursday (in Skjærtorsdagskappet)
Skred (in Skredbugten)	Avalanche (in Skredbugten)
Skreia	A place where avalanches fall
Skruis (in Skruisodden)	Pack-ice (in Skruisodden)
Skrugar (in Skrugarodden)	Ice barrier (in Skrugarodden)
Skræling (in Skrælingodden, Skrælingøen)	American aborigines (in Skrælingodden, Skrælingøen)
Smørgraut (in Smørgrautberget)	Boiled cornflour (in Smørgrautberget.
Spæk (in Spækodden, Spækkassen)	Blubber (in Spækodden, Spækkassen)
Stenkul (in Stenkulsfjorden)	Coal (in Stenkulsfjorden)

Strøm (in Strømodden)	Current, stream (in Strømodden)
Svartevæg	Black wall
Søsterbræerne	The sister glaciers
Tommen	The thumb
Trold (in Troldfjorden, Troldbotn)	Troll (in Troldfjorden, Troldbotn)
Tverdal	Cross valley
Tvillingbræerne	The twin glaciers
Ulv (in Ulvedalen, Ulvefjorden)	Wolf (in Ulvedalen, Ulvefjorden)
Uveirsleiren	Storm camp
Vakkerkap	Pretty cape
Varg (in Vargdalen)	Wolf (in Vargdalen)
Vendom (in Vendomkap, Vendomfjorden)	Turn back (in Vendomkap, Vendomfjorden)

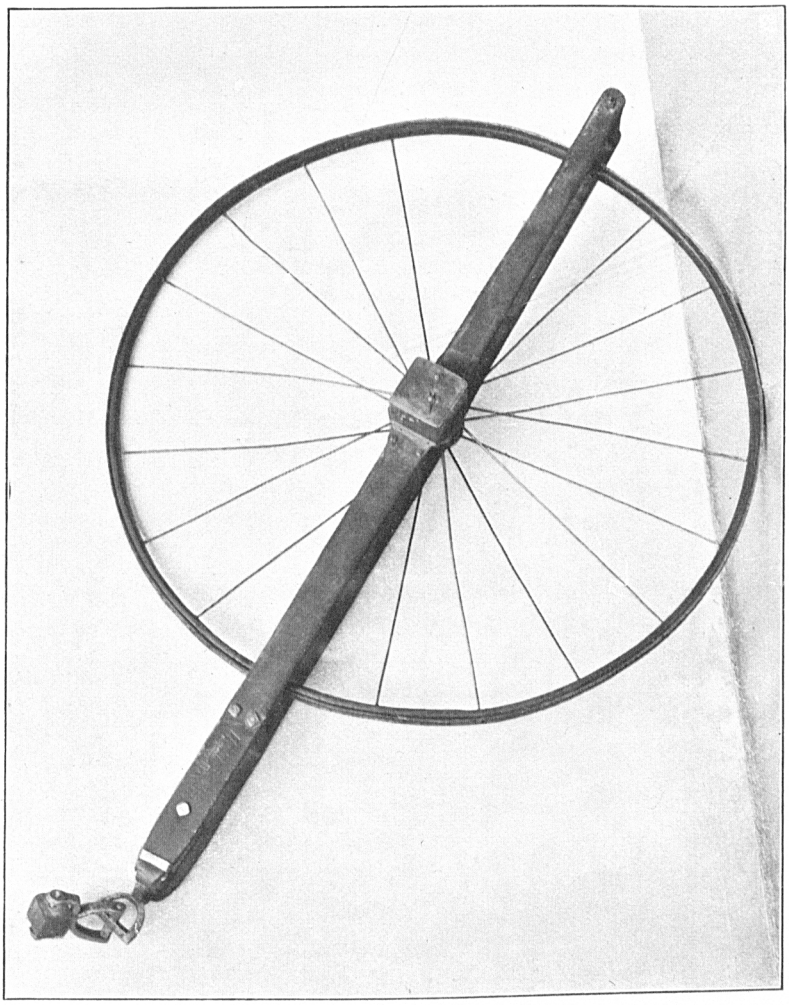
The following names occur also in Norway, and are taken from that country.

Aafjord
Aaklungen
Aurlandsfjord
Balsfjord
Beitstadfjord
Bergholmen
Blaafjeld
Blaamanden
Bukkenfjord
Bundefjord
Digermulen
Eidsbotn
Eidsfjord
Fugleø
Grytebogen
Gunnarsholmen
Haaøen
Haraldshaugen
Heksefjeld
Holmenkollen
Hovedøen
Husviken
Kringsjaa
Lerdalen
Lifjord
Lysefjord
Meheia
Mosviken
Nesodden
Nordstrand
Noresund
Nærøfjord
Ringardholmen
Rødbergbugten
Sandhøgda
Sandspollen
Sandbugten
Sanddøla
Skaarefjord
Skogn
Skreia
Slutvarden
Sparbo
Statt
Stenkjær
Strandefjord
Storøen
Styggebræen
Sørfjord
Troldfjord
Troldbotn
Vestfjord
Viksfjord
Ytterøen
Øiangen
Ørlandet

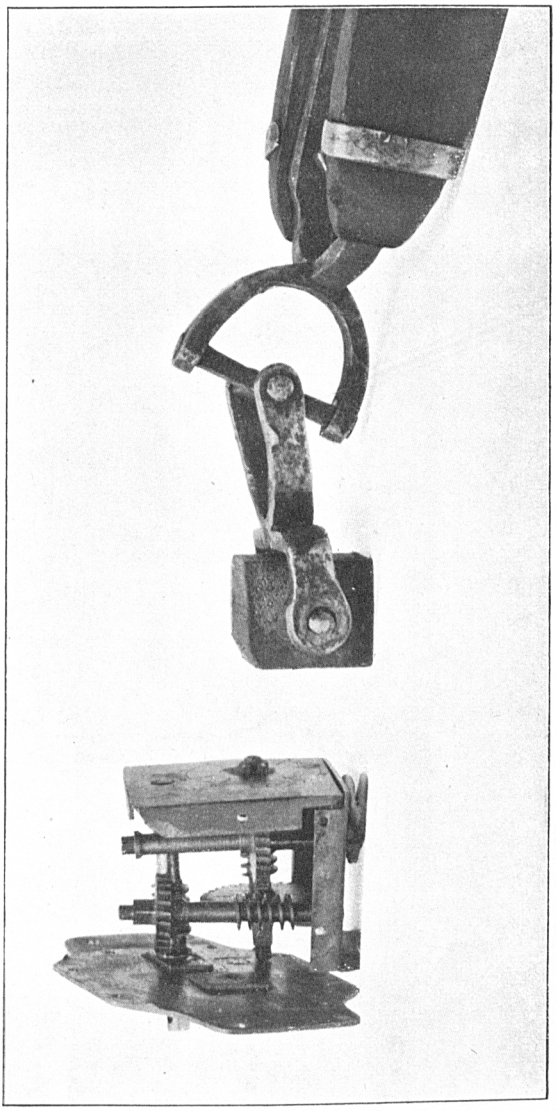
ERRATA.

Page 28, June 25, obs. 2, instead of W. 29 m, ⊙ 8′, read 22 m and 38′.
— — June 30, a. m., Bar., instead of 746.6, read 764.6.
— 29, May 5, ⊙, obs. 1, instead of 30′, read 20′.
— 30, July 5, p. m., Watch, obs. 2, instead of 20 s, read 38 s.
— 33, April 19, Locality, Supp. long.. instead of 91°39′, read 90°45′.
— 34, instead of April 27, read April 29, p. m.
— 37, May 11, p. m., Locality, instead of Moskuskamp, read Moskusleir.
— 38, May 28, ⊙, last obs., instead of 127°, read 123°.
— 40, May 10, Locality, instead of Lands, read Land's
— 48, May 5, last line, Deviation etc., add about 25°.
— 50, June 17, obs. 6, instead Cape on West —, read Cape in west.
— — June 19, obs. 5, instead of Red Cone, read land at Cone Island.
— 57, April 13, p. m., last obs., instead of 32m 23 s.5, read 34m 41 s.
— — April 14, W., obs. 2, instead 3m 42 s, read 0h 3m 42 s.
— 58, May 2, W., last obs., instead of 10m 35 s, read 1h 0m 35 s.
— 61, Date, instead of 1900, read 1901.
— — May 24, p. m., Level, obs. 5, instead of 1.5, read 5.0.
— 62, May 30, p. m., ⊙, last obs., instead of 296°. read 295°.
— 63, Date, instead of 1900, read 1901.
— — July 15, a. m., W., obs. 2, instead of 36m, read 33m.
— 64, July 16, p. m., Level, obs. 2, instead of 4.7, read 3.2.
— 65, July 17, ⊙, obs. 5, instead of 24.5, read 34.5.
— 71, April 25, ⊙, obs. 2, instead of 2 5°, read 245°.
— 76, May 28, p. m., last obs., instead of "Midtøie", read "Midtøia" (Midtøen).
— 77, April 25, p. m., ☽, obs. 5, instead of 143°, read 142°.
— — April 30, Noon, ☽, obs. 2, instead of 280°, read 279°.
— 80, June 5, Noon, obs. 6, instead of 288°, read 285°.
— — June 13, a. m., Observations and Locality, instead of Lands, read Land's.
— 83, July 17, p. m., obs. 1, instead of 23′, read 25′.
— — July 21, p. m., W., obs. 1, instead of 11 h, read 10 h.
— 84, — — obs. 11, instead of 33′, read 38′.
— — July 29, a. m., W., obs. 1, instead of 53 s, read 55 s.
— 86, August 3, p. m., obs. 7, instead of 30′, read 13′.5.
— 87, May 28, p. m., last obs., instead of 258°, read 358°.
— 88, May 28, last obs., instead of 37°, read 74°.
— — May 31, last obs., instead of Tan. on, read Tan. fjord on.
— 89, July 29, a. m., obs. 5, instead of 19°, read 89°.
— 91, Sept. 15, obs. 3, instead of 52′, read 42′.
— 97, May 31, Bar., instead of 656.0, read 756.0.
— — June 1, p. m., W., obs. 2, instead of 6s.5, read 16s.5.
— 107, May 10, a. m., ⊙, obs. 2, instead of 4′, read 14′.
— 111, June 1, p. m., W., obs. 2, instead of 65s, read 16s.5.
— 112, June 8, a. m., last obs. but one, instead of Litle, read Little.

Printed 28. februar 1907.



THE ODOMETER.



THE COUPLING.

THE REGISTERING-APPARATUS.

Omkring „Frams" 1ste vinterkvarter 1898-99.

Fotolitografi - Kristiania lith. Aktiebolag -

Otto Sverdrup: Nyt Land. (H. Aschehoug & Co.)

KART

over

vestre del af JONES SUND

optaget under

2. norske polarfærd med „FRAM", kaptein SVERDRUP

1898 - 1902

af

ritmester Gunn. Isachsen.

MAALESTOK 1:200000.

Kilometer.

Geografisk mil.

TEGNFORKLARING:

- Længde- og breddebestemmelse.
- Breddebestemmelse.
- Længdebestemmelse.
- Trigonometrisk signal.
- Frams vinterkvarterer.
- Eskimoteltringer.
- Eskimovinterhus.
- Höider i meter.

BELCHER KANALEN

KONG OSCARS LAND

SIMMONS'S HALVÖ

NORTH KENT

CARDIGAN STREDET

HALVÖ

TVERSUNDET

KALVEN

HVALROSFJORDEN

COLIN ARCHERS HALVÖ

JONES SUND

EIDSBOTN

NESODDEN

VESTFJORDEN

VIKSFJORDEN

Nordstrand

Landsend

De Lacy H.

Kap Bourgoyne

Strömodden

Lerbugten

Skred-bugten

Spækodden

Kap Dönninghausen

Ekskrementbugten

Pilchers vatte

Djævelöen

Rödbergbugten

Falkodden

Prince Edward P.t

Ekskrementodden

Kap Harrison

Kobbebugten

Vendomkap

Hvalroskap

Maageberget

Indereidet

Nötvedts ö

Halvöen

Olsens ö

Rendalen

Björneborg

Stormkap

Storbræen

Kap Hawes

St. Helena

Kavheotberget

Kap Vera

Sandspollen

Nabben

Bergholmen

Hvalbenet

Baadodden

Aasfjorden

Lyseefjorden

Kongsfjorden

FRAM 1900-01

FRAM 1901-02

Middagskollen

Mosviken

Ren-bugten

Strandalen

Kaseskar

Hvalrosfjorden

Jonesbugten

Hvalrosfjorden

Kaldbrekkbugten

Björneborgs-bugten

ca. 200

ca. 450

ca. 350

ca. 400

ca. 500

ca. 300

ca. 250

ca. 70

ca. 400

ca. 200

ca. 200

91° 90° 89° 88°

77°00' 50' 40' 30' 20' 10' 76°00'

90° vest Greenwich

Fotolitografi · Kristiania lith. Aktiebolag.

Otto Sverdrup: Nyt Land. (H. Aschehoug & Co.)

Fotolitografi · Kristiania lith. Aktiebolag.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 6.

AKSEL S. STEEN

TERRESTRIAL MAGNETISM

AT THE EXPENSE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

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A. INTRODUCTION.

The regions in which the 2nd Norwegian Polar Expedition under the command of Captain Otto Sverdrup in the Fram, passed the four years from the autumn of 1898 to the autumn of 1902, are, magnetically considered, among the most interesting portions of the earth's surface, as they are not far from the magnetic north pole. It is therefore greatly to be deplored that the Expedition's magnetic outfit had to be limited, on economic grounds, to the smallest possible amount, and that moreover no special attention could be paid in the outfit to the peculiar magnetic conditions under which the Expedition was compelled, as it subsequently proved, to labour.

It will be remembered that it was Captain Sverdrup's original plan to endeavour to make his way round the north of Greenland, and finally return along its east coast. With this plan in view, the Expedition received the same set of magnetic instruments that had previously been employed by Captain Scott-Hansen on the famous 1st Fram Expedition, 1893—1896, under the command of Dr. Fridtjof Nansen. There was reason to suppose at the time that the instruments that were specially constructed for the Nansen Expedition, might also, with advantage be employed on the 2nd Fram Expedition, which, it might be assumed, would make its observations at a sufficient distance from the magnetic pole to keep the numerical values of the terrestrial magnetic elements from differing greatly from the results found by Scott-Hansen.

Sverdrup, however, as we know, was forced to abandon his original plan, and instead of going farther northwards after the first winter in Rice Strait, was obliged to take up his winter quarters in a more

southerly latitude in Havne Fjord and Gaase Fjord, whence geographical investigations of the hitherto unknown surrounding districts were made.

It was in these winter quarters that the magnetic observations were made, and it was soon apparent that the terrestrial-magnetic conditions there were of such a nature that it was only with the greatest difficulty that the instruments brought could be employed to obtain observation results that were at all usable.

There is one circumstance too, that must here be taken into consideration. When the 2nd Fram Expedition left Christiania in June, 1898, the working-up of the magnetic observations brought back from the Nansen Expedition was begun, but not nearly completed, this not being done until December, 1900. The experience gained in this work as to the most practical employment of the instruments, and the supplementing that was desirable, was therefore of no avail to the Sverdrup Expedition, a circumstance which is all the more to be regretted since one decided lesson it taught was that an Expedition to the polar regions cannot content itself with a Fox circle for determining inclination, but must in addition in every case have a reliable inclinatorium, with needles for remagnetisation, and if possible an earth inductor also.

It was therefore anything but an easy task that devolved upon the 2nd Fram Expedition's second in command, formerly lieutenant, now captain in the navy, V. BAUMANN, and the chartographer of the Expedition, formerly lieutenant, now cavalry captain, G. ISACHSEN. These two gentlemen had made in Wilhelmshaven, in 1898, a series of determinations of the three magnetic elements with the universal magnetometer constructed for the first Fram Expedition by Geheimerat von NEUMAYER and E. A. ZSCHAU, the mechanician of the Deutsche Seewarte. They shared the work of magnetic observation during the first two years, while during the last two Captain BAUMANN undertook it alone, Captain ISACHSEN being engaged in geographical work.

Various circumstances, especially the frequent sledge-journeys for the discovery and charting of new land, as also the numerous practical occupations on board, combined to prevent the collection of such copious magnetic observations as might have been desired; while at the same time the above-mentioned difficulties arising from the imperfect capabilities of the instruments under the existing terrestrial-magnetic conditions, must have raised doubts as to the utility of the results obtained, and thus have weakened to some extent the interest in a continued repetition of the troublesome work of observation.

Strenuous efforts were made, however, to overcome the difficulties. I may mention, for instance, that in the summer of the last year, 1902, a new brass rod intended for the deflection-observations was made on board, the one belonging to the apparatus having proved to be too short, as even the weakest deflector introduced at the greatest distance turned the needle 90°. With the new deflection-rod it was possible to place each deflector at two distances, with a reasonable angle of deflection in all four combinations.

The previously-mentioned magnetic apparatus E. A. Zschau, No. 289, also used on this Expedition, was described by me in my working-up of the observations from the first Fram Expedition[1]. It is a combination of the well-known Neumayer declinatorium and a Fox circle, to which is added a vibration-box with suspension tube. On each side of the alhidade belonging to the horizontal circle of the declinatorium, a brass rod can be affixed for the application of the vibrating magnet as deflector. The horizontal circle is furnished with two verniers, which give a direct reading of 0.5′. Increasing figures in the reading answer to increasing east declination.

The constants of the apparatus were determined in Hamburg in June, 1893, by Geheimerat NEUMAYER and Captain SCOTT-HANSEN in conjunction, and six months after the return of the first Fram expedition, in March, 1897, at Wilhelmshaven by E. STÜCK, assistant at the Marine Observatory there, the result of his observations showing that on the whole the constants had remained unchanged throughout the first Fram Expedition. The observations made by Captain BAUMANN and Captain ISACHSEN at Wilhelmshaven in April, 1898, which were subsequently calculated by STÜCK, were in such harmony with the results previously found, that it may be assumed that the constants of the instruments at the time of the departure of the 2nd Fram Expedition, were the same as at the time of the return of the first.

At the end of November, 1902, three months after the Sverdrup Expedition had come back to Christiania, Captain ROALD AMUNDSEN who was then engaged in fitting out his expedition with the "Gjøa" to the regions about the magnetic north pole, obtained the loan of the Fram's magnetic instruments, and took them to Potsdam, where, with the kind assistance of Professor AD. SCHMIDT, the director of the magnetic obser-

[1] The Norwegian North Polar Expedition, 1893—1896. Scientific results. Edited by Fridtjof Nansen. Vol. II, Mem. VII. Terrestrial Magnetism. By Aksel S. Steen, pp. 2—6. In the following pages, this paper will be referred to as "Nansen Exped. T. M."

vatory there, and Professor J. EDLER, his assistant (who died in 1905), he made a number of observations which showed that the deflectors of the Zschau apparatus had unfortunately had their magnetic moment considerably weakened. I shall explain this more fully in a later section of this paper.

For the temperature readings in the magnetic observations of the Expedition, the thermometers belonging to the magnetic apparatus were always used. Their corrections cannot be seen to have been especially determined, and must therefore be considered as included in the constants of the instruments.

The Expedition took with them various chronometers, and of these the box-chronometer Frodsham was used for vibration observations, and the box-chronometer Kutter served as standard clock. The other watches were compared almost daily with the latter, and a journal kept. When the astronomical observations had been reduced and calculated after the return of the Expedition, I obtained a statement of the chronometer Kutter's error on Greenwich mean time for, in all, 24 different days during the time from the 4th May, 1899, to the 20th July, 1902. I have also obtained a statement of the final values of latitude and longitude for the four winter havens, where the magnetic observations were made. By the aid of this material, together with the chronometer journal, I have been enabled to calculate the error on local time and the daily rate (during the vibration-observations) of the watch employed in each separate case in the magnetic observations. The hours mentioned in this paper are thus all local time.

As mentioned above, magnetic observations were only made in the four winter havens, and always on land. The four stations were as follows:

Station I. Rice Strait. $\varphi = 78° 46'$, $\lambda = 74° 57'$ W. A series of observations was made here on the south side of the haven, between the 25th November and the 2nd December, 1898, and between the 27th and the 30th May, 1899. Station I a.

From the 5th to the 9th June, 1899, observations of declination and horizontal intensity were made on the north side of the haven. Station I b.

The distance between the two points of observation was about 450 or 500 metres.

A snow hut was erected at Station I a, in which to make the observations. In the centre of it was placed

a pedestal of ice, upon which, frozen firmly to it, lay a slab of stone, the instrument being placed upon this. When spring arrived, the roof of the hut was removed.

At Station I b the observations were made under the open sky. A large erratic block, that was firmly embedded in the ground, was used as a pedestal; and upon this, in the winter time, a lantern was placed to serve as a mark for the sights taken at Station I a.

When the instruments were moved over from the south to the north side, the ice pedestal was removed from Station I a, and in its place a vertical rod was set up in such a manner as to pass as accurately as possible through the point at which the centre of the instrument had been. This rod served as a mark for Station I b, where observations were made for the determination of the azimuth of the line of connection.

Station II. Havne Fjord. $\varphi = 76° 29'$, $\lambda = 84° 4'$ W.

The observations were made on land, under the open sky, at a distance of about 500 metres from the Fram. A large block of stone was used as a stand for the instruments. The mark was a rod set up vertically in a direction ENE, at a distance of about 500 metres from the place of observation.

Between the 26th June and the 3rd July, 1900, a series of determinations of all the three elements was made at this station by Captain Baumann, and between the 20th July and the 3rd August, a new series of observations by Captain Isachsen.

Station III. Gaase Fjord. $\varphi = 76° 49'$, $\lambda = 88° 40'$ W.

The observations were made on land, under a tent, by Captain Baumann, from the 2nd to the 22nd July, and on the 11th August, 1901, at a point situated at a distance of about 800 metres in a direction S 30°E from the Fram. A large block of stone was used as a stand for the instrument. The mark, a vertical rod, was placed at a distance of 400 metres in a direction E 31°N.

Station IV. Gaase Fjord. $\varphi = 76° 40'$, $\lambda = 88° 38'$ W. The observations were made on land under a tent at a dis-

tance of about 400 or 500 metres from the Fram in an easterly direction, by Captain BAUMANN, during the period from the 3rd June to the 10th July, 1902. The instruments were set up on a large block of limestone. A vertical rod at a distance of about 900 metres in a SSE direction, served as a mark.

B. DECLINATION.

THE NEEDLES.

There were two declination needles belonging to the apparatus, one double needle, *P*, and one rather shorter needle, *L*, to be placed on a pin as in an ordinary Neumayer's declinatorium. Both needles were furnished with a mirror, but only *P* could be reversed; and it was this needle that was always used for determinations of declination, while the small needle, *L*, was only employed as a deflected magnet in deflection-observations for the determination of horizontal intensity.

The position of the double needle was noted as "Skr. op" (heads of the screws up) and "Skr. ned" (heads of the screws down), and these two positions will be indicated in the following pages respectively by the signs P_1 and P_2.

The needle's total error of collimation (mirror and magnetic axis) was $\pm 30.1'$ during the first Fram Expedition, so that the correction $-30.1'$ was applied to the readings in the position P_1, which gave too large an easterly declination, and $+30.1'$ in the position P_2, which gave too small an easterly declination.

The following values for the error of collimation were obtained from the first determinations of declination at Station I a, during the last few days of November, 1898:

1898. November 25,	$\pm 24.7'$
— 28,	$\pm 31.1'$
Mean	$\pm 27.9'$,

which shows, when we consider that the observations on the 28th November were made under particularly quiet magnetic conditions, that at the starting of the Expedition, the needle had practically the same error of collimation as before.

After the return of the Expedition, a series of constant determinations were made with the apparatus, as stated in the introduction, at Potsdam by Roald Amundsen. The value for the error of collimation given by the determination of declination made there, simultaneously with readings of the declination variometer, was:

1902.	November 28,	± 4.3′
	— 29,	± 4.6
	December 2,	± 2.6
	— 3,	± 4,9
	Mean	± 4.1′

According to this there is every reason to suppose that the position of the mirror in relation to the axis of the magnetic needle has shifted somewhat during the Expedition; but as, owing to the always unsettled magnetic conditions, the observations afford no opportunity for investigation as to when such a displacement may have taken place, it has been impossible for me to make a calculation of the absolute declination answering to each separate position of the needle.

Nor is this necessary, as fortunately in each determination of declination, the same number of settings of the needle was made in each of the two positions, P_1 and P_2, thus eliminating the error of collimation.

THE AZIMUTH.

The determination of the azimuth of the mark, *a*, was made by Captain BAUMANN at all four stations by the aid of solar observations, with the following result, *a* being reckoned positive from the south point through west:

			a
Station I b.	1899.	June 1,	— 8° 28.5′
		— 2,	28.0
		— .	28.7
		Mean	— 8° 28.4′
Station II.	1900.	June 26,	— 121° 55.4′
		— 27,	56.8
		Mean	— 121° 56.1′
Station III.	1901.	July 11,	— 121° 15.1′
		— 13,	13.5
		Mean	— 121° 14.3′
Station IV.	1902.	June 2,	— 18° 51.9′
		— 4,	53.0
		Mean	— 18° 52.5′

THE OBSERVATIONS.

When the apparatus had been duly levelled, a sight at the mark was first made, with the subsequent reading of both verniers of the horizontal circle. The double needle was then placed upon the pin, and the alhidade so turned as to bring the wire of the telescope into coincidence with its reflected image in the mirror of the double needle, while the ivory disc was kept rubbing on the projecting peg fixed for that purpose upon the lid of the magnet-box. The moment of coincidence was noted by the observation watch, and then both the verniers of the horizontal circle were read. The setting of the needle was invariably attended with great difficulty: the needle always oscillated backwards and forwards, more or less regularly, often in jerks. After a varying number of readings with the needle in both the positions, P_1 and P_2, the observation concluded with a fresh sight at the mark, and reading.

If the reading of the position of the needle in the magnetic meridian be called M, the mean of the readings of the sights at the mark before and after, m, and the azimuth of the mark, reckoned from the south point through west, a, we obtain, as the value for the easterly declination, D:

$$D = M - m + a.$$

The following list contains all the determinations of declination made during the Expedition, in chronological order, with the addition of the hour in local time to the nearest minute for each setting of the needle.

In some cases, in deflection observations, when the double needle was used for the determination of the horizontal intensity as a deflected magnet in both positions, P_1 and P_2, I have given the mean of the readings belonging to the four positions of the deflector as the meridian reading. Every such case is indicated by a record of the deflector used, *V* or *VI*, under the heading "Needle", beside the position of the double needle, P_1 or P_2.

OBSERVATIONS OF DECLINATION.

Station I a. Rice Strait.

$a = 171° 31'.6$.

1898. November 25. Obs. Baumann.

Mark 15° 50'.0 $a-m = 155° 53'.8$

L. T. h m	Needle	M ° '
3 42 p. m	P_1	102 44.0
55	P_2	4.5
59	P_1	57.5
4 6	P_2	9.5
15	P_1	49.8
22	P_2	101 49.0

Mark 15° 25'.6

L. T. h m	D ° '
3 49 p. m.	258 18.1
4 2	27.3
19	13.2
4 3 p. m.	258 19.5

1898. November 28. Obs. Baumann.

Mark 24° 29'.5 $a-m = 147° 1'.8$

L. T. h m	Needle	M ° '
4 15 p. m.	P_1	111 44.8
22	P_1	44.0
31	P_2	110 43.5
42	P_2	42.3
52	P_1	111 46.5
58	P_1	45.3
5 8	P_2	110 42.5
17	P_2	43.5

Mark 24° 29'.8

L. T. h m	D ° '
4 28 p. m	258 15.4
5 4	16.2
4 46 p. m.	258 15.8

1898. November 30. Obs. Baumann.

Mark 105° 13'.3 $a-m = 66° 17'.6$

L. T. h m	Needle	M ° '
5 14 p. m.	P_1	192 4.5
22	P_1	8.5
37	P_2	11.0
43	P_2	21.5
48	P_1	9.0
53	P_1	9.0
6 0	P_2	12.5
6	P_2	13.0

Mark 105° 14'.7

L. T. h m	D ° '
5 29 p. m.	258 29.0
57	28.5
5 43 p. m.	258 28.8

1898. December 1. Obs. Baumann.

Mark 105° 3′.4

$a-m = 66° 27'.4$

L. T. h m	Needle	M ° ′
3 50 p. m.	P_1	191 13.2
56	P_1	11.0
4 0	P_2	3.0
7	P_2	21.0
14	P_1	2.5[1]
20	P_1	0.3[1]
33	P_2	19.8[1]
44	P_2	30.2[1]

L. T. h m	D ° ′
3 58 p. m.	257 39.5
4 28	40.6
4 13 p. m.	257 40.1

Mark 105° 4′.8.

1898. December 2. Obs. Baumann.

Mark 76° 29′.0

$a-m = 95° 1'.6$

L. T. h m	Needle	M ° ′
10 40 a. m.	P_1	163 7.5
46	P_1	4.0
57	P_2	162 53.5
11 1	P_2	52.7
9	P_1	163 19.0
18	P_1	9.0[1]
29	P_2	162 57.0
33	P_2	163 4.0

L. T. h m	D ° ′
10 51 a. m.	258 1.0
11 22	8.8
11 7 a. m	258 4.9

Mark 76° 31′.0

1899. May 27. Obs. Baumann.

Mark 9° 53′.0

$a-m = 161° 38'.3$

L. T. h m	Needle	M ° ′
11 24 a. m.	P_1	95 57.8
30	P_2	54.8
35	P_1	96 2.5
38	P_2	95 51.0
41	P_1	58.5
48	P_2	49.0
51	P_1	59.3
55	P_2	48.3

L. T. h m	D ° ′
11 27 a. m.	257 34.6
37	35.1
44	32.1
53	32.1
11 40 a. m	167 33.5

Mark 9° 53′.5

[1] The needle much disturbed.

1899. May 29. Obs. Baumann.

Mark 11° 14′.5

L. T. h m	Needle	M ° ′
9 35 a. m	P_1	98 16.5
37	P_1	13.5
43	P_2	97 52.5
47	P_2	47.7
51	P_1	98 14.5
53	P_1	16.3
58	P_2	97 44.0
10 0	P_2	48.5

Mark 11° 15′.4

$a-m = 160° 16'.6$

L. T. h m	D ° ′
9 40 a. m.	258 19.2
56	17.4
9 48 a. m.	258 18.3

Mark 11° 14′.5

h m		° ′
5 57 p. m.	P_1	98 3.5
59	P_1	4 0
6 20	P_2	97 57.5
29	P_2	98 3.0
32	P_1	14.0
35	P_1	12.5
42	P_2	2.7
45	P_2	0.5

Mark 11° 13′.1

$a-m = 160° 17'.8$

h m	° ′
6 11 p. m.	258 19.8
39	25.2
6 25 p. m.	258 22.5

1899. May 30. Obs. Baumann.

Mark 11° 40′.8

L. T. h m	Needle	M ° ′
9 42 a. m.	P_1	98 27.0
50	P_1	27.0
10 0	P_2	27.0
4	P_2	22.0
0 52 p. m.	P_1	97 42.0
56	P_2	34.5

Mark 11° 43′.0

$a-m = 159° 49'.7$

L. T. h m	D ° ′
9 54 a. m.	258 15.4
0 54 p. m.	257 28.0
11 24 a. m.	257 51.7

Station I b.

$a = 351° 31'.6$.

1899. June 5. Obs. Baumann.

Mark 163° 18'.3

L. T.	Needle	M
h m		° '
9 8 a. m.	P_1	67 51.5
15	P_2	68 4.0
20	P_1	67 54.0
26	P_2	68 9.0
0 9 p. m.	P_1	67 28.5
14	P_2	56.0
20	P_2	59.0
24	P_1	36.0

Mark 163° 18'.3

$a - m = 188° 13'.3$

L. T.	D
h m	° '
9 11 a. m.	256 11.0
23	14.8
0 12 p. m.	255 55.6
22	256 0.8
10 47 a. m.	256 5.6

1899. June 8. Obs. Baumann.

Mark 112° 28'.0

L. T.	Needle	M
h m		° '
9 9 a. m.	P_1	17 6.7
15	P_2	16 49.5
19	P_1	17 6.2
25	P_2	16 48.0
0 51 p. m.	P_1	16 8.0
59	P_2	8.5
1 3	P_1	22.0
7	P_2	20.0

Mark 112° 28'.4

$a - m = 239° 3'.4$

L. T.	D
h m	° '
9 12 a. m.	256 1.5
22	0.5
0 55 p. m.	255 11.7
1 5	24.4
11 9 a. m.	255 39.5

1899. June 9. Obs. Baumann.

Mark 177° 54'.0

L. T.	Needle	M
h m		° '
9 58 a. m.	P_1	82 10.0
10 11	P_2	1.5
17	P_1	9.0
25	P_2	7.0
0 7 p. m.	P_1	81 48.2
14	P_2	44.0
19	P_1	46.0
23	P_2	53.5

Mark 177° 53'.5

$a - m = 173° 37'.8$

L. T.	D
h m	° '
10 5 a. m.	255 43.6
21	45.7
0 11 p. m.	23.9
21	27.6
11 15 a. m.	255 35.2

Station II. Havne Fjord.

$a = 238° 3'.9$.

1900. June 26. Obs. Baumann.

Mark 233° 25'.3

L. T.	Needle	M
h m		° '
4 38 p. m.	P_1	239 2.8
50	P_1	4.8
5 5	P_2	238 55.7
12	P_2	239 6.3
16	P_1	1.0
20	P_1	2.8
27	P_2	19.3
36	P_2	21.5

Mark 233° 21'.9

$a - m = 4° 40'.3$

L. T.	D
h m	° '
4 56 p. m.	243 42.7
5 25	51.5
5 11 p. m.	243 47.1

1900. June 27. Obs. Baumann.

Mark 234° 55'.7

L. T.	Needle	D
h m		° '
9 30 a. m.	P_1	240 17.5
37	P_2	37.3
43	P_1	8.3
48	P_2	29.5
54	P_1	11.0
10 7	P_2	27.8
14	P_1	3.3
24	P_2	8.0

Mark 234° 56'.9

$a - m = 3° 7'.6$

L. T.	D
h m	° '
9 34 a. m.	243 35.0
46	26.5
10 0	27.0
19	13.2
9 55 a. m.	243 25.4

1900. July 2. Obs. Baumann.

Mark 175° 24'.0

L. T.	Needle	M
h m		° '
10 37 a. m.	P_1	179 42.8
52	P_2	37.5
59	P_1	34.5
11 5	P_2	36.0
12	P_1	34.0
19	P_2	35.5
23	P_1	35.8
35	P_2	26.5
h m		° '
2 56 p. m.	P_1	180 42.5
3 2	P_2	47.0
6	P_1	43.5
10	P_2	41.5
h m		° '
3 42 p. m.	P_1	181 7.0
49	P_2	7.0
54	P_1	2.5
4 2	P_2	180 46.5

Mark 175° 26'.5

$a - m = 62° 38'.6$

L. T.	D
h m	° '
10 45 a. m.	242 18.8
11 2	13.9
16	13.3
29	9.8
11 8 a. m.	242 13.9
h m	° '
2 59 p. m.	243 23.2
3 8	21.1
3 4 p. m.	243 21.2
h m	° '
3 46 p. m.	243 45.6
58	33.1
3 52 p. m.	243 39.4

1900. July 20. Obs. Isachsen.

Mark 175° 17′.5

L. T.	Needle	M
h m		° ′
10 38 a. m.	P_1	179 55.0
43	P_1	22.0
48	P_2	180 3.5
55	P_2	179 55.0
59	P_1	180 50.5
11 3	P_1	182 13.2
10	P_2	179 41.5
16	P_2	180 50.0
31	P_1	180 16.0
35	P_1	44.5
45	P_2	181 20.0
50	P_2	179 49.0
56	P_1	180 58.0
Noon	P_1	59.5
0 6 p. m.	P_2	181 36.0
14	P_2	180 33.0

Mark 175° 17′.5

$a-m = 62° 46'.4$

L. T.	D
h m	° ′
10 46 a. m.	242 35.3
11 7	243 40.3
10 57 a. m.	243 7.8

h m	° ′
11 40 a. m.	243 18.8
0 4 p. m.	48.0
11 52 a. m.	243 33.4

Mark 54° 45′.0

h m		° ′
4 49 p. m.	P_2	60 24.5
56	P_2	9.5
5 0	P_1	59 47.5
3	P_1	60 21.0

Mark 54° 45′.0

$a-m = 183° 18'.9$

h m	° ′
4 57 p. m.	243 29.5

1900. July 23. Obs. Isachsen.

Mark 114° 9′.0

L. T.	Needle	M
h m		° ′
9 29 a. m.	P_1	119 16.0
32	P_1	15.0
37	P_2	43.0
41	P_2	31.5
45	P_1	28.5
48	P_1	31.5
52	P_2	47.5
56	P_2	47.7

Mark 114° 9′.0

$a-m = 123° 54'.9$

L. T.	D
h m	° ′
9 35 a. m.	243 21.3
50	33.7
9 43 a. m.	243 27.5

1900. July 25. Obs. Isachsen.

Mark 55° 12′.0

L. T.	Needle	M
h m		° ′
3 42 p. m.	P_2	60 38.0
45	P_2	61 13.5
47	P_1	5.0
49	P_1	3.0
53	P_2	60 42.0
55	P_2	61 16.0
57	P_1	32.0
59	P_1	25.0

Mark 55° 12′.0

$a-m = 182° 51'.9$

L. T.	D
h m	° ′
3 46 p. m.	243 51.8
56	244 5.6
3 51 p. m.	243 58.7

1900. July 26. Obs. Isachsen.

Mark 114° 9′.0 $a-m = 123° 54'.9$

L. T.	Needle	M	L. T.	D
h m		° ′	h m	° ′
8 42 a. m.	P_1	119 42.0	8 48 a. m.	243 27.8
45	P_1	37.5	9 4	30.9
50	P_2	20.5	8 56 a. m.	243 29.4
55	P_2	31.5		
57	P_1	31.5		
9 0	P_1	34.5		
8	P_2	39.5		
11	P_2	38.5		
1 17 p. m.	P_2	118 20.5	h m	° ′
19	P_2	27.0	1 20 p. m.	242 29.3
21	P_1	44.5		
25	P_1	45.5		

Mark 114° 9′.0

1900. July 27. Obs. Isachsen.

Mark 55° 23′.5 $a-m = 182° 40'.4$

L. T.	Needle	M	L. T.	D
h m		° ′	h m	° ′
11 39 a. m.	P_1	59 46.5	11 44 a. m.	242 33.0
42	P_1	50.0	Noon	18.0
46	P_2	58.0	11 52 a. m.	242 25.5
49	P_2	56.0		
51	P_1	46.5		
54	P_1	49.5		
0 5 p. m.	P_2	34.5		
8	P_2	19.8		

Mark 55° 23′.5

Mark 174° 39′.0 $a-m = 63° 24'.9$

h m		° ′	h m	° ′
3 21 p. m.	P_2	180 1.5	3 33 p. m.	243 48.5
31	P_2	14.5	59	36.7
37	P_1	37.5	4 35	242 42.5
42	P_1	41.0	5 5	56.4
48	P_2	44.3	4 18 p. m.	243 16.0
52	P_2	44.3		
4 5	P_1	179 30.5		
13	P_1	48.0		
27	P_2	16.0		
31	P_2	14.0		
39	P_1	16.0		
44	P_1	24.5		
51	P_2	39.5		
5 4	P_2	14.8		
9	P_1	34.3		
16	P_1	37.3		

Mark 174° 39′.0

1900. July 31. Obs. Isachsen.

Mark 174° 21′.0

L. T.	Needle	M
h m		° ′
2 31 p. m.	P_1	179 40.5
33	P_1	38.5
45	P_2	178 38.5
50	P_2	35.3
55	P_1	48.5
3 0	P_1	53.5
3	P_2	179 10.5
7	P_2	9.0

Mark 174° 21′.0

$a-m = 63° 42'.9$

L. T.	D
h m	° ′
2 40 p. m.	242 51.1
3 1	43.3
2 50 p. m.	242 47.2

1900. August 1. Obs. Isachsen.

Mark 174° 23′.5

L. T.	Needle	M
h m		° ′
9 23 a. m.	P_1	178 30.5
33	P_1	40.0
51	P_2	54.0
57	P_2	56.0
10 7	P_1	13.0
10	P_1	8.8
19	P_2	33.0
34	P_2	58.5

Mark 174° 23′.5

$a-m = 63° 40'.4$

L. T.	D
h m	° ′
9 41 a. m.	242 25.5
10 17	8.7
9 59 a. m.	242 17.1

1900. August 2. Obs. Isachsen.

Mark 175° 10′.0

L. T.	Needle	M
h m		° ′
9 12 a. m.	P_1	180 17.5
17	P_1	37.5
20	P_2	18.5
24	P_2	18.5
35	P_1	42.0
40	P_1	42.0
46	P_2	29.5
50	P_2	20.5

Mark 175° 10′.0

$a-m = 62° 53'.9$

L. T.	D
h m	° ′
9 18 a. m.	243 16.9
43	27.4
9 30 a. m.	243 22.2

1900. August 3. Obs. Isachsen.

Mark 175° 4'.0 $a-m = 62° 59'.9$

L. T.	Needle	M
h m		° '
9 8 a. m.	P_2	180 57.3
12	P_2	51.3
22	P_1	38.5
27	P_1	34.3
11 44	$P_1 . VI$	180 23.3
50	$P_2 . VI$	20.1
4 15 p. m.	P_1	180 9.5
18	P_1	13.5
24	P_2	18.0
28	P_2	24.0
4 52	$P_2 . VI$	180 11.1
52	$P_1 . VI$	10.1

Mark 175° 4'.0

L. T.	D
h m	° '
9 17 a. m.	243 45.3
11 47	21.6
4 21 p. m.	16.2
52	10.5
1 34 p. m.	243 23.4

Station III. Gaase Fjord.

$a = 238° 45'.7.$

1901. July 2. Obs. Baumann.

Mark 75° 11'.8 $a-m = 163° 33'.9$

L. T.	Needle	M
h m		° '
4 54 p. m.	P_1	67 30.0
5 2	P_2	66 58.5
6	P_1	67 33.5
16	P_2	2.5
20	P_1	38.3
38	P_1	41.7
45	P_2	12.5
50	P_2	26.0

Mark 75° 11'.8

L. T.	D
h m	° '
4 58 p. m.	230 48.2
5 11	51.9
38	231 3.5
5 15 p. m.	230 54.5

1901. July 4. Obs. Baumann.

Mark 75° 44'5 $a-m = 163° 1'.4$

L. T.	Needle	M
h m		° '
10 46 a. m.	P_1	68 3.0
50	P_1	67 55.8
58	P_2	29.5
11 2	P_2	28.5
7	P_1	68 17.5
10	P_1	17.5
24	P_2	67 3.0
30	P_2	12.0
38	P_1	52.8
43	P_1	44.5
47	P_2	66 55.5
56	P_2	35.5
0 3 p. m.	P_1	67 14.5
7	P_1	9.7
14	P_2	66 30.5
21	P_2	43.8

Mark 75° 44'.0

L. T.	D
h m	° '
10 54 a. m.	230 45.6
11 18	43.9
46	18.5
0 11 p. m.	229 56.0
11 32 a. m.	230 26.0

1901. July 10. Obs. Baumann.

Mark 66° 28′.5 $a-m = 172° 17'.4$

L. T.	Needle	M	L. T.	D
h m		° ′	h m	° ′
0 37 p. m.	P_1	57 18.0	0 40 p. m.	229 15.9
43	P_2	56 39.0	53	228 56.7
50	P_1	56.5	0 47 p. m.	229 6.3
56	P_2	22.0		
3 12 p. m.	P_2	58 3.0	h m	° ′
17	P_1	43.5	3 15 p. m.	230 40.7
27	P_2	52.0[1]	31	231 14.9
35	P_1	59 3.0[1]	3 23 p. m	230 57.8

Mark 66° 28′.0

1901. July 11. Obs. Baumann.

Mark 76° 23′.0 $a-m = 162° 23'.2$

L. T.	Needle	M	L. T.	D
h m		° ′	h m	° ′
9 8 p. m.	P_1	68 8.5	0 12 p. m.	230 23.0
16	P_2	67 51.0	24	39.2
21	P_1	68 26.0	0 18 p. m.	230 31.1
28	P_2	6.0		
2 19 p. m.	P_1	68 20.5	h m	° ′
23	P_2	1.0	2 21 p. m.	230 34.0
29	P_1	19.0	31	28.0
34	P_2	67 50.5	2 26 p. m.	230 31.0

Mark 76° 22′0

1901. July 12. Obs. Baumann.

Mark 75° 34′.5 $a-m = 163° 11'.2$

L. T.	Needle	M	L. T	D
h m		° ′	h m	° ′
11 47 a. m.	P_1	65 51.0	11 50 a. m.	228 43.5
53	P_2	13.5	0 5 p. m.	229 12.3
58	P_1	66 6.3	11 58 a. m.	228 57.9
0 12 p. m.	P_2	66 56.0[2]		
1 49 p. m.	P_1	66 42.0	h m	° ′
53	P_2	55.5	1 51 p. m.	230 0.0
59	P_1	67 22.5	2 1	18.2
2 4	P_2	66 51.5	1 56 p. m.	230 9.1

Mark 75° 34′5

[1] The needle much disturbed.
[2] The needle disturbed.

1901. July 15. Obs. Baumann.

Mark 75° 24′.8

L. T. h m	Needle	M ° ′
10 9 a. m.	P_2	67 12.0
13	P_2	22.0
19	P_1	38.7
24	P_1	30.5
29	P_2	22.0
32	P_2	27.0
36	P_1	48.0
41	P_1	44.8
11 24	P_1	28.5
28	P_1	24.5
31	P_2	15.5
40	P_2	24.0
53	P_1	66 20.5[1]
56	P_1	20.5
59	P_2	22.0
0 6 p. m.	P_2	4.5

Mark 75° 24′.8

$a-m = 163° 20'.9$

L. T. h m	D ° ′
10 16 a. m.	230 46.7
34	56.4
11 31	44.0
58	229 37.8
11 5 a. m.	230 31.2

1901. July 20. Obs. Baumann.

Mark 66° 5′.3

L. T. h m	Needle	M ° ′
3 7 p. m.	P_2	58 2.0
10	P_2	7.2
15	P_1	3.3
19	P_1	12.3
23	P_2	29.0
27	P_2	30.0
31	P_1	21.0
37	P_1	16.0
51	P_1	36.8
54	P_1	41.0
58	P_2	42.3
4 1	P_2	47.5
8	P_1	40.0
13	P_1	42.5
18	P_2	57.8
27	P_2	59 0.5

Mark 66° 5′.3

$a-m = 172° 40'.4$

L. T. h m	D ° ′
3 13 p. m.	230 46.6
29	231 4.4
56	22.3
4 16	30.6
3 44 p. m.	231 11.0

[1] The needle disturbed.

Station IV. Gaase Fjord

$a = 341° 7'.5$.

1902. June 3. Obs. Baumann.

Mark 144° 40'.0

L. T. h m	Needle	M ° '
3 27 p. m.	P_1	35 42.2
33	P_2	36.0
36	P_1	56.8
43	P_2	53.8
48	P_1	55.8
55	P_2	42.8
4 2	P_1	49.2
9	P_2	36 0.2
17	P_1	8.0
25	P_2	35 58.0
31	P_1	51.0
44	P_2	56.2
49	P_1	48.0
55	P_2	48.0
59	P_1	39.5
5 7	P_2	46.3

Mark 144° 42'.0

$a-m = 196° 26'.5$

L. T. h m	D ° '
3 30 p. m.	232 5.6
40	21.8
52	15.8
4 6	21.2
21	29.5
38	20.1
52	14.5
5 3	9.4
4 15 p. m.	232 17.2

1902. June 11. Obs. Baumann.

Mark 204° 48'.5

L. T. h m	Needle	M ° '
10 15 a. m.	P_1	93 56.8
24	P_2	45.2
11 11	$P_1 . VI$	48.1
	$P_2 . VI$	94 15.1
52	P_2	93 56.8
0 1 p. m.	P_1	94 6.0
0 31	$P_1 . VI$	93 32.1
	$P_2 . VI$	28.3
1 1	P_2	94 13.5
7	P_1	30.5

Mark 204° 47'.5

$a-m = 136° 19'.5$

L. T. h m	D ° '
10 19 a. m.	230 10.5
11 11	21.1
57	20.9
0 31 p. m.	229 49.7
1 4	230 41.5
11 48 a. m.	230 16.7

1902. June 12. Obs. Baumann.

Mark 204° 47'.0

L. T. h m	Needle	M ° '
10 0 a. m.	P_1	94 15.2
6	P_2	12.0
39	$P_1 . VI$	7.4
	$P_2 . VI$	6.8
11 6	P_2	95 4.8
14	P_1	94 33.8
11 45	$P_1 . VI$	93 41.5
	$P_2 . VI$	43.8
0 13 p. m.	P_1	6.0
18	P_2	14.2

Mark 204° 47'.0

$a-m = 136° 20'.5$

L. T. h m	D ° '
10 3 a. m.	230 34.1
39	27.6
11 10	231 9.7
45	230 3.1
0 15 p. m.	229 30.6
11 10 a. m.	230 21.0

1902. June 13. Obs. Baumann.

Mark 204° 46′.0 $a-m = 136° 21'.1$

L. T. h m	Needle	M ° ′
10 27 a. m.	P_1	94 37.0
35	P_2	23.0
11 37	$P_1 . V$	41.7
	$P_2 . V$	38.1
0 14 p. m.	P_2	53.0
20	P_1	55.0
0 49	$P_1 . V$	42.3
	$P_2 . V$	52.0
1 18	P_1	31.5
22	P_2	44.3

L. T. h m	D ° ′
10 31 a. m.	230 51.1
11 37	231 1.0
0 17 p. m.	15.1
49	8.3
1 20	0.0
0 7 p. m.	231 3.1

Mark 204° 46′.8

1902. June 14. Obs. Baumann.

Mark 204° 46′.0 $a-m = 136° 21'.9$

L. T. h m	Needle	M ° ′
10 3 a. m.	P_2	94 25.5
7	P_1	36.5
42	$P_1 . V$	20.8
44	$P_2 . V$	20.8
11 23	P_1	93 57.5
30	P_2	94 19.7
0 1 p. m.	P_2	93 58.6
3	P_1	55.4
32	P_2	10.0
36	P_1	16.0

L. T. h m	D ° ′
10 5 a. m.	230 52.9
43	42.7
11 27	30.5
0 2 p. m.	18.9
34	229 34.9
11 22 a. m.	230 24.0

Mark 204° 45′.2

1902. June 16. Obs. Baumann.

Mark 204° 45′.0 $a-m = 136° 22'.5$

L. T. h m	Needle	M ° ′
11 1 a. m.	P_1	94 23.8
9	P_2	23.0
13	P_1	33.0
18	P_2	31.5
50	$P_2 . VI$	37.0
	$P_1 . VI$	44.9
0 40 p. m.	$P_2 . V$	95 7.1
	$P_1 . V$	9.5
1 10	P_2	45.5
15	P_1	51.0
19	P_2	52.5
23	P_1	59.7

L. T. h m	D ° ′
11 5 a. m.	230 45.9
16	54.8
50	231 3.4
0 40 p. m.	30.8
1 13	232 10.8
21	18.6
0 14 p. m.	231 27.4

1902. June 18. Obs. Baumann.

Mark 204° 46′.3

L. T.	Needle	M
h m		° ′
9 41 a. m.	P_1	94 59.5
53	P_1	57.7
10 0	P_2	42.5
8	P_2	59.7
12	P_1	95 1.5
19	P_1	94 30.7[1]
24	P_2	45.0
28	P_2	51.5
37	P_1	58.3
43	P_1	57.5
49	P_2	59.3
53	P_2	95 6.5
58	P_1	94 58.3
11 3	P_1	95 2.5
12	P_2	94 51.8
19	P_2	52.8

Mark 204° 46′.3

$a-m = 136° 21'.2$

L. T.	D
h m	° ′
9 56 a. m.	231 16.1
10 21	8.4
46	21.6
11 8	17.5
10 33 a. m.	231 15.9

1902. June 20. Obs. Baumann.

Mark 204° 44′.3

L. T.	Needle	M
h m		° ′
10 48 a. m.	P_1	94 45.5
11 3	P_2	56.5
9	P_1	49.5
15	P_2	56.7
43	$P_1.V$	95 8.1
	$P_2.V$	8.6
0 27 p. m.	P_2	46.0[1]
34	P_1	29.2
40	P_2	27.0
44	P_1	25.0
1 15	$P_1.VI$	32.8
	$P_2.VI$	47.2
43	P_1	14.5
49	P_2	9.3
54	P_1	22.3
59	P_2	32.5
2 54	P_2	96 4.8
57	P_1	11.0
3 3	P_2	20.7
7	P_1	6.3
37	$P_1.VI$	95 56.5
	$P_2.VI$	51.5
4 1	P_1	36.0
5	P_2	40.5
10	P_1	39.0
14	P_2	59.3
44	$P_1.V$	32.0
	$P_2.V$	41.6
5 10	P_2	49.5
14	P_1	24.0
18	P_2	45.5
22	P_1	28.5

Mark 204° 42′.3

$a-m = 136° 24'.2$

L. T.	D
h m	° ′
10 55 a. m.	231 15.2
11 12	17.3
43	32.6
0 31 p. m.	232 1.8
42	231 50.2
1 15	232 4.2
46	231 36.1
56	51.6
2 56	232 32.1
3 5	37.7
37	18.2
4 3	2.5
12	13.4
44	1.0
5 12	0.9
20	1.2
2 19 p. m.	231 57.3

[1] The needle much disturbed and difficult to point.

1902. June 25. Obs. Baumann.

Mark 204° 44′.5 $a-m = 136° 23'.2$

L. T. h m	Needle	M ° ′
11 37 a. m.	P_1	95 6.8
41	P_2	6.8
44	P_1	9.5
47	P_2	16.5
0 11 p. m.	$P_1 . V$	30.6
	$P_2 . V$	34.7
38	P_2	96 8.7[1]
41	P_1	95 55.7
47	P_2	53.5
51	P_1	96 2.7
1 16	$P_1 . VI$	7.3
	$P_2 . VI$	26.9
39	P_1	47.0
43	P_2	52.8
45	P_1	55.5
49	P_2	57.7
2 48	P_2	46.3
52	P_1	39.5
56	P_2	41.7
59	P_1	44.7
3 20	$P_1 . VI$	95 48.1
	$P_2 . VI$	53.3
47	P_1	94 51.0
53	P_2	3.2
57	P_1	11.2
4 0	P_1	23.0
19	$P_1 . V$	43.3
	$P_2 . V$	46.5
39	P_2	95 29.5
44	P_1	25.0
47	P_2	27.7
50	P_1	18.5

Mark 204° 44′.0

L. T. h m	D ° ′
11 39 a. m.	231 30.0
46	36.2
0 11 p. m.	55.8
40	232 25.4
49	21.3
1 16	40.3
41	233 13.1
47	19.8
2 50	6.1
58	6.4
3 20	232 13.9
50	230 50.3
58	40.3
4 19	231 8.1
41	50.5
49	46.3
2 17 p. m.	232 6.5

1902. June 30. Obs. Baumann.

Mark 204° 43′.0 $a-m = 136° 24'.5$

L. T. h m	Needle	M ° ′
11 3 a. m.	P_1	94 33.0
7	P_1	12.3
9	P_1	17.8
11	P_1	26.2
24	$P_1 . V$	35.6
54	$P_1 . VI$	93 42.8
0 9 p. m.	P_1	95 1.8
12	P_1	94 52.3
36	$P_1 . VI$	55.8
58	$P_1 . V$	0.2
1 10	P_1	14.8
12	P_1	24.2
15	P_1	19.5
18	P_1	20.4

Mark 204° 43′.0

L. T. h m	$D\ P_1$ ° ′
0 11 p. m.	230 50.0

[1] The needle in rapid motion eastwards.

1902. July 1. Obs. Baumann.

Mark 204° 38′.7

L. T. h m	Needle	M ° ′
10 44 a. m.	P_2	94 55.5
46	P_2	59.5
49	P_2	56.5
51	P_2	95 4.0
11 5	$P_2 . V$	2.7
25	$P_2 . VI$	18.9
36	P_2	2.8
39	P_2	4.5
57	$P_2 . VI$	94 42.0
0 10 p. m.	$P_2 . V$	95 4.1
22	P_2	18.0
26	P_2	12.5
28	P_2	2.7
31	P_2	94 58.3

Mark 204° 40′.5

$a-m = 136° 27'.9$

L. T. h m	$D P_2$ ° ′
11 38 a. m.	231 35.2

1902. July 5. Obs. Baumann.

Mark 204° 40′.5

L. T. h m	Needle	M ° ′
9 55 a. m.	P_1	94 49.5
10 1	P_1	48.5
21	P_2	32.0[1]
25	P_2	16.5
31	P_1	3.0
35	P_1	2.0
40	P_2	4.2
47	P_2	3.3
52	P_1	19.0
59	P_1	29.8
11 4	P_2	41.8
11	P_2	36.2
17	P_1	37.0
23	P_1	30.2
27	P_2	37.0
32	P_2	30.0

Mark 204° 40′.5

$a-m = 136° 27'.0$

L. T. h m	D ° ′
10 11 a. m.	231 3.6
38	230 30.1
11 2	58.7
25	231 0.6
10 49 a. m.	230 53.2

[1] The needle much disturbed, difficult to point.

1902. July 7. Obs. Baumann.

Mark 204° 40′.0

L. T. h m	Needle	M ° ′
10 2 a. m.	P_2	94 15.8
11	P_2	17.7
17	P_1	20.0
20	P_1	24.0
26	P_2	22.0
32	P_2	31.0
36	P_1	28.0
39	P_1	31.8
44	P_2	34.0
53	P_2	40.0
57	P_1	40.0
59	P_1	43.0
11 4	P_2	52.0
7	P_2	54.0
11	P_1	47.0
14	P_1	49.2

Mark 204° 40′.0

$a-m = 136° 27'.5$

L. T. h m	D ° ′
10 13 a. m.	230 46.9
33	55.7
53	231 6.8
11 9	18.1
10 42 a. m.	231 1.9

1902. July 10. Obs. Baumann.

Mark 204° 34′.0

L. T. h m	Needle	M ° ′
10 13 a. m.	P_1	94 36.0
19	P_1	28.8
28	P_2	37.0
33	P_2	49.5
44	P_1	46.0
49	P_1	41.2
53	P_2	44.0
11 1	P_2	25.2
4	P_1	1.3
8	P_1	93 56.3
12	P_2	53.2
16	P_2	44.8
21	P_1	29.3
26	P_1	30.3
33	P_2	26.7
36	P_2	24.7

Mark 204° 34′.0

$a-m = 136° 33'.5$

L. T. h m	D ° ′
10 23 a. m.	231 11.3
52	12.6
11 10	230 27.4
29	1.3
10 59 a. m.	230 43.1

C. HORIZONTAL INTENSITY.

For the determination of the absolute value of the horizontal intensity, both vibration and deflection observations were made with the two magnets belonging to the apparatus, *V* and *VI*, whose length was respectively 99 mm. and 98 mm.

In the regions explored by the Expedition, it must be presupposed that while the observations were being made, the magnetic conditions were always disturbed, and cannot be taken into account, as the Expediton had not taken variation instruments with them. I have therefore endeavoured to calculate the horizontal intensity separately from vibrations and from deflections, by means of the two following formulæ[1]:

$$\text{For deflections,} \quad H = \frac{C\mu}{\sin\varphi}\left[1 - (3\beta + \alpha)\, t_\varphi\right] \qquad (1)$$

$$\text{For vibrations,} \quad H = \frac{C}{\mu} \cdot \frac{1}{T^2}\left[1 + (2\beta' + \alpha)\, t_T\right] \qquad (2)$$

The symbols employed in these formulæ are as follows:

H = absolute horizontal intensity.

φ = angle of deflection.

T = time of vibration, corrected for rate of chronometer, arc of vibration and torsion force of the suspended thread.

t_φ = temperature of magnet during the deflections.

t_T = temperature of magnet during the vibrations.

α = temperature coefficient.

β = coefficient of dilatation for brass (0.0000180).

β' = coefficient of dilatation for steel (0.0000124).

μ and C are two constants, of which the first, μ, is proportional to the magnetic moment of the magnet, while C is the constant employed when the horizontal intensity is to be calculated from simultaneous vibrations and deflections, according to the following well-known formula[2]:

$$H = \frac{C}{T\sqrt{\sin\varphi}}\left[1 + \beta' t_T - \frac{3}{2}\beta t_\varphi + \frac{\alpha(t_T - t_\varphi)}{2}\right] \qquad (3)$$

[1] Nansen Expedition. T. M. p. 64.

[2] I will take this opportunity of drawing attention to the fact that in the Report on the Nansen Expedition, T. M., p. 62, this formula has been incorrectly given as

DETERMINATION OF THE CONSTANTS.

As already mentioned in the Introduction, a series of determinations of the horizontal intensity were made with the apparatus at Wilhelmshaven before the departure of the Expedition by Captains BAUMANN and ISACHSEN, from the 19th to the 28th April, 1898, a corresponding series of observations having been made with the apparatus by Captain AMUNDSEN, after the return of the Expedition, at Potsdam, on the 29th and 30th November and 1st December, 1902.

It is these two sets of observations that form the basis of my calculations of the values that the constants α, μ and C may be assumed to have had in the observations made during the Expedition.

DETERMINATION OF THE TEMPERATURE COEFFICIENT α.

The result of the determinations of the temperature coefficient made during the observations at Wilhelmshaven in 1898 was,

	α
for magnet *V*,	0.000204
for magnet *VI*,	0.000497

AMUNDSEN's determinations at Potsdam in 1902 made it,

	α
for magnet *V*,	0.000243
for magnet *VI*,	0.000625

At the time that the constants of the instruments were first determined in Hamburg in 1893, shortly before the departure of the 1st Fram Expedition, DR. NEUMAYER found the following values:

	α
For magnet *V*,	0.000307
For magnet *VI*,	0.000638

It will be seen that these values tally better with AMUNDSEN's determinations than with those found in 1898 at Wilhelmshaven. Nor can any very great degree of certainty be attributed to the last-named, as the two observers were then less practised in the taking of magnetic

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$$H = \frac{C}{T\sqrt{\sin\varphi}}\,[1 + \beta' t_T - \tfrac{3}{4}\beta\, t_\varphi + \alpha\,(t_T - t_\varphi)]$$

and also that β and β', by a printer's error (the omission of a 0), have been given values ten times greater than they should be. These mistakes, however, have fortunately had no influence upon the results as the latter were calculated from the above formulæ (1) & (2), with the correct values of β and β'.

observations. I have therefore deemed it best simply to employ the values deduced from the observations that AMUNDSEN made with great accuracy under most favorable conditions. These include a long series of deflections with both deflectors placed at both distances in various temperatures from — 1.3° C. to + 20.7°. The temperature coefficient adopted is therefore,

for magnet *V*, $\alpha_V = 0.000243$

for magnet *VI*, $\alpha_{VI} = 0.000625$.

If we call the angle of deflection at 0°, φ_o, and the time of vibration at 0°, T_o, we obtain from equations (1) and (2),

$$\sin \varphi_o = \frac{\sin \varphi}{1 - (3\beta + \alpha)\, t_\varphi}$$

$$T_o^2 = \frac{T^2}{1 + (2\beta' + \alpha)\, t_T}$$

or, substituting the values of β, β' and α, we obtain the following formulæ for the reduction of the angle of deflection and the time of vibration to 0°:

$$\left.\begin{array}{lll} \text{For magnet } V, & \log \sin \varphi_o = \log \sin \varphi + 12.93\, t_\varphi \,.\, 10^{-5} \\ & \log T_o \quad = \log T \quad - \; 5.82\, t_T \,.\, 10^{-5} \\ \text{For magnet } VI, & \log \sin \varphi_o = \log \sin \varphi + 29.60\, t_\varphi \,.\, 10^{-5} \\ & \log T_o \quad = \log T \quad - 14.09\, t_T \,.\, 10^{-5} \end{array}\right\} \quad (4)$$

DETERMINATION OF THE CONSTANTS *C* AND μ.

The following table gives the values of *C* and μ that have been found at various times for the two deflectors, *V* and *VI*, placed at the distance e = 29.840 cm., and E = 39.638 cm. It should be remarked that in all these cases, the small declination needle, *L*, has been employed as deflected magnet.

Date	Place	*V. L*				*VI. L*			
		C		μ		*C*		μ	
		e	*E*	*e*	*E*	*e*	*E*	*e*	*E*
1893. June 7	Hamburg	0.27245	0.17735	0.11799	0.07680	0.34069	0.22169	0.14634	0.09523
1897. Apr. 19	Wilhelmsh.	0.27153	0.17651	0.11757	0.07644	0.34013	0.22128	0.14223	0.09252
1898. Apr. 20	Wilhelmsh.	0.27275	0.17657	0.11814	0.07668	0.34234	0.22242	0.14219	0.09247
1902. Dec. 1	Potsdam	0.26831	0.17567	0.10604	0.06943	0.33636	0.22019	0.13547	0.08866
Mean		0.27126	0.17652			0.33988	0.22140		

As will be seen from the table, the magnets have evidently undergone some change during the 2nd Fram Expedition. For both magnets, μ has become less, i. e. their magnetic moment is weakened.

μ, as we know, can be determined independently of the absolute value of the horizontal intensity, as we obtain, from equations (1) and (2).

$$\log \mu = \tfrac{1}{2} \log \sin \varphi_o - \log T_o.$$

It should thus be possible to verify the value of μ by means of the observations made during the Expedition itself, under the assumption that H might be supposed to have remained approximately constant during the time required to take a complete set of deflections and vibrations.

I have also attempted a verification such as this, but unfortunately with not altogether satisfactory results.

Even at Station I it proved to be impossible to use magnet *VI* at the short distance, *e*, and at Station III magnet *V* could not be used at that distance either. At Station IV, neither of the deflectors could be used, even at the longer distance, *E*, and therefore, as mentioned in the introduction, a new, longer rod for the deflection observations was made.

There was thus only an opportunity of making a calculation of μ for V_e, V_E and VI_E from the observations at the first three stations. After having selected the observations that seemed most suitable for such a calculation, I have found the following values for μ:

			V_e	V_E	VI_E
Station I.	1899.	May 30	0.11608	0.07544	0.09153
		June 5	332	348	8755
		- 8	359	375	8854
		- 9	228	300	
		Mean	0.11382	0.07392	0.08921
Station II.	1900.	June 29	0.11892	0.07926	
		July 2		7944	0.09486
		Mean	0.11892	0.07935	0.09486
Station III.	1901.	July 10		0.07579	0.08834
		- 11		499	828
		- 12		621	899
		Mean		0.07566	0.08854

The means of the values found for μ in each of the three years do not, it will be observed, agree very well with one another; but if we take the average of the results from 1899 and 1900, and compare it with the result from 1901, and the certain determinations in the table on p. 29, made before and after the Expedition, indications appear, which make it possible to fix with more or less certainty, the time when the above-mentioned weakening of the magnetic moment of the deflectors took place. We have as follows:

			μ	
		V_e	V_E	VI_E
$\frac{1897+1898}{2}$	Wilhelmshaven	0.11785	0.07656	0.09250
$\frac{1899+1900}{2}$	Expedition	0.11637	0.07664	0.09200
1901	—		0.07566	0.08854
1902	Potsdam	0.10604	0 06943	0.08866

According to this it may safely be assumed that deflector *VI* has undergone a change at the end of 1900 or the beginning of 1901, while deflector *V* seems to have kept its magnetic moment more or less unchanged until the termination of the observations in the summer of 1901. On the other hand it is a question, as regards the latter magnet, whether the change demonstrated at Potsdam took place before or after the observations made at Station IV during the summer of 1902.

In order to solve this question, I have proceeded in the following manner. According to equation (2), the following connection is found between the time of vibration at 0° for the two magnets, assuming that H is constant:

$$\frac{C_V}{\mu_V T_{oV}^2} = \frac{C_{VI}}{\mu_{VI} T_{oVI}^2}$$

and accordingly

$$\mu_V = \frac{C_V T_{oVI}^2}{C_{VI} T_{oV}^2} \mu_{VI}$$

Both for 1901 and 1902, I have calculated μ_V from the vibration observations made with magnets *V* and *VI* on the same day, and from the means for C_V and C_{VI}, taken from the table on p. 29, as also from the value of μ_{VI} found at Potsdam in 1902, belonging to the long distance, *E*, and obtain as mean

		μ
1901.	Expedition	0.07599
1902.	—	0.06843,

which shows with all the clearness desirable that the change in the magnetic moment of magnet *V* took place before the observations at Station IV in the summer of 1902 were begun.

As the value of the constant, *C*, which is independent of the magnetic moment of the magnet concerned, I have employed for Stations I, II, and III, 1899—1901, the mean value given in the table on p. 29.

As the constant μ, according to the above explanation, must be assumed, as far as magnet *V* is concerned, to have remained more or less unchanged during these three years, I have employed the mean of the values found at Wilhelmshaven in 1897 and 1898. I have used the corresponding mean for magnet *VI*, on the other hand, only for Stations I and II, and have assumed the value of μ found at Potsdam in 1902 to be the right one for Station III.

In deflection observations at Station II on the 26th July and 3rd August, 1900, the double declination needle, *P*, was used as deflected magnet, instead of the small needle, *L*, usually employed, whereby both *C* and μ acquired a slightly different value. In the determination of the constants of the instrument at Wilhelmshaven in 1897, however, observations were also made with this arrangement of the apparatus, whence it appeared that the following correction must be added to the value of log $C\mu$ for needle *L*, when *P* was employed as deflected magnet:

	Correction
For magnet *V*, distance *E*,	— 0.00599
- — *VI*, — *E*,	— 0.00725

The correction proved to be practically the same for both positions, P_1 and P_2 [1].

I have thus, for the first 3 stations, been able to give for calculation the following values for $\log \frac{C}{\mu}$ and log $C\mu$

Expedition	$\log \frac{C}{\mu}$		log $C\mu$				
	V	*VI*	*V. L*		*VI. L*	*V. P*	*VI. P*
			e	*E*	*E*	*E*	*E*
Station I. 1899	0.36243	0.37872	8.50472	8.13079	8.31132		
— II. 1900	0.36243	0.37872	8.50472	8.13079	8.31132	8.12480	8.30407
— III. 1901	0.36243	0.39500		8.13079	8.29053		

[1] Nansen Expedition, T. M. p. 70.

With regard to observations made at Station IV in the summer of 1902, the conditions are somewhat different. As already indicated, there is every probability that the magnetic moment of both deflectors was the same as during AMUNDSEN's determinations of the constants at Potsdam about the 1st December of that year.

The value for log $\frac{C}{\mu}$, deduced by AMUNDSEN's observations, may therefore straightway be employed, namely,

	$\log \frac{C}{\mu}$
for magnet *V*,	0.40318
for magnet *VI*,	0.39500

On the other hand, there is a great difficulty to face when an endeavour is made to find a usable value for log $C\mu$, as, for the deflection observations, the new long rod was employed, and the double needle *P* was always used as deflected magnet instead of the small needle *L*.

Among AMUNDSEN's series of observations from Potsdam, there is, it is true, a set of deflections with magnet *VI* placed upon the new rod at both the distances marked upon the latter, which I will call e' and E'; but as in these observations the small needle *L* was used as deflected magnet, no use, unhappily, can be made of them.

My only alternative has therefore been to seek for a mean value for log $C\mu$ by the aid of the vibration observations made at Station IV itself.

Assuming that the horizontal intensity has remained unchanged during a set of vibrations and a set of deflections, the following equation, by the combination of formulæ (1) and (2), is obtained:

$$\log C\mu = \log \frac{C}{\mu} - 2 \log T_0 + \log \sin \varphi_0.$$

On the 20th, 25th and 30th June, and the 1st July, 1902, there were taken, from about 9 or 9.30 a. m. until late in the afternoon, first a double series of vibrations with both magnets, then an entire set of deflections with the magnets at both distances, and finally another double series of vibrations with both magnets.

We have thus obtained, for each of the above-named days, a mean value for T_0 and for φ_0, which may be assumed to correspond more or less with each other.

If these mean values, and the previously given value of log $\frac{C}{\mu}$, be put into the above equation, the following values are obtained for $C\mu$:

		V. P		VI. P	
		e'	E'	e'	E'
1902.	June 20.	0.007093	0.003185	0.01147	0.005019
	— 25.	7184	3230	1164	5027
	— 30.	7029	3124	1147	4955
	July 1.	7101	3239	1144	5181
	Mean	0.007102	0.003195	0.01149	0.005046
	log $C\mu$	7.85138	7.50447	8.06032	7.70295

THE TEMPERATURE OF THE MAGNETS.

On first looking through the observations before me, I noticed the remarkably high temperatures that had frequently been observed during the vibration and deflection observations. I was also amazed at the variations in temperature, which were often considerable, and appeared chiefly at the transition from vibration to deflection observations, or vice versa.

To illustrate this, the following three instances are given, taken at random from the series of observations. Under the heading t is entered the mean temperature observed during a set of vibrations or a set of deflections, read off from the thermometer of the vibration box, or from that on the deflection rod; while under the heading "Fram", I have placed the simultaneously-observed atmospheric temperatures on board the Fram, which have kindly been furnished by Professor MOHN, who has worked up the Expedition's meteorological observations.

		L. T.		t	"Fram"
		h m		°	°
1900.	July 2.	8 56 a. m.	Vibr.	20.5	3.3
		9 13	»	22.5	3.2
		39	»	24.5	3.0
		1 4 p. m.	Defl.	7.8	3.6
		2 4	»	9.4	3.8
		5 12	»	14.5	6.0
1901.	July 10.	10 47 a. m.	Vibr.	16.5	6.9
		11 13	»	17.5	7.0
		47	»	19.0	7.3
		0 4 p. m.	»	18.5	7.5
		1 36	Defl.	10.0	7.6
		2 15	»	8.8	7.6
		4 8	»	12.0	7.4
		25	»	11.6	7.4

			L. T.		t	"Fram"
1902.	June	5.	9 33 a. m.	Vibr.	23.0	— 0.6
			54	»	22.5	— 0.4
			10 31	»	19.0	— 0.4
			48	»	19.5	— 0.4

With regard to the temperature conditions here mentioned, Captain BAUMANN, upon inquiry, has given a verbal explanation, which is very much as follows.

The summer temperature on shore, where the magnetic observations were made, was always much higher than out on the vessel. The sun was really scorching when there was no wind, so much so, that the observer sometimes had to divest himself of various articles of clothing. Even when the tent was used, the sun might shine directly upon the instrument through the tent-door, which always faced south. The vibration-box, which had a black bottom, became especially warm, and this heated the air and the magnet in the box. The air in the tent was warmed by the heated sides of the tent. The fact that the temperature during the deflections never reached so high a point as the vibration-temperatures, may presumably be explained by the circumstance that the thermometer used in the deflections was bent in such a manner, that the bulb was in the zinc casing that was placed over the deflector, and was not exposed to the direct radiation of heat from the sun itself or the sides of the tent.

The considerable and often rapid variations of temperature are probably caused by the occurrence of strong gusts of wind. A cold wind would often suddenly blow from the nearest elevated ice-covered land-surface (glacier), and cool the instrument and the tent, especially when at the same time the sun was hidden by clouds.

Captain BAUMANN added that once during a sledge-journey he observed with a sling-thermometer an air temperature of — 25° C., while at the same time the sun was powerful enough to melt the surface of the ice, where pools of water appeared.

THE OBSERVATIONS.

The following tables contain, in chronological order, all the deflection and vibration observations made, and the value of the horizontal intensity, H, calculated from each separate series.

OBSERVATION OF DEFLECTION.

The deflector, magnet V or VI, was first placed upon the western half of the deflection rod with its north pole towards the west, and was then moved over to the eastern half of the rod with the north pole as before. The deflector was then turned round so that the north pole pointed east, and was finally, in the same position, moved across to the western half of the rod. With each of the four positions of the deflector, a setting of the declination needle was made, with the accompanying reading of the horizontal circle, and temperature reading.

t = the temperature read.

M = reading of the horizontal circle (the mean of the two verniers).

δ = correction for the angular inequality[1].

φ = angle of deflection corrected for angular inequality.

τ = correction to be added to $\log \sin \varphi$ for reduction to 0° according to formula (4), p. 29.

[1] Nansen Expedition. T. M., p. 66.

Station Ia. Rice Strait.

1899. May 30. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 42 a. m.	V	E	L	0.0	81 0.8
55				1.5	7.0
11 0				3.7	118 53.5
7				5.0	39.3
10 56 a. m.				2.6	$\delta = 0.0$

φ	= 18° 51′.2
log sin φ	9.50940
τ	+0.00024
colog sin φ_0	0.49036
log $C\mu$	8.13079
log H	8.62115
H	= 0.04180

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 26 a. m.	VI	E	L	4.5	69 9.8
32				4.0	58.0
46				4.0	128 58.5
54				6.0	129 37.5
11 40 a. m.				4.6	$\delta = 0.2$

φ	= 29° 51′.8
log sin φ	9.69717
τ	+0.00136
colog sin φ_0	0.30147
log $C\mu$	8.31122
log H	8.61269
H	= 0.04099

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 14 p. m.	V	e	L	6.0	49 21.5
23				6.5	51 18.5
31				6.8	149 6.5
36				6.5	43.3
0 26 p. m.				6.5	$\delta = 0.6$

φ	= 49° 31′.9
log sin φ	9.88125
τ	+0.00084
colog sin φ_0	0.11791
log $C\mu$	8.50472
log H	8.62263
H	= 0.04193

Station Ib. Rice Strait.

1899. June 5. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 9 a. m.	VI	E	L	8.0	40 43.5
15				7.0	41 8.7
26				7.0	98 12.5
30				6.0	6.5
10 20 a. m.				7.0	$\delta = 0.0$

φ	= 28° 36′.7
log sin φ	9.68022
τ	+0.00207
colog sin φ_0	0.31771
log $C\mu$	8.31122
log H	8.62893
H	= 0.04255

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 56 a. m.	V	E	L	7.0	50 49.5
11 0				4.0	51 16.0
7				6.0	87 57.8
13				6.0	88 2.0
11 4 a. m.				5.8	$\delta = 0.1$

φ	= 18° 28′.5
log sin φ	9.50091
τ	+0.00075
colog sin φ_0	0.49834
log $C\mu$	8.13079
log H	8.62913
H	= 0.04258

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 31 a. m.	V	e	L	8.0	19 12.0
42				5.0	21 31.0
50				5.5	117 52.5
54				6.0	118 20.5
11 44 a. m.				6.1	$\delta = 0.8$

φ	$= 48° 51'.7$
log sin φ	9.87687
τ	+0.00101
colog sin φ_0	0.12212
log $C\mu$	8.50472
log H	8.62684
H	$= 0.04235$

1899. June 8. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
9 51 a. m.	V	e	L	9.0	147 49.8
11 10				5.0	149 24.8
15				7.0	248 22.5
20				8.0	33.0
10 54 a. m.				7.2	$\delta = 0.4$

φ	$= 49° 54'.9$
log sin	9.88371
τ	+0.00093
colog sin φ_0	0.11536
log $C\mu$	8.50472
log H	8.62008
H	$= 0.04169$

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 38 a. m.	V	E	L	7.0	179 32.5
43				6.0	52.0
49				8.0	217 23.0
57				8.5	16.5
11 47 a. m.				7.4	$\delta = 0.0$

φ	$= 18° 48'.7$
log sin	9.50847
τ	+0.00096
colog sin φ_0	0.49057
log $C\mu$	8.13079
log H	8.62136
H	$= 0.04182$

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 15 p. m.	VI	E	L	5.0	168 47.5
19				7.0	169 10.5
26				8.0	227 27.0
31				9.0	21.5
0 23 p. m.				7.2	$\delta = 0.0$

φ	$= 29° 12'.6$
log sin φ	9.68843
τ	+0.00213
colog sin φ_0	0.30944
log $C\mu$	8.31122
log H	8.62066
H	$= 0.04175$

1899. June 9. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 44 a. m.	V	e	L	8.0	212 47.3
55				5.5	214 43.5
11 4				4.8	314 7.0
12				4.8	34.0
10 59 a. m.				5.8	$\delta = 0.6$

φ	$= 50° 16'.9$
log sin φ	9.88604
τ	+0.00075
colog sin φ_0	0.11321
log $C\mu$	8.50472
lag H	8.61793
H	$= 0.04149$

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 27 a. m.	V	E	L	5.0	244 50.0
35				4.7	245 10.0
42				5.3	283 0.0
46				3.5	282 56.2
11 38 a. m.				4.6	$\delta = 0.0$

φ	=	18° 59′.0
log sin φ		9.51227
τ		+0.00059
colog sin φ_0		0.48714
log $C\mu$		8.13079
log H		8.61793
H	=	0.04149

Station II. Havne Fjord.

1900. June 29. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 28 a. m.	V	e	L	8.5	102 30.5
42				8.7	109 12.5
51				8.0	252 33.0
59				8.5	55.5
10 45 a. m.				8.4	$\delta = 11.2$

φ	=	73° 15′.2
log sin φ		9.98118
τ		+0.00109
colog sin φ_0		0.01773
log $C\mu$		8.50472
log H		8.52245
H	=	0.03330

L. T.	Deflector	Distance	Needle	M
h m				° ′
11 42 a. m.	V	E	L	153 30.5
59				52.0
0 9 p. m.				204 12.0
15				203 52.5
0 1 p. m.				$\delta = 0.1$

φ	=	25° 10′.4
log sin φ		9.62876
τ		+0.00109
colog sin φ_0		0.37015
log $C\mu$		8.13079
log H		8.50094
H	=	0.03169

1900. July 2. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 50 p. m.	V	E	L	8.0	156 36.0
1 0				8.0	54.0
9				7.0	206 14.0
16				8.2	8.0
1 4 p. m.				7.8	$\delta = 0.0$

φ	=	24° 43′.0
log sin φ		9.62131
τ	+	0.00101
colog sin φ_0		0.37768
log $C\mu$		8.13079
log H		8.50847
H	=	0.03224

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
1 40 p. m.	VI	E	L	7.0	142 52.0
2 4				8.5	35.5
12				11.0	220 41.5
21				11.0	9.5
2 4 p. m.				9.4	$\delta = 0.1$

φ	=	38° 50′.8
log sin φ		9.79743
τ		+0.00278
colog sin φ_0		0.19979
log $C\mu$		8.31132
log H		8.51111
H	=	0.03244

1900. July 20. Obs. Isachsen.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
3 12 p. m.	V	E	L	9.5	36 20.5
23				9.5	49.0
29				9.5	84 8.0
34				9.5	15.5
3 25 p. m.				9.5	$\delta = 0.2$

φ	=	23° 48′.3
log sin φ		9.60598
τ		+0.00123
colog sin φ_0		0.39279
log $C\mu$		8.13079
log H		8.52358
H	=	0.03339

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
3 39 p. m.	V	e	L	7.5	156 2.0
49				7.3	169 14.0[1]
57				7.3	313 7.0
4 4				9.7	319 39.0
3 52 p. m.				8.0	$\delta = 64.9$

φ	=	75° 47′.6
log sin φ		9.98651
τ		+0.00091
colog sin φ_0		0.01258
log $C\mu$		8.50472
log H		8.51730
H	=	0.03291

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
4 19 p. m.	VI	E	L	9.0	21 17.0
22				9.7	23 21.5
30				9.0	99 45.0
36				8.3	101 25.0
4 27 p. m.				9.0	$\delta = 1.1$

φ	=	39° 7′.9
log sin φ		9.79993
τ		+0.00266
colog sin φ_0		0.19741
log $C\mu$		8.31132
log H		8.50873
H	=	0.03227

1900. July 25. Obs. Isachsen.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
9 1 a. m.	VI	E	L	7.0	140 40.0
5				6.6	141 12.0
14				11.0	220 1.5
25				12.6	218 55.0
9 11 a. m.				9.3	$\delta = 0.2$

φ	=	39° 15′.9
log sin φ		9.80134
τ		+0.00275
colog sin φ_0		0.19591
log $C\mu$		8.31132
log H		8.50723
H	=	0.03215

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
9 34 a. m.	V	E	L	10.3	154 40.5
38				8.2	42.5
42				9.5	205 14.5
46				11.8	204 46.5
9 40 a. m.				10.0	$\delta = 0.0$

φ	=	25° 9′.5
log sin φ		9.62852
τ		+0.00129
colog sin φ_0		0.37019
log $C\mu$		8.13079
log H		8.50098
H	=	0.03169

[1] While the scratching was going on, the needle turned right round.

1900. July 26. Obs. Isachsen.

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
9 18 a. m.	V	E	P_2	8.5	275 5.5
22				8.0	34.5
28				10.4	323 40.5
34				11.0	16.5
9 26 a. m.				9.5	$\delta = 0.1$

φ	=	24° 4′.5
log sin φ		9.61051
τ		+0.00123
colog sin φ_0		0.38826
log $C\mu$		8.12480
log H		8.51306
H	=	0.03259

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
9 40 a. m.	VI	E	P_2	8.1	261 59.5
43				5.5	262 53.0
58				5.0	336 19.0
10 2				10.0	335 56.5
9 51 a. m.				7.2	$\delta = 0.2$

φ	=	36° 50′.6
log sin φ		9.77788
τ		+0.00213
colog sin φ_0		0.21999
log $C\mu$		8.30407
log H		8.52406
H	=	0.03342

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
0 28 p. m.	V	E	P_2	12.9	273 30.0
32				12.0	41.5
39				7.5	322 59.0
45				8.0	25.0
0 36 p. m.				10.1	$\delta = 0.1$

φ	=	24° 33′.0
log sin φ		9.61856
τ		+0.00131
colog sin φ_0		0.38013
log $C\mu$		8.12480
log H		8.50493
H	=	0.03198

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
0 51 p. m.	VI	E	P_2	8.0	260 27.0
58				6.0	54.0
1 3				6.0	336 6.0
7				7.0	335 13.5
1 0 p. m.				6.8	$\delta = 0.2$

φ	=	37° 29′.4
log sin φ		9.78435
τ		+0.00172
colog sin φ_0		0.21393
log $C\mu$		8.30407
log H		8.51800
H	=	0.03296

1900. August 3. Obs. Isachsen.

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
11 24 a. m.	VI	E	P_1	8.0	142 41.2
32			P_2	8.0	45.0
39			P_1	7.3	144 0.5
45			P_2	7.0	12.5
49			P_1	6.0	218 13.5
54			P_2	6.0	217 58.5
0 4 p. m.			P_1	9.0	216 38.0
9			P_2	6.5	24.5
11 47 p. m.				7.2	$\delta = 0.7$

φ	=	36° 56′.2
log sin φ		9.77882
τ		+0.00213
colog sin φ_0		0.21905
log $C\mu$		8.30407
log H		8.52412
H	=	0.03343

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
4 34 p. m.	V	E	P_2	6.5	155 58.0
38				6.7	156 3.0
43				8.7	16.5
48				10.0	1.0
56				9.0	204 24.0
5 0				9.0	11.0
7				8.7	10.0
12				8.5	21.5
4 52 p. m.				8.4	$\delta = 0.0$

φ	=	24° 6′.0
log sin φ		9.61101
τ		+0.00109
colog sin φ_0		0.38790
log $C\mu$		8.12480
log H		8.51270
H	=	0.03256

Station III. Gaase Fjord.

1901. July 10. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
1 24 p. m.	V	E	L	9.0	25 22.7
33				9.5	54.5
40				11.0	90 28.7
46				10.5	14.7
1 36 p. m.				10.0	$\delta = 0.1$

φ	=	32° 21′.5
log sin φ		9.72853
τ		+0.00129
colog sin φ_0		0.27018
log $C\mu$		8.13079
log H		8.40097
H	=	0.02517

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
2 2 p. m.	VI	E	L	9.0	5 5.5
13				9.0	6 36.5
20				8.5	110 27.5
26				8.5	109 1.7
2 15 p. m.				8.8	$\delta = 0.7$

φ	=	51° 56′.1
log sin φ		9.89615
τ		+0.00260
colog sin φ_0		0.10125
log $C\mu$		8.29053
log H		8.39178
H	=	0.02465

1901. July 11. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 54 p. m.	VI	E	L	8.5	22 5.5
1 1				7.5	23 9.5
6				8.5	119 31.0
12				8.5	22.5
1 3 p. m.				8.3	$\delta = 0.2$

φ	=	48° 24′.4
log sin φ		9.87383
τ		+0.00246
colog sin φ_0		0.12371
log $C\mu$		8.29053
log H		8.41424
H	=	0.02596

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
1 26 p. m.	V	E	L	7.0	39 44.0
36				7.0	44.0
54				8.5	100 36.5
2 7				8.5	23.0
1 46 p. m.				7.8	δ = 0.0

φ	=	30° 22′.9
log sin φ		9.70394
τ		+0.00101
colog sin φ_0		0.29505
log $C\mu$		8.13079
log H		8.42584
H	=	0.02666

1801. July 12. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 32 p. m.	V	E	L	11.0	35 16.0
38				11.5	33.5
42				14.5	100 28.0
52				16.0	27.5
0 41 p. m.				13.3	δ = 0.0

φ	=	32° 31′.5
log sin φ		9.73051
τ		+0.00172
colog sin φ_0		0.26777
log $C\mu$		8.13079
log H		8.39856
H	=	0.02504

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
1 7 p. m.	VI	E	L	15.0	14 54.0
17				12.0	16 45.0
24				11.0	119 38.0
32				11.8	118 9.5
1 20 p. m.				12.5	δ = 0.3

φ	=	51° 31′.8
log sin φ		9.89374
τ		+0.00370
colog sin φ_0		0.10256
log $C\mu$		8.29053
log H		8.39309
H	=	0.02472

Station IV. Gaase Fjord.

1902. June 11. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 35 a. m.	VI	e'	P_2	12.0	65 29.5
47			P_1	10.0	0.0
57			P_1	16.0	64 44.5
11 8			P_2	16.3	65 20.0
17			P_2	13.8	123 9.0
25			P_1	13.8	20.5
36			P_1	15.5	122 7.5
44			P_2	14,0	123 2.0
11 11 a. m.				13.9	δ = 0.1

φ	=	28° 53′.0
log sin φ		9.68397
τ		+0.00411
colog sin φ_0		0.31192
log $C\mu$		8.06032
log H		8.37224
H	=	0.02356

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 8 p. m.	*VI*	*E'*	P_1	15.5	81 13.5
13			P_2	17.2	80 53.5
22			P_2	19.0	25.3
27			P_1	17.0	39.5
33			P_1	16.0	105 56.5
40			P_2	14.0	106 11.7
49			P_2	14.0	22.7
54			P_1	14.0	18.7
0 31 p. m.				15.8	$\delta = 0.1$

φ	=	12° 42′.1
log sin φ		9.34218
τ		+0.00468
colog sin φ_0		0.65314
log $C\mu$		7.70294
log H		8.35608
H	=	0.02270

1902. June 12. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 16 a. m.	*VI*	*E'*	P_2	17.0	81 12.0
25			P_1	16.5	80 58.8
29			P_1	19.0	81 9.0
35			P_2	22.0	3.5
42			P_2	19.5	106 41.8
47			P_1	22.0	107 1.8
54			P_1	17.5	20.3
11 2			P_2	18.5	29.7
10 39 a. m.				19.0	$\delta = 0.1$

φ	=	13° 3′.4
log sin φ		9.35274
τ		+0.00562
colog sin φ_0		0.64164
log $C\mu$		7.70294
log H		8.34458
H	=	0.02211

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 22 a. m.	*VI*	*e'*	P_1	24.5	65 38.0
29			P_2	25.0	64 37.5
37			P_2	28.0	65 18.5
43			P_1	28.0	64 40.5
48			F_1	26.0	122 47.5
53			P_2	24.5	43.3
Noon			P_2	22.2	16.0
0 7 p. m.			P_1	21.8	121 40.0
11 45 a. m.				25.0	$\delta = 0.1$

φ	=	28° 38′.9
log sin φ		9.68073
τ		+0.00740
colog sin φ_0		0.31187
log $C\mu$		8.06032
log H		8.37219
H	=	0.02356

1902. June 13. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 13 a. m.	*V*	*e'*	P_2	17.0	76 24.7
18			P_1	17.0	54.7
25			P_1	17.0	45.5
35			P_2	16.0	52.7
42			P_2	16.3	112 32.0
47			P_1	15.8	40.2
51			P_1	16.0	26.5
0 2 p. m.			P_2	16.5	42.7
11 37 a. m.				16.4	$\delta = 0.0$

φ	=	17° 55′.5
log sin φ		9.48823
τ		+0.00212
colog sin φ_0		0.50965
log $C\mu$		7.85138
log H		8.36103
H	=	0.02296

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 30 p. m.	V	E'	P_1	15.0	87 8.7
35			P_2	15.0	21.5
39			P_2	14.0	86 58.0
44			P_1	12.8	54.0
51			P_1	11.8	102 35.0
59			P_2	11.2	29.8
1 6			P_2	10.6	38.8
10			P_1	10.6	11.2
0 49 p. m.				12.6	$\delta = 0.1$

φ	=	7° 41′.5
log sin φ		9.12659
τ		+0.00163
colog sin φ_0		0.87178
log $C\mu$		7.50447
log H		8.37625
H	=	0.02378

1902. June 14. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 13 a. m.	V	E'	P_1	5.8	86 54.0
25			P_2	6.0	54.2
33			P_2	6.0	45.3
39			P_1	6.2	40.5
46			P_1	6.2	102 0.5
56			P_2	6.2	101 57.3
11 2			P_2	6.3	46.3
9			P_1	6.1	48.3
10 43 a. m.				6.1	$\delta = 0.0$

φ	=	7° 32′.3
log sin φ		9.11790
τ		+0.00079
colog sin φ_0		0.88131
log $C\mu$		7.50447
log H		8.38578
H	=	0.02431

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 39 a. m.	V	e'	P_2	7.0	76 47.0
46			P_1	7.3	36.2
51			P_1	7.2	11.5
55			P_2	7.0	2.0
0 4 p. m.			P_2	7.0	111 57.5
14			P_1	6.8	39.0
19			P_1	6.8	14.8
24			P_2	6.0	8.0
0 1 p. m.				6.9	$\delta = 0.2$

φ	=	17° 32′.6
log sin φ		9.47918
τ		+0.00089
colog sin φ_0		0.51993
log $C\mu$		7.85138
log H		8.37131
H	=	0.02351

1902. June 16. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 28 a. m.	VI	e'	P_2	10.0	65 35.0
33			P_1	10.0	66 0.5
38			P_1	9.5	65 52.0
47			P_2	8.8	58.0
52			P_2	8.3	123 29.5
59			P_1	7.8	59.0
0 7 p. m.			P_1	7.2	8.0
16			P_2	6.0	25.5
11 50 a. m.				8.5	$\delta = 0.0$

φ	=	28° 49′.5
log sin φ		9.68316
τ		+0.00252
colog sin φ_0		0.31432
log $C\mu$		8.06032
log H		8.37464
H	=	0.02369

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 23 p. m.	V	e'	P_2	6.8	77 31.2
27			P_1	6.8	41.8
33			P_1	7.0	33.5
36			P_2	7.1	47.0
42			P_2	7.5	112 23.0
47			P_1	7.2	45.5
53			P_1	6.0	37.2
57			P_2	5.8	47.2
0 40 p. m.				6.8	$\delta = 0.0$

φ	=	17° 29′.9
log sin φ		9.47810
τ		+0.00088
colog sin φ_0		0.52102
log $C\mu$		7.85138
log H		8.37240
H	=	0.02357

1902. June 20. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 22 a. m.	V	E'	P_2	12.8	87 25.0
27			P_1	13.0	31.2
34			P_1	13.0	15.0
39			P_2	13.0	30.8
45			P_2	13.0	102 42.5
54			P_1	12.7	52.7
58			P_1	11.7	53.3
0 6 p. m.			P_2	11.0	56.3
11 43 a. m.				12.5	$\delta = 0.0$

φ	=	7° 42′.8
log sin φ		9.12780
τ		+0.00162
colog sin φ_0		0.87058
log $C\mu$		7.50441
log H		8.37499
H	=	0.02371

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 56 p. m.	VI	E'	P_1	12.5	83 27.5
1 0			P_2	13.0	29.7
7			P_2	13.2	43.3
15			P_1	13.4	23.7
20			P_1	13.5	107 48.3
26			P_2	13.0	58.5
32			P_2	11.5	57.5
37			F_1	11.3	31.3
1 17 p. m.				12.7	$\delta = 0.0$

φ	=	12° 8′.9
log sin φ		9.32313
τ		+0.00376
colog sin φ_0		0.67311
log $C\mu$		7.70294
log H		8.37605
H	=	0.02377

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
3 18 p. m.	VI	e'	P_1	12.0	67 12.3
22			P_2	12.0	66 50.5
26			P_2	12.0	67 21.8
36			P_1	13.0	7.8
42			P_1	13.0	125 11.3
46			P_2	13.0	124 38.3
51			P_2	13.0	35.7
55			P_1	12.5	14.5
3 37 p. m.				12.6	$\delta = 0.1$

φ	=	28° 45′.9
log sin φ		9.68235
τ		+0.00373
colog sin φ_0		0.31392
log $C\mu$		8.06032
log H		8.37424
H	=	0.02367

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
4 25 p. m.	V	e'	P_2	11.5	78 20.2
30			P_1	11.5	16.0
36			P_1	12.5	77 52.7
41			P_2	12.7	78 27.5
47			P_2	12.0	112 56.0
52			P_1	12.3	113 12.5
58			P_1	12.0	112 46.5
5 3			P_2	11.7	113 2.0
4 44 p. m.				12.0	δ = 0.0

φ	=	17° 22′.6
log sin φ		9.47517
τ		+0.00155
colog sin φ_0		0.52328
log $C\mu$		7.85138
log H		8.37466
H	=	0.02369

1902. June 25. Obs. Baumann.

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
11 53 a. m.	V	e'	P_2	11.8	78 3.2
57			P_1	11.7	14.0
0 3 p. m.			P_1	12.0	6.5
9			P_2	11.8	22.5
15			P_2	11.8	112 38.7
19			P_1	11.7	54.5
23			P_1	12.1	47.2
28			P_2	12.3	113 14.2
0 11 p. m.				11.9	δ = 0.0

φ	=	17° 21′.0
log sin φ		9.47452
τ		+0.00154
colog sin φ_0		0.52394
log $C\mu$		7.85138
log H		8.37532
H	=	0.02373

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
0 59 p. m.	VI	e'	P_1	11.7	67 18.0
1 4			P_2	12.0	28.8
9			P_2	13.0	68 15.5
13			P_1	13.0	67 45.3
19			P_1	13.2	124 58.3
25			P_2	13.3	125 6.7
29			P_2	13.2	124 56.0
32			P_1	13.6	27.8
1 16 p. m.				12.9	δ = 0.1

φ	=	28° 35′.1
log sin φ		9.67984
τ		+0.00382
colog sin φ_0		0.31634
log $C\mu$		8.06032
log H		8.37666
H	=	0.02380

L. T. h m	Deflector	Distance	Needle	t °	M ° ′
3 6 p. m.	VI	E'	P_1	12.7	84 1.3
9			P_2	12.7	83 52.7
13			P_2	13.5	84 1.2
17			P_1	13.2	83 34.0
21			P_1	13.0	108 17.2
25			P_2	12.5	107 53.8
29			P_2	11.8	45.5
39			P_1	11.5	19.7[1]
3 20 p. m.				12.6	δ = 0.1

φ	=	11° 58′.3
log sin φ		9.31687
τ		+0.00373
colog sin φ_0		0.67940
log $C\mu$		7.70294
log H		8.38234
H	=	0.02412

[1] The needle much disturbed, difficult to point.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
4 6 p. m.	V	E'	P_2	11.0	87 1.0
8			P_1	11.3	1.2
13			P_1	12.2	5.0
17			P_2	12.0	5.0
21			P_2	12.0	102 23.0
25			P_1	12.7	24.2
29			P_1	13.3	23.0
31			P_2	13.3	37.0
4 19 p. m.				12.2	$\delta = 0.0$

φ	=	7° 41′.8
log sin φ		9.12687
τ		+0.00158
colog sin φ_0		0.87155
log $C\mu$		7.50441
log H		8.37596
H	=	0.02377

1902. June 30. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 16 a. m.	V	E'	P_1	16.7	87 6.5
21				17.0	86 51.0
26				16.8	102 11.0
34				17.6	13.8
11 24 a. m.				17.0	$\delta = 0.0$

φ	=	7° 36′.8
log sin φ		9.12217
τ		+0.00220
colog sin φ_0		0.87563
log $C\mu$		7.50441
log H		8.38004
H	=	0.02399

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 45 a. m.	VI	E'	P_1	17.2	82 5.3
52				17.5	81 13.5
57				17.5	105 59.5
0 2 p. m.				18.0	32.5
11 54 a. m.				17.6	$\delta = 0.3$

φ	=	12° 3′.0
log sin φ		9.31966
τ		+0.00511
colog sin φ_0		0.67523
log $C\mu$		7.70295
log H		8.37818
H	=	0.02389

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 22 p. m.	VI	e'	P_1	17.0	65 56.8
34				18.0	66 9.0[1]
41				18.5	124 13.5
45				18.8	123 24.0
0 36 p. m.				18.1	$\delta = 0.1$

φ	=	28° 52′.8
log sin φ		9.68392
τ		+0.00536
colog sin φ_0		0.31072
log $C\mu$		8.06032
log H		8.37104
H	=	0.02350

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 51 p. m.	V	e'	P_1	18.8	76 42.5
56				19.0	37.7
1 1				19.1	111 31.3
5				19.7	9.5
0 58 p. m.				19.2	$\delta = 0.0$

φ	=	17° 10′ 1
log sin φ		9.47415
τ		+0.00248
colog sin φ_0		0.52337
log $C\mu$		7.85138
log H		8.37475
H	=	0.02370

[1] The needle difficult to point, rapidly moving.

1902. July 1. Obs. Baumann.

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
10 58 a. m.	V	e'	P_2	18.0	77 56.7
11 2				17.8	78 9.5
7				17.2	112 2.3
11				18.0	2.3
11 5 a. m.				17.8	$\delta = 0.0$

φ	=	16° 59′.5
log sin φ		9.46573
τ		+0.00230
colog sin φ_0		0.53197
log $C_i\mu$		7.85138
log H		8.38335
H	=	0.02417

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 18 a. m.	VI	e'	P_2	18.2	67 10.8
22				17.8	43.0
28				17.5	123 15.5
32				18.5	6.3
11 25 a. m.				18.0	$\delta = 0.1$

φ	=	27° 51′.9
log sin φ		9.66968
τ		+0.00533
colog sin φ_0		0.32499
log $C_i\mu$		8.06032
log H		8.38531
H	=	0.02428

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
11 46 a. m.	VI	E'	P_2	18.8	82 26.7
50				18.0	30.3
54				17.5	106 54.2
58				17.6	56.8
11 52 a. m.				18.0	$\delta = 0.0$

φ	=	12° 13′.5
log sin φ		9.32582
τ		+0.00533
colog sin φ_0		0.66885
log $C_i\mu$		7.70295
log H		8.37180
H	=	0.02354

L. T.	Deflector	Distance	Needle	t	M
h m				°	° ′
0 4 p. m.	V	E'	P_2	17.2	87 17.5
8				17.2	31.3
12				17.8	102 37.3
16				17.8	50.3
0 10 p. m.				17.5	$\delta = 0.1$

φ	=	7° 39′6
log sin φ		9.12481
τ		+0.00226
colog sin φ_0		0.87293
log $C_i\mu$		7.50441
log H		8.37734
H	=	0.02384

OBSERVATION OF VIBRATION.

Magnet *V* or *VI* was hung by a silk fibre in the suspension-tube of the vibration-box, after its torsion had been, as far as possible, annulled by means of a torsion balance. The pointed end of the magnet moved during the vibrations over a linear scale, where the distance between the division marks was 2.22° in angular measurement.

Every third time the point of the magnet passed the middle division on the scale, the moment was noted by the chronometer, from the 1st to the 31st passage inclusive, and then ordinarily from the 61st to the 91st inclusive. Thus 11 determinations of the duration of 60 vibrations were obtained. In the period of repose, halfway between the two halves of the vibration series, the amplitude was read on each side of the central division on the scale, and the temperature from the thermometer in the vibration-box.

The hour given in the table is the mean of the hours noted for the first and last passage of the magnet, reduced to local time.

T = the observed time of vibration.

A = the mean amplitude of the point of the magnet, from the middle division of the scale.

t = the temperature read.

ϱ = logarithmic correction for the rate of the chronometer.

σ = logarithmic correction for the arc of vibration.

τ = correction to be added to log T for reduction to 0° C. according to formula (4), p. 29.

As no torsion determinations were made, there has been no opportunity of introducing any correction for torsion.

Station I a. Rice Strait. **Station I b. Rice Strait.**

Date and Observer	1899. May 30. Baumann		1899. June 5. Baumann.				1899. June 8. Baumann.		1899. June 9. Baumann			
Clock and Daily Rate	Chron. Frodsham +0.9 s		Chron. Frodsham + 0.2 s				Chron. Frodsham +0.5 s		Chron. Frodsham +0.9 s			
Local time	h m 4 10 p. m.	h m 4 39 p. m.	h m 2 58 p. m.	h m 3 14 p. m.	h m 3 35 p. m.	h m 3 50 p. m.	h m 3 28 p. m.	h m 3 48 p. m.	h m 9 19 a. m.	h m 9 35 a. m.	h m 0 46 p. m.	h m 1 0 p. m.
Magnet	*V*	*VI*	*VI*	*VI*	*V*	*V*	*V*	*VI*	*V*	*V*	*V*	*V*
Number of vibr.	100	100	60	60	60	60	60	60	60	60	00	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	12 34.0	12 55.3	7 57.5	7 56.0	7 41.2	7 40.0	7 44.5	7 56.3	7 50.0	7 50.0	7 52.0	7 51.0
	33.3	55.3	57.5	56.5	42.0	40.5	44.0	56.0	49.2	49.7	52.0	55.5
	33.5	54.5	57.8		42.0	39.5	43.8	56.0	49.5	50.0	52.2	50.5
	32.8	55.0	57.5	56.5	42.0	39.5	44.0	55.5	48.5	49.5	52.0	50.0
	33.0	54.7	57.3	56.2		39.5	43.0	55.5	49.0	49.0	52.0	50.5
	33.0	54.8	56.8	57.0	41.0	39.5	43.5	55.5	48.5	48.8	51.8	50.0
	33.0	54.8	57.2	56.3	42.0	39.5	43.0	55.5	48.5	49.0	52.0	50.8
	32.2	53.7	57.5	56.5	41.0	39.5	43.0	55.3	48.0	48.5	51.0	50.0
	32.5	53.5	57.5	56.3	41.5	40.0	42.5	55.0	48.5	49.0	51.5	
	32.0	53.5	57.8	57.0	41.5	40.5	42.5	54.8	47.5	48.5	51.0	
	33.0	53.5	57.8	57.0	42.0	40.5	42.7	54.0	48.0	48.5	51.2	
T	7.5294^s	7.7442^s	7.9578^s	7.9422^s	7.6937^s	7.6643^s	7.7220^s	7.9233^s	7.8110^s	7.8190^s	7.8617^s	7.8402^s
A	2.2^p	4.2^p	2.5^p	2.1^p	2.3^p	2.55^p	2.7^p	2.4^p	2.1^p	2.4^p	2.5^p	1.85^p
t	4.8°	3.8°	9.0°	8.0°	7.5°	7.3°	7.5°	7.0°	13.0°	13.0°	11.0°	11.0°
log T	0.87676	0.88898	0.90078	0.89993	0.88614	0.88448	0.88773	0.89891	0.89271	0.89315	0.89552	0.89433
ϱ	— 1	— 1	0	0	0	0	— 1	— 1	— 1	— 1	— 1	— 1
σ	— 19	— 71	— 25	— 18	— 21	— 26	— 29	— 23	— 18	— 23	— 25	— 14
τ	— 28	— 54	— 127	— 113	— 44	— 42	— 44	— 99	— 76	— 76	— 64	— 64
2 colog T_0	8.24744	8.22456	8.20148	8.20276	8.22902	8.23240	8.22602	8.20464	8.21648	8.21570	8.21076	8.21292
log $\frac{C}{\mu}$	0.36242	0.37872	0.37872	0.37872	0.36242	0.36242	0.36242	0.37872	0.36242	0.36242	0.36242	0.36242
log H	8.60986	8.60328	8.58020	8.58148	8.59144	8.59482	8.58844	8.58336	8.57890	8.57812	8.57318	8.57534
H	0.04072	0.04011	0.03804	0.03815	0.03903	0.03934	0.03876	0.03831	0.03792	0.03786	0.03743	0.03761

Station II. Havne Fjord.

Date and Observer	1900. June 28. Baumann.				1900. June 29. Baumann.							
Clock and Daily Rate	Chron. Frodsham + 3 s				Chron. Frodsham + 2 s							
Local time	h m 10 0 a. m.	h m 10 17 a. m.	h m 10 44 a. m.	h m 11 4 a. m.	h m 8 42 a. m.	h m 9 2 a. m.	h m 9 29 a. m.	h m 9 45 a. m.	h m 4 0 p. m.	h m 1 17 p. m.	h m 4 41 p. m.	h m 5 0 p. m.
Magnet	*V*	*V*	*VI*	*VI*	*V*	*V*	*V*	*V*	*VI*	*VI*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	8 7.0	8 5.5	8 26.0	8 30.0	8 16.5	8 16.2	8 15.0	8 14.5	8 35.0	8 34.5	8 16.2	8 15.5
	6.5	4.0	26.0	28.5	17.5	16.8	15.3	14.7	35.0	34.0	16.5	15.8
	6.2	5.9	26.4	30.0	17.2	16.2	15.2	14.5	35.0	34.3	16.0	15.8
	6.5	4.5	26.3	29.3	18.2	16.2	15.5	14.7	34.5	34.0	16.5	15.0
	5.5	5.0	26.7	29.5	18.0	16.0	15.0	14.5	34.3	33.5	16.5	15.5
	5.0	3.8	26.8	28.5	18.0	17.0	15.0	14.3	34.0	33.8	16.2	15.0
	5.0	3.5	27.2	29.0	17.0	15.8	14.5	13.3	33.5	33.7	16.5	15.5
	5.5	3.0	27.6	28.7	19.0	16.2	14.5	14.0	33.5	33.5	16.0	15.0
	5.5	4.0	28.3	29.0	17.0	15.5	14.0	13.5	33.5	33.5	16.5	14.7
	6.0	3.5	28.0	28.5	18.0	17.0	13.5	13.2	33.5	33.5	16.2	15.0
	7.0	4.0	28.5	29.2	17.0	16.0	13.0		33.0		16.0	14.8
T	8.0995^s	8.0693^s	8.4512^s	8.4852^s	8.2938^s	8.2710^s	8.2432^s	8.2353^s	8.5678^s	8.5638^s	8.2713^s	8.2540^s
A	1.85^p	2.0^p	1.9^p	1.8^p	2.6^p	1.9^p	2.35^p	2.3^p	4.5^p	3.2^p	3.0^p	2.8^p
t	19.5°	19.0°	19.0°	19.0°	15.8°	21.0°	17.5°	17.2°	11.0°	11.0°	10.0°	11.0°
log T	0.90846	0.90684	0.92692	0.92866	0.91875	0.91756	0.91610	0.91568	0.93287	0.93267	0.91758	0.91666
ϱ	— 2	— 2	— 2	— 2	— 1	— 1	— 1	— 1	— 1	— 1	— 1	— 1
σ	— 14	— 16	— 14	— 13	— 27	— 14	— 22	— 21	— 83	— 41	— 37	— 31
τ	—113	—111	—268	—268	— 92	—122	—102	—100	—155	—155	— 58	— 64
2 colog T_0	8.18566	8.18890	8.15184	8.14834	8.16090	8.16762	8.17030	8.17108	8.13904	8.13860	8.16676	8.16860
$\log \frac{C}{\mu}$	0.36242	0.36242	0.37872	0.37872	0.36242	0.36242	0.36242	0.36242	0.37872	0.37872	0.36242	0.36242
log H	8.54808	8.55132	8.53056	8.52706	8.52332	8.53004	8.53272	8.53350	8.51776	8.51732	8.52918	8.53102
H	0.03532	0.03559	0.03393	0.03366	0.03337	0.03389	0.03410	0.03416	0.03294	0.03291	0.03382	0.03396

Station II. Havne Fjord.

Date and Observer	1900. July 2. Baumann.							1900. July 23. Isachsen.				
Clock and Daily Rate	Chron. Frodsham + 6s							Chron. Frodsham + 3s				
Local time	h m 8 56 a. m.	h m 9 13 a. m.	h m 9 39 a. m.	h m 9 56 a. m.	h m 5 12 p. m.	h m 5 29 p. m.	h m 5 52 p. m.	h m 3 47 p. m.	h m 4 4 p. m.	h m 4 39 p. m.	h m 5 37 p. m.	h m 6 4 p. m.
Magnet	*VI*	*VI*	*VI*	*VI*	*VI*	*VI*	*V*	*V*	*V*	*V*	*VI*	*VI*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	68
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	8 28.7	8 28.3	8 29.5	8 28.0	8 21.5	8 21.5	8 10.7	8 13.2	8 11.8	8 12.2	8 38.4	9 46.5
	28.8	28.0	29.8	28.5	21.5	22.2	10.5	13.3	11.8	12.0	38.8	46.9
	28.5	28.0	29.5	28.0	21.3	21.5	11.0	12.7	11.7	12.1	38.4	
	28.8	27.8	29.5	28.0	21.2	21.8	10.5	12.6	11.7	12.2	38.3	46.5
	28.2	27.7	29.0	28.3	21.0	21.8	10.0	12.7	11.4	12.1	37.9	47.5
	28.5	28.0		28.5	21.3	21.7	9.7	12.6	11.3	12.8	38.3	46.7
	28.3	28.0	29.3	28.5	21.2	21.7	9.8	12.0	11.2	12.0	38.1	46.4
	27.8	27.5	29.8	28.8	21.2	21.5	9.2	12.0	11.2	12.5	38.4	46.9
	27.8	27.7	29.0	27.8	21.5	21.7	8.5	11.7	10.5	12.6	37.9	46.6
	27.8	27.3	29.5	28.0	21.3	22.0	8.8	11.8	11.4	12.1	38.3	46.9
	27.8	27.0	29.7	28.0		21.7	7.5	11.6	10.9	12.5	37.5	46.2
T	8.4710s	8.4625s	8.4910s	8.4703s	8.3550s	8.3623s	8.1608s	8.2063s	8.1892s	8.2047s	8.6368s	8.6272s
A	2.05p	1.95p	2.0p	2.05p	2.2p	2.3p	1.5p	5.0p	4.35p	3.95p	3.85p	4.27p
t	20.5°	22.5°	24.5°	24.5°	14.5°	14.2°	14.0°	20.8°	22.3°	21.6°	21.8°	21.3°
log T	0.92793	0.92750	0.92896	0.92790	0.92195	0.92233	0.91173	0.91415	0.91324	0.91407	0.93635	0.93587
ϱ	— 3	— 3	— 3	— 3	— 3	— 3	— 3	— 2	— 2	— 2	— 2	— 2
σ	— 17	— 15	— 16	— 17	— 19	— 21	— 9	—102	— 78	— 63	— 60	— 75
τ	—289	—310	—354	—354	—204	—201	— 81	—121	—130	—126	—307	—300
2 colog T_0	8.15032	8.15156	8.14954	8.15168	8.16062	8.15984	8.17840	8.17620	8.17772	8.17768	8.13468	8.13580
$\log \frac{C}{\mu}$	0.37872	0.37872	0.37872	0.37872	0.37872	0.37872	0.36242	0.36242	0.36242	0.36242	0.37872	0.37872
log H	8.52904	8.53028	8.52826	8.53040	8.53934	8.53856	8.54082	8.53862	8.54014	8.54010	8.51340	8.51452
H	0.03381	0.03391	0.03375	0.03392	0.03462	0.03456	0.03474	0.03456	0.03468	0.03468	0.03261	0.03270

Station II. Havne Fjord.

Date and Observer	1900. July 24. Isachsen.			1900. July 25. Isachsen.				1900. July 26. Isachsen.				
Clock and Daily Rate	Chron. Frodsham + 2s			Chron. Frodsham + 2s				Chron. Frodsham + 3s				
Local time	h m 8 53 a. m.	h m 9 38 a. m.	h m 9 57 a. m.	h m 10 51 a. m.	h m 11 25 a. m.	h m 11 50 a. m.	h m 0 22 p. m.	h m 10 24 a. m.	h m 10 43 a. m.	h m 11 5 a. m.	h m 11 24 a. m.	h m 11 56 a. m.
Magnet	*V*	*VI*	*VI*	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*V*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	
	8 35.3	8 50.3	8 48.6	7 53.4	7 56.0	8 32.2	8 32.2	8 52.4	8 49.4	8 25.4	8 29.3	m s
	34.4	50.5	47.6	52.3	56.0	32.2	33.1	52.0	48.7	25.0	28.5	8 26.1
	34.5	49.2	48.9	52.3	55.0	32.2	32.2	52.7	48.5	25.3	27.7	26.2
	34.2	49.4	47.6	52.1	56.0	31.8	31.6	52.1	48.2	24.2	27.4	25.4
	33.8	48.9	49.3	50.8	55.0	31.6	29.5	52.5	48.1	24.2	26.9	26.1
	33.5	48.6	47.9	50.5	55.0	31.4	31.4	51.6	48.0	23.3	26.9	26.1
		47.5	49.4	50.4	54.7	31.3	30.9	52.1	48.1	23.2	26.5	26.0
	34.9	48.4	48.3	52.0	55.4	31.2	32.2	51.2	47.9	23.0	26.5	25.7
	32.4	47.5	49.5	48.4	55.0	31.4	30.7	52.0	48.0	22.6	26.0	25.1
	32.4	48.4	48.1	48.4	54.7	30.8	30.8	51.2	48.1	22.8	26.3	24.5
	32.2	47.4	49.5	47.0	53.9	30.5	27.0	51.9	48.1	22.3	26.0	24.4
T	8.5627^s	8.8123^s	8.8102^s	7.8449^s	7.9193^s	8.5252^s	8.5176^s	8.8662^s	8.8047^s	8.3958^s	8.4515^s	8.4260^s
A	4.62^p	5.05^p	3.35^p	24.0^p	3.9^p	3.55^p	3.82^p	4.68^p	4.1^p	4.22^p	4.75^p	3.85^p
t	13.5°	14.0°	14.4°	23.8°	22.8°	23.5°	21.6°	12.6°	12.5°	15.3°	16.0°	16.5°
log T	0.93262	0.94508	0.94499	0.89458	0.89869	0.93070	0.93032	0.94774	0.94472	0.92406	0.92694	0.92562
ϱ	— 1	— 1	— 1	— 1	— 1	— 1	— 1	— 2	— 2	— 2	— 2	— 2
σ	— 88	—104	— 45	— 65	— 61	— 51	— 59	— 90	— 69	— 73	— 94	— 59
τ	— 79	—197	—203	—139	—133	—331	—304	—177	—176	— 89	— 93	— 96
2 colog T_0	8.13812	8.11588	8.11500	8.21494	8.20652	8.14626	8.14664	8.10990	8.11550	8.15516	8.14990	8.15190
log $\frac{C}{\mu}$	0.36242	0.37872	0.37872	0.36242	0.36242	0.37872	0.37872	0.37872	0.37872	0.36242	0.36242	0.36242
log H	8.50054	8.49460	8.49372	8.57736	8.56894	8.52498	8.52536	8.48862	8.49422	8.51758	8.51232	8.51432
H	0.03166	0.03123	0.03117	0.03779	0.03706	0.03350	0.03352	0.03081	0.03120	0.03293	0.03253	0.03268

	Station II. Havne Fjord.						Station III. Gaase Fjord.					
Date and Observer	1900. August 3. Isachsen.						1901. July 10. Baumann.					
Clock and Daily Rate	Chron. Frodsham + 3s						Chron. Frodsham + 3s					
Local time	h m 9 47 a. m.	h m 10 3 a. m.	h m 10 20 a. m.	h m 10 40 a. m.	h m 3 44 p. m.	h m 5 42 p. m.	h m 10 47 a. m.	h m 11 13 a. m.	h m 11 47 a. m.	h m 0 4 p. m.	h m 4 8 p. m.	h m 4 25 p. m.
Magnet	*V*	*VI*	*VI*	*VI*	*V*	*V*	*VI*	*VI*	*V*	*V*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	8 17.0	8 37.7	8 48.0	8 48.4	7 59.9	7 56.4	10 6.5	10 10.0	9 52.5	9 48.5	9 36.7	9 36.0
	17.3	37.5	47.9	47.5	59.6	55.0	6.5	9.5	52.2	48.0	37.5	36.5
	16.5	37.1	48.0	47.5	59.8	55.0	7.0	10.0	52.0	48.5	37.5	37.0
	17.4	37.3	48.0	47.1	58.9	54.5	7.0	9.0	51.5	47.5	37.5	37.0
	16.3	37.0	47.3	47.1	58.0	54.5	7.0	10.0	51.5	48.0	38.0	37.5
	16.9	37.4	47.7	46.5	57.7	54.4	6.5	9.0	51.0	47.2	37.0	36.5
	15.7	36.6	47.2	46.5	57.5	54.3	7.0	10.0	51.0	47.2	37.5	37.0
	16.6	38.0	47.8	46.4	57.4	54.0	6.5	8.5	50.0	46.2	37.5	36.5
	15.0	36.5	47.2	45.8	57.8	54.0	7.5	9.5	50.0	47.0	37.5	36.5
	15.8	36.5	47.6	45.8	57.2	53.0	6.3	8.5	49.0	46.0	37.5	36.5
		36.5	47.1	45.8	57.2	53.8	7.5	9.0		46.0	37.5	36.5
T	8.2742s	8.6183s	8.7937s	8.7793s	7.9710s	7.9075s	10.1142s	10.1560s	9.8512s	9.7880s	9.6238s	9.6113s
A	3.75p	4.42p	5.4p	5.05p	4.52p	4.32p	1.75p	2.3p	2.75p	4.3p	8.9p	5.2p
t	10.0°	16.9°	15.5°	17.0°	13.0°	14.0°	16.5°	17.3°	19.0°	18.5°	12.0°	11.6°
log T	0.91773	0.93543	0.94418	0.94346	0.90151	0.89804	1.00493	1.00672	0.99349	0.99069	0.98335	0.98278
ϱ	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2
σ	— 57	— 80	—119	—104	— 84	— 77	— 13	— 21	— 30	— 76	—322	—111
τ	— 58	—236	—218	—240	— 76	— 81	—230	—247	—111	—108	— 70	— 64
2 colog T_0	8.16688	8.13550	8.11842	8.12000	8.20022	8.20712	7.99504	7.99192	8.01588	8.02234	8.04118	8.03798
log $\frac{C}{\mu}$	0.36242	0.37872	0.37872	0.37872	0.36242	0.36242	0.39500	0.39500	0.36242	0.36242	0.36242	0.36242
log H	8.52930	8.51222	8.49714	8.49872	8.56264	8.56954	8.39004	8.38692	8.37830	8.38476	8.40360	8.40040
H	0.03383	0.03253	0.03142	0.03153	0.03653	0.03711	0.02455	0.02437	0.02389	0.02425	0.02533	0.02514

Station III. Gaase Fjord.

Date and Observer	1901. July 11. Baumann.								1901. July 12. Baumann.			
Clock and Daily Rate	Chron. Frodsham + 4 s								Chron. Frodsham + 3 s			
Local time	h m 10 32 a. m.	h m 10 54 a. m.	h m 11 24 a. m.	h m 11 40 a. m.	h m 3 30 p. m.	h m 3 48 p. m.	h m 4 34 p. m.	h m 4 50 p. m.	h m 10 13 a. m.	h m 10 32 a. m.	h m 11 4 a. m.	h m 11 22 a. m.
Magnet	*VI*	*VI*	*V*	*V*	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	10 1.5	10 0.5	9 40.7	9 44.5	9 24.5	9 28.0	9 50.2	9 49.0	10 18.5	10 22.5	9 55.3	9 52.5
	1.5	0.0	40.0	44.0	23.7	27.5	48.7	48.5	17.5	20.7	54.0	51.5
	1.0	9 59.0	39.5	43.5	23.0	27.8	49.2	48.0	17.7	21.7	54.7	51.0
	1.0	59.0	40.2	43.0	22.0	27.0	48.0	47.3	16.4	19.7	53.3	50.0
	0.0	58.0	39.5	42.5	21.2	26.7	48.0	47.0	16.5	21.0	54.0	50.8
	0.0	58.0	39.5	41.5	20.7	26.5	46.8	46.2	15.8	18.8	52.5	49.5
	9 59.5	57.5	39.5	41.5	21.5	26.5	47.5	46.0	16.0	20.5	52.5	50.0
	59.5	57.5		40.5	20.0	26.2	46.3	45.0	15.0	17.0	50.8	48.8
	58.5	57.5		41.0	20.5	26.0	47.0	45.5	15.2	20.3	52.0	51.0
	58.5	57.0		40.5	19.7	25.8	45.3	44.5	14.4	15.7	50.0	48.5
	57.5	57.0		40.5	20.5	26.5	46.3	44.5		20.0	52.5	50.0
T	9.9977^s	9.9710^s	9.6640^s	9.7015^s	9.3595^s	9.4462^s	9.7928^s	9.7750^s	10.2717^s	10.3302^s	9.8812^s	9.8388^s
A	2.2^p	2.8^p	2.4^p	3.6^p	3.9^p	4.25^p	3.8^p	4.05^p	5.0^p	3.3^p	2.8^p	2.15^p
t	18.0°	15.5°	12.5°	11.2°	14.9°	11.0°	16.0°	12.0°	22.5°	22.0°	21.0	21.0°
log T	0.99990	0.99874	0.98516	0.98684	0.97125	0.97526	0.99091	0.99012	1.01164	1.01411	0.99481	0.99294
ϱ	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2
σ	— 19	— 31	— 23	— 53	— 61	— 74	— 58	— 67	—102	— 44	— 31	— 19
τ	—254	—218	— 73	— 65	— 81	— 64	—223	—169	—317	—310	—122	—122
2 colog T_0	8.00570	8.00754	8.03164	8.02872	8.06038	8.05228	8.02384	8.02452	7.98514	7.97890	8.01348	8.01698
log $\frac{C}{\mu}$	0.39500	0.39500	0.36242	0.36242	0.36242	0.36242	0.39500	0.39500	0.39500	0.39500	0.36242	0.36242
log H	8.40070	8.40254	8.39406	8.39114	8.42280	8.41470	8.41884	8.41952	8.38014	8.37390	8.37590	8.37940
H	0.02516	0.02527	0.02478	0.02461	0.02647	0.02598	0.02621	0.02627	0.02400	0.02365	0.02376	0.02395

Station III. Gaase Fjord.

Date and Observer	1901. July 12. Baumann			
Clock and Daily Rate	Chron. Frodsham. + 3 s			
Local time	h m 2 31 p. m.	h m 2 47 p. m.	h m 3 31 p. m.	h m 3 49 p. m.
Magnet	*VI*	*VI*	*V*	*V*
Number of vibr.	60 m s	60 m s	60 m s	60 m s
	9 53.0	9 51.0	9 31.3	9 31.5
	52.0	50.8	31.0	31.2
	52.3	50.0	31.0	31.0
	51.0	50.0	30.5	30.5
	51.5	49.0	30.0	30.0
	50.5	49.5	29.5	29.8
	51.0	48.5	28.5	29.0
	50.0	49.0	28.5	29.3
	50.0	47.7	28.0	28.2
	49.0	48.3	27.5	28.7
	49.0	47.5		28.0
T	9.8475^s	9.8202^s	9.4930^s	9.4958^s
A	4.15^p	4.65^p	5.4^p	5.0^p
t	15.5°	14.5°	11.8°	12.0°
log T	0.99332	0.99212	0.97740	0.97753
ϱ	— 2	— 2	— 2	— 2
σ	— 71	— 89	—119	—102
τ	—218	—204	— 69	— 70
2 colog T_0	8.01918	8.02166	8.04900	8.04842
log $\frac{C}{\mu}$	0.39500	0.39500	0.36242	0.36242
log H	8.41418	8.41666	8.41142	8.41084
H	0.02595	0.02610	0.02579	0.02575

Station IV. Gaase Fjord.

Date and Observer	1902. June 5. Baumann.				1902. June 6. Baumann.			
Clock and Daily Rate	Chron. Frodsham + 3 s				Chron. Frodsham + 3 s			
Local time	h m 9 33 a. m.	h m 9 54 a. m.	h m 10 31 a. m.	h m 10 48 a. m.	h m 9 53 a. m.	h m 10 10 a. m.	h m 0 7 p. m.	h m 0 26 p. m.
Magnet	*VI*	*VI*	*V*	*V*	*VI*	*VI*	*V*	*V*
Number of vibr.	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s
	10 29.5	10 31.3	10 36.8	10 37.7	10 49.0	10 47.7	10 25.0	10 31.7
	29.0	31.5	35.0	35.0	49.4	49.0	24.5	32.5
	29.0	30.2	33.7		48.5	47.0	24.5	30.5
	28.5	30.9	32.5	32.7	49.2	48.0	23.8	32.0
	28.5	30.3	32.0	32.5	48.2		23.3	29.2
	27.5	31.0	31.8	31.0	49.5	47.8	22.8	32.0
	26.5	30.0	31.4	30.8	48.5	45.5	23.0	28.5
	25.0	30.6	30.8	29.3	49.0	47.0	22.2	31.0
	23.5	28.5	30.5	29.3	48.2	44.7	23.0	28.5
	22.2	29.3	30.7	28.0	49.5	46.5	22.0	31.0
	21.5	27.5	30.2	28.2	47.8	44.0	23.0	29.0
T	10.4405^s	10.5017^s	10.5385^s	10.5242^s	10.8133^s	10.7787^s	10.3895^s	10.5090^s
A	3.0^p	3.45^p	4.6^p	4.25^p	3.9^p	3.1^p	3.25^p	1.9^p
t	23.0°	22.5°	19.0°	19.5°	16.0°	17.0°	13.0°	13.5°
log T	1.01872	1.02126	1.02278	1.02219	1.03396	1.03257	1.01660	1.02156
ϱ	— 2	— 2	— 2	— 2	— 2	— 2	— 2	— 2
σ	— 37	— 49	— 87	— 74	— 61	— 39	— 43	— 14
τ	—324	—317	—110	—114	—223	—240	— 76	— 79
2 colog T_0	7.96982	7.96484	7.95842	7.95942	7.93780	7.94048	7.96922	7.95878
log $\frac{C}{\mu}$	0.39500	0.39500	0.40318	0.40318	0.39500	0.39500	0.40318	0.40318
log H	8.36482	8.35984	8.36160	8.36260	8.33280	8.33548	8.37240	8.36196
H	0.02316	0.02290	0.02299	0.02305	0.02152	0.02165	0.02357	0.02301

Station IV. Gaase Fjord.

Date and Observer	1902. June 6. Baumann.				1902. June 11. Baumann.					
Clock and Daily Rate	Chron. Prodsham + 3s				Chron. Frodsham + 3s					
Local time	h m 2 27 p. m.	h m 2 44 p. m.	h m 3 23 p. m.	h m 3 40 p. m.	h m 9 14 a. m.	h m 9 34 a. m.	h m 9 52 a. m.	h m 2 10 p. m.	h m 2 27 p. m.	h m 2 44 p. m.
Magnet	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*VI*	*VI*	*VI*	*VI*
Number of vibr.	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s		m s	m s	m s	m s
	10 27.0	10 26.2	10 13.4	10 9.3	10 23.7	m s	10 14.3	10 12.0	10 10.4	10 7.4
	26.5	25.5	13.0	9.1	23.3	10 11.5	14.0	11.5	11.0	7.8
	26.1	25.5	12.5	8.7	22.5	10.2	14.2	11.6	9.6	7.5
	25.1	24.8	12.0	8.5	22.2	11.0	14.6	11.2	10.0	7.5
	25.2	24.8	11.5	8.3	21.6	11.6	14.4	11.0	8.9	7.1
	24.5	24.6	11.0	8.0	21.8	10.4	14.5	11.3	9.6	7.4
	24.0	24.5	11.0	8.0	20.9	10.0	14.2	10.5		7.0
	23.6	24.3	10.7	7.8	20.9	10.3	15.0	9.9	9.2	7.5
	23.8	23.6	10.0	7.5	20.5	9.9	14.7	10.4	7.6	7.1
	22.8	23.0		7.5	20.0	10.2	15.0	9.5	9.0	7.5
	23.0	23.0	9.9	7.4	19.5	10.2	14.8	9.4	6.9	7.0
T	10.4115^s	10.4088^s	10.1917^s	10.1365^s	10.3590^s	10.1755^s	10.2420^s	10.1792^s	10.1537^s	10.1225^s
A	5.7^p	5.25^p	5.45^p	4.85^p	6.3^p	5.0^p	4.0^p	6.35^p	5.5^p	4.0^p
t	10.0°	10.0°	10.5°	10.8°	12.0°	10.7°	10.0°	12.8°	12.5°	12.0
log T	1.01750	1.01740	1.00824	1.00589	1.01532	1.00756	1.01038	1.00772	1.00663	1.00529
ϱ	− 2	− 2	− 2	− 2	− 2	− 2	− 2	− 2	− 2	− 2
σ	−132	−113	−121	− 97	−162	−102	− 65	−165	−123	− 65
τ	− 58	− 58	−148	−152	−169	−151	−141	−180	−176	−169
2 colog T_0	7.96884	7.96866	7.98894	7.99324	7.97602	7.98998	7.98340	7.99150	7.99276	7.99414
log $\frac{C}{\mu}$	0.40318	0.40318	0.39500	0.39500	0.39500	0.39500	0.39500	0.39500	0.39500	0.39500
log H	8.37202	8.37184	8.38394	8.38824	8.37102	8.38498	8.37840	8.38650	8.38777	8.38914
H	0.02355	0.02354	0.02421	0.02445	0.02350	0.02427	0.02390	0.02435	0.02442	0.02450

Station IV. Gaase Fjord.

Date and Observer	1902. June 12. Baumann.				1902. June 13. Baumann.				1902. June 14. Baumann.			
Clock and Daily Rate	Chron. Frodsham + 3s				Chron. Frodsham + 5s				Chron. Frodsham + 6s			
Local time	h m 9 20 a. m.	h m 9 39 a. m.	h m 2 11 p. m.	h m 2 30 p. m.	h m 9 30 a. m.	h m 9 53 a. m.	h m 2 53 p. m.	h m 3 12 p. m.	h m 9 19 a. m.	h m 9 38 a. m.	h m 2 18 p. m.	h m 2 48 p. m.
Magnet	*VI*	*VI*	*VI*	*VI*	*V*	*V*	*V*	*V*	*V*	*V*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	10 3.9	10 1.6	10 12.8	10 14.1	10 36.3	10 33.9	10 30.5	10 28.3	10 37.3	10 35.4	10 27.6	10 27.5
	3.7	1.9	12.8	14.4	36.1	33.6	30.2	27.7	37.2	35.5	27.3	27.0
	3.6	1.5	12.8	14.2	35.9	33.3	30.0	27.9	37.2	34.6	27.3	26.8
	3.4	1.6	13.2	14.5	35.8	33.1	29.7	27.4	37.1	34.8	26.8	26.5
	3.5	1.5	12.6	13.9	35.2	32.9	29.4	27.6	36.7	34.3	27.0	26.5
	3.5		13.3	14.4	35.2	32.9	29.0	27.2	36.6	34.7	26.3	26.0
	3.2	1.5	12.9	13.6	34.4	32.7	28.8	27.3	36.4	34.3	26.7	25.9
	3.0	1.5	13.4	14.1	34.6	32.6	28.4	26.9	36.4	34.5	26.1	25.9
	3.2	1.3	13.2	13.7	34.2	32.5	28.5	26.8	35.9	34.2	26.4	25.6
	3.3	1.5	13.9	13.5	34.1	32.5	27.8	26.5	36.3	34.5	26.2	25.2
	3.4	1.4	13.4	14.0	33.8	32.1	27.8	26.6	35.6	33.7	26.6	25.1
T	10.0572s	10.0255s	10.2187s	10.2340s	10.5842s	10.5486s	10.4850s	10.4548s	10.6102s	10.5765s	10.4458s	10.4363s
A	4.15p	3.4p	4.1p	3.65p	3.5p	3.45p	4.2p	3.85p	3.9p	3.35p	4.0p	3.6p
t	14.5°	15.0°	15.8°	15.5°	13.5°	14.0°	10.8°	11.0°	8.0°	8.0°	8.8°	8.8°
log T	1.00248	1.00111	1.00940	1.01005	1.02466	1.02319	1.02057	1.01932	1.02573	1.02434	1.01894	1.01854
ϱ	— 2	— 2	— 2	— 2	— 3	— 3	— 3	— 3	— 3	— 3	— 3	— 3
σ	— 71	— 47	— 69	— 55	— 50	— 48	— 72	— 59	— 61	— 45	— 65	— 53
τ	—204	—211	—223	—218	— 79	— 81	— 63	— 64	— 47	— 47	— 51	— 51
2 colog T_0	8.00058	8.00298	7.98708	7.98540	7.95332	7.95626	7.96162	7.96388	7.95076	7.95322	7.96450	7.96506
log $\frac{C}{\mu}$	0.39500	0.39500	0.39500	0.39500	0.40318	0.40318	0.40318	0.40318	0.40318	0.40318	0.40318	0.40318
log H	8.39558	8.39798	8.38208	8.38040	8.35650	8.35944	8.36480	8.36706	8.35394	8.35640	8.36768	8.36824
H	0.02486	0.02500	0.02410	0.02401	0.02272	0.02288	0.02316	0.02328	0.02259	0.02272	0.02332	0.02335

Station IV. Gaase Fjord.

Date and Observer	1902. June 16. Baumann.				1902. June 20. Baumann.							
Clock and Daily Rate	Chron. Frodsham + 5s				Chron. Frodsham − 1s							
Local time	h m 9 24 a. m.	h m 9 43 a. m.	h m 10 17 a. m.	h m 10 36 a. m.	h m 9 10 a. m.	h m 9 31 a. m.	h m 9 58 a. m.	h m 10 16 a. m.	h m 5 44 p. m.	h m 6 2 p. m.	h m 6 28 p. m.	h m 6 45 p. m.
Magnet	*V*	*V*	*VI*	*VI*	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*V*	*V*
Number of vibr.	60	60	60	60	64	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	10 35.5	10 36.7	10 17.8	10 17.2	11 15.2	10 30.0	10 19.1	10 10.9	10 12.2	10 12.8	10 25.4	10 26.2
	35.7	36.4	18.0		15.2	30.0	18.8	10.8	12.5	12.7	25.0	26.0
	35.3	36.2	17.7	17.0	14.7	30.0	18.3	10.0	12.3	12.5	25.0	25.7
	34.7	35.8	17.6	17.3	14.4		18.3		12.3	12.5	24.4	25.8
	34.5	35.7	17.6	17.2	13.9	29.9		10.0	12.2	12.3	24.4	25.7
	34.5	35.2	17.6	17.4	13.7	30.5	18.0	10.1	12.3	12.3	24.1	25.3
	34.5	35.3	17.6	17.1	13.7	30.0	17.5	10.0	12.2	12.4	24.0	25.2
	34.5	34.7	17.6	17.5	13.3	30.8	17.6	10.0	12.0	12.3	23.7	25.1
	34.0	34.8		17.8	13.2	30.2	17.1	10.0		12.1	23.5	24.8
	33.6	34.7	17.7	18.0	13.2	31.0	17.2	10.1	11.8	12.1	23.5	25.0
	33.2	34.2	17.8	17.9	12.8	31.0	16.7	9.9	11.8	11.8	23.9	25.0
T	10.5758^s	10.5905^s	10.2950^s	10.2907^s	10.5303^s	10.5057^s	10.2977^s	10.1697^s	10.2027^s	10.2058^s	10.4043^s	10.4223^s
A	3.65^p	4.0^p	3.75^p	3.9^p	3.25^p	3.55^p	3.75^p	4.05^p	4.05^p	4.2^p	3.2^p	4.0^p
t	10.0°	11.8°	11.9°	12.0°	13.0°	13.0°	13.0°	13.0°	12.0°	13.5°	13.5°	12.5°
log T	1.02431	1.02492	1.01263	1.01245	1.02244	1.02142	1.01274	1.00688	1.00872	1.00883	1.01721	1.01796
ϱ	− 3	− 3	− 3	− 3	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1
σ	− 54	− 65	− 57	− 61	− 43	− 51	− 57	− 67	− 67	− 72	− 41	− 65
τ	− 58	− 59	−168	−169	− 76	− 76	−183	−183	−169	−189	− 79	− 73
2 colog T_0	7.95368	7.95270	7.97930	7.97976	7.95748	7.95968	7.97930	7.99122	7.98726	7.98754	7.96796	7.96682
log $\frac{C}{\mu}$	0.40318	0.40318	0.39500	0.39500	0.40318	0.40318	0.39500	0.39500	0.39500	0.39500	0.40318	0.40318
log H	8.35686	8.35588	8.37430	8.37476	8.36066	8.36286	8.37430	8.38622	8.38226	8.38254	8.37114	8.37000
H	0.02274	0.02269	0.02368	0.02370	0.02294	0.02306	0.02368	0.02433	0.02411	0.02413	0.02350	0.02344

Station IV. Gaase Fjord.

Date and Observer	1902. June 25. Baumann.								1902. June 30. Baumann.			
Clock and Daily Rate	Chron. Frodsham 0 s								Chron. Frodsham — 1 s			
Local time	h m 9 37 a. m.	h m 9 57 a. m.	h m 10 39 a. m.	h m 10 57 a. m.	h m 5 17 p. m.	h m 5 34 p. m.	h m 6 2 p. m.	h m 6 18 p. m.	h m 9 28 a. m.	h m 9 47 a. m.	h m 10 22 a. m.	h m 10 41 a. m.
Magnet	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*V*	*V*	*VI*	*VI*	*V*	*V*
Number of vibr.	60	60	60	60	60	60	60	60	60	60	60	60
	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	10 32.4	10 31.7	10 14.3	10 12.4	10 9.2	10 10.0	10 12.2	10 10.7	10 30.5	10 30.3	10 30.8	10 33.0
	32.2	31.0	14.8		9.5	9.7	12.3	11.0	30.7	30.4	31.0	32.4
	31.8	31.0	14.6	12.3	8.5	9.3	12.0	10.4	29.8	29.7	30.9	33.0
	31.4	30.3	15.1	12.1	8.7	9.0	12.1	10.5	30.0	29.2	30.7	32.0
	31.4	30.4	14.7	11.4	8.0	8.9		10.0	29.0	28.3	31.1	32.9
	31.1	29.8	15.0	11.5	8.3	8.4	12.0	10.1	29.7	28.0	30.8	31.7
	31.3	29.7	14.7	10.9	7.6	8.1	11.6	9.6	29.0	27.2	31.0	32.4
	31.0	29.3	14.9	10.8	8.2	7.8	12.0	9.7	29.7	27.2	30.6	31.2
	30.9	29.3	14.0	10.4	8.0	7.5	11.5	9.3	28.8	26.8	31.6	32.1
	30.6	29.0		10.4	8.5	7.4	11.8	9.5	30.0	26.7	30.5	30.5
	30.5	29.0	13.5	10.0	8.2	7.7	11.3	9.0	29.1	26.2	32.0	31.8
T	10.5222^s	10.5000^s	10.2427^s	10.1870^s	10.1405^s	10.1422^s	10.1980^s	10.1663^s	10.4943^s	10.4697^s	10.5167^s	10.5348^s
A	4.0^p	4.15^p	4.2^p	4.6^p	3.9^p	4.8^p	4.4^p	4.6^p	4.4^p	3.9^p	3.8^p	3.6^p
t	11.0°	11.7°	12.8°	13.0°	11.8°	12.0°	13.0°	13.2°	17.2°	18.0°	17.2°	17.0°
log T	1.02211	1.02119	1.01041	1.00804	1.00606	1.00613	1.00851	1.00716	1.02096	1.01994	1.02187	1.02263
ϱ	0	0	0	0	0	0	0	0	+ 1	+ 1	+ 1	+ 1
σ	— 65	— 70	— 72	— 87	— 61	— 95	— 79	— 87	— 79	— 61	— 58	— 53
τ	— 64	— 68	—180	—183	—166	—169	— 76	— 77	—242	—254	—100	— 99
2 colog T_0	7.95836	7.96038	7.98422	7.98932	7.99242	7.99302	7.98608	7.98894	7.96448	7.96640	7.95940	7.95776
log $\frac{C}{\mu}$	0.40318	0.40318	0.39500	0.39500	0.39500	0.39500	0.40318	0.40318	0.39500	0.39500	0.40318	0.40318
log H	8.36154	8.36356	8.37922	8.38432	8.38742	8.38802	8.38926	8.39212	8.35948	8.36140	8.36258	8.36094
H	0.02299	0.02310	0.02395	0.02423	0.02440	0.02444	0.02451	0.02467	0.02288	0.02298	0.02304	0.02296

Station IV. Gaase Fjord.

Date and Observer	1902. June 30 Baumann				1902. July 1. Baumann.							
Clock and Daily Rate	Chron. Frodsham -1^s				Chron. Frodsham $+2^s$							
Local time	h m 2 48 p. m.	h m 3 6 p. m.	h m 3 40 p. m.	h m 3 57 p. m.	h m 9 23 a. m.	h m 9 40 a. m.	h m 10 11 a. m.	h m 10 29 a. m.	h m 1 55 p. m.	h m 2 11 p. m.	h m 2 34 p. m.	h m 2 50 p. m.
Magnet	*V*	*V*	*VI*	*VI*	*VI*	*VI*	*V*	*V*	*V*	*V*	*VI*	*VI*
Number of vibr.	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s	60 m s
	10 24.2	10 20.1	10 14.7	10 14.1	10 19.2	10 17.5	10 18.3	10 12.6	10 20.3	10 16.8	10 9.8	10 9.8
	22.9	20.2	15.0	13.7	19.0	17.7	17.8	12.5	19.9	16.7	9.5	9.5
	23.7	20.2	14.8	13.9	18.8	17.3	17.7	12.0	19.1		9.2	9.3
	22.5	19.5	14.8		18.5	17.5	17.5	12.1	18.9	16.1	9.2	9.2
	23.3	20.3	14.2	13.1	18.0	17.7	17.0	12.0	18.9	16.1		8.7
	22.1	19.4	14.5	13.1	18.0	17.9	17.1	12.0	18.5	15.9	9.2	8.5
	22.8	20.4		13.0	17.6	17.8	17.0	11.8	18.3	15.8	8.8	8.1
	21.2	19.5	14.5	12.5	17.8	18.1		11.8	18.0	15.6	8.8	8.4
	22.3	20.8	14.3	12.2	17.4	18.1	16.6	11.7	18.2	15.7	8.8	7.8
	21.2	19.8	14.5	12.6	17.7	18.5	16.7	11.5	17.6	15.0	8.9	8.2
	21.8	20.9	14.3	12.5	17.8	18.4	16.2	11.5	17.8	15.5	8.5	7.7
T	10.3758^s	10.3350^s	10.2427^s	10.2178^s	10.3027^s	10.2977^s	10.2865^s	10.1992^s	10.3113^s	10.2653^s	10.1512^s	10.1442^s
A	3.9^p	4.5^p	4.15^p	4.3^p	4.6^p	3.9^p	4.0^p	4.7^p	4.85^p	4.65^p	3.45^p	4.75^p
t	19.2°	19.8°	20.0°	19.5°	17.1°	17.5°	18.0°	18.1°	18.0°	18.1°	18.2°	18.5°
log T	1.01602	1.01431	1.01041	1.00936	1.01295	1.01274	1.01227	1.00857	1.01331	1.01137	1.00652	1.00622
ϱ	+ 1	+ 1	+ 1	+ 1	− 1	− 1	− 1	− 1	− 1	− 1	− 1	− 1
σ	− 61	− 83	− 71	− 76	− 87	− 61	− 65	− 91	− 97	− 90	− 48	− 93
τ	−112	−115	−282	−274	−241	−247	−105	−105	−105	−105	−256	−261
2 colog T_0	7.97140	7.97532	7.98622	7.98826	7.98068	7.98070	7.97882	7.98680	7.97744	7.98118	7.99302	7.99466
log $\frac{C}{\mu}$	0.40318	0.40318	0.39500	0.39500	0.39500	0.39500	0.40318	0.40318	0.40318	0.40318	0.39500	0.39500
log H	8.37458	8.37850	8.38122	8.38326	8.37568	8.37570	8.38200	8.38998	8.38062	8.38436	8.38802	8.38966
H	0.02369	0.02391	0.02406	0.02417	0.02375	0.02375	0.02410	0.02455	0.02402	0.02423	0.02444	0.02453

SUMMARY OF THE RESULTS.

In the following table of the values of H, deduced separately from vibrations and from deflections, and expressed in γ ($\gamma = 0.00001$ c. g. s.), it will be seen that there are several considerable discrepancies between the two. This is also natural enough when the various circumstances that may have influenced the accuracy of the results calculated, are taken into consideration.

Among these may be mentioned

(1) The inconstant magnetic conditions peculiar to the regions surrounding the magnetic pole, of which, owing to the want of variation instruments, it was impossible to take account.

(2) The effect of the daily range of the horizontal intensity, which in these regions in the summer may be assumed to be very considerable.

(3) The unsatisfactory conditions of temperature prevailing while the observations were being made.

(4) The absence of determinations of the torsion of the suspension thread during the vibration observations. This want makes itself especially felt in the regions about the magnetic pole, where the directing force of the vibration magnet is so small.

(5) The somewhat considerable changes that are proved to have taken place in the magnetic moment of the two deflectors during the Expedition.

Although there is certainly every reason to assume that the deflection observations made in high magnetic latitudes give more reliable values for the horizontal intensity than the vibration obervations, yet, in consideration of the far larger number of the latter in the present instance, I have calculated the mean value of H for every day of observation according to the formula

$$H = \frac{H_V + H_D}{2}$$

where H_V and H_D are the mean of all the single values of the horizontal intensity found that day by respectively vibration and deflection observations.

The final value of H will then be the mean of the values that magnets V and VI give, if both magnets have been used on the same day.

Station I a.

Date	L. T.	Magn.	Vibr.	H Defl.
	h m			
1899. May 30.	10 56 a. m.	*V*		4180
	11 40	*VI*		4099
	0 26 p. m.	*V*		4193
	4 10	»	4072	
	39	*VI*	4011	

Magn.	*H*
V	0.04129
VI	0.04055
Mean	0.04092

Station I b.

1899. June 5.	10 20 a. m.	*VI*		4255
	11 4	*V*		4258
	44	»		4235
	2 58 p. m.	*VI*	3804	
	3 14	»	3815	
	35	*V*	3903	
	50	»	3934	

Magn.	*H*
V	0.04082
VI	0.04032
Mean	0.04057

— 8.	10 54 a. m.	*V*		4169
	11 47	»		4182
	0 23 p. m.	*VI*		4175
	3 28	*V*	3876	
	48	*VI*	3831	

Magn.	*H*
V	0.04026
VI	0.04003
Mean	0.04015

— 9.	9 19 a. m.	*V*	3792	
	35	»	3786	
	10 59	»		4149
	11 38	»		4149
	0 46 p. m.	»	3743	
	1 0	»	3761	

Magn.	*H*
V	0.03960

Station II.

Date	L. T.	Magn.	Vibr.	H Defl.
	h m			
1900. June 28.	10 0 a m.	*V*	3532	
	17	»	3559	
	44	*VI*	3393	
	11 4	»	3366	
— 29.	8 42 a. m.	*V*	3337	
	9 2	»	3389	
	29	»	3410	
	45	»	3416	
	10 45	»		3330
	0 1 p. m.	»		3169
	4 0	*VI*	3294	
	17	»	3291	
	41	*V*	3382	
	5 0	»	3396	

Magn.	*H*
V	0.03359
VI	0.a3337
Mean	0.03348

Date	L. T. h m	Magn.	Vibr.	H Defl.
1900. July 2.	8 56 a. m.	*VI*	3381	
	9 13	»	3391	
	39	»	3375	
	56	»	3392	
	1 4 p. m.	*V*		3224
	2 4	*VI*		3244
	5 12	»	3462	
	29	»	3456	
	52	*V*	3474	

Magn.	*H*
V	0.03349
VI	0.03327
Mean	0.03338

— 20.	3 25 p. m.	*V*		3339
	52	»		3291
	4 27	*VI*		3227
— 23.	3 47 p. m.	*V*	3456	
	4 4	»	3468	
	39	»	3468	
	5 37	*VI*	3261	
	6 4	»	3270	
— 24.	8 53 a. m.	*V*	3166	
	9 38	*VI*	3123	
	57	»	3117	

Magn.	*H*
V	0.03315
VI	0.03210
Mean	0.03263

— 25.	9 11 a. m.	*VI*		3215
	40	*V*		3169
	10 51	»	3779	
	11 25	»	3706	
	50	*VI*	3350	
	0 22 p. m.	»	3352	

Magn.	*H*
V	0.03456
VI	0.03283
Mean	0.03369

— 26.	9 26 a. m.	*V*		3259
	51	*VI*		3342
	10 24	»	3081	
	43	»	3120	
	11 5	*V*	3293	
	24	»	3253	
	56	»	3268	
	0 36 p. m.	»		3198
	1 0	*VI*		3296

Magn.	*H*
V	0.03250
VI	0.03210
Mean	0.03230

August 3.	9 47 a. m.	*V*	3383	
	10 4	*VI*	3253	
	20	»	3142	
	40	»	3153	
	11 47	»		3343
	3 44 p. m.	*V*	3653	
	4 52	»		3256
	5 42	»	3711	

Magn.	*H*
V	0.03419
VI	0.03263
Mean	0.03341

Station III.

Date	L. T. h m	Magn.	Vibr.	H Defl.
1901. July 10.	10 47 a. m.	*VI*	2455	
	11 13	»	2437	
	47	*V*	2389	
	0 4 p. m.	»	2425	
	1 36	»		2517
	2 15	*VI*		2465
	4 8	*V*	2533	
	25	»	2514	

Magn.	*H*
V	0.02491
VI	0.02455
Mean	0.02473

Date	L. T. h m	Magn.	Vibr.	H Defl.
— 11.	10 32 a. m.	*VI*	2516	
	54	»	2527	
	11 24	*V*	2478	
	40	»	2461	
	1 3 p. m.	*VI*		2596
	46	*V*		2666
	3 30	»	2647	
	48	»	2598	
	4 34	*VI*	2621	
	50	»	2627	

Magn.	*H*
V	0.02606
VI	0.02584
Mean	0.02595

Date	L. T. h m	Magn.	Vibr.	H Defl.
— 12.	10 13 a. m.	*VI*	2400	
	32	»	2365	
	11 4	*V*	2376	
	22	»	2395	
	0 41 p. m.	»		2504
	1 20	*VI*		2472
	2 31	»	2595	
	47	»	2610	
	3 31	*V*	2579	
	49	»	2575	

Magn.	*H*
V	0.02492
VI	0.02482
Mean	0.02487

Station IV.

Date	L. T. h m	Magn.	Vibr.	H Defl.
1902. June 5.	9 33 a. m.	*VI*	2316	
	54	»	2290	
	10 31	*V*	2299	
	48	»	2305	

Magn.	*H*
V	0.02302
VI	0.02303
Mean	0.02303

Date	L. T. h m	Magn.	Vibr.	H Defl.
— 6.	9 53 a. m.	*VI*	2152	
	10 10	»	2165	
	0 7 p. m.	*V*	2357	
	26	»	2301	
	2 27	»	2355	
	44	»	2354	
	3 23	*VI*	2421	
	40	»	2445	

Magn.	*H*
V	0.02342
VI	0.02296
Mean	0.02319

Date	L. T.	Magn.	H Vibr.	H Defl.
	h m			
1902. June 11.	9 14 a. m.	*VI*	2350	
	34	»	2427	
	52	»	2391	
	11 11	»		2356
	0 31 p. m.	»		2270
	2 10	»	2435	
	27	»	2442	
	44	»	2450	

Magn.	*H*
VI	0.02365

— 12.	9 20 a. m.	*VI*	2486	
	39	»	2500	
	10 39	»		2211
	11 45	»		2356
	2 11 p. m.	»	2410	
	30	»	2401	

Magn.	*H*
VI	0.02366

— 13.	9 30 a. m.	*V*	2272	
	53	»	2288	
	11 37	»		2296
	0 49 p. m.	»		2378
	2 53	»	2316	
	3 12	»	2328	

Magn.	*H*
V	0.02319

— 14.	9 19 a. m.	*V*	2259	
	38	»	2272	
	10 43	»		2431
	0 1 p. m.	»		2351
	2 18	»	2332	
	48	»	2335	

Magn.	*H*
V	0.02346

— 16.	9 24 a. m.	*V*	2274	
	43	»	2269	
	10 17	*VI*	2368	
	36	»	2370	
	11 50	»		2369
	0 40 p. m.	*V*		2357

Magn.	*H*
V	0.02314
V	0.02369
Mean	0.02341

— 20.	9 10 a. m.	*V*	2294	
	31	»	2306	
	58	*VI*	2368	
	10 16	»	2433	
	11 43	*V*		2371
	1 17 p. m.	*VI*		2377
	3 37	»		2367
	4 44	*V*		2369
	5 44	*VI*	2411	
	6 2	»	2413	
	28	*V*	2350	
	44	»	2344	

Magn.	*H*
V	0.02347
VI	0.02373
Mean	0.02360

Date	L. T. h m	Magn.	Vibr.	H Defl.
1902. June 25.	9 37 a. m.	*V*	2299	
	57	»	2310	
	10 39	*VI*	2395	
	57	»	2423	
	0 11 p. m.	*V*		2373
	1 16	*VI*		2380
	3 20	»		2412
	4 19	*V*		2377
	5 17	*VI*	2440	
	34	»	2444	
	6 2	*V*	2451	
	18	»	2467	

Magn.	*H*
V	0.02379
VI	0.02411
Mean	0.02395

— 30.	9 28 a. m.	*VI*	2288	
	48	»	2298	
	10 22	*V*	2304	
	41	»	2296	
	11 24	»		2399
	54	*VI*		2389
	0 35 p. m.	»		2350
	58	*V*		2370
	2 48	»	2369	
	3 6	»	2391	
	40	*VI*	2406	
	57	»	2417	

Magn.	*H*
V	0.02362
VI	0.02361
Mean	0.02362

July 1.	9 23 a. m.	*VI*	2375	
	40	»	2375	
	10 11	*V*	2410	
	29	»	2455	
	11 5	»		2417
	25	*VI*		2428
	52	»		2354
	0 10 p. m.	*V*		2384
	1 55	»	2402	
	2 11	»	a423	
	34	*VI*	2444	
	50	»	2453	

Magn.	*H*
V	0.02412
VI	0.02402
Mean	0.02407

D. INCLINATION.

As I mentioned in the Introduction, the Fox circle belonging to the NEUMAYER apparatus was the only means for the determination of inclination that the Expedition possessed. There were two needles with it, only one of which, that indicated by the letter B, was in a condition to be used. It was the needle that was principally used during the first Fram Expedition.

After the meridian reading of the horizontal circle had been determined in the usual manner by four settings in the magnetic prime vertical, three or four settings and readings were made of the north and south ends of the needle in both positions of the instruments, "circle E" and "circle W". The same observations were then generally repeated with the needle reversed in its bearings, that is to say, the one time with the marked side of the needle outwards, and the other time with the marked side inwards. I have called the two positions of the needle respectively B_1 and B_2.

Previous to a direct determination of the inclination such as this, an indirect determination would also often be made by the aid of the deflectors belonging to the apparatus.

The alhidade on the back of the vertical circle, with one deflector screwed in, was first adjusted with its zero-point at that point of the limb answering to ($I' - 30°$), when I' stands for the mean of the inclination readings, which had previously been obtained with the free needle in the same position of the instrument, B_1 or B_2, "circle E" or "circle W". When the north and south ends of the deflected needle had been sighted and read three or four times, the alhidade and deflector were moved across to the position ($I' + 30°$), whereupon corresponding sights and readings of the needle, now deflected to the other side, were made. In this way, a new value of I' was obtained for each position of the instrument, being the mean of the readings made with the deflected needle.

THE INDEX-ERROR.

As the inclination needle, B, was also intended for determinations of intensity, it was never remagnetised. In consequence of this, the inclination values found had to be corrected for the index-error of the needle. If we call the value of the inclination observed with the Fox circle I', the true inclination I, and the index-error Δ, we obtain

$$I = I' + \Delta$$

For the determination of Δ, I have on a former occasion[1] educed the following formula:

$$\Delta = \frac{p \cos (I' + \alpha) \cos I'}{H + p \cos (I' + \alpha) \sin I' \sin 1'} \tag{5}$$

in which H is the horizontal intensity, I' the observed inclination, and p and α two constants.

From the observations made in Hamburg in 1893, and Wilhelmshaven in 1897, and during the first Fram Expedition in the winter of 1893—94, I found, for needle B,

$$p = -61.5' \quad \text{and} \quad \alpha = 209° 33'$$

Since then there has been no opportunity of verifying these values, as no determinations of intensity were made with the apparatus during the second Fram Expedition; nor was the needle B used by Captain AMUNDSEN in his inclination observations made at Potsdam with the Fox circle in December, 1902, when a new needle made by Dover was used.

I have therefore, as an experiment, employed the above value of p and α, and calculated a mean value of Δ for each of the four stations, inserting in formula (5) the mean values for H and I' deduced from the observations for each separate station. The result of this calculation was as follows:

Station	H	I'	Δ	I
I	0.0406	86° 0′	— 56′	85° 4′
II	0.0332	87 1	— 57	86 4
III	0.0252	87 41	— 67	86 34
IV	0.0235	87 53	— 68	86 45

The values thus found for the absolute inclination I, can scarcely be correct, however; for if we calculate the total intensity, W, for each station according to the formula

[1] Nansen Expedition. T. M. p. 134.

$$W = \frac{H}{\cos I},$$

we obtain

Station	W
I	0.472
II	0.482
III	0.421
IV	0.415

These values are manifestly too low. The total intensity at the places in question must be assumed to have a value of about 0.6 c. g. s., or more.

That the error cannot originate from the values for the horizontal intensity, is evident from the fact that if H is calculated with $W = 0.6$ and the corrected values of I, H is found to be from 800 γ to 1100 γ greater than the mean value observed.

It must therefore be assumed that the values of Δ calculated according to the formula (5), are much too high, which again may be accounted for by the fact that the constant p, which is dependent upon the magnetic moment of the inclination needle, has changed its value. No very great degree of accuracy, moreover, can be attributed to the above-mentioned determination of p and α.

Under these circumstances I have found it absolutely impossible to set down any reasonable value for the index-error in the present instance, and have therefore had to content myself with giving the observed inclination values without correction. These, however, cannot be so very different from the true values, as is indicated by the fact that together with the observed values of the horizontal intensity, they give the following not unreasonable values for the total intensity:

Station	W
I	0.582
II	0.638
III	0.624
IV	0.637

THE OBSERVATIONS.

The following table gives, in chronological order, the result of the determinations of inclination. "Mer." is the meridian adjustment on the horizontal circle. Under the heading "Needle" the position of the needle is given, with the marked side either "out" B_1 or „in" B_2. N and S in the column "Defl." indicate that the needle has been deflected, repulsed respectively by the north or south end of the deflector used. The mean of the inclination value found separately for the free needle and for the deflected needle, without correction for index-error, is given as the final value of I.

Station I a.

1899. May 29. Obs. Baumann.

Mer. 186° 35′.

	L. T. h m	Needle	Circle	Defl.	I′ ° ′
	11 16 a. m.	B_1	E	—	86 21.5
	29	»	W	—	14.8
	56	»	W	S	85 48.6
	0 20 p. m.	»	E	S	49.0
	3 49	B_2	W	—	51.0
	53	»	E	—	86 23.0
	4 22	»	E	S	2.4
	50	»	W	S	85 32.3
Mean	2 52 p. m.				

Needle	I′ ° ′
B_1 free	86 18.2
» defl.	85 48.8
B_2 free	86 7.0
» defl.	85 47.4
I =	86 0

Station II.

1900. June 27. Obs. Baumann.

Mer. 149° 33′.

	L. T. h m	Needle	Circle	Defl.	I′ ° ′
	11 36 a. m.	B_1	W	—	86 59.4
	39	»	E	—	87 23.8
	0 12 p. m.	»	E	N	86 57.8
	42	»	W	N	51.9
	3 29	B_2	E	—	87 11.7
	39	»	W	—	2.5
	4 4	»	W	N	86 36.0
	32	»	E	N	87 6.5
Mean	1 59 p. m.				

Needle	I′ ° ′
B_1 free	87 11.6
» defl.	86 54.9
B_2 free	87 6.1
» defl.	86 51.3
I =	87 1

1900. July 3. Obs. Baumann.

Mer. 269° 7′.

	L. T. h m	Needle	Circle	Defl.	I′ ° ′
	9 39 a. m.	B_2	W	—	86 51.3
	54	»	E	—	87 23.7
	10 21	»	E	N	22.3
	59	»	W	N	86 21.3
	11 59	B_1	W	—	48.8
	0 7 p. m.	»	E	—	55.0
	22	»	E	N	55.9
	37	»	W	N	43.0
Mean	11 15 a. m.				

Needle	I′ ° ′
B_2 free	87 7.0
» defl.	86 51.8
B_1 free	51.9
» defl.	49.5
I =	86 55

1900. July 23. Obs. Isachsen.

Mer. 208° 18′.

	L. T.	Needle	Circle	Defl.	I′
	h m				° ′
	10 45 a. m.	B_1	E	—	86 55.7
	55	»	W	—	87 38.5
	11 33	»	E	N	86 18.7
	9 59 p. m.	»	W	N	87 43.1
Mean	11 33 a. m.				

Needle	I′
	° ′
B_1 free	87 17.1
» defl.	0.9
I =	87 9

1900. July 24. Obs. Isachsen.

Mer. 90° 41′.

	L. T.	Needle	Circle	Defl.	I′
	h m				° ′
	4 41 p. m.	B_2	E	—	87 11.9
	5 19	»	E	N	54.4
	50	»	W	—	86 36.2
	6 10	»	W	N	87 6.4
Mean	5 30 p. m.				

Needle	I′
	° ′
B_2 free	86 54.0
» defl.	87 30.4
I =	87 12

1900. July 25. Obs. Isachsen.

Mer. 150° 41′.

	L. T.	Needle	Circle	Defl.	I′
	h m				° ′
	3 43 p. m.	B_1	E	—	87 6.0
	4 26	»	W	—	86 57.5
	39	»	E	N	46.3
	5 5	»	W	N	45.1
Mean	4 28 p. m.				

Needle	I′
	° ′
B_1 free	87 1.8
» defl.	86 45.7
I =	86 54

1900. July 27. Obs. Isachsen.

Mer. 150° 16′.

	L. T.	Needle	Circle	Defl.	I′
	h m				° ′
	9 16 a. m.	B_2	E	—	87 18.3
	35	»	E	N	9.1
	50	»	W	—	86 36.4
	10 10	»	W	N	30.2
	32	B_1	W	—	58.3
	55	»	W	N	52.8
	11 9	»	E	—	87 8.3
	22	»	E	N	86 43.4
Mean	10 21 a. m.				

Needle	I′
	° ′
B_2 free	86 57.4
» defl.	49.6
B_1 free	87 3.3
» defl.	86 48.1
I =	86 55

1900. July 28. Obs. Isachsen.

Mer. 88° 45′

L. T. h m	Needle	Circle	Defl.	I′
9 35 a. m.	B_1	E	—	87° 0′.0
47	»	W	—	8.5
58	B_2	W	—	86 57.0
10 15	»	E	—	87 26.0
25	B_1	E	—	10.0
33	»	W	—	7.5
43	B_2	W	—	86 46.3
54	»	E	—	87 21.5
11 19	»	E	N	11.6
42	»	W	N	86 34.1
0 8 p. m.	B_1	W	N	53.4
23	»	E	N	87 2.4
Mean 10 49 a. m.				

Needle	I′
B_1 free	87° 6′.5
» defl.	86 57.9
B_2 free	87 7.7
» defl.	86 52.9
I =	87 1

1900. July 31. Obs. Isachsen.

Mer. 179° 4′.

L. T. h m	Needle	Circle	Defl.	I′
3 28 p. m.	B_1	E	—	86° 55′.8
39	»	W	—	55.4
47	B_2	W	—	38.1
52	»	E	—	87 20.6
59	»	W	—	86 32.5
4 9	»	W	N	34.6
18	»	E	—	87 27.5
24	»	E	N	19.2
Mean 3 57 p. m.				

Needle	I′
B_1 free	86° 55.6
B_2 »	59.7
» defl.	56.9
I =	86 58

1900. August 1. Obs. Isachsen.

Mer. 88° 36′.

L. T. h m	Needle	Circle	Defl.	I′
10 50 a. m.	B_1	W	—	86° 51′.2
58	»	E	—	87 5.2
11 6	B_2	E	—	20.1
15	»	W	—	14.5
20	B_1	W	—	15.0
34	»	W	N	86 57.3
44	»	E	—	51.3
Noon	»	E	N	52.5
0 10 p. m.	B_2	E	—	87 17.0
23	»	E	N	7.5
34	»	W	—	20.0
44	»	W	N	86 56.3
Mean 11 41 a. m.				

Needle	I′
B_1 free	87° 0′.8
» defl.	86 54.9
B_2 free	87 17.9
» defl.	1.9
I =	87 4

1900. August. 2. Obs. Isachsen.

Mer. 90° 28′.

L. T. h m	Needle	Circle	Defl.	I′ ° ′
10 6 a. m.	B_1	E	—	86 48.8
18	»	E	N	87 1.2
31	»	W	—	16.2
40	»	W	N	86 54.8
50	B_2	W	—	57.0
11 10	»	W	N	37.8
21	»	E	—	87 5.5
35	»	E	N	0.6
45	B_1	E	—	86 47.5
56	»	E	N	87 1.9
0 7 p. m.	»	W	—	5.0
17	»	W	N	86 55.6
Mean 11 11 a. m.				

Needle	I′ ° ′
B_1 free	86 59.4
» defl.	58.4
B_2 free	87 1.3
» defl.	86 49.2
I =	86 57

Station III.

1901. July 5. Obs. Baumann.

Mer. 157° 1′.

L. T. h m	Needle	Circle	Defl.	I′ ° ′
11 6 a. m.	B_1	E	—	87 40.6
23	»	W	—	36.2
54	»	W	S	23.8
0 25 p. m.	»	E	S	31.1
1 34	B_2	E	—	88 4.0
51	»	W	—	87 19.5
2 11	»	W	S	1.3
33	»	E	S	57.3
Mean 0 52 p. m.				

Needle	I′ ° ′
B_1 free	87 38.3
» defl.	27.5
B_2 free	41.7
» defl.	29.3
I =	87 34

1901. July 22. Obs. Baumann.

Mer. 154° 36′.

L. T. h m	Needle	Circle	Defl.	I′ ° ′
11 4 a. m.	B_1	E	—	87 25.6
14	»	W	—	88 10.6
0 2 p. m.	»	W	S	87 47.5
21	»	E	S	26.4
2 59	B_2	E	—	88 14.1
3 9	»	W	—	87 31.3
28	»	W	S	12.2
50	»	E	S	88 27.3
Mean 1 31 p. m.				

Needle	I′ ° ′
B_1 free	87 48.1
» defl.	37.0
B_2 free	52.7
» defl.	49.8
I =	87 47

1901. August 11. Obs. Baumann.

Mer. 135° 57′.

L. T.	Needle	Circle	Defl.	I′
h m				° ′
11 0 a. m.	B_1	E	—	87 51.2
7	»	W	—	41.2
20	»	W	S	31.2
28	»	E	S	35.0
37	B_2	E	—	88 10.0
41	»	E	S	87 58.8
49	»	W	—	32.5
55	»	W	S	13.7
Mean 11 30 a. m.				

Needle	I′
	° ′
B_1 free	87 46.2
» defl.	33.1
B_2 free	51.3
» defl.	36.3
I =	87 42

Station IV.

1902. July 3. Obs. Baumann.

Mer. 5° 26′.

L. T.	Needle	Circle	Defl.	I′
h m				° ′
10 54 a. m.	B_1	W	—	87 54.8
11 5	»	E	—	88 5.0
33	»	E	N	87 53.3
0 5 p. m.	»	W	N	47.2
2 58	B_2	W	—	40.0
3 11	»	E	—	88 17.8
33	»	E	N	21.3
58	»	W	N	87 13.3
Mean 1 25 p. m.				

Needle	I′
	° ′
B_1 free	87 59.9
» defl.	50.3
B_2 free	58.9
» defl.	47.3
I =	87 54

1902. July 4. Obs. Baumann.

Mer. 3° 33′.

L. T.	Needle	Circle	Defl.	I′
h m				° ′
9 50 a. m.	B_1	E	—	88 7.8
10 6	»	E	S	87 47.7
20	»	W	—	54.9
38	»	W	S	43.0
11 29	B_2	W	—	42.8
46	«	W	S	24.9
0 5 p. m.	»	E	—	88 10.3
22	»	E	S	6.2
Mean 11 5 a. m.				

Needle	I′
	° ′
B_1 free	88 1.4
» defl.	87 45.4
B_2 free	56.5
» defl.	45.5
I =	87 52

1902. July 4. Obs. Baumann.

Mer. 2° 26′.

	L. T. h m	Needle	Circle	Defl.	I' ° ′
	2 53 p. m.	B_1	E	—	87 58.9
	3 4	»	W	—	54.8
	20	»	W	N	43.5
	38	»	E	N	49.9
	4 28	B_2	W	—	42.5
	38	»	E	—	88 24.7
	53	»	E	N	21.1
	5 13	»	W	N	87 13.0
Mean	4 1 p. m.				

Needle	I' ° ′
B_1 free	87 56.9
» defl.	46.7
B_2 free	88 3.6
» defl.	87 47.1
$I =$	87 54

E. GENERAL RESULTS.

The folloving table contains a complete list of the results of the determinations made during the Expedition, of the three magnetic elements, east declination, *D*, horizontal intensity, *H*, and inclination, *I*.

Station	Date			*D*	*H*	*I*
				° ′		
I a.	1898.	Nov.	25.	258 19		
		—	28.	258 16		
		—	30.	258 29		
		Dec.	1.	257 40		
		—	2.	258 5		
	1899.	May	27.	257 34		
		—	29.	258 20		86° 0′
		—	30.	257 52	0.04092	
I b.	1899.	June	5.	256 6	0.04057	
		—	8.	255 40	0.04015	
		—	9.	255 35	0.03960	
II.	1900.	June	26.	243 47		
		—	27.	243 25		87 1
		—	28.	}	0.03348	
		—	29.	}		
		July	2.	242 52	0.03338	
		—	3.			86 55
		—	20.	243 24 }		
		—	23.	243 28 }	0.03263	87 9
		—	24.	}		87 12
		—	25.	243 59	0.03369	86 54
		—	26.	242 59	0.03230	
		—	27.	242 51		86 55
		—	28.			87 1
		—	31.	242 47		86 57
		Aug.	1.	242 17		87 4
		—	2.	243 22		86 57
		—	3.	243 23	0.03341	
III.	1901.	July	2.	230 55		
		—	4.	230 26		
		—	5.			87 34
		—	10.	230 58	0.02473	
		—	11.	230 31	0.02595	
		—	12.	229 34	0.02487	
		—	15.	230 31		
		—	20.	230 11		
		—	22.			87 47
		Aug.	11.			87 42

Station	Date			D	H	I
				° ′		
IV.	1902.	June	3.	232 17		
		—	5.		0.02303	
		—	6.		0.02319	
		—	11.	230 17	0.02365	
		—	12.	230 21	0.02366	
		—	13.	231 3	0.02319	
		—	14.	230 24	0.02346	
		—	16.	231 27	0.02341	
		—	18.	231 16		
		—	20.	231 57	0.02360	
		—	25.	232 7	0.02395	
		—	30.	230 50	0.02362	
		July	1.	231 35	0.02407	
						° ′
		—	3.			87 54
		—	4.			87 53
		—	5.	230 53		
		—	7.	231 2		
		—	10.	230 43		

As will be seen from the table, the declination at Station I is a little more than 2° more easterly on the south side of the haven than on the north side. Station I a gives 258° 4′ as the mean for *D*, Station I b 255° 47′. I therefore take the mean of these two, 256° 56′ as the final value for Station I.

For each of the four stations I have taken, in every other instance, the mean of all the separate values given in the table on pages 79 & 80, as the final value for the declination, horizontal intensity and inclination, giving all the values the same weight.

I have finally calculated the total intensity, *W*, and its three components, *X*, *Y* and *Z*, from the final mean values of *D*, *H* and *I*. All these data, referred to the period of time that lies half-way between the first and last days on which magnetic observations have been made at the station in question, are given in the following concluding table.

Magnetic Elements	Station I		Station II		Station III		Station IV	
	Rice Strait. $\varphi = 78° 46'$ N $\lambda = 74\ 57$ W		Havne Fjord. $\varphi = 76° 29'$ N $\lambda = 84\ \ 4$ W		Gaase Fjord. $\varphi = 76° 49'$ N $\lambda = 88\ 40$ W		Gaase Fjord. $\varphi = 76° 40'$ N $\lambda = 88\ 38$ W	
	1899. 2		1900. 5		1901. 6		1902. 5	
	O	*O*−*C*	*O*	*O*−*C*	*O*	*O*−*C*	*O*	*O*−*C*
D	256° 56′ *E*	9° 13′	243° 13′ *E*	5° 53′	230° 27′ *E*	5° 46′	231° 9′ *E*	6° 4′
H	0.04031	− 0.00486	0.03315	0.00108	0.02518	− 0.00175	0.02353	− 0.00307
I	86° 0′	24′	87° 1′	5′	87° 41′	15′	87° 53′	25′
W	0.57787	− 0.01139	0.63694	0.03836	0.62293	0.02216	0.63707	0.03602
X	− 0.00911	0.00802	− 0.01494	0.00237	− 0.01603	0.00312	− 0.01476	0.00402
Y	− 0.03927	0.00255	− 0.02959	− 0.00259	− 0.01942	− 0.00048	− 0.01832	0.00052
Z	0.57646	− 0.01107	0.63607	0.03884	0.62241	0.02225	0.63663	0.03616

It will be observed that in the table there are columns headed *O-C*, which contain the difference between the value deduced from the observations, and the theoretically calculated value for each separate element; for Professor Ad. Schmidt at Potsdam has on this occasion, as previously on the publication of the observations-results from the first Fram Expedition, been so obliging as to undertake to calculate, on the basis of his Potential Calculation for 1885.0, the theoretical value of

the magnetic elements for the four points indicated by the geographical coordinates of the four stations.

The differences given in the table (observed value minus calculated value) suffer, however, from considerable uncertainty; for in the first place the theoretical values are calculated for the period 1885.0, while the observed values are for 1899—1902, and the differences thus contain a not inconsiderable secular change, which it has not been possible to take into account.

In the next place, as I have already pointed out in the Introduction, the magnetic observations of the 2nd Fram Expedition were made under very unfavorable circumstances, the instrumental equipment, in particular, having been far from satisfying the demands made by observations as near the magnetic pole as the Stations are situated.

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REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 7.

ERNST KITTL:

DIE TRIASFOSSILIEN VOM HEUREKA SUND

(MIT 3 HELIOGRAPHISCHEN TAFELN)

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Die erste Nachricht über die geologischen Arbeiten der II. Norwegischen Polarexpedition mit der Fram (1898—1902) finde ich in dem „Geographical Journal“ (London 1903) Vol. XXII, wo dem allgemeinen Berichte Captain Otto Sverdrups pag. 56 ein „Summary of Geological Results“ von Per Schei angeschlossen ist.

Aus der beigegebenen Kartenskizze sowie aus den Bildern ersieht man dort mit Berücksichtigung des Textes sowie späterer Verlautbarungen, wie sich das ältere Palaezoikum auf die altkristallische Unterlage von North-Devon und Ellesmere Island in ziemlich flacher Lagerung bei westlicher Neigung hingelegt hat. Dem Altpalaeozoikum (Cambrium und Silur) im Jones Sund, welches quer durch Ellesmereland zieht, folgt westlich das Devon, welches von der Grinnellhalbinsel herstreicht, über die Cardiganstrasse und die Insel Nord Kent weiterhin über den Baumannsfjord und den Bayfjord nach Norden verfolgt wurde. Bei dem Grossen Bärenkap sowie an der „Schwarzen Wand“ am Nordende der Axel Heiberg Insel wurden Aufbrüche von Kohlenkalk gefunden, der die Unterlage bilden dürfte für die Triaszone [1], welche die Festlandsteile zu beiden Seiten des Heurekasundes vom Bärenkaplande im S. bis zum Nansensund und Blauen Berg im N. durchzieht. Eines der erwähnten Bilder zeigt sehr schön die Einschaltung dunkler Bänke (Decken von Basalt oder eines anderen basischen Eruptivgesteins?) in die Kalke und Sandsteine der Trias. Diese Vergesellschaftung eruptiver Decken mit den marinen Sedimentgesteinen der Trias, welche ausdrücklich erwähnt werden, scheint im Heurekasund eine charakteristische Erscheinung zu sein, die insbesondere auch vom Blauen Berg zitiert wird. Es erinnert das an gewisse südalpine Verhältnisse, wo ebenfalls sehr häufig basische Eruptivgesteine mit den Triasablagerungen verbunden sind.

[1] loc. cit. pag. 61 berichtet Schei, dass L. Mc Clintock, Sh. Osborn und E. Belcher die Existenz mesozoischer fossilführender Schichten in den Parry Inseln, also westlich von dem durch die Expedition der Fram untersuchten Gebiete bekannt waren.

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Schon damals hat SCHEI darauf hingewiesen, dass das Mesozoikum von König Oscar Land, Heiberg Land und Grinnell Land eine weite Verbreitung besitzen und nähere Beziehungen eher zu Nordeuropa (Spitzbergen) als zu Nordamerika erkennen lassen.

In dem vorläufigen Berichte, den P. SCHEI über seine geologischen Beobachtungen auf der II. Norwegischen Polarexpedition in demselben Jahre in deutscher Sprache veröffentlicht hat [1], erwähnt derselbe die auf seinen Schlittenexpeditionen in der Frühlingssaison im Heurekasunde gesammelten Materialien. Er nennt sie sehr unvollständig, ist aber doch in der Lage, ausser Eruptivgesteinen Stücke anzuführen, welche „auf das Vorhandensein von Carbon, alpiner Trias und Tertiærgebilden in diesen Gegenden schliessen lassen“ [2].

Nach seinem Berichte [3] bestehen „die Küsten auf beiden Seiten des Heurekasundes wesentlich aus Quarzsandstein mit untergeordnetem Schiefer und Kalksteinen. Fossilien sind nur in wenigen Exemplaren an im Ganzen fünf Stellen gefunden worden, so am Ammonitenberge auf der Nordspitze des Bärenkaplandes ein Ammonit und einige Lamellibranchiaten, darunter vielleicht *Daonella Lommeli*“; „gleichfalls ein Ammonit und einige Lamellibranchiaten in Kalkstein auf der Hutinsel im Bayfjord und in schwarzem Schiefer am Blauen Berge eine *Daonella* sp.“

Sind nun die hier gemachten Angaben über die Fossilien annäherungsweise zutreffend, so sind auch die daraus gezogenen Folgerungen über das Auftreten alpiner Trias im Heurekasunde und dessen Umgebung richtig.

Die von P. SCHEI und den anderen Teilnehmern der Expedition gesammelten Materialien wurden zum Zwecke eingehender Bearbeitung verschiedenen Palaeontologen, so A. G. NATHORST in Stockholm und TH. TSCHERNYCHEFF in St. Petersburg übergeben. Es hat auch mir P. SCHEI noch im Jahre 1905 die Triasmaterialien der II. Norwegischen Polarexpedition behufs näherer Untersuchung zugesandt.

Meine Befunde habe ich in dem folgenden zusammengestellt.

Das mir zugekommene Material enthält Fossilien von nachstehenden Fundorten:

1. Ammonitenberg am Bärenkaplande (Ammonitberget, Björnekaplandet).

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[1] In O. SVERDRUP, Neues Land, Vier Jahre in Arktischen Gebieten II. 1903.
[2] loc. cit. pag. 2.
[3] loc. cit. pag. 10.

2. Bärenspitze am Bärensund im Heurekasund (Björneodden, Björne Sundet [1], Eureka Sundet).
3. Depôt auf der Grossen Insel im Heurekasund (Depotet Storöen, Eureka Sundet).
4. Hutinsel nächst dem Bayfjord und König Oscars Land im Heureka Sund (Hatöen, Baysfjord).
5. Blauer Berg im Greeleyfjord N. vom Heurekasund (Blaafjeld, Greeleyfjord).
6. Westlicher Teil des Blauen Berges [2].

Zunächst seien mir einige Bemerkungen über den Gesteinscharakter sowie über die fossilen Faunen der einzelnen Fundorte gestattet. Diesen möge dann die Beschreibung der Fossilien selbst folgen.

1. Ammonitenberg am Bärenkaplande.

[Ammonitberget, Björnekaplandet.]

Das Gesteinsmaterial dieses Fundpunktes ist ein schwarzgrauer, bituminöser kalkhältiger Schiefer. Das häufigste Fossil in demselben ist *Halobia Zitteli* Lindstr.; daneben erscheinen vereinzelt Ammoniten sowie kleinere Lamellibranchiaten und Brachiopoden. Die erwähnte *Halobia* tritt — wie das bei den Arten dieser Gattung Regel ist — massenhaft auf.

Es ist bemerkenswert, dass die *Halobia Zitteli* auf Spitzbergen in einem petrographisch ganz ähnlichen Gesteine vorkommt.

Insofern hier auch mehrere Arten von Ammoniten gefunden wurden, ist die Bezeichnung Ammonitenberg nicht unzutreffend gewählt worden.

Vom Ammonitenberge konnte ich nachfolgende Arten bestimmen:

Discina cf. Barrentsi I. Böhm.
Halobia Zitteli Lindstr.
Avicula polaris Kittl.
Gryphaea Skuld I. Böhm.
Protrachyceras Sverdrupi Kittl.
Protrachyceras cf. Sverdrupi Kittl.
Protrachyceras aff. Richthofeni Mojs.

[1] Diese beiden Namen kommen weder auf der Karte von P. Schei (loc. cit.) noch auf der grossen Karte des Arbeitsgebietes der II. Norwegischen Polar-Expedition von G. Isachsen vor, welche letztere mir Herr Professor N. Wille freundlichst verschafft hat.

[2] Dieser 6. Fundort wurde von Schei wohl zu dem vorangehenden gerechnet, als er von 5 Fundorten berichtete. Auf den Originaletiketten ist er getrennt gehalten.

Diese kleine Fauna darf als der ladinischen oder der karnischen Stufe entsprechend betrachtet werden; die 2 genannten Stufen sind zeitlich von einander wenig verschieden, vielleicht sogar nur vikarierende Faciesbildungen zeitlich gleichwertiger Ablagerungen.

2. Bärenspitze nächst der Bärenbucht im Heurekasund.

[Björneodden, Björnesundet, Eurekasundet.]

Von dieser Lokalität liegen bräunliche bis schwärzliche Sandsteinschiefer vor, deren Schichtflächen im ersten Falle verkohlte Pflanzenreste zeigen, die eine Bestimmung nicht zulassen, während eine Platte schwärzlichen Schiefers nur Hieroglyphen-artige Fossilien darbietet, die man als *Gyrochorda* sp. anführen kann.

Die schiefrigen Sandsteine mit den verkohlten Pflanzenfragmenten gestatten ohne weitere Daten keinen sicheren Schluss auf ihr Alter; sie erinnern aber lebhaft zunächst an drei ähnliche alpine Vorkommnisse in der Trias: in den Wengener Schichten (ladinisch) findet man nicht selten ebensolche mazerierte Pflanzenfragmente neben besser erhaltenen; dieses Vorkommen dürfte mit dem von der Bärenspitze die meisten Analogien haben. Beiläufig gleichaltrig sind die ebenfalls Pflanzenreste führenden bituminösen Fischschiefer von Raibl, die gar nicht selten relativ gut erhaltene aber auch verkohlte Pflanzenreste enthalten. Vielleicht etwas jünger sind die Kohlen und Pflanzenreste führenden Sandsteine der nordalpinen Lunzer Schichten.

Dazu kommt der bekannte pflanzenführende Horizont im Keuper der Germanischen Trias, welcher ein weiteres Analogon der Sandsteine von der Bärenspitze darbietet.

Wenn sonach mit einiger Berechtigung ein triadisches Alter dieser anstehenden pflanzenführenden Sandsteine von der Bärenspitze angenommen werden kann, so darf doch die Möglichkeit eines höheren oder jüngeren Alters derselben nicht ganz ausser Acht gelassen werden.

Ausser dem besprochenen pflanzenführenden Sandsteine liegen von der Bärenspitze einige Platten eines an marinen tierischen Resten reichen schiefrigen Sandsteines vor, die nach der beiliegenden Angabe von einem „nicht anstehend gefundenen Blocke“ herrührten, der „unterhalb der höchsten marinen Grenze ca. 100. über dem Meeresspiegel“ aufgefunden wurde. Die in diesen Gesteinsstücken vorkommenden Fossilien deuten auf eine individuenreiche Pelecypodenfauna hin, von welcher ich allerdings nur 4 Arten bestimmen konnte, nämlich:

Pecten (Entolium) cf. Öbergi LUNDGR.
Cardita ursina KITTL.
Cardita Wittei KITTL.
Palaeopharus Scheii KITTL.

Diese mit der viel artenreicheren durch I. BÖHM von der Bäreninsel bei Spitzbergen[1] beschriebenen Fauna recht innige Beziehungen aufweisende kleine Fauna ist wohl sicher triadischen Alters. Der Block, aus dem sie stammt, braucht keinem sehr weiten Transporte unterlegen gewesen zu sein, da die meisten der in ihm erhaltenen Arten sich an anderen Lokalitäten des Heurekasundes wiederfinden. Es ist daher auch recht wahrscheinlich, dass das Anstehende der Sandsteine mit der zitierten marinen Pelecypodenfauna nicht sehr weit von der heutigen Lagerstätte des isolierten Blockes gefunden werden könnte. Das triadische Alter der in demselben vorkommenden Fossilien ist nach meiner Anschauung recht geeignet, die Annahme eines ebenfalls triadischen Alters für die von SCHEI anstehend gefundenen Sandsteine mit Pflanzenresten zuu nterstützen.

3. Depôt auf der Grossen Insel im Heurekasund.

[Depotet Storöen, Eurekasundet.]

Ausser einem kleinen Stückchen Hornsteinschiefer mit unbestimmbarer Brut von *Daonella* oder *Halobia* — einem losen Funde — liegen von der Depôtstelle auf der Grossen Insel Proben eines kalkhältigen Sandsteinschiefers mit marinen Fossilien vor, worunter vor Allem wieder die *Halobia Zitteli* auffällt, die — wenn auch z. T. nur in Fragmenten — in jedem Stücke zu finden ist. Die Liste der gefundenen Arten ist:

**Halobia Zitteli* LINDSTR.
Avicula polaris KITTL.
Pseudomonotis? sp.
Pecten Oscari KITTL.
°*Pecten Öbergi* LUNDGR.
°*Palaeopharus Scheii* KITTL. (?)

Halobia Zitteli fand ich in dem Material vom Bärenkaplande, die mit ° bezeichneten Arten konnte ich in dem losen Blocke von der Bärenspitze konstatieren.

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[1] I. BÖHM, Über die obertriadische Fauna der Bäreninsel. Kun. Svenska Vet. Ak. Handl., Bd. 37, No. 3.

4. Hutinsel nächst dem Bayfjorde (König Oscars Land) im Heurekasunde.

[Hatöen, Baysfjord, Kong Oscars Landet.]

Es sind graue fossilreiche Kalksteine, welche von der Hutinsel vorliegen; es kann nur bedauert werden, dass von dieser Fundstelle nicht mehr Material mitgebracht worden ist, da das bisher vorhandene wegen der Unvollständigkeit der Reste häufig nur eine unsichere Bestimmung gestattete.

Trotzdem ergab sich aus dem grauen Kalke der Hutinsel eine ziemlich artenreiche Fauna:

Brachiopode indet.
Halobia juv. indet.
Gervilleia cf. Loewenighi I. Böhm.
Hoernesia ? sp.
Lima hatensis Kittl.
Lima Hakoni Kittl.
Lima boreas Kittl.
Pecten cf. Öbergi Lundgr.
Pecten Oscari Kittl.
Gryphaea cf. Keilhaui I. Böhm.
Leda (Phaenodesmia) regia Kittl.
Palaeoneilo ? cf. lunaris I. Böhm.
Nucula ? sp. indet.
Cardinia ? ovula Kittl.
Palaeopharus ? sp.
Anoplophora ? ephippium I. Böhm.
Homomya ? sp.
Trachyceras sp.

Wie zu ersehen, sind auch hier wieder Lamellibranchiaten vorwaltend. Von diesen sind einige mit schon von der Bäreninsel bekannten identisch oder stehen solchen sehr nahe. Auch an anderen Fundorten des Heurekasundes auftretende Arten finden sich darunter. Als wahrscheinliches Alter dieser Lokalität ergibt sich wieder die ladinische oder unter-karnische Stufe.

5. Blauer Berg N. vom Greeleyfjord und Heurekasund.

[Blaafjeld, Greeleyfjord.]

Vom Blauen Berge liegen dunkle, fast schwarze Kalkschiefer mit Halobien und (in anderen Stücken) Daonellen vor, sowie ein aschgrauer Kalkstein.

Der Kalkstein sowie die eine Probe der schwarzen Schiefer führen *Halobia Zitteli* LINDSTR., welches Fossil in dem letztgenannten Gesteine ausschliesslich vorkommt, in dem Kalke aber zusammen mit Fragmenten anderer unbestimmbarer Lamellibranchiaten auftritt. Nach dem Erscheinen der *Halobia Zitteli* in beiden Gesteinen darf man es als wahrscheinlich ansehen, dass der Kalkstein und der Schiefer des Blauen Berges ein nahezu oder völlig gleiches Alter besitzen. In wie weit das richtig ist, lässt sich nur im Terrain entscheiden.

Mehrere Proben eines schwarzen bituminösen Kalkschiefers führen eine *Daonella*, welche sich mit keiner bekannten Art vereinigen lässt, die ich daher neu benannt habe. Es ist die unten beschriebene *Daonella Frami* m. Nach ihrem Habitus könnte diese Art auf einen ladinischen oder unterkarnischen Horizont hinweisen, der vermutlich unter den Bänken mit *Halobia Zitteli* liegt. Dieser Annahme scheint mir die einer noch zu erwähnenden Probe des grauen Kalkes beigefügte Notiz: „Im Hangenden einer Diabasintrusion“ nicht zu widersprechen. Eine Bekräftigung der als wahrscheinlich angenommenen Altersfolge kann aber darin natürlich ebenfalls nicht gefunden werden.

Im allgemeinen reihen sich die besprochenen Funde vom Blauen Berge recht gut den übrigen Trias-Vorkommnissen des Heurekasundes an, indem sie diesen gegenüber eine wesentliche Altersdifferenz nicht erschliessen lassen.

6. Westlicher Teil des Blauen Berges.

Ein grauer Kalkstein mit Muscheltrümmern, der von dort vorliegt und nach SCHEIS Angabe aus dem Hangenden einer Diabasintrusion stammt, zeigt nur wenige halbwegs bestimmbare Exemplare. Es sind Fragmente von Halobien, die wahrscheinlich an *Halobia Zitteli* anzuschliessen sind.

Beschreibung der Arten.

I. *Brachiopoda.*

An Brachiopoden fand sich nur eine Art von Discina und eine generisch unbestimmte Klappe einer zweiten Art.

1. *Discina cf. Barrentsi* I. Böhm.

Taf. I, Fig. 1.

Zwei mir vorliegende Dorsalklappen mit glatter glänzender Oberfläche, die nur am Rande Spuren einer Radialskulptur erkennen lassen, besitzen exzentrische, dem Hinterrande sehr nahe gerückte, etwas nach hinten gekrümmte Wirbeln. Eine konzentrische Skulptur ist nur schwach ausgebildet.

Von den aus dem deutschen Muschelkalk bekannten Formen steht unsere *Discina* der *D. silesiaca* (Dkr.)[1] in Bezug auf Umriss und Wirbellage am nächsten; es fehlt jener jedoch die rauhe konzentrische Streifung der letzteren, welches Merkmal an ersterer immerhin durch den Fossilisationsprozess verloren gegangen oder aber wegen des verschiedenen Erhaltungszustandes nicht mehr erkennbar sein könnte. Auch sind unsere Exemplare kleiner.

Aus der alpinen Trias sind bisher nur sehr kleine Formen publiziert worden[2], obgleich ihr nach meinen Erfahrungen auch grössere Discinen nicht ganz fehlen. Die Kössener Schichten, welche jetzt mit Recht der Trias zugeteilt werden, haben die grössere von E. Suess beschriebene *Discina cellensis* geliefert[3]. Das deutsche Rhät die mit subzentralem Wirbel behaftete *Discina rhaetica Andreae*[4].

Eine recht auffallende Ähnlichkeit mit unseren Exemplaren besitzt die durch I. Böhm vom Mt. Misery auf der Bäreninsel beschriebene

[1] Palaeontographica I. Bd., Taf. XIII, Fig. 13–14.

[2] A. Bittner, Brachiopoden der alpinen Trias. Abh. d. k. k. G. R.-A. XIV. Bd. Wien. 1890.

[3] E. Suess, Brachiopoden der Kössener Schichten. Denkschr. d. Wiener Akad. d. Wissensch. VII. Bd. 1854.

[4] A. Andreae, Die Brachiopoden des Rhät von Malsch. Mitt. d. grhz. Badischen geol. Landesanstalt III, 1. Heft, 1893, p. 13.

Discina Barrentsi. Sie zeigt dieselbe Grösse und exzentrische Wirbellage, jedoch eine kräftigere konzentrische Rippung als jene.

Darnach ist die Möglichkeit einer Identität unserer Exemplare sowie der *Discina Barrentsi* I. Böhm mit *Discina silesiaca* Dkr. nicht ausgeschlossen.

Da ich die meiste Übereinstimmung der Discinen vom Bärenkaplande mit *Discina Barrentsi* finde, so reihe ich erstere der letzteren an. Sehr wahrscheinlich bilden sie eine einzige Art.

Fundort: Ammonitenberg am Bärenkaplande (2 Exemplare).

2. *Brachiopod indet.*

Eine Schale in Steinkernerhaltung zeigt die Abdrücke der Zahnstützen und der Schnabelhöhlung; ein Medianseptum ist nicht zu erkennen. Der Rest ist wohl nicht vollständig genug, um eine genauere Bestimmung zu gestatten.

Fundort: Hutinsel im Bayfjord.

II. *Lamellibranchiata.*

In dem folgenden werden 23 Arten oder Formen beschrieben, die sich auf 15 Gattungen verteilen, worunter eine neu benannte; diese Gattungen sind:

Avicula 1 Art (A. polaris Ki.)
Daonella 1 Art (D. Frami Ki.)
Halobia 2 Arten (H. Zitteli Lindstr.; H. sp.)
Gervilleia 1 Art (G. cf. Löwenighi I. B.)
Lima s. g. Plagiostoma 3 Arten (P. Hakoni Ki., P. hatensis Ki., Lima sp.)
Pecten 4 Arten (P. cf. Öbergi, P. Öbergi Lundg., P. Oscari Ki., P. sp.)
Gryphaea 2 Arten (G. Skuld I. B., cf. Keilhaui I. B.)
Leda 1 Art (L. regia K.)
Palaeoneilo? 1 Art (P. cf. lunaris I. B.).
Nucula? 1 Art (N. sp.)
Cardinia? 1 Art (C. ovula Ki.)
Cardita 2 Arten (C. ursina Ki., C. Wittei Ki.)

Palaeopharus nov. gen. 1 Art (P. Scheii Ki.)
Homomya 1 Art (H.? sp.)
Anoplophora 1 Art (A. cf. ephippium I. B.).

3. *Avicula polaris* KITTL *n. f.*

Taf. I, Fig. 2–4.

Die Schale ist etwas höher als lang, wenig nach hinten gezogen, der Wirbel ist vorragend und um 1/3 der Schalenlänge nach vorne geschoben. Die linke Klappe ist stärker gewölbt als die rechte. Die hinteren Flügeln sind dreieckig und relativ gross, der Vorderflügel der linken Klappe ist undeutlich, jener der rechten Klappe scharf abgesetzt. Ein Byssusausschnitt scheint vorhanden zu sein. Die Schalenoberfläche zeigt einzelne Radialrippen, die am Rande zahlreicher werden.

Wie so häuflg bei Arten mit ungleicher Wölbung der Klappen kommt die stärker gewölbte Klappe häufiger zur Beobachtung als die flachere. Dementsprechend liegt von der *Avicula polaris* die stärker gewölbte linke Klappe in mehreren Exemplaren vor (vgl. Fig. 2 und 3), die flachere rechte jedoch nur in einem einzigen (Fig. 4). Die Wölbungsverhältnisse der beiden Klappen würden etwa den von *Antijanira* BITTN. entsprechen. Selbstverständlich kann aber deshalb noch nicht an irgend eine Verwandtschaft der vorliegenden Art mit *Antijanira* gedacht werden, wie ja die *Pectines* in dieser Hinsicht ganz ausser Betracht bleiben.

Bezüglich der generischen Stellung der Art scheinen mir einige Bemerkungen am Platze zu sein. So wenig es zweifelhaft war, dass *Avicula polaris* zu den Aviculiden gehöre, so war doch mit Rücksicht auf die unvollständige Erhaltung der vorliegenden Exemplare die generische Stellung derselben etwas zweifelhaft.

Die relative Länge des Schlossrandes, die Ausbildungsweise der Flügeln sowie der Umriss erinnern auch an *Pseudomonotis*. Das Ohr der rechten Klappe ist jedoch ohne Byssuseinschnitt, weshalb die Art zu *Pseudomonotis* nicht gestellt werden kann.

Von „*Pseudomonotis spitzbergensis* I. BÖHM“ [1], welche unten näher verglichen wird, ist die rechte Klappe gar nicht bekannt, der Nachweis der Zugehörigkeit zu *Pseudomonotis* also noch ausständig; man würde

[1] I. BÖHM, Die obertriad. Fauna d. Bäreninsel; K. Svenska Vetensk. Akad. Handl. Bd. 37, No. 3, pag. 27, Taf. II, Fig. 10–13.

also besser tun, die letztgenannte Art ebenfalls bei *Avicula* unterzubringen, wo ja rechte Klappen ohne Byssuseinschnitt vorkommen.

Im Umrisse, nicht aber in der Skulptur scheint mir unsere Art der *Avicula mucronata* GABB.[1] sehr ähnlich zu sein. Der längs des Schlossrandes schnabelförmig ausgezogene Hinterflügel ist bei unserer Art in ähnlicher, jedoch kaum in so extremer Weise entwickelt.

Nachdem also unsere Art der „*Pseudomonotis*" *spitzbergensis* I. BÖHM ähnelt, welche, wie oben gezeigt, möglicher Weise keine *Pseudomonotis* ist, vielmehr wahrscheinlich besser zu Avicula gestellt würde, so ergibt sich daraus die Möglichkeit einer Identität derselben mit *Avicula polaris*. Im Umrisse sind beide Arten einander recht ähnlich, auch besitzen beide eine Radialskulptur. Nach der Abbildung bei I. BÖHM (das Original habe ich leider nicht kennen gelernt) ist die Skulptur der *Pseudomonotis spitzbergensis* an der Peripherie entwickelt und besteht aus „fadenförmigen, gedrängten Rippen, zwischen welche sich einzelne einschalten, und kräftigen Anwachsstreifen"[2]. Bei *Avicula polaris* sind einzelne Rippen schon in der Nähe des Wirbels erkennbar, im Übrigen sind die Rippen ebenfalls fein und dichtgedrängt; es dürfte also hier die Skulptur so ziemlich über die ganze Schale verbreitet gewesen sein. In dieser Hinsicht vermag also zwischen den beiden verglichenen Arten kein sehr grosser Unterschied gefunden werden. Nach BÖHM sollen bei der Art von Spitzbergen aber die „Ohren klein, scharf abgesetzt, flach" sein[3], während ich im Gegensatze dazu bei *Avicula polaris* relativ grosse Ohren fand; namentlich das hintere ist lang ausgezogen. Hier zeigt sich also eine Differenz, welche mir eine Identifizierung beider Arten zu verbieten scheint. Dazu kommt noch, dass bei der Art von Spitzbergen die rechte Klappe noch unbekannt ist.

Fundorte: Ammonitenberg am Bärenkaplande (9 Exemplare), Depôt auf der Grossen Insel im Heurekasunde (1 Exemplar).

4. *Daonella Frami* KITTL. *n. f.*

Taf. I, Fig. 5 u. 6.

Der Umriss der Schalen ist — von dem geraden Schlossrande abgesehen — schräg eiförmig mit einiger Annäherung an eine symme-

[1] W. M. GABB, Triassic & cretaceous fossils, Geolog. Survey of California. Paleontology I.

[2] I. BÖHM, loc. cit.

[3] Der genannte Autor stellt seine Art zu der Untergattung *Eumicrotis*, ohne jedoch die bezeichnende rechte Klappe zu kennen. (Vgl. A. BITTNER, Über *Pseudomonotis Telleri* u. verwandte Arten der Untern Trias. Jahrb. d. k. k. Geolog. Reichsanst. 1900, 50. Bd.).

trische Gestaltung. Der Wirbel ist nur wenig exzentrisch; die breiten Radialrippen beginnen meist schon in der Entfernung von wenigen Millimetern vom Wirbel und erscheinen erst in bedeutenderer Distanz vom Wirbel (10—15 mm) einfach geteilt. Hinten ist ein meist schwach gewölbtes dreieckiges Feld (meist als „das hintere Ohr" bezeichnet) fast rippenfrei (siehe das grosse Exemplar bei Fig. 5), während vorne ein ähnliches aber schmäleres Feld erscheint, das noch durch eine Furche geteilt ist, so dass die Rippen hier fast bis zum Schlossrande hin ausgebildet sind (siehe die 2 vollständigen Exemplare bei Fig. 6). In der Nähe des Wirbels findet man häufig eine schwache konzentrische Runzelung, die sich gegen den Rand hin nur zuweilen, und schwächer ausgebildet, einstellt und daher dort von den Radialrippen überwogen wird.

Daonella Frami liess sich mit keiner der schon beschriebenen Arten vereinigen. Manche Exemplare erinnern an *Daonella styriaca* Mojs.[1]; sie sind aber weniger symmetrisch und ist bei ihnen die Rippeneilung mehr vorgeschritten. Die beiden Arten haben eine gewisse Inconstanz hinsichtlich der Ausbildung ohrähnlicher Felder mit einander gemein. Unserer Art ähnlich ist auch *Daonella indica* Bittn.[2], doch ist diese etwas symmetrischer und sind bei dieser Art die Rippen mehr geteilt. Einige südalpine Formen (*Daon. cassiana* Mojs., *Daon. Richthofeni* Mojs. etc.), welche der ladinischen Stufe angehören, sind dagegen mehr unsymmetrisch ausgebildet als *D. Frami*; auch ist bei ihnen die Rippenteilung weiter vorgeschritten,

Daonella Frami scheint eine bedeutende Grösse zu erreichen, bis zu 42 mm. Höhe und darüber.

Fundort: Blauer Berg N. von Greeleyfjord.

5. *Halobia Zitteli* Lindstr.

Taf. I, Fig. 7—11.

1865. G. Lindström, Om Trias och Jura versteningar från Spetzbergen. K. Sv. Vet. Ak. Handl. B. 6, No. 6, 1865, p. 6, Taf. I, Fig. 6—12; Taf. II, Fig. 11.

1874. E. v. Mojsisovics, Üb. d. triad. Pelecyp. *Daonella* und *Halobia*. Abhandl. d. k. k. Geolog. Reichsanst. Wien. B. VII, Heft 2, 1874, p. 32, Taf. III, Fig. 10—11.

1877. P. Öberg, Om Triasversteningar från Spetsbergen. K. Sv. Vet. Ak. Handl. B. 14, No. 14, p. 6, Taf V, Fig. 3—4.

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[1] E. v. Mojsisovics, Über die triadischen Pelecypodengattungen *Daonella* und *Halobia*. Abhandl. d. k. k. geolog. Reichsanstalt in Wien. Bd. VII, Heft 2, p. 10, Taf. I, Fig. 4—5.

[2] A. Bittner, Himalayan fossils III, 2. Trias Brachiopoda & Lamellibranchiata (Palaeont. Indica, Ser. XIII) p. 39, Taf. VII, Fig. 4—11.

1903. I. Böhm, Über die obertriadische Fauna der Bäreninsel. K. Sv. Vet. Akad. Handl. B. 57, No. 3. — *Halobia Zitteli* p. 30, Taf. III, Fig. 27; *Halobia cf. Neumayri* p. 32, Taf. III, Fig. 29; *Daonella Lovéni* (p. p.) pag. 33, Fig. 30 (non Figg. 22, 25 & 31).

Die aus dem Gebiete des Heurekasundes u. z. namentlich von dem Bärenkaplande aber auch von anderen Lokalitäten vorliegenden Materialien enthalten zahlreiche Individuen von Halobien in den verschiedensten Altersstadien. Einzelne erreichen eine Höhe bis zu 7 dm. und eine Länge bis zu 11 dm.

Die Formen, welche hier erörtert werden sollen, erinnern schon häufig auf den ersten Blick an die zuerst durch G. Lindström vom Eisfjord auf Spitzbergen beschriebene *Halobia Zitteli*. Soweit sich das genauer erheben liess, stimmt diese Art mit den Halobien vom Bärenkaplande in den wesentlichen Merkmalen überein; Wirbellage, Berippung (in Bezug auf diese insbesondere die weitgehende Rippenteilung und deren Knickung in der mittleren Schalenregion längs einer bestimmten noch jugendlichen Zuwachszone), und konzentrische Runzelung der Wirbelgegend sind in gleicher Weise ausgebildet, während der Schalenumriss ausgewachsener Exemplare wohl vom Heurekasund nicht aber von den Typen von Spitzbergen genau erhoben werden konnte, also nur eine beiläufige Vergleichung zuliess. Dem Original zu Fig. 10 bei Mojsisovics l. cit. (wahrscheinlich der Gypsabguss von Lindströms Type), welches mir vorliegt, fehlt der Schalenrand und die Zuwachsstreifen sind zu undeutlich um jenen mit Sicherheit zu rekonstruieren. Auch der Erhaltungszustand der Ohren an der Type lässt viel zu wünschen übrig.

Lindströms Angabe der Rippenzahl mit 20—30 ist an und für sich schon nur eine beiläufige, die aber — wenn man nur Lindströms Original in Betracht zieht — nicht leicht durch eine genauere ersetzt werden kann, da die Rippen oft schon gepaart oder geteilt aus der unberippten Wirbelregion herauskommen und die Zahl der Primærrippen deshalb fast nicht festgestellt werden kann. Die aus dem Gebiete des Heurekasundes vorliegenden Exemplare sind weit vollständiger als jene von Spitzbergen, so dass ich hier in dem folgenden auf Grund des neuen Materiales eine ausführlichere Artsbeschreibung geben kann.

Der Umriss der Schalen ist langgestreckt, vorn verschmälert, hinten höher, vom geraden Schlossrande weg nach hinten abgeschrägt. Der Wirbel liegt bei kleinen Exemplaren nach vorn gerückt zwischen dem ersten und zweiten Drittel der Länge der Schale, bei grossen ausgewachsenen aber fast in der Mitte, nur wenig vorgerückt. Den Wirbel umgeben den Zuwachszonen entsprechende konzentrische wellige Runzeln.

Bei einer Schalenhöhe von 8 bis 11 mm. erscheint meist eine tiefe Zuwachsfurche. Das auffälligste Skulpturelement der Schalen sind Radialrippen, welche schon in einer Entfernung von wenigen Millimetern vom Wirbel beginnen, meist einfach, selten als gepaart erscheinen. Bei weiterem Wachstum tritt eine einfache bis mehrfache Gabelung der Rippen ein, welche namentlich bei den vorderen Rippen grosser Exemplare eine deutlich 3—4 fache ist, so dass ausgesprochene Rippenbündel entstehen, deren Teilrippen fein oder grob sein können. Bei den meisten Rippen erscheint eine tiefere primäre Teilungsfurche; die Teilrippen sind dann bündelförmig weiter geteilt. Die hinteren Radialrippen zunächst dem hinteren Ohre sind etwas wellig hin und her gebogen. Nur die vordersten und die hintersten Rippen in der Nähe der Ohren verlaufen vom Wirbel aus gerade bis zum Schalenrande; alle übrigen erleiden in der Nähe der oben erwähnten tieferen Zuwachsfurche eine Beugung oder Knickung. Die zwei hier in Fig. 1 u. 2 abgebildeten grossen Exemplare zeigen die vollständigen Ohren: ersteres das hintere, letzteres das vordere.

Das sogenannte „hintere Ohr“ besitzt Zuwachsstreifen, die sich in stetiger Krümmung dem Schlossrande zuwenden und auf diesen unter spitzem Winkel treffen. Ein etwa 10° einnehmendes dreieckiges Feld nächst dem Schlossrande ist unberippt, dann folgt eine schwache Einzelrippe, nach dieser ein in der Grösse dem ersten ähnliches Feld mit etwa 8 feinen, nur schwach ausgebildeten dicht gedrängten Rippen, denen sich ganz unvermittelt kräftigere, fast schon der normalen Rippenstärke entsprechende Rippen anschliessen, die zumeist wellig hin und her gebogen sind. Es folgt dann die mittlere etwa einen Quadranten einnehmende Region mit den in einer Zuwachszone geknickten Rippen. Vor diesen liegen etwa 10 meist bündelförmig geteilte fast oder ganz ungeknickte Rippen, dann erst folgt das „vordere Ohr“. Dieses letztere ist gegen die übrige Schale durch eine radiale Furche scharf und deutlich abgegrenzt und — wie z. B. das in Fig. 10 abgebildete Exemplar zeigt — gewölbt. Es trägt das vordere Ohr ausser den auf den Schlossrand spitz hinlaufenden Zuwachsstreifen eine innere und eine äussere radiale Randrippe, meist auch eine deutliche Mittelrippe.

Die oben erwähnten wellenförmigen Biegungen der Rippen sind nicht ganz auf jenen Radianten beschränkt, sondern treten zuweilen in untergeordneter Ausbildung auch an anderen Stellen auf. Die den Wirbel konzentrisch umgebenden Runzeln enden bei der oben angeführten Knickungszone der Rippen nicht, vielmehr erscheinen sie in schwächerer Ausbildung an grösseren Zuwachszonen gelegentlich wieder.

Ein Jugendexemplar der *Halobia Zitteli* vom Blauen Berge zeigt Fig. 7; es ist das besterhaltene von mehreren auf ein und demselben Gesteinsstücke befindlichen Klappen und hat einen etwas mehr rundlichen Umriss als die typischen Individuen von *Halobia Zitteli*. Die gleiche Differenz lässt die Zuwachsstreifung erkennen. Es ist daher auch die relative Höhe der Klappe eine grössere und nähert sie sich in dieser Beziehung der *Halobia Neumayri*. Der von Radialrippen freie, nur die konzentrischen Runzeln tragende Prodissoconch ist relativ klein (3.5 mm. hoch), die Radialrippen beginnen daher auch hier schon in sehr jugendlichen Schalenstadien. Eine Anzahl der Radialrippen ist deutlich gegabelt.

Das Bündel feinerer Rippen zunächst dem hinteren Ohre ist auffällig ausgebildet. Beide Ohren sind rippenfrei, nur das vordere Ohr zeigt die mediane und die obere randständige Rippe. Am hinteren Teile des unteren Klappenrandes erscheint die Knickung der Rippen sehr deutlich. Während das vordere Ohr nach unten hin durch eine Radialfurche scharf abgegrenzt ist, fehlt eine solche Begrenzung bei dem hinteren Ohre. Die Zuwachsstreifen, welche auf dem vorderen Ohre sichtbar werden, laufen eine Strecke weit fast senkrecht gegen den Schlossrand hin, wenden sich aber in der Nähe des letzteren entschieden schräge dem Wirbel zu. Das ist der Befund bei dem zunächst in Betracht gezogenen abgebildeten Exemplare.

Ein zweites unmittelbar daneben liegendes zeigt folgende Besonderheiten: auf dem vorderen Ohre sind die Zuwachsstreifen regelmässig und kräftig ausgebildet, während sie auf der übrigen Schale in unregelmässiger Weise bald feiner bald kräftiger auftreten. Auf die Radialzone neben dem vorderen Ohre setzen die regelmässigen Runzeln des letzteren nur schwächer und unregelmässiger fort. Das hintere Ohr ist nach unten durch eine isolierte kräftigere Radialrippe recht deutlich abgegrenzt.

Die sich sonach ergebenden Abweichungen der beiden Exemplare von den als mehr typisch erscheinenden halte ich für individuelle, die kaum auf eine besondere Varietät hinweisen. Die Aufstellung eines besonderen Namens ist um so überflüssiger, als ja die beiden Klappen untereinander nicht völlig übereinstimmen. Dafür aber ist das Studium der individuellen Variationen in diesem Falle lehrreich, da sie eine gewisse Inkonstanz mancher der Artcharaktere erkennen lassen.

Mit der *Halobia Zitteli* sind zunächst alle jene Arten zu vergleichen, welche geknickte Rippen besitzen, also in erster Linie:

Halobia fallax Mojs. } aus den Kalken von Hallstatt [1]
— *superba* „ }
— *rugosa* Gümb. aus den Reingrabener Schiefern [2]
— *intermedia* Mojs. aus den Reiflinger Kalken [3]
— *Neumayri* Bittn. von Balia Maden [4]
— *fascigera* Bittn. von Bambanag [5],

wozu noch einige minder bekannte oder minder wichtige Vorkommnisse anzureihen wären, die an entsprechender Stelle, wenn nötig, erwähnt werden sollen.

Halobia intermedia Mojs. und *Halobia fluxa* (Mojs.) [6] sind diejenigen Formen, bei welchen die Knickung der Rippen noch eine geringe ist und welche auch wohl die geologisch ältesten europäischen Formen dieser Gruppe sind.

Halobia rugosa Gümb. dagegen erscheint als die aberranteste aller Formen der Gruppe, zeigt auch gegen *Halobia Zitteli* in der Skulptur so viele Abweichungen, dass sie füglich bei einem genaueren Vergleiche ausser Betracht bleiben kann.

Als die mit *Halobia Zitteli* vielleicht näher verwandten Formen erübrigen sonach:

Halobia fallax, H. superba, H. Neumayri, H. fascigera.

Halobia superba besitzt eine viel stärkere und weiter ausholende Beugung der Radialrippen; zudem liegt die Beugungszone viel weiter vom Wirbel ab als bei *Halobia Zitteli.* Etwa zwischen diesen beiden kann *Halobia fallax* eingefügt werden; doch schliesst sich letztere der *Halobia superba* näher an. Auch *Halobia Neumayri* [7] zeigt die Rippenbeugungen erst in grösserer Entfernung vom Wirbel (Bittner gibt „etwa 15—16 mm." an) und erstrecken sich dieselben ebenfalls auf mehrere Zuwachszonen, so dass ich diese Art gerade mit *Hal. superba* in nähere Beziehung gebracht sehen möchte, obgleich Bittner geneigt zu sein

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[1] E. von Mojsisovics, Über die triadischen Pelecypodengattungen *Daonella* und *Halobia.* Abh. d. k. k. Geolog. Reichsanstalt, Wien, 1874. VII. Bd., No. 2.
[2] loc. cit., pag. 31, Taf. IV, Fig. 7—8.
[3] loc. cit., pag. 30, Taf. III, Fig. 5—6.
[4] A. Bittner, Triaspetrefakten von Balia in Kleinasien. Jahrb. d. k. k. Geol. Reichsanstalt Wien. 41. Bd., 1891. 1. Heft, pag. 100.
[5] Palaeontologia Indica. Ser. XV. Himalayan fossils. Vol. III, part 2. A. Bittner, Trias Brachiopoda and Lamellibranchiata. 1899.
[6] A. Bittner, Lamellibranch. d. alp. Trias. Abh. d. k. k. Geol. Reichsanst. Wien, 1895. XVIII. Bd., Heft 1, p. 79, Taf. IX, Fig. 27—29.
[7] A. Bittner, Triaspetrefakten von Balia in Kleinasien. Jahrbuch der k. k. Geolog. Reichsanstalt in Wien 1891, 41. Bd., pag. 100.

scheint, diese und andere Arten, bei welchen der Verlauf der Radialrippen „jenseits der Hauptunterbrechung wieder ein gerader wird“ [1], von jenen Formen scharf getrennt zu halten, welche — wie besonders *Halobia rugosa* — jenseits der Hauptunterbrechung eine Undulation der Rippen erkennen lassen.

Es sind aber nach meiner Auffassung alle Arten mit einer breiten Entwickelung der Beugungszone der Rippen von *Halobia Zitteli*, welche gewöhnlich nur eine einmalige Knickung der Rippen zeigt, in bestimmter Weise unterschieden.

Die indische *Halobia fascigera* Bittn. [2] steht bezüglich der Breite ihrer Beugungszone zwischen den zwei Extremen, wäre also mit *Halobia Zitteli* näher verwandt, als die früher erwähnten Formen. Doch auch sie besitzt noch zwei Beugungslinien; überdies sind die Klappen dieser Art viel höher als jene von *Halobia Zitteli*.

Von *Halobia Hochstetteri* Mojs. [3] aus Neuseeland meinte A. Bittner [4], dass sie sich der *Hal. Zitteli* näher anschliesse, als der *Hal. rugosa*, was wohl nicht zu bezweifeln ist und auch der Anschauung E. v. Mojsisovics' nicht widerspricht, welcher die *Hal. Zitteli* als „in der Mitte zwischen der alpinen *Halobia rugosa* und der neuseeländischen *Halobia Hochstetteri* stehend“ betrachtet hat.

Es erübrigt noch die leider ungenügend bekannte *Halobia intermedia* Mojs. [5], deren Typus jedoch die Knickungslinie der Rippen in viel grösserer Wirbeldistanz als *Halobia Zitteli* und die Rippen ausser der Knickungslinie unduliert aufweist.

Das wären also die Beziehungen der *Halobia Zitteli* zu den ihr mehr oder weniger formverwandten Arten, welche alle mit hinreichender Sicherheit von ihr unterschieden werden können.

Der Umstand, dass südlich von Spitzbergen — bekanntlich die Heimat der Typen von *Halobia Zitteli* — auf der Bäreninsel durch J. G. Nathorst eine artenreiche Triasfauna entdeckt wurde, legt die Frage ausserordentlich nahe, ob denn die *Halobia Zitteli* nicht auch in der Trias der Bäreninsel auftrete? Sehen wir, was Joh. Böhm in seiner schon mehrmals angeführten Abhandlung darüber berichtet.

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[1] loc. cit. pag. 101.

[2] A. Bittner in Palaeontol. Indica. Ser. XV, Vol. III, pt. 2, pag. 45, Taf. VII, Fig. 15.

[3] E. v. Mojsisovics in Abh. d. k. k. Geol. R.. B. VII, Heft 2, pag. 32, Taf. III, Fig. 7–9.

[4] Jahrb. d. k. k. Geol. R.-A. 1891, pag. 101.

[5] E. v. Mojsisovics, loc. cit., pag. 30, Taf. III, Fig. 5–6.

Zuerst fällt auf[1], dass dort mitten unter den Fossilien der Bäreninsel auch *Halobia Zitteli* angeführt, im Texte jedoch nur deren Auftreten auf Spitzbergen erwähnt wird. Was den genannten Autor zu diesem Vorgange veranlasst hat, ist nicht ersichtlich. Die Anführung dieser von ihm nur als Vergleichsobjekt herangezogenen Art erweckt der Form nach den Glauben, als hätte J. Böhm in der fossilen Fauna der Bäreninsel auch *Halobia Zitteli* gefunden. Erst ein aufmerksamer Leser erkennt, dass das aber nicht der Fall ist. Man findet dann die von J. Böhm ausgesprochene Angabe, dass Lindströms *Halobia Zitteli* aus zwei verschiedenen Formen zusammengefasst sei, was aus den von Lindström und Mojsisovics gegebenen Abbildungen hervorgehe. Dabei will J. Böhm nicht die Originale zu Taf. I Fig. 6—12, sondern jenes zu Taf. II Fig. 11 bei Lindström als Typus festhalten, welchem Vorgange — die Notwendigkeit einer Trennung vorausgesetzt — auch ich mich gerne anschliessen möchte, weil das Exemplar Fig. 11 auf Taf. II[2] ein ausgewachsenes, die übrigen aber nur kleinere Jugendexemplare sind. Dem stehen nur die heute geltenden Nomenklaturregeln entgegen, welche eine solche Umstülpung nicht zulassen. Von den Abbildungen bei Lindström erweckt in mir zunächst Fig. 10 ein Bedenken wegen Homogenität der Art, während die Figuren 11 & 12 auf Taf. I, ferner 7 und 8 kaum ein solches hervorrufen. So wenig als J. Böhm kann aber auch ich die von ihm aufgeworfene Frage ohne Untersuchung der Originale zu Taf. I entscheiden. Vorläufig muss ich also die *Halobia Zitteli* entweder in der vielleicht zu weiten Fassung Lindströms oder in der engeren Mojsisovics', die ja unausgesprochen schon dem Standpunkte J. Böhms entspricht, belassen.

Hiervon abgesehen halte ich den Umstand fest, dass *Hal. Zitteli* von der Bäreninsel nicht angeführt, wohl aber eine *Halobia sp.* vom Urdsberg auf der Bäreninsel[3] angeführt wird, die einen nicht so weit nach vorn gerückten Wirbel und breitere Rippen als *Hal. Zitteli* besitzen, sonst aber dem Formenkreise der letzteren angehören soll. Es ist das wohl ein nicht ausgewachsenes Exemplar. Dann beschreibt J. Böhm noch eine *Halobia cf. Neumayri* Bittn. vom Tschermakberge[4] auf Spitzbergen, die ich wegen der nicht undulierten Ausbildung der Rippen nicht so eng an *Hal. Neumayri* anschliessen würde und von

[1] K. Svenska Vet. Ak. Handl. B. 87, No. 8, p. 30.
[2] Es liegt mir ein Gypsabguss davon vor.
[3] loc. cit., pag. 32, Taf. III, Fig. 32.
[4] loc. cit., pag. 32, Taf. III, Fig. 29.

der Bäreninsel als neue Art eine *Daonella Lovéni*[1], die nach meiner Meinung zum Teile oder ganz der *Halobia Zitteli* anzureihen wäre. Namentlich scheint mir das von J. Böhm in Fig. 30 auf Taf. III (loc. cit.) abgebildete Fragment mit *Halobia Zitteli* völlig übereinzustimmen. Die anderen Originale der *Daonella Lovéni* zeigen keine Rippenknickung. Wohl mit Rücksicht auf diese letzteren vergleicht Böhm die Art mit *Daonella cf. Richthofeni* Bittn.[2] Gerade diese Exemplare sind als die Haupttypen von *Daonella Lovéni* zu betrachten.

Durch die Erkenntnis der Übereinstimmung des eben zitierten einen Originals von „*Daonella Lovéni*" mit *Halobia Zitteli*[3] ergibt sich die Wahrscheinlichkeit des Vorhandenseins der letzteren Art in der Trias der Bäreninsel.

Fundorte: Ausser Spitzbergen (und Bäreninsel?): Bärenkapland, Depôt im Heurekasund, Blauer Berg im Grayfjord (hier in dunklem Kalkschiefer und in aschgrauem Kalkstein).

Die ziemliche Entfernung dieser zwei Gruppen nordischer Fundorte lässt immerhin auf eine weitere horizontale Verbreitung der Art in der nordischen Trias schliessen. Bemerkenswert ist die Wiederkehr der Art an verschiedenen Punkten der Gegend des Heurekasundes, was wohl auf das Durchziehen eines Horizontes mit *Halobia Zitteli* hinweist.

6. *Halobia sp. juv.* (*H. Zitteli*? Lindstr.)

In den Kalksteinen der Hutinsel fanden sich (u. z. in verschiedenen Proben) einzelne juvenile Halobien. Die meisten derselben sind konzentrisch gerunzelt, wie das bei jugendlichen Halobien gewöhnlich der Fal ist; sie stimmen mit Jugendschalen von *Halobia Zitteli* Lindstr. gut überein; daraus möchte ich aber noch nicht in bestimmter Weise auf eine artliche Identität schliessen, da der Artcharakter erst in mittleren Alters- und Wachstumsstadien in schärfer erkennbarer Weise ausgebildet

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[1] loc. cit., pag. 33, Taf. III, Fig. 22, 25, 30, 31.

[2] A. Bittner, Die Lamellibranchiaten der alpinen Trias, Abh. d. k. k. Geol. Reichsanst. Wien, XVIII. Bd., 1. Heft, 1895, pag. 78, Taf. IX, Fig. 23.

[3] Ich zitiere hier nach J. Böhm: „*Daonella*" *Lovéni*, bemerke jedoch, dass die Art wohl eine *Halobia* ist, da sie — wie das mir vorliegende Exemplar des Originales zu Taf. III Fig. 22 (J. Böhm loc. cit.) zeigt — ein durch eine Furche deutlich begrenztes rippenfreies vorderes Ohr besitzt, das J. Böhm nur als rippenfreie Fläche erwähnt. An der Grenzfurche des vorderen Ohres zeigt sich eine leichte, aber immerhin deutliche Beugung der Zuwachsstreifen. Der Byssusausschnitt an dieser Stelle ist damit wenigstens angedeutet. (Vgl. A. Bittner, Himalayan fossils, Brachiopoda and Lamellibranchiata, pag. 37 & 38).

wird. Es ist aber wohl mit Rücksicht auf die weite Verbreitung der *Hal. Zitteli* die nächstliegende Annahme, die Halobien der Hutinsel für zu *Hal. Zitteli* gehörig zu halten. Die beiläufige Übereinstimmung der Cephalopoden der Kalke der Hutinsel mit jenen der Schiefer des Bärenkaplandes wäre ein weiterer, indes nicht beweiskräftiger Umstand, der dabei zu beachten ist.

Fundort: Hutinsel im Bayfjord (5 Exemplare).

7. *Gervilleia* (?) *cf. Loewenighi* J. Böhm.

Eine *Gervilleia* oder *Avicula* von der Gestalt und Grösse der *Gervilleia Loewenighi*[1] wird durch ein fragmentäres Exemplar repräsentiert. Es ist so schräg und stark gewölbt, wie die genannte Art, zeigt konzentrische Zuwachsstreifen, aber nur Spuren einer Radialskulptur, diese letzteren gleichwohl in derselben Region, wie nach J. Böhm *Gervilleia Loewenighi.* Da bei der letzteren Art die Richtigkeit der generischen Bestimmung durch die Kenntnis des Schlossrandes ausser allem Zweifel steht, so mag wohl auch unser Exemplar von der Hutinsel eine *Gervilleia* sein, was sich an dem vorliegenden Exemplare nicht erheben lässt, da der Schlossrand fehlt.

Fundort: Hutinsel im Bayfjord.

8. *Lima* (*Plagiostoma*) *Hakoni* Kittl *n. f.*

Taf. II, Fig. 4.

Ein allerdings nur in Fragmenten vorliegendes Exemplar von der Hutinsel, welches der bekannten Art des deutschen Muschelkalkes *Lima lineata* an Grösse mindestens gleichkommt, sich in der Skulptur den kräftig gerippten Varietäten der letzteren nähert und in der Verzierung der Schale mit *Lima radiata* sehr gut übereinstimmt, darf wohl als nahezu identisch mit der letztgenannten Art angesehen werden. Der Grössenunterschied ist allerdings ein immerhin noch so bedeuteuder, dass vielleicht ein besonderer Name für das Vorkommen auf der Hutinsel gerechtfertigt wäre. Ich würde in Vorschlag bringen: *Lima* (*Plagiostoma*) *Hakoni n. f.*

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[1] Joh. Böhm, Die obertriadische Fauna der Bäreninsel, loc. cit., pag. 26, Taf. IV, Fig. 13 & 17.

Lima radiata wurde von GOLDFUSS zuerst aus dem Muschelkalke von Bayreuth beschrieben [1], wobei auf die breiten Rippen und schmalen Zwischenfurchen besonders Gewicht gelegt wurde. Aus dem Saaltale bei Jena beschrieben dann SCHMID und SCHLEIDEN [2] vielleicht nur eine Varietät derselben mit quergestreiften Furchen als *Lima interpunctatum*. Das eine von GOLDFUSS in Fig. 4 a & b loc. cit. abgebildete Exemplar besitzt eine Höhe von 80 mm., während die Type von *Lima interpunctatum* SCHM. et SCHL. bedeutend kleiner ist. Es kann daher die Selbständigkeit der letzteren ohne erneute Untersuchungen nicht als ganz sichergestellt gelten. Für unsere Zwecke ist das jedoch nicht von Wichtigkeit, da *Lima Hakoni* zu *Lima interpunctatum* viel geringere Beziehungen zeigt als zu *Lima radiata*.

Weil aber die letztere angeblich durch Übergänge mit der *Lima lineata* SCHLOTH. verbunden ist und *Lima Hakoni* grossen Exemplaren von *Lima lineata* in den Dimensionen nahekommt, so sei hier nur darauf hingewiesen, dass schon GOLDFUSS neben den Differenzen der Skulptur die geringere Wölbung der Schalen bei *Lima radiata* bemerkt hat [3]. Ferner ist — was nicht hervorgehoben wurde — die Zurückwölbung der Schalen auf der Hinterseite zum Schlossrande hin bei *Lima radiata* eine weniger bedeutende [4]. Es ist nun nicht von geringem Interesse, dass *Lima Hakoni* in den erwähnten Wölbungsverhältnissen wohl mit *Lima radiata*, aber nicht mit *Lima lineata* übereinstimmt, sich also in jeder Beziehung an *Lima radiata* recht nahe anschliesst.

Es mag nun schliesslich noch erwähnt sein, dass J. BÖHM von der Bäreninsel ein in ihrer Grösse sich der *Lima Hakoni* nähernde, aber anders berippte *Lima* als *Lima Rijpi* beschreibt [5], sowie eine in der Berippung kaum verschiedene kleinere Art als *Lima Svenanderi* [6]. Es ist immerhin interessant, auf der Bäreninsel in Ablagerungen von ähnlichem Alter wie jene der Hutinsel, auch wieder grosse Lima-Formen vertreten zu finden.

Fundort: Hutinsel im Bayfjord.

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[1] A. GOLDFUSS, Petrefacta Germaniae, II, pag. 79, Taf. C., Fig. 4.

[2] E. E. SCHMID und M. J. SCHLEIDEN, Die geogn. Verh. des Saaltales bei Jena, 1846, pag. 42, Taf. IV, Fig. 6.

[3] GOLDFUSS, loc lit., pag. 78 u. 79.

[4] In Übereinstimmung mit ALBERTI (Überblick über die Trias, pag. 77) glaube ich die Selbständigkeit der *Lima radiata* annehmen zu sollen.

[5] J. BÖHM, loc. cit., pag. 21, Taf. II, Fig. 6.

[6] J. BÖHM, loc. cit., pag. 20, Taf. II, Fig. 7, 8, 15 & 21.

9. *Lima* (*Plagiostoma*) *hatensis* KITTL. *n. f.*

Taf. II, Fig. 5 u. 6.

In zahlreichen, meist jedoch nur fragmentarisch erhaltenen Stücken fand sich eine *Lima*, in der Gestalt beiläufig der *Lima lineata* ähnlich, von welcher sie sich aber u. a. besonders durch die viel geringere Grösse und eine schwächere Skulptur unterscheidet. Eine sehr feine konzentrische Zuwachsstreifung ist die einzige deutliche Skulptur auf der Schalenoberfläche, die zumeist ganz glatt erscheint. Nach Beobachtungen an einigen Schalenfragmenten dürften hie und da sehr schwache Radialfurchen auftreten.

Die inneren Schalenlagen zeigen eine unregelmässige, wohl auf die Schalenstruktur zurückführbare radiale Streifung. Das Schlossfeld ist sehr kurz. Wie *Lima lineata* gehört auch *Lima hatensis* zu der Untergattung *Plagiostoma*.

Aus dem deutschen Muschelkalk führt schon 1842 (Neues Jahrb. f. Min. 1842 pag. 311) WISSMANN eine ungestreifte *Lima* (nach ihm höher als *Pecten laevigatus* und ungleichseitiger) an, die in Graf MÜNSTERS Sammlung als *Lima venusta* MSTR. liege. Unter diesem Namen zitiert ALBERTI (Überblick über die Trias pag. 81) ähnliche Exemplare. Eine Abbildung dieser Art existiert nicht.

Durch A. BITTNER u. a. ist eine ganze Reihe von glatten *Lima*-Arten aus der alpinen Trias bekannt geworden, die aber meist der Untergattung *Mysidioptera* zufallen. Mit unserer Art dürften sie alle kaum näher zu vergleichen sein, am ehesten noch gewisse schwach skulpturierte Formen, die sich an *Lima subpunctata* ORB. anschliessen [1].

Grössere Analogien mit unserer neuen Art zeigt aber ein von J. BÖHM als *Lima spitzbergensis* LUNDGR. von der Bäreninsel beschriebenes und abgebildetes Exemplar [2]. LUNDGRENS Abbildung der Art [3] zeigt einen sehr stumpfen Wirbel, (vielleicht wegen dessen Steinkernerhaltung?) und einen Umriss, der recht lebhaft an *Lima lineata* SCHLOTH. erinnert, womit LUNDGREN auch seine *Lima spitzbergensis* vergleicht. Durch die zahlreicheren und feineren Radialfurchen ist letztere indessen von *Lima lineata* in bestimmter Weise unterschieden. LUNDGRENS Type der *Lima spitzbergensis* kann ich, da sie mir nicht vorliegt und die Abbildung derselben für genauere Vergleiche ungenügend ist, nicht weiter in Betracht ziehen. Die von J. BÖHM unter demselben Namen loc. cit.

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[1] Vgl. A. BITTNER, Lamellibr. d. alp. Trias, pag. 170—172, Taf. XXI.

[2] J. BÖHM, loc. cit.

[3] B. LUNDGREN, Bemerk. über Jura- u. Triasfossilien von Spitzbergen. Bihang till K. Sv. Vet. Ak. Handlingar, Bd. 8, No. 12, pag. 20, Taf. II, Fig. 17.

Taf. II, Fig. 2 & 3 abgebildeten Fragmente scheinen in der Tat zu *Lima spitzbergensis* zu gehören. Wenigstens zeigen sie die vordere und die hintere Radialstreifung. In der Grösse und im Umrisse entspricht der *Lima hatensis* am besten die von J. Böhm auf Taf. II in Fig. 48 (loc. cit.) abgebildete Klappe, die aber nur als glatter Steinkern erhalten ist und die Beschaffenheit der Schalenoberfläche daher nicht zu erkennen gestattet. Übrigens ist auch dieses Exemplar flacher und etwas kürzer als *Lima hatensis*, so dass eine Identität der zwei Arten nicht angenommen werden kann, obgleich manche Analogien zwischen ihnen bestehen.

Die Verschiedenheit in den Wölbungsverhältnissen der Schalen, und in der Skulptur, endlich die etwas längere Gestalt der *Lima hatensis* bilden die Differenzen beider Arten.

Fundort: Hutinsel im Bayfjord.

10. *Lima* (?) *boreas* Kittl *n. f.*

Taf. II, Fig. 1–2.

Zwei unvollständige Klappen besassen wohl, wie in den Abbildungen angedeutet, subovalen Umriss mit abgestutzter Wirbelregion; sie sind ziemlich flach gewölbt, mit zahlreichen (ich zähle über 60) Radialrippen geziert, die gegen die Schlossränder dichter gedrängt und feiner ausgebildet sind. Hie und da erscheinen sie etwas wellig gebogen. Die Rippenzahl ist bei jugendlichen Individuen eine viel kleinere; sie mehrt sich bei dem Weiterwachsen der Schale durch Einschaltung neuer, schwächerer Rippen. Die erwähnten unregelmässig welligen Biegungen der Rippen scheinen durch Verschiebungen längs gewisser Zuwachsstreifen bedingt zu sein. Auf der hinteren Seite ist ein dreieckiges Ohr durch eine Furche von der übrigen Schale deutlich abgegrenzt. Von den zwei abgebildeten Exemplaren dürfte wohl das zu Fig. 1 die rechte Klappe, das andere (Fig. 2) die linke Klappe darstellen.

Die Gattungsbestimmung ist wegen der Unvollständigkeit der vorliegenden Reste unsicher. Sie würden durch ihre Skulptur auch an andere Gattungen wie z. B. *Terquemia* erinnern, werden aber wohl am ehesten zu *Lima* gehören, was aber natürlich erst sichergestellt werden kann, bis der Schlossrand vollständiger bekannt geworden sein wird. Die relativ grosse Länge des Hinterflügels würde — vorausgesetzt dass ein Limide vorliegt — für die Zugehörigkeit zu der Untergattung *Mysidioptera* sprechen. Bezüglich der Skulptur zeigt *Lima* (?) *boreas m.*

einige Ähnlichkeit mit *Monotis boreas* ÖBERG[1]; eine genauere Vergleichung dieser Art, von welcher es mir scheint, dass sie keine *Monotis* sei[2], war mir leider nicht möglich.

Fundort: Hutinsel im Bayfjord.

11. *Pecten* (*Entolium*) *cf. Öbergi* LUNDGR.

Taf. II, Fig. 8.

Die Schalen sind fast kreisrund, glatt, mit zwei inneren dicken submarginalen Schalenleisten. Die Ohren sind gegen den Schlossrand verschmälert (?).

Die hier kurz charakterisierte Pecten-Art gehört zu einer triadischen Gruppe glatter Pectenformen mit 2—4 inneren Radialleisten, wozu vor allen *Pecten discites* SCHLOTH. zu stellen ist[3]. Die zwei oberen dieser leistenförmigen Schalenverdickungen entsprechen, wie schon PHILIPPI bemerkte, der äusseren Grenze der Ohren[4]; sie sind bei vielen Pectenformen mehr oder weniger deutlich ausgebildet, so bei *Pecten subdemissus* MSTR.[5], *Pecten incognitus* BITTN.[6], *Pecten Hellii* EMMR.[7], *Pecten Zitteli* WÖHRM.[8] u. a. Die erwähnten Leisten treten bei allen Arten der Gruppe besonders kräftig an relativ dickschaligen Klappen älterer Individuen auf[9]. Dies ist wohl auch bei dem vorliegenden Innenabdrucke einer Klappe der Fall.

Pecten Öbergi LUNDGR., von dem ich die mir vorliegenden Exemplare (leider sind fast alle fragmentarisch) kaum zu trennen wage, wurde zuerst durch LUNDGREN von Spitzbergen beschrieben[10]. Dieser Autor

[1] P. ÖBERG, Om Trias-försteningar från Spetsbergen. K. Svenska Vet.-Ak. Handl. Bd. 14 (1877), No. 14, pag. 17, Taf. V, Fig. 5.

[2] Der fast kreisförmige Umriss würde eher auf die Gattung *Pecten* hindeuten.

[3] E. PHILIPPI, Zur Stammesgeschichte der Pectiniden. Zeitschr. der Deutschen geolog. Ges. 52. Bd., 1900, pag. 79, bildet in Textfigur 3 die erwähnten inneren Schalenleisten ab.

[4] PHILIPPI, loc. cit.

[5] A. BITTNER, Lamellibr. d. Trias, loc. cit. pag. 164, Taf. XIX, Fig. 20.

[6] A. BITTNER, Lamellibranchiaten aus der Trias des Bakonyer Waldes. (Result. d. wissensch. Erforsch. d. Balatonsees I. Bd. 1. Th.) 1901, pag. 35.

[7] A. BITTNER, loc. cit. pag. 105, Taf. VIII, Fig. 36 u. 37.

[8] F. BROILI, Die Fauna der Pachycardientuffe, Palaeontographica L. Band, 1903, pag. 172. Taf. XIX, Fig. 19—21.

[9] Das Vorkommen der 4 internen Radialrippen ist nicht auf die in Rede stehende triadische Gruppe beschränkt und findet sich z. B. schon im Perm, wo *Entolium Salinchieti* GORT. ein ausgezeichnetes Beispiel eines echten *Entolium* darbietet, das auch die 4 internen Radialrippen zeigt (vgl. M. GORTANI, La fauna degli strati a Bellerophon della Carnia. Rivista Italiana di Paleontologia XII, 1906, Taf. IV, Fig. 15).

[10] B. LUNDGREN, Bemerk. üb. d. v. d. Schwed. Exp. n. Spitzbergen 1882 gesamm. Jura- u. Trias-Fossilien. Bihang till K. Sv. Vet. Ak. Handl. Bd. VIII, No. 12, (1883) pag. 19, Taf. II, Fig. 15.

erwähnt nichts von inneren Schalenleisten und das wohl deshalb, weil er nur die Aussenseite der Schale kannte. Er vergleicht die Art mit *Pecten discites*, aber unzutreffender Weise auch mit *Pecten laevigatus* SCHLOTH.

Sodann stellte auch J. BÖHM kürzlich Reste von der Bäreninsel zu *Pecten Öbergi* [1], wobei er bemerkt: „Hart unter dem rechten Ohr liegt der vertiefte Abdruck einer inneren Falte“ [2]. Wenn aber seine in Fig. 20 gelieferte Abbildung richtig ist, so unterliegt es keinem Zweifel, dass *Pecten Öbergi* von der Bäreninsel 4 innere Leisten besass, wie *Pecten discites*, da sich die 2 grösseren derselben aus den zwei ihnen entsprechenden Radiallinien der Schalenoberfläche erschliessen lassen.

Fundorte: Bärenspitze (loser Block) in der Bärenbucht im Heurekasund; Hutinsel im Bayfjord.

12. *Pecten* (*Entolium*) *Öbergi* LUNDGR.

B. LUNDGREN, Bihang till K. Svenska Vet. Ak. Handl. VIII, No. 12, (1883), pag. 19, Taf II, Fig. 15.
J. BÖHM, K. Svenska Vet. Ak. Handl. Bd. 37, No. 3, pag. 21. Taf. II, Fig. 14 u. 20.

Aus den hellgrauen Kalken der Grossen Insel liegen einige Fragmente einer glatten Pectenart vor, wovon eines in sehr vollkommener Weise mit J. BÖHMS Abbildungen von *Pecten Öbergi* übereinstimmt. Unter der Schale kommen die Abdrücke der inneren Radialleisten zum Vorschein.

Bezüglich der weiteren Beziehungen der Art sei auf die Bemerkungen bei Art 11 und die dortigen Literaturangaben verwiesen.

Fundort: Depôt auf der Grossen Insel im Heurekasund.

13. *Pecten* (*Chlamys*) *Oscari* KITTL *n. f.*

Taf. II, Fig. 9 u. 10.

Der Umriss der rechten Klappen (nur solche liegen vor) ist nahezu kreisförmig mit grossen schmalen vorderen und dreieckigen hinteren Ohren. Unterhalb des ersteren ist der tiefe Byssusausschnitt. Die Oberfläche der Schale ist mit zahlreichen (etwa 50) Radialrippen von wechselnder Stärke bedeckt, die sich im zweiten Drittel der Schalenhöhe gegen den Wirbel zu abschwächen und darnach nahezu ganz verschwinden. Das vordere Ohr ist mit etwa 4 Radialrippen geziert, die gegen den

[1] J. BÖHM, loc. cit., pag. 21, Taf. II, Fig. 14 & 20.
[2] loc. cit. pag. 22.

Byussusausschnitt zu etwas kräftiger werden; das hintere Ohr trägt etwas schwächere Rippen. Ausser der Radialskulptur ist eine wellige konzentrische Skulptur vorhanden, deren Ausbildung nicht nur von Individuum zu Individuum wechselt, sondern selbst an derselben Klappe in den verschiedenen Anwachszonen in recht verschiedener Weise hervortritt. Bei einer Breite und Höhe von 19 mm. besitzt das vordere Ohr des in Fig. 10 abgebildeten Exemplares eine Länge von 8 mm., das hintere eine solche von mindestens 5.5 mm. Ganz vollständige Klappen dürften eine grössere Länge auch des hinteren Ohres aufweisen, worauf auch das kleinere in Fig. 9 abgebildete Exemplar hindeutet. Jugendliche Klappen wie Fig. 9 erscheinen etwas vorgebogen, ältere dagegen werden mehr symmetrisch ausgebildet, wie ein Vergleich der beiden Abbildungen lehrt.

Pecten Oscari gehört in die Verwandtschaft des *Pecten pervulgatus* BITTN.[1], ist aber besonders charakterisiert durch die grössere Anzahl der Radialrippen sowie durch deren Ausbreitung auch über den Hinterrand, wo sie sich allerdings bedeutend verflachen. Eine der beiden Klappen von *Pecten Oscari* ähnelt mehr dem *Pecten pervulgatus*, die andere dagegen mehr dem *Pecten Hammeri* BITTN.[2], in soweit die Skulptur in Betracht kommt. Die erstgenannte Klappe zeigt leider nur die Innenseite, während bei der zweiten die Schale parallel der Schalenoberfläche durchgebrochen ist, so dass eine korrekte Vergleichung unausführbar ist. Das eine lässt sich jedoch feststellen, dass *Pecten Oscari* eine Rippenzahl besizt, die etwa doppelt so gross ist, wie bei *Pecten pervulgatus*, dessen Rippenzahl von BITTNER auf etwa 30 angegeben wird. Darnach erscheint mir die Anwendung eines neuen Namens (*Pecten Oscari*) für die Exemplare vom Heurekasund genügend gerechtfertigt.

Durch seine Berippung, insbesondere aber durch das Auftreten kräftiger Radialrippen ähnelt unser *Pecten Oscari* vielleicht auch dem *Pecten auristriatus* MSTR. von St. Cassian[3], einem kleinen angeblich glatten Pecten mit verziertem Ohr. A. BITTNER gibt einen *Pecten cf. auristriatus* als auf der Seelandalpe häufig und auch sonst in Cassianer Schichten vorkommend an[4]. Dieser ist nicht ganz glatt, doch ist die Skulptur des-

[1] A. BITTNER, Brachiopoden und Lamellibranchiaten aus der Trias von Bosnien etc. Jahrb. d. k. k. Geolog. Reichsanst. Wien, 52. Bd., 1902 (1903) pag. 609 u. 610.

[2] loc. cit., pag. 610.

[3] MÜNSTER, Beiträge zur Petrefactenkunde IV., Taf. VI, Fig. 35.

[4] A. BITTNER, Lamellibranchiaten der alpinen Trias. Abhandl. d. k. k. Geolog. Reichsanst. Wien, XVIII. Bd., Heft 1, 1825, pag. 165.

selben nur schwach ausgebildet. Etwas besser entwickelt ist sie auf einem unter demselben Namen durch A. BITTNER aus der Trias von Veszprem abgebildeten und beschriebenen *Pecten*[1]. Hier zeigen sich deutliche Radialrippen, von welchen einzelne kräftiger ausgebildet sind; jene des Byssusohres sind auf den unteren gegen den Byssusausschnitt zu gelegenen Rand zusammengedrängt, während der obere Teil des Ohres nach BITTNER rippenfrei ist. Einen ähnlichen Typus der Skulptur besitzt nun auch *Pecten Oscari*. Der kleine angeblich glatte *Pecten auristriatus* MSTR. stellt vielleicht nur das Jugendstadium der grösseren berippten Schalen dar, welche BITTNER als *Pecten cf. auristriatus* beschrieben hat.

Wie oben angegeben, liegen von *Pecten Oscari* nur rechte Klappen vor. Indessen stimmt eine ziemlich vollständige linke Klappe von der Grossen Insel mit *Pecten Oscari* bis auf die Zahl der Radialrippen und selbstverständlich auch bis auf das vordere Ohr überein, das keinen Byssusausschnitt zeigt. Die Anzahl der Radialrippen ist aber nur etwa 30, wie bei *Pecten pervulgatus*, dem diese linke Klappe darnach näher stehen würde, wenn sie einen rippenfreien Hinterrand besässe. Das ist aber nicht der Fall; vielmehr erstreckt sich die Berippung auch auf den Hinterrand, wie bei *Pecten Oscari*. Mit weiterer Berücksichtigung des Umstandes, dass die besprochene linke Klappe noch relativ klein ist, also wohl ein Jugendstadium repräsentiert, könnte sie als wahrscheinlich zu *Pecten Oscari* gehörig betrachtet werden. Die besondere Länge des Schlossrandes und die Grösse der Ohren würden diesbezüglich kaum als ein Hindernis dieser Anschauung zu betrachten sein, da sie an beiden abgebildeten Exemplaren von *Pecten Oscari* kaum vollständig sichtbar sind.

Fundorte: Depôt auf der Grossen Insel im Heurekasund (7 Exemplare), Hutinsel im Bayfjord.

14. *Pecten(?)* sp.

Taf. II, Fig. 3.

Eines kleines, rundliches, fast glattes Schälchen mit breiten flachen Radialrippen am Rande zeigt nach Art der rechten Klappen von *Pseudomonotis* ein Ohr, das sich an eine radiale Ausbuchtung der Schale anfügt, während auf der anderen Seite des Schlossrandes ein deutlich abgesetztes Ohr nicht zu erkennen oder bloss nicht erhalten ist. Nach den Analogien zu schliessen, muss erstere eine rechte Klappe sein. Wäre

[1] A. BITTNER, Lamellibranchiaten aus der Trias des Bakonyer Waldes. Resultate der wissensch. Erforschung des Balatonsees. I. Bd., 1. Th. pag. 47.

die vorliegende Klappe nicht gewölbt, sondern flach, so könnte sie zu *Pseudomonotis* gestellt werden. Unter den obwaltenden Umständen muss das unterbleiben. Das einzige vorliegende Exemplar zeigt zwar eine Schale, jedoch nicht deren Oberfläche; die erwähnten schwachen Radialrippen deuten daher auf eine kräftigere Radialskulptur der Schalenoberfläche hin. Ist aber das vorliegende Exemplar eine rechte Klappe wie ich oben darzutun versucht habe, so entspricht sie keineswegs der Gattung *Pseudomonotis*, eher der Gattung *Pecten*.

Die erwähnte nur andeutungsweise bekannte Skulptur könnte nur derjenigen der linken Klappe von *Pseudomonotis* (*Subg. Eumorphotis*) entsprechen[1].

Wäre an dem untersuchten Exemplare ein Hinterflügel entwickelt, so könnte man dasselbe unbedenklich zu *Avicula* stellen, wofür alle sonstigen erkennbaren Eigenschaften passen würden.

Fundort: Hutinsel im Bayfjord.

15. *Gryphaea Skuld* J. Böhm.

Taf. II, Fig. 7.

J. Böhm, Üb. d. obertriad. Fauna d. Bäreninsel. K. Sv. Vet. Ak. Handl. Bd. 87, No. 3, p. 17, Taf. I, Fig. 36, 39–41.

Diese durch J. Böhm beschriebene und recht gut abgebildete Art glaube ich mit hinreichender Sicherheit unter den Materialien vom Bärenkaplande zu erkennen. Die mir durch die Liebenswürdigkeit Professor G. Holms zugänglich gewesenen Originale der Art[2] stimmen recht gut mit dem einzigen Exemplare vom Bärenkaplande überein. Das letztere zeigt noch Teile der Schale erhalten, die aber nicht jene Dicke aufweisen, welche man von einer *Gryphaea* zu erwarten vielleicht berechtigt wäre.

Fundort: Ammonitenberg am Bärenkaplande, 1 Ex.

16. *Gryphaea cf. Keilhaui* J. Böhm.

Eine kleine von der Hutinsel vorliegende Muschel, die einer *Gryphaea* sehr ähnlich ist, darf wohl am besten an *Gryphaea Keilhaui*

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[1] Vgl. A. Bittner, Über *Pseudomonotis Telleri* u. verwandte Arten d. unt. Trias. Jahrb. d. k. k. Geol. Reichsanst. Wien. 50. Bd., 1900.

[2] Das von J. Böhm loc. cit. in Fig. 41 abgebildete Exemplar ist wohl dasjenige, an welchem er den Schliessmuskeleindruck beobachtet hat, der in der Tat recht deutlich abgegrenzt sichtbar ist, während die Abbildung des Stückes diesen Eindruck nur recht undeutlich und verschwommen wahrnehmen lässt.

J. Böhm von der Bäreninsel[1] angeschlossen werden. Von diesem Fundorte hat J. Böhm auch die viel flacher gewölbte *Gr. Skuld* beschrieben, die hier zu Vergleichszwecken ausser Betracht bleiben kann, weil das von der Hutinsel vorliegende Exemplar noch stärker gewölbt zu sein scheint, als *Gryphaea Keilhaui*.

Fundort: Hutinsel im Bayfjord.

17. *Leda* (*Phaenodesmia*) *regia* Kittl n. f.

Taf. II, Fig. 11.

Von der Gattung *Leda* trennte A. Bittner eine durch ein äusseres Ligament ausgezeichnete kleine Gruppe von Triasformen ab[2], die er treffend *Phaenodesmia* benannte. Zu dieser Gattung oder Untergattung, wie sie wohl am besten aufgefasst wird, scheint auch die in dem folgenden zu beschreibende neue Art zu gehören. Darauf deutet eine rückwärts vom Wirbel liegende Aufbiegung des Schlossrandes hin. Überdies stimmt die neue Art in ihrer Gestalt ausserordentlich nahe mit *Phaenodesmia Laubeana* Bittn. von St. Cassian überein, wird aber viel grösser.

Leda (Phaenodesmia) regia besitzt langgestreckte, geschwänzte, dicke Schalen mit sehr deutlich ausgeprägter, fast scharfer, konzentrischer Rippung, welche der Zuwachsstreifung entspricht. Unter den Wirbeln tritt ein kräftiger Kiel auf die hintere Seitenfläche hervor, der sich längs des Schlossrandes bis zum Ende des Schwanzes erstreckt. Unmittelbar vor diesem Kiele liegt eine breite flache Radialfurche, in welcher sich die darüber hinweglaufenden Rippen leicht einbiegen, zwischen jenem Kiele und dem Schlossrande aber mit einer konvexen Biegung ausgestattet sind. Auf dieser so beschaffenen Area läuft die Zuwachsstreifung nach einer auf dem Kiele erfolgenden Knickung unter spitzem Winkel gegen die Schlosslinie zu. Die Wirbel sind schwach prosogyr; das Schildchen ist nur undeutlich begrenzt. Das abgebildete Exemplar (es ist das einzige vollständigere) zeigt eine Asymmetrie, indem das hintere Schalenende etwas gekrümmt erscheint; während die linke Klappe in dieser Gegend fast konvex ist, zeigt die rechte eine leichte Aushöhlung.

Leda regia ist wohl eine der grössten Arten der Gattung.

Fundort: Hutinsel im Bayfjord.

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[1] J. Böhm, loc. cit., pag. 16, Taf. I, Fig. 35, 37–38, 44–46, 50–52.

[2] A. Bittner, Lamellibranchiaten d. alpinen Trias. Abhandl. d. k. k. Geolog. Reichsanst. Wien 1905. XVIII. Bd., 1. Heft, pag. 145.

[3] loc. cit., pag. 146, Taf. XVIII, Fig. 15.

18. *Palaeoneilo? cf. lunaris* J. Böhm.

Taf. III, Fig. 5.

Eine aus den grauen Kalken der Hutinsel vorliegende linke Klappe stelle ich nur auf Grund äusserer Ähnlichkeit zu *Palaeoneilo*, ohne dass mir das Schloss bekannt geworden wäre. Zeigt sich bei dem Vergleiche des mir vorliegenden Exemplares mit *Palaeoneilo elliptica* Goldf. sp. von St. Cassian[1] schon eine auffällige Übereinstimmung in Umriss und Zuwachsstreifen (wobei *P. elliptica* nur einen mehr gerade gestreckten hinteren Schlossrand und stärkere Aufblähung erkennen lässt), so fallen diese Differenzen bei einer Gegenüberstellung mit *Palaeoneilo lunaris* J. Böhm[2] fast ganz fort, so dass der Rest von der Hutinsel vielleicht direkt mit der letztgenannten Art zu identifizieren wäre.

Fundort. Hutinsel im Bayfjord.

19. *Nucula? sp.*

Der äusseren Erscheinung nach könnten zwei fragmentarische Exemplare zu *Nucula* gehören. Etwas ähnlich wäre ihnen, wenn eine hintere Kante vorhanden wäre, der ohnedies problematische *Megalodon rotundatus* J. Böhm[3].

Fundort: Hutinsel im Bayfjord.

20. *Cardinia(?) ovula* Kittl *n. f.*

Taf. II, Fig. 12—13.

Die Schalen sind schräg eiförmig mit etwas vorstehendem, stark nach vorne gerücktem und in diesem Sinne eingerolltem Wirbel, ausgehöhlter, kantig begrenzter Area, kräftigen, konzentrischen regelmässig ausgebildeten Zuwachsrippen, die nur bis zur Areakante reichen. Der Schlossapparat ist nicht bekannt.

Der letzterwähnte Umstand verhindert eine sichere Gattungsbestimmung der vorliegenden so charakteristischen Art. Sie an *Gonodon* Schafh.[4] anzuschliessen, wo eine sehr ähnliche Skulptur auftritt, ist un-

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[1] Vgl. A. Bittner, Lamellibr. d. alp. Trias. loc. cit., pag. 142, Taf. XVI, Fig. 26—31.

[2] J. Böhm, Die obertriad. Fauna der Bäreninsel, loc. cit., pag. 40, Taf. IV, Fig. 18,

[3] J. Böhm, Die obertriadische Fauna der Bäreninsel, loc. cit., pag. 48, Taf. V. Fig. 15—16.

[4] Eine grössere Zahl triadischer Arten dieser Gattung beschrieb A. Bittner (besonders in: „Lamellibranchiaten der alpinen Trias“ loc. cit.).

tunlich, da die dahin gehörigen Arten durchwegs mehr symmetrische Schalen besitzen. Von anderen unserer Art ähnlichen und in Betracht kommenden Gattungen wären zu nennen: *Pleuromya* Ag., *Pachycardia* Haw.[1] und *Cardinia* Ag. Davon bietet *Pleuromya* wohl die geringsten Analogien dar. *Pachycardia* dagegen besitzt eine völlig übereinstimmende Skulptur; nur im Umrisse tritt die so bezeichnende Verschmälerung der Hinterseite auf, die unserer Art ganz abgeht. Dass auch die bei *Pachycardia* häufig erscheinende Lunula unserer Art fehlt, wäre kein Hindernis, letztere zu *Pachycardia* zu stellen, da ja — wie ich zeigen konnte[2] — im bosnischen Muschelkalke eine *Pachycardia* ohne Lunula (*P. alunulata*) vorkommt. Am meisten analog unserer Art sind Formen der Gattung *Cardinia* gestaltet; wir finden dort einen ähnlichen Umriss, eine gleiche Skulptur und häufig auch die Andeutung einer Area, ganz wie bei unserer Art. Ich stelle die letztere daher vorläufig zu *Cardinia*.

Sieht man von *Trigonodus* Sandb., welche Gattung auch als Untergattung von *Cardinia* betrachtet wird, ab, so würde *Cardinia ovula* — die wirkliche Zugehörigkeit zu *Cardinia* vorausgesetzt — den ersten Vertreter der Gattung in der Trias vorstellen.

Fundort: Hutinsel im Bayfjord (6 Exemplare).

21. *Cardita(?) ursina* Kittl. *n. f.*

Taf. II, Fig. 15.

Mit Zögern nur stelle ich eine grosse Klappe zu *Cardita*, die, obwohl nur in Steinkernerhaltung, immerhin noch eine gut wahrnehmbare Skulptur zeigt, die aus breiten lamellös krenelierten Radialrippen besteht. Die Schale dürfte relativ viel weniger gewölbt sein, als eine viel kleinere mit ihr zusammen vorkommende Art, die noch besondere Erwähnung finden wird. In der mittleren Schalenregion sind deutlich 10 der in der schon besprochenen Weise verzierten Radialrippen zu erkennen; vorne und hinten war die Schale vielleicht nur schwach oder gar nicht radial skulpturiert. Eine solche Art der Skulptur würde zu *Cardita* allerdings nicht sonderlich passen.

Wegen ihrer subsymmetrischen Gestalt würde diese sowie die folgende Art zu jener Gruppe von Carditaformen zu stellen sein, welche

[1] Vgl. A. Bittner loc. cit. und A. Broili, Die Fauna der Pachycardientuffe loc. cit.
[2] E. Kittl, Geologie der Umgebung von Sarajevo. Jahrb. d. k. k. Geolog. Reichsanstalt, 53. Bd., 1903–04, pag. 714, Taf. XXIII, Fig. 18.

manche Autoren[1] unter der 1801 von LAMARCK aufgestellten Gattungsbezeichnung *Venericardia* von den echten schräg verlängerten *Cardita*-Arten abtrennen wollen.

Fundort: Bärenspitze nächst der Bärenbucht im Heurekasund. (Loser Block!)

22. *Cardita Willei* KITTL *n. f.*

Taf. II, Fig. 14.

Durch zahlreiche Steinkerne und Abdrücke in ein und demselben Gesteinsstücke ist eine kleine *Cardita* repräsentiert. Nur hie und da ist ein Stückchen Schale erhalten. Der Umriss der Schalen ist ein gerundet rhomboidischer, fast symmetrisch, wie er der Untergattung *Venericardia* entsprechen würde, der innere Schalenrand gezähnt. Die Art ist dickschalig, mit zahlreichen, nicht besonders kräftigen Radialrippen verziert, die recht dicht gedrängt stehen. Der Umriss nähert sich der Kreisform mehr als bei jeder anderen triadischen Art, etwa noch mehr als bei *Cardita Pichleri* BITTN. aus den Carditaschichten Nordtirols[2] und bei *Cardita cf. Pichleri* BITTN. von der Seelandalpe[3]. Area und Lunula scheinen sehr klein zu sein, wodurch sich diese Art von der ihr zunächst stehenden *Cardita Pichleri* gerade so unterscheiden würde wie durch ihren mehr der Kreisform genäherten Umriss.

Es mag hier angemerkt sein, dass auch von der Bäreninsel durch J. BÖHM das Fragment einer *Cardita* angegeben wird[4].

Fundort: Bärenspitze nächst der Bärenbucht im Heurekasund. (Loser Block!)

23. *Palaeopharus Scheii* KITTL *n. g., n. sp.*

Taf. III, Fig. 1—4.

Die Schale ist relativ dick, nach hinten schotenförmig verlängert, seitlich zusammengedrückt; geschlossen (?), mit annäherungsweise parallelem Ober- und Unterrand, vorne abgerundet, hinten etwas verschmälert und abgestutzt. Die Wirbel sind weit nach vorne gerückt. Die Oberfläche

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[1] Vgl. hierüber: P. FISCHER, Manuel de Conchyliologie, pag. 1010 u. f., sowie: A. BITTNER, Lamellibranchiaten der alpinen Trias, loc. cit., pag. 34.

[2] A. BITTNER, Lamellibranchiaten der alpinen Trias, loc. cit., pag. 39, Taf. XXIV, Fig. 8—10.

[3] ibidem, pag. 39, Taf. IV, Fig. 17.

[4] J. BÖHM, Obertriad. Fauna der Bäreninsel, loc. cit., pag. 47, Taf. 5, Fig. 22.

der Schale zeigt eine kräftige aber ungleich ausgebildete Zuwachsstreifung, die an dem Schalenrande in eine grobe Berippung übergeht, ferner eine schwächere, aber aus breiten Strahlen bestehende Radialrippung, die sich vom Wirbel gegen den Hinterrand erstreckt und so in der Nähe des unteren Schalenrandes die konzentrische Rippung unter sehr spitzem Winkel kreuzt. Die Schale ist vorne beträchtlich dicker als hinten und zeigt den vorderen Muskeleindruck stark vertieft. Der letztere wird nach hinten zu durch eine querliegende Schalenverdickung abgegrenzt, die nicht direkt zum Wirbel läuft, sondern sich mit einer vom Wirbel ausgehenden längs des vorderen Schlossrandes nach vorne ziehenden Verdickung vor dem Wirbel vereinigt. Der hintere Schliessmuskeleindruck ist länglich, weit nach hinten gerückt. Eine schwache Schalenverdickung läuft vom Wirbel in radialer Richtung gegen die untere Grenze des hinteren Schliessmuskels, ohne sie zu erreichen.

In der allgemeinen Gestalt wie auch in der Verzierung stimmt *Palaeopharus Scheii* im allgemeinen ziemlich gut mit *Pleurophorus perlongus* J. Böhm[1] überein, viel weniger mit *Pleurophorus Anderssoni* J. Böhm[2], die beide auf der Bäreninsel aufgefunden worden sind. Die Übereinstimmung der erstgenannten beiden Arten ist auf den ersten Blick eine so weitgehende, dass eine genauere Untersuchung nötig erschien, um festzustellen, ob hier nicht etwa eine spezifische Identität vorliege. Die Gestalt sowie die Verzierung sind bei den 2 Arten ähnlich; nur der Wirbel ist bei *Palaeopharus Scheii* nicht so weit nach vorne gerückt, wie bei *Pleurophorus perlongus*. Nach den Abbildungen zu urteilen, müsste auch bei der letzteren Art eine gewisse Variabilität der Wirbellage vorhanden sein und namentlich der Wirbel auch knapp an den Vorderrand heranrücken können (vergl. namentlich Fig. 1 auf Taf. IV bei J. Böhm, loc. cit.). Dieser Anschein ist aber nur auf eine Unvollständigkeit der Erhaltung zurückzuführen, wie eine Untersuchung von Böhms Originalexemplaren lehrte; übrigens war doch auch zwischen den verschiedenen Individuen eine ganz geringe Variabilität der Wirbellage zu erkennen.

In Hinsicht auf die Wirbellage ist also eine bestimmte Differenz vorhanden. Was Böhm bei *Pleurophorus perlongus* als Diagonalkante anspricht, scheint mir nur eine Diagonalrippe zu sein, die vielleicht zusammenfällt mit der bei *Palaeopharus Scheii* erwähnten leichten Schalenverdickung der Innenseite. Bei der letzteren Art ist der vordere Muskel-

[1] J. Böhm, Über die obertriadische Fauna der Bäreninsel. K. Svenska Vetensk. Ak. Handl., Bd. 37 (1903) No. 3 pag. 46, Taf. IV, Fig. 1—3 u. 8.

[2] J. Böhm, loc. cit., pag. 45, Taf. IV, Fig. 4—7 und 9—10.

eindruck etwas grösser und auch etwas mehr hinabgerückt. Der Schlossapparat von *Palaeopharus Scheii* ist mir zu unvollständig bekannt geworden, um mit jenem von *P. perlongus* verglichen werden zu können. Die wichtigsten Differenzen zwischen den zwei Arten, welche ich konstatieren konnte, bestehen also in der verschiedenen Wirbellage und in der grösseren Zahl der Radialrippen bei *P. Scheii* von 12 gegen 7—9 solcher bei *P. perlongus*. Erstere Art scheint auch grösser zu werden als *P. perlongus*. Es bestehen daher so gewichtige Unterschiede der beiden Arten, dass für die Art aus dem Heurekasunde ein besonderer Name zu gebrauchen ist.

Lediglich als ein Anklang an unsere Art sei hier ein Steinkern erwähnt, den F. TELLER als *?Solenopsis indet.* von Werchojansk beschrieb[1].

Bevor ich die generische Stellung unserer Art präzisiere, will ich nochmals anführen, dass J. BÖHM[2] zwei wohl charakterisierte Arten aus der Trias der Bäreninsel, die augenscheinlich unserer Art sehr nahe stehen, der Gattung *Pleurophorus* angereiht hat. Bei diesen zwei Arten entsprechen Lage und Beschaffenheit des vorderen Schliessmuskeleindruckes sowie die subterminale Wirbellage ganz wohl der Gattung *Pleurophorus*; auch die Anlage des Schlossapparates ist der bei *Pleurophorus* ähnlich; doch sind die Cardinalzähne nach BÖHMS Angaben auf einen einzigen in der rechten Klappe reduziert, wie es — das sei gleich bemerkt — bei manchen Soleniden zu finden ist; ferner entspricht der Umriss der Schalen in seiner extremen Verlängerung und deren seitliche Kompression ebenfalls gar nicht der Gattung *Pleurophorus*, wohl aber erinnern diese Eigenschaften wieder an die Soleniden. Dazu kommen einige Details der zwei Pleurophorusarten: die Diagonalkante der einen Art findet sich bei *Solen*-Arten in der Färbung, während die Desorientierung der Skulptur der anderen Art, bei Formen der Solenidengattung *Macha* Analoga trifft.

Es sind also gewisse Beziehungen der zwei sogenannten *Pleurophorus*-Arten zu den Soleniden vorhanden[3]. Dass man sie aber zu dieser Familie stellt, das verbietet nicht nur das in der Regel weite Klaffen der Schalen aller Soleniden-Gattungen, welches den zwei Arten fehlt. Das genannte

[1] F. TELLER, Die Pelecypodenfauna von Werchojansk in E. v. MOJSISOVICS, Arktische Triasfaunen. Mém. Ac. I. des sci. de St. Petersb. VII. sér., t. XXXIII, No. 6, pag. 136, Taf. XX, Fig. 2.

[2] loc. cit.

[3] Möglicher Weise existieren auch Beziehungen zu der Gattung *Sphenotus Hall* (Geological Surv. of New-York. J. HALL Palaeontology Vol. V, Part. I, Lamellibr. II. (1885), pag. XXXIII) von der L. BEUSHAUSEN (Die Lamellibranchiaten des

Hindernis ist bei der Familie der Solenopsiden nicht vorhanden. Dahin kann man die zwei *Pleurophorus*-Arten nebst unserer Art aus dem Heurekasunde eher stellen. Ich schlage nun für die Art aus dem Heurekasunde sowie für die besprochenen *Pleurophorus*-Arten den neuen Gattungsnamen:

Palaeopharus

vor. Die Gattung *Palaeopharus* würde sich einerseits an *Sanguinolites*, anderseits an *Solenopsis* anlehnen, von beiden durch die kaum klaffende Schale, hauptsächlich aber durch das Schloss unterschieden sein.

Fundorte: Bärenspitze nächst der Bärenbucht im Heurekasunde (loser Block, darin häufig); Depôt auf der Grossen Insel im Heurekasund (1 Ex.); einige Fragmente in den grauen Kalken der Hutinsel im Bayfjord machen das Vorkommen der Art auch an dieser Lokalität sehr wahrscheinlich.

24. *Homomya ? sp.*

Als *Homomya Forsbergi* beschreibt J. Böhm[1] von der Bäreninsel die linke Klappe eines Lamellibranchiaten, womit ein von der Hutinsel vorliegendes Fragment im Umrisse wie auch im Verlaufe der Zuwachsstreifen übereinstimmt. Es deutet dasselbe auf eine hinten klaffende Schale hin, was zu der Gattung *Homomya* ganz wohl passen würde.

Fundort: Hutinsel im Bayfjord.

25. *Anoplophora cf.(?) ephippium* J. Böhm.

Taf. III, Fig. 6.

Von der Bäreninsel hat J. Böhm als *Anoplophora ephippium* langgestreckte Lamellibranchiaten mit einer medianen Radialdepression und einer vom Wirbel zum Hinterrande ausstrahlenden Furche abgebildet und beschrieben[2]. Ein einziges aus den hellgrauen Kalken stammendes unvollständiges Exemplar aus dem Heurekasund stimmt mit der zitierten

rheinischen Devon) in den Abhandl. d. kön. preuss. Geol. Landesanstalt Heft 17 (1895) pag. 215, Taf. XVIII, Fig. 1—2 und W. E. Schmidt (Der obere Lenneschiefer zwisch. Lethrathe und Iserlohn) in der Zeitschr. d. deutsch. geol. Ges. 1905, pag. 557. Taf. XXII, Fig. 1, europaeische Vertreter aus dem deutschen Devon beschrieben haben. Doch ist man bisher über die Beschaffenheit des Schlosses dieser Gattung noch in Unkenntnis geblieben.

[1] loc. cit. pag. 49, Taf. V, Fig. 33.

[2] J. Böhm, loc. cit., pag. 44, Taf. V, Fig. 34—35.

Art von der Bäreninsel ziemlich überein. Nur ist die mediane Furche nicht so kantig abgegrenzt, wie bei der Art von der Bäreninsel.

Fundort: Hutinsel im Bayfjord.

III. *Cephalopoda.*

Nur 4 Formen trachycerater Ammoniten werden hier angeführt.

26. *Protrachyceras Sverdrupi* Kittl n. f.

Taf. III, Fig. 8 (und Fig. 7?).

Auf einer kleinen Schieferplatte liegen, zum Teile auf einander gepresst, einige Individuen, welche alle derselben Art anzugehören scheinen. Sie sind halb involut mit einem Verhältnis der Nabelweite zum Durchmesser wie 3 : 10. Die Umgänge tragen zahlreiche Radialrippen, welche auf den inneren Windungen einfach sind, auf der Schlusswindung aber falcoid vorgezogen, meist schon vom Nabelrande aus einfach gegabelt und denen hie und da einfache Rippen eingeschaltet sind. Die kleinen Windungen tragen zwei den Rippen aufsitzende spirale Dornenreihen (eine umbilikale und eine marginale), die grösseren Windungen deren mehr, die mittlere etwa 4, die Schlusswindung auf der Schalenoberfläche (und im Abdrucke, nicht aber auf dem Steinkerne) eine grössere Zahl solcher spiraler Dornenreihen (etwa 8). Auf den äusseren Windungen gehören die marginale (externseitige) und die submarginale Dornenreihe stets zu den am kräftigsten entwickelten.

Die Skulptur dieser Art hat einige Ähnlichkeit mit der von *Trachyceras doleriticum* Mojs.[1], doch sind die Radialrippen auf der Externseite deutlich vorgezogen und treten auf den Flanken Dornenspiralen auf. Grössere Analogien zeigen daher *Trachyceras Steinmanni* Mojs. von Esino[2] und andere *Protrachyceras*-Formen aus der Gruppe der *furcosa*[3] mit *Protrachyceras Sverdrupi*, welche Art wohl auch der genannten Gruppe anzureihen ist.

Besonders charakteristisch für *Protrachyceras Sverdrupi* ist die starke Vorwärtsbiegung der Radialrippen auf der Externseite; deshalb

[1] E. v. Mojsisovics, Die Cephalopoden der mediterranen Trias. Abhandl. d. k. k. Geolog. Reichsanstalt, Wien. X. Bd., 1882, Taf. XIII, Fig. 5.

[2] E. v. Mojsisovics, Cephalopoden der mediterranen Trias, l. cit., Taf. LXXXI, Fig. 10—11.

[3] Vgl. auch: E. v. Mojsisovics, Cephalopoden der Hallstätter Kalke, II. Bd., Abhandl. d. k. k. Geolog. Reichsanst. Wien. VI. Bd., 2. Hälfte, 1893, pag. 623.

erinnert die Art in ihrer Skulptur auch an diejenige der Jugendstadien mancher *Sirenites*-Arten, namentlich solcher aus der Gruppe der *senticosi.* Es ist eigentlich nur das Fehlen des für *Sirenites* bezeichnenden Zopfkieles, welches einen näheren Anschluss des *Protrachyceras Sverdrupi* an die Gattung *Sirenites* verbietet.

Das in Fig. 7 abgebildete Exemplar dürfte zu *Protrachyceras Sverdrupi* gehören; dessen Erhaltungszustand ist jedoch ein zu ungenügender, um die vermutete Identität zu erhärten.

Fundort: Ammonitenberg am Bärenkaplande.

27. *Protrachyceras cf. Sverdrupi* Kittl.

Taf. III, Fig. 9.

An die vorige Art schliesst sich das in Fig. 9 abgebildete Exemplar durch seine Skulptur, namentlich durch den Verlauf seiner Radialrippen wie auch durch das Mass seiner Involubilität an. Die Rippen sind jedoch weiter von einander entfernt und scheinen Dornenspiralen zu fehlen; nur von umbilikalen Dornen sind Andeutungen zu erkennen. Da das vorliegende Exemplar jedoch ein Steinkern ist und auf Steinkernen von *Protrachyceras Sverdrupi* die Dornenspiralen in ähnlicher Weise zurücktreten, so bleibt als wichtigste Differenz unseres in Rede stehenden Exemplares gegen *Protrachyceras Sverdrupi* nur die grössere Distanz der Radialrippen übrig, die vielleicht nicht gewichtig genug ist, um darauf eine neue Art zu gründen.

Fundort: Ammonitenberg am Bärenkaplande.

28. *Protrachyceras aff. Richthofeni* Mojs.

Taf. III, Fig. 10 und 11.

Auch die hier angeführten Exemplare zeigen noch deutliche Beziehungen zu *Protrachyceras Sverdrupi,* von dem sie sich durch ihre zahlreichen und dicht gedrängten, sonst ähnlich beschaffenen Radialrippen sowie durch den Abgang deutlicher Dornenspiralen auf den Flanken in bestimmter Weise unterscheiden. Durch eben dieselben Eigenschaften nähern sie sich aber dem *Protrachyceras Richthofeni* Mojs., welche Art von Mojsisovics übrigens ebenfalls zu der Gruppe der *furcosa* gestellt wird.

Fig. 10 zeigt ein jüngeres Individuum mit weniger gekrümmtem Verlauf der Radialrippen, Fig. 11 dagegen das fragmentarische Gehäuse eines älteren Individuums mit externseitig stark vorgebogenen Rippen.

Fundort: Ammonitenberg am Bärenkaplande.

29. *Trachyceras sp. indet.*

Einige fragmentarische Exemplare sind ziemlich eng genabelt, zeigen hohe Umgänge mit zahlreichen (gedornten?) Radialrippen und Externkielen, könnten sich also ganz wohl der schon früher erwähnten Gruppe der *Protrachycerata furcosa* anfügen. Doch ist die Skulptur der Schale zu undeutlich erhalten, um irgend eine Artbestimmung zu erlauben.

Fundort: Hutinsel im Bayfjord.

IV. *Hieroglypha.*

29. *Gyrochorda sp.*

Taf. III, Fig. 12.

Aus den tonigen Faciesgebilden verschiedener Formationen sind schon lange die von QUENSTEDT[1] als „Zopfplatten" bezeichneten Gebilde bekannt. Dieser Autor bildet sie aus dem braunen Jura β ab; dieselben Vorkommnisse nennt O. HEER[2] *Gyrochorte*, wovon er mehrere Arten unterschied und sie als Algen ansah. Seit A. G. NATHORST gezeigt hat, dass solche Gebilde als Kriechspuren von Crustaceen anzusehen seien, was er in einer Reihe von Publikationen verfocht[3], dürfte wohl kaum ein Zweifel an der Richtigkeit dieser Anschauung übergeblieben sein. Herr Hofrat TH. FUCHS, dem ich das hier abgebildete Stück vorlegte, machte mich auf diese Umstände aufmerksam und verwies darauf, dass solche Reste völlig den Spuren gleichen, die NATHORST von *Corophium longicorne* FABR. erhalten hat[4]. In unserer Sammlung (Wiener Hofmuseum) liegen solche Reste auch aus dem Lias.

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[1] F. A. QUENSTEDT, Handb. d. Petrefactenkunde 3. Aufl. 1885, pag. 1082, Taf. 88, Fig. 20.

[2] O. HEER, Die Urwelt der Schweiz, 2. Aufl. 1879, pag. 158, Taf. IX, Fig. 9—11

[3] Hievon seien genannt: A. G. NATHORST, Om spår af nagra evertebrerade djur M. M. K. Svenska Vet.-Akad. Handl. Band 18, No. 7. 1881.
— Nouvelles observations sur des traces d'animaux etc. K. Sv. Vet.-Ak. Handl. Band. 21, No. 14, 1886.

[4] Vgl. NATHORST, Om spår etc. pag. 66, Taf. 1, Fig. 1—2.

Übrigens meinte Herr Hofrat FUCHS, das vom Heurekasund vorliegende Exemplar könnte aus dem Carbon stammen, was ich hiermit gerne registriere.

Hiernach wäre es also zweifelhaft, ob der Rest aus der Trias stamme.

Fundort: Bärenspitze nächst der Bärenbucht im Heurekasund.

	Tabelle der Triasfossilien des Heurekasundes	Gebiet des Heurekasundes								
		Bärenkapland	Bärenspitze	Hutinsel	Depôt Gr. Insel	Blauer Berg	Bären Insel	Spitzbergen	Germanische Trias	Alpine Trias
1	*Discina cf. Barentsi* J. Böhm	+	..	..	..	..	+	..	..	..
2	*Brachiopod indet*	..	..	+	..	..	..	..	..	..
3	*Avicula polaris* Ki.	..	..	..	+	.	..	×	..	..
4	*Daonella Frami* Ki.	+	..	..	..	+	..	..	..	×
5	*Halobia Zitteli* Lindstr.	×	..	×	+	+	+	+	..	..
6	*Halobia sp. juv.*	×	..	+	×	×	×	×	..	..
7	*Gervilleia cf. Löwenighi* J. Böhm	..	..	+	..	.	+	..	..	..
8	*Lima (Plagiostoma) Hakoni* Ki.	..	..	+	..	..	×	..	+	..
9	— — *hatensis* Ki.	..	..	+	..	..	×	..	×?	×
10	— *(?) boreas* Ki.	.	..	+	..	..	..	..	..	..
11	*Pecten (Entolium) cf. Öbergi* Lundgr.	..	+	+	×	..	+	+	×	×
12	— — *Öbergi* Lundgr.	..	×	×	+	..	×	×	×	×
13	*Pecten (Chlamys) Oscari* Ki.	..	..	+	+	..	..	..	×	×
14	*Pecten? sp.*	..	..	+	..	..	..	..	..	..
15	*Gryphaea Skuld* J. Böhm	+	..	..	..	..	+	..	..	..
16	— *cf. Keilhaui* J. Böhm	..	..	+	..	..	..	..	..	..
17	*Leda (Phaenodesmia) regia* Ki.	.	..	+	..	..	..	..	..	..
18	*Palaeoneilo? cf. lunaris* J. Böhm	..	..	+	..	..	+	..	..	×
19	*Nucula? sp.*	..	..	+	..	..	..	..	..	×
20	*Cardinia? ovula* Ki.	..	..	+	..	..	..	..	..	..
21	*Cardita ursina* Ki.	..	+	..	..	..	..	..	..	..
22	— *Willei* Ki.[1]	..	+	..	..	..	..	..	..	×
23	*Palaeopharus Scheii* Ki.	..	+	×?	+	..	×	..	..	..
24	*Homomya sp.*	..	..	+	..	..	×	.	..	×
25	*Anoplophora cf. ephippium* J. B.	..	..	+	..	..	×	..	..	..
26	*Protrachyceras Sverdrupi* Ki.	+	..	..	..	..	..	..	..	×
27	— *cf. Sverdrupi* Ki.	+	..	..	..	..	..	..	..	×
28	— *aff. Richthofeni* Mojs.	+	..	..	..	..	..	..	..	×
29	*Trachyceras sp. indet.*	..	..	+	..	..	..	..	.	×
30	*Gyrochorda sp.*	..	+	..	..	..	..	..	..	..

Anm. + bedeutet das Vorkommen der Art an dem betreffenden Fundorte,
× — . — einer verwandten Art.

[1] Auf pag. 6 und 11 ist irrtümlich „*Wittei*" stehen geblieben.

Schluss.

In den vorangehenden Zeilen habe ich wiederholt Gelegenheit gehabt, die von dem Heurekasunde und seiner nächsten Umgebung (Bärenkapland, Bayfjord und Greeleyfjord) vorliegenden Triasfossilien mit jenen anderer Regionen zu vergleichen. Es ergaben sich dabei vor allem nahe Beziehungen der Triasfaunen aus der Gegend des Heurekasundes zu jenen Spitzbergens und der Bäreninsel. Besonders auffällig ist die nun erkannte weite Verbreitung der *Halobia Zitteli* LINDSTR., welche jetzt in mehreren Varietäten (oder Mutationen?) von der Bäreninsel südlich von Spitzbergen an bis hinüber zum Heurekasund, resp. Greeleyfjord konstatiert ist und eine Leitform für die nordische Trias darstellt; ob sie auf einen bestimmten Horizont beschränkt ist oder sich auf mehrere benachbarte erstreckt, kann bei der Dürftigkeit der stratigraphischen Daten nicht festgestellt werden.

Im ganzen sind, wie aus nebenstehender Tabelle zu ersehen ist, von den 30 Arten der Trias aus der Gegend des Heurekasundes etwa 11 bis 12 in sehr nahestehenden Formen auch auf der Bäreninsel vorhanden; ausser den schon genannten Halobien fallen als gemeinsame Gattungen auf: *Gervilleia, Plagiostoma, Entolium, Gryphaea, Leda, Palaeoneilo, Palaeopharus, Cardita, Homomya, Anoplophora.* Eine völlige Identität der Arten konnte nur in seltenen Fällen erkannt werden.

Relativ viel weniger auffällig sind die Beziehungen der Trias des Heurekasundes zu fernerab liegenden Triasgebieten. An die Fauna der germanischen Trias erinnert insbesondere die grosse *Lima Hakoni*; anders beschaffen sind die Anklänge an die Faunen der alpinen Trias, obgleich da noch weniger Übereinstimmung in spezifischer Hinsicht zu finden war, was aber nach der grösseren Entfernung derselben wohl nur zu erwarten war. Da aber die alpine Trias nicht nur an Arten ausserordentlich reich ist, sondern auch sehr verschiedene Facies darbietet und überdies relativ gut studiert erscheint, so gestattet gerade sie am besten, das Alter der Triasbildungen des Heurekasundes vergleichsweise abzuleiten.

Es deuten z. B. *Halobia Zitteli, Daonella Frami* und *Protrachyceras Sverdrupi* auf ein ladinisches oder karnisches Alter hin, während das *Trachyceras*-Vorkommen auf der Hutinsel auf ein karnisches Alter schliessen lässt, soweit das eben überhaupt zulässig erscheint.

Man kann daher in diesem Sinne weiter noch vermuten, dass im Triasgebiete des Heurekasundes von oben nach unten einander folgen:

1. Die hellen Kalke der Hutinsel.
2. Die *Palaeopharus*- und *Entolium*-Bänke der Bärenspitze und der Grossen Insel.
3. Die Kalkschiefer mit *Halobia Zitteli* und *Protrachyceras*.
4. Die Kalkschiefer mit *Daonella Frami*.

Indessen darf ein grosser Altersunterschied kaum angenommen werden. Wo etwa die pflanzenführenden Sandsteine der Bärenspitze eingereiht werden könnten, dafür fehlt jeglicher palaeontologische Anhaltspunkt.

Im Jahre 1886 hat E. v. Mojsisovics eine für damals erschöpfende Übersicht der Kenntnisse über die arktische Trias gegeben[1]. Als die ältesten Triasschichten der arktischen Regionen werden dort die Olenek-Schichten angeführt und als dem Werfener Schiefer aequivalent bezeichnet. Darüber folgt der Posidonomyenkalk von Spitzbergen als Zwischenschichte. Als jüngstes Glied bezeichnet Mojsisovics den Daonellenkalk von Spitzbergen, der dem Muschelkalk gleichgestellt wird. Die Pseudomonotisfauna von Werchojansk wird dem Alter nach nicht näher präzisiert. Als norisch (recte ladinisch oder karnisch) werden die Schichten mit *Halobia Zitteli* angeführt[2]. Von etwa demselben Alter sind nun die neuerdings von A. G. Nathorst und J. G. Andersson auf der Bäreninsel entdeckten und von J. Böhm bearbeiteten Triasbildungen[3] und grösstenteils auch die hier beschriebenen Faunenreste des Heureka-Sund-Gebietes. Die im Osten so fossilreich entwickelten unteren Triasbildungen, die auf Spitzbergen noch auftreten, sind in westlicheren arktischen Regionen bisher nicht bekannt geworden.

Für Spitzbergen hat J. Böhm kürzlich angenommen, dass die obere Trias dort von oben nach unten zu in folgender Weise zu gliedern sei:

Schichte mit *Halobia cf. Neumayri* Bittn.

Horizont mit *Lingula polaris* Lundgr.

Horizont mit *Halobia Zitteli* Lindstr.

Aus all diesen Darlegungen geht zweifellos hervor, dass man aus dem weiteren Studium der nordischen Trias noch recht wichtige Aufschlüsse in palaeontologischer wie auch in stratigraphischer Hinsicht zu erwarten hat.

[1] E. v. Mojsisovics, Arktische Triasfaunen. Mém. Ac. Imp. d. sciences de St. Pétersbourg. VII. ser., tome XXXIII, No. 6. (1886).

[2] loc. cit. pag. 152.

[3] Die obertriad. Fauna der Bäreninsel. loc. cit.

Gedruckt 29. Juni 1907.

E. Kittl.

Triasfossilien vom Heurekasund.

Tafel I.

Tafel I.

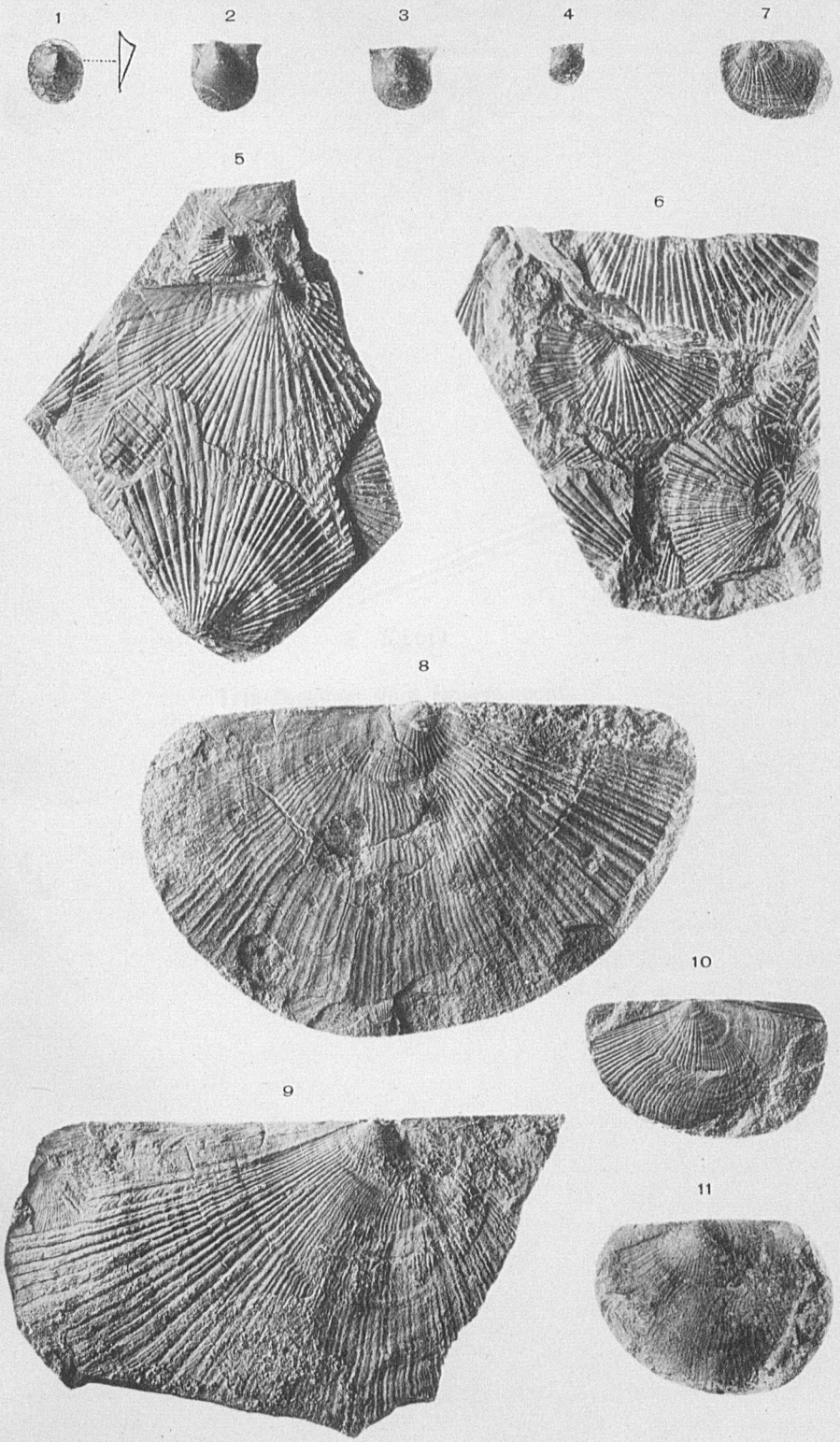
Fig. 1. *Discina cf. Barrentsi* J. Böhm vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . . Pag. 10

Fig. 2–4. *Avicula polaris* Kittl *n. f.* vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . . — 12

Fig. 5–6. *Daonella Frami* Kittl *n. f.* vom Blauen Berge im Greeleyfjord (Blaafjeld, Greeleyfjord) . . . . . — 13

Fig. 7–11. *Halobia Zitteli* Lindstr. Fig. 7 vom Blauen Berge im Greeleyfjord (Blaafjeld, Greeleyfjord). Fig. 8–11 vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) — 14

Alle Figuren stellen die Fossilien in natürlicher Grösse dar.



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E. Kittl: Triasfossilien vom Heurekasund, Taf. I.

E. Kittl.

Triasfossilien vom Heurekasund.

Tafel II.

Tafel II.

Fig. 1—2. *Lima* (?) *boreas* Kittl *n. f.* von der Hutinsel im Bayfjord, König Oscars Land (Hatøen, Baysfjord) . . . . . Pag. 25

Fig. 3. *Pecten* (?) *sp.* von der Hutinsel im Bayfjord, König Oscars Land (Hatøen, Baysfjord) . . . . . — 29

Fig. 4. *Lima (Plagiostoma) Hakoni* Kittl *n. f.* von der Hutinsel im Bayfjord (Hatøen, Baysfjord) . . . . . — 22

Fig. 5—6. *Lima (Plagiostoma) hatensis* Kittl *n. f.* von der Hutinsel im Bayfjord, König Oscars Land (Hatøen, Baysfjord) . . . . — 24

Fig. 7. *Gryphaea Skuld* J. Böhm, vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . . — 30

Fig. 8. *Pecten (Entolium)* cf. *Öbergi* Lundgr. von der Bärenspitze im Heurekasund (Bjørneodden, Eureka Sund), Steinkern mit Radialfurchen . . . . . — 26

Fig. 9—10. *Pecten (Chlamys) Oscari* Kittl *n. f.* vom Depôt auf der Grossen Insel im Heurekasund (Depotet Storøen, Eureka Sund) . — 27

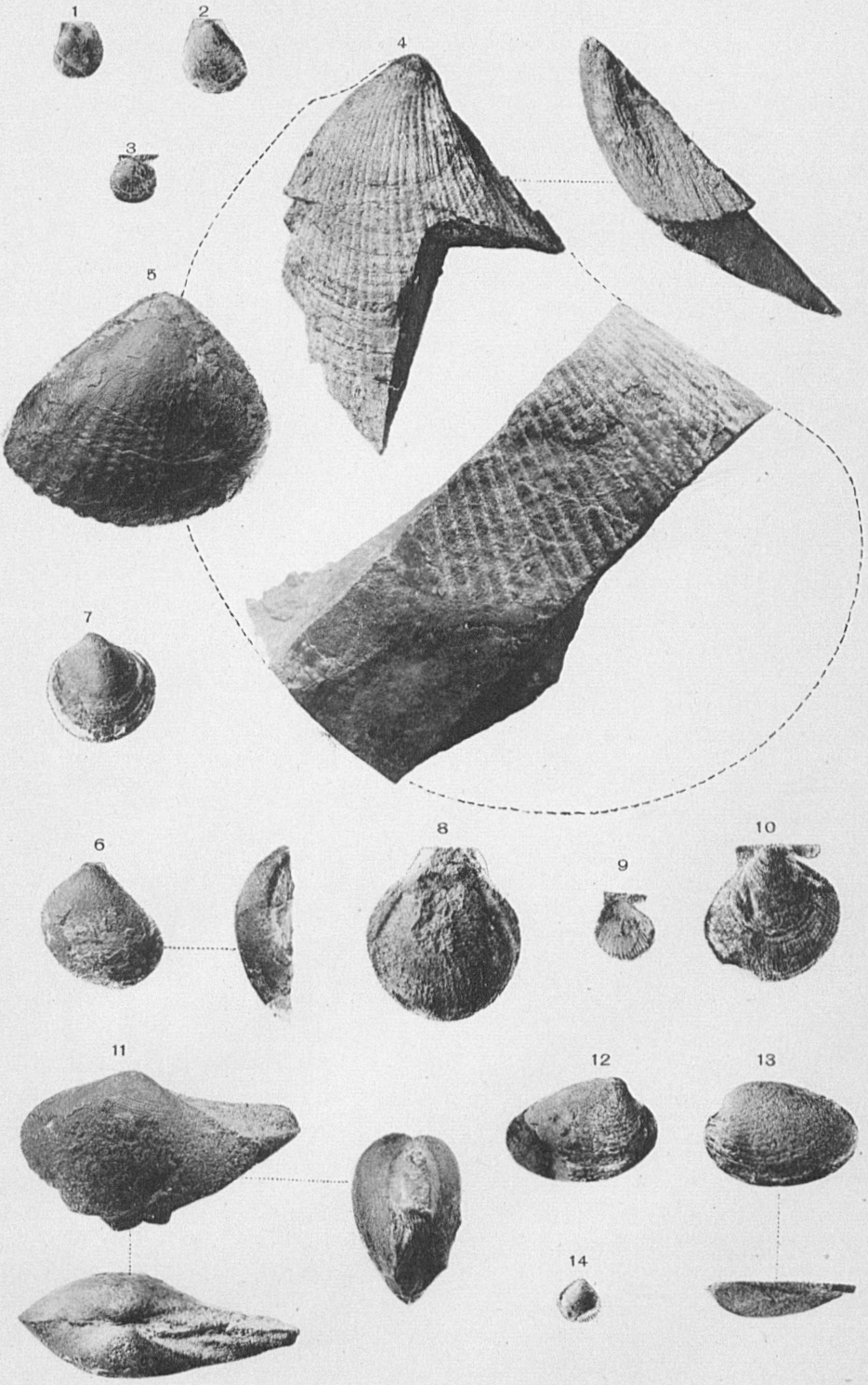
Fig. 11. *Leda (Phaenodesmia) regia* Kittl *n. f.* von der Hutinsel im Bayfjord (Hatøen, Baysfjord) . . . . . — 31

Fig. 12—13. *Cardinia (?) ovula* Kittl *n. f.* von der Hutinsel im Bayfjord (Hatøen, Baysfjord) . . . . . — 32

Fig. 14. *Cardita Willei* Kittl *n. f.* von der Bärenspitze im Heurekasund (Bjørneodden, Eureka Sund) . . . . . — 34

Fig. 15. *Cardita* (?) *ursina* Kittl *n. f.* von der Bärenspitze im Heurekasund (Bjørneodden, Eureka Sund) . . . . . — 33

Alle Figuren stellen die Fossilien in natürlicher Grösse dar.



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E. Kittl: Triasfossilien vom Heurekasund, Taf. II.

E. Kittl.

Triasfossilien vom Heurekasund.

Tafel III.

Tafel III.

Fig. 1–4. *Palaeopharus Scheii* Kittl *n. f.* von der Bärenspitze im Heurekasund (Bjørneodden, Eureka Sund) . . . . . Pag. 34

Fig. 5. *Palaeoneilo? cf. lunaris* J. Böhm von der Hutinsel im Bayfjord (Hatøen, Baysfjord) . . . . . — 32

Fig. 6. *Anoplophora cf.*(?) *ephippium* J. Böhm von der Hutinsel im Bayfjord (Hatøen, Baysfjord). . . . . — 37

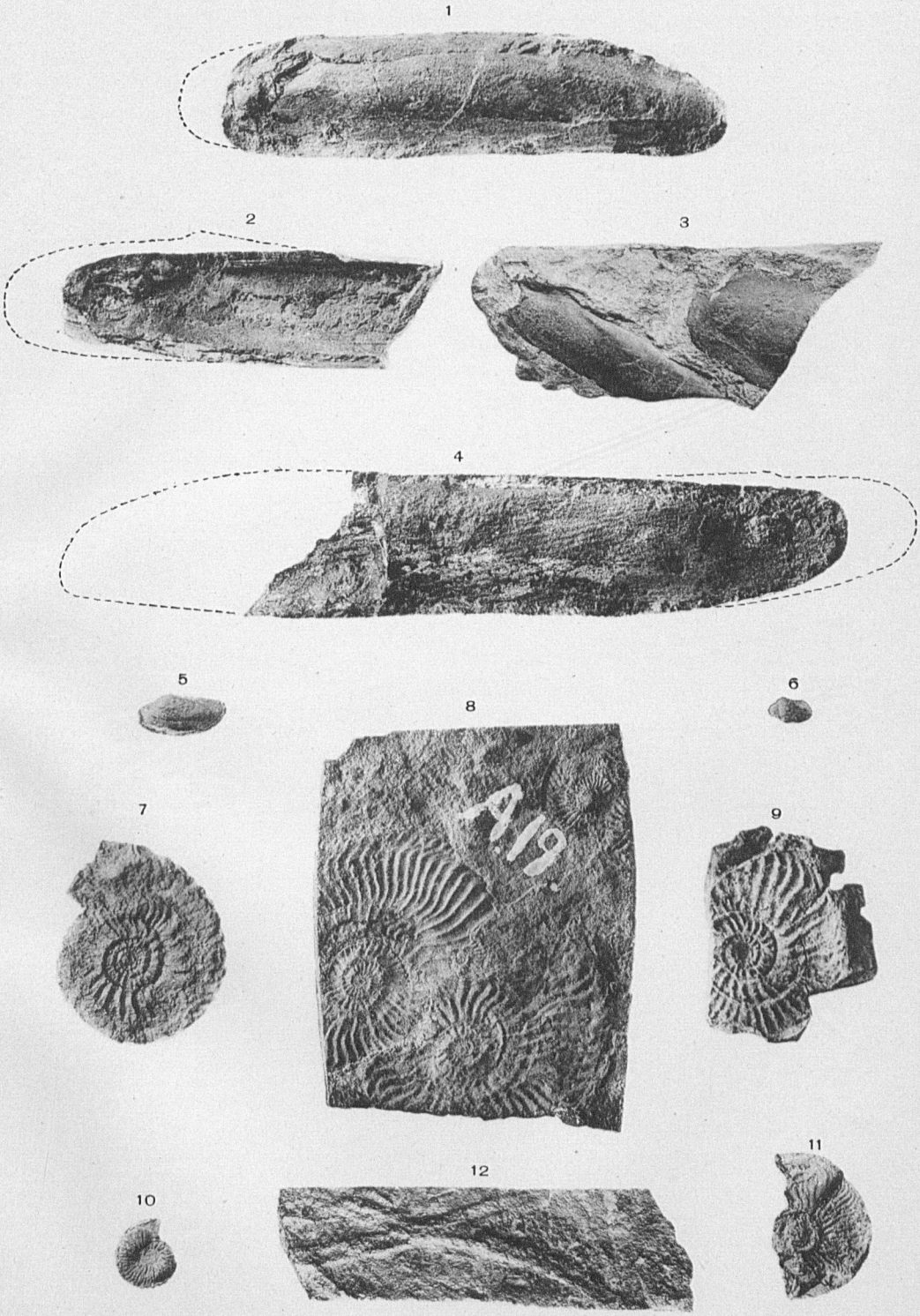
Fig. 7–8. *Protrachyceras Sverdrupi* Kittl *n. f.* vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . — 38

Fig. 9. *Protrachyceras cf. Sverdrupi* Kittl vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . — 39

Fig. 10–11. *Protrachyceras* aff. *Richthofeni* Mojs. vom Ammonitenberge am Bärenkaplande (Ammonitberget, Bjørnekaplandet) . . . . — 39

Fig. 12. *Gyrochorda sp.* von der Bärenspitze im Heurekasund (Bjørneodden, Eureka Sund). . . . . — 40

Alle Figuren stellen die Fossilien in natürlicher Grösse dar.



Kunstanstalt Max Jaffé, Wien.

E. Kittl: Triasfossilien vom Heurekasund, Taf. III.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE „FRAM“ 1898—1902. No. 8.

O. NORDGAARD:

BRYOZOA FROM THE 2ND FRAM EXPEDITION 1898–1902

(WITH 4 PLATES)

AT THE EXPENCE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

PUBLISHED BY

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INTRODUCTION.

My investigations on the subject of Bryozoa have, until quite lately, been based exclusively upon material from the Norwegian shores, the more northerly of which exhibit a number of arctic forms, although the animal life there, on account of the peculiar hydrographic conditions, is of a mixed character. It was therefore with pleasure, that I acceded to the request of Hr. P. SCHEI to work up the Bryozoa material collected during the 2nd Fram Expedition, as it might be assumed beforehand the species it contained would be of a purely arctic character. In general it may also be said that the Bryozoa in the east arctic region are better known than those in the west arctic, for which reason any contribution from the last named region cannot fail to be an object og zoogeographical interest.

Before going on to mention the various species, I will make a few remarks regarding the places in which dredgings were made, referring moreover to the maps that accompany Captain SVERDRUP's account of his travels, these maps having been drawn by Captain ISACHSEN[1].

The dredging-stations at which Bryozoa were found are here given in chronological order:

August 24, 1898, Rice Strait. The Fram's first winter quarters were within Rice Strait, which is in latitude 78° 45′ N. and longitude 74° 55′ W.

July 22, 1899, winter haven. In Rice Strait.

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[1] See OTTO SVERDRUP, Nyt Land, Vol. I & II. Christiania 1903.
Vol. 1, p. 48, Map of the route of the Expedition.
Vol. I, p. 64, The Fram's surroundings, first winter haven, 1898–99.
Vol. I, p. 240, „ „ „ 2nd winter haven, 1899–1900.
Vol. II, p. 112, „ „ „ 3rd & 4th winter havens, 1900–1902.

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July 3, 1900, winter haven; July 18, 1900, winter haven; July 22, 1900, winter haven; July 24, 25 & 29, 1900, winter haven; July 31, 1900, winter haven; August 1, 1900, off the mouth of Stordalen; August 3, 1900, FOSHEIM's Peak and the valley on the west side of the fjord; August 4, 1900, Sjöpölse Ness; August 7, 1900, Öst Cape; August 8, 1900, winter haven; August, 1900, north side of N. Devon.

All the dredging-stations from the 3rd July to the 8th August, 1900, are in the Havne Fjord, which runs up from Jones Sound into King Oscar's Land.

Thus Stordalen is one of the valleys that join the abovenamed fjord, Fosheim's Peak — afterwards called Fosheim's Baby — is a small island in Havne Fjord, and Øst Cape is on the east side of the entrance to that fjord.

September 9, 1900, off Forvisnings Valley.

September 20, 1900, the head of Gaase Fjord.

June 28, 1901, the mouth of Hvalros Fjord.

July 5, 1901, the Sound (in the southern part of Hell Gate).

July 8, 1901, Ren Bay.

July 9, 1901, between Ren Bay and Cape Land's End.

July 12, 1901, bay at Land's End.

July 13, 1901, a little to the north of Land's End.

July 18, 1901, the winter haven (Gaase Fjord).

July 18, 1901, the mouth of Gaase Fjord.

July 19, 1901, lower part of Gaase Fjord.

August 16, 1901, Gaase Fjord.

August 30, 1901, Gaase Fjord.

July 15, 1902, off Havhest Mountain, N. Devon.

Gaase Fjord and Hvalros Fjord, are the two most westerly of the series of fjords that run up from Jones Sound into King Oscar's Land.

The stations from July 5—13, 1901, are all situated near Hell Gate, which, together with Cardigan Strait, forms the northern outlet of Jones Sound. This sound is bordered on the south and west by N. Devon, on the west of which projects a tongue of land called Colin Archer's Peninsula. The eastern point of this peninsula is Cape Vera with the Havhest Mountain. The 76th parallel of latitude cuts Jones Sound almost down the middle, and most of the dredgings took place in a latitude of about 76° 30′, and between 84° and 90° W. Long. It will also be seen from the above that most of the dredgings were made in the months of July and August. Before the beginning of July, the ice would place a barrier in most places in the way of that kind of work. In 1900, for

instance, Capt. SVERDRUP describes the coming of spring in the following suggestive manner (Vol. II, p. 38): „About the 9th June (1900), the fine weather made its entry into Havne Fjord. The snow began to melt up on the mountain sides, and the brooks to hop and leap over the slopes.“ Here I will also quote a couple of faunistic remarks from the description of the voyage. He thus writes of the dredgings in Havne Fjord in July, 1900 (Vol. II. p. 72): „Dredgings were now more frequent and wherever we could get at the bottom, they gave good results. The bay we lay in was an especially fruitful field of research.“ Gaase Fjord also receives a good character for its stock of marine animals. According to BAY, this fjord had an unusually abundant fauna (see Vol. II, p. 112). A special account of the dredgings on the east side of Hell Gate in July, 1901, is given by SIMMONS (Voll. II, p. 374). From this account it appears, *inter alia*, that in the above-named waters the current is very strong, a circumstance which is of importance in judging the faunistic character.

In the following list of species, there are several places in which, instead of giving long lists of synonyms, I have only put „BIDENKAP, Kat. p. . ,“ which refers to the most recent work of that author[1].

In giving the lengt and breadth of the zoœcia, I have in every case where it allowed of being done, taken the measurements at the back of the colony, between the bases of the transversal walls, and between the bases of the lateral walls. In giving the proportion between the length and the breadth of the mandible of the avicularium, the ordinary mathematical sign, $l \lesseqgtr b$, is sometimes used.

[1] Fortegnelse over de arktiske Bryozoa. Bergens Museums Aarbog 1905, No. 9.

Order Gymnolæmata.

Sub-order Cheilostomata.

Gen. Gemellaria, Savigny.

1. *Gemellaria loricata*, LIN.

July 5, 1901, the Sound; July 9, 1901, between Ren Bay and Cape Land's End.

As SMITT[1] has indicated, the length of the zoœcia is subject to considerable variation. In a colony on *Hyas coarctatus* from northern Norway (North Cape, 1894), the zoœcia had a length of 0,52 mm., while the aperture measured 0.26 mm. The corresponding measurements in a colony from Station 363 of the Norwegian North Atlantic Expedition (80° 3′ N, 8° 28′ E, depth 475 metres) were respectively 1.1 mm. and 0.32 mm.; and in specimens from the 2nd Fram Expedition (July 9, 1901), the corresponding measurements were found to be 1.0 mm. and 0.58 mm. On colonies from Northumberland Island (West Greenland), ANDERS HENNIG[2] found that the length of the zoœcia was 0.74 mm., and that of the aperture 0.34 mm. The high arctic forms of this species thus seem to be characterised by a lengthening of the zoœcia.

Gen. Menipea, Lamouroux.

2. *Menipea gracilis*, J. VAN BENEDEN[3].

July 22, 1900, winter haven, about 30 fathoms; Sept. 19, 1900, off the mouth of Forvisnings Valley, 2—20 fathoms; Sept. 20, 1900, the head of Gaase Fjord; July 8, 1901, Ren Bay; July 12, 1901, bay at Land's End; July 19, 1901, lower end of Gaase Fjord; August 16, 1901 Gaase Fjord, about 7 fathoms.

In specimens from Ren Bay (July 8, 1901), there were 9 zoœcia in one internodium. In colonies from Gaase Fjord (Aug. 16, 1901), the aperture of the zoœcia had a length of 0.39 mm. and a breadth of 0.195 mm.

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[1] Öfversigt af Kgl. Vet. Akad. Förh., 1867, p. 325.
[2] Bryozoer från Vestgrönland. Öfvers, Kgl. Vet. Akad. Förh., 1896, p. 353.
[3] See NORMAN, Ann. Mag. Nat. Hist., ser. 7, Vol. 11, p. 578.

3. *Menipea elongata*, Smitt.

1867. *Cellularia scabra*, f. *elongata*, Smitt, Ofvers. Kgl. Vet. Akad. Förh. 1867, pp. 284, 317, Pl. 27, figs. 35 & 36.
1897. *Scrupocellaria scabra*, f. *elongata*, Bidenkap, Zool. Jahrb. Vol. 10. p. 614.
1900. *Scrupocellaria elongata*, Waters, Journ. of the Linn. Soc., Vol. 28, p. 58.

July 22, 1899, the winter haven, 8 fath.

The aperture of the zoœcia was 0.52 mm. in length and 0.195 mm in breadth. The margin of the aperture was granulated as in *Cellularia (Bugulopsis) peachi*, Busk. Sub-oral and lateral avicularia were present, and under the latter from 3 to 5 pores sometimes occurred. On the distal part of the oral margin, there was one spine in each corner. The fornix was rather narrow. There were two lateral rosette-plates with numerous pores. The pore-tubes issued from the lower (proximal) part of the zoœcium, and the depression or hollow in which these tubes were attached had at the bottom a pore-plate with several pores. Norman gives this form from Davis Strait (Valorous Exp., 1875)[1]. Among *Menipea* species from the same place, there are moreover the following:

M. ternata, Ell. and Sol.; *M. gracilis*, J. van Beneden;
M. smitti, Norman; *M. arctica*, Busk.

Among the boreal and arctic species of this genus, I have up to the present only made the acquaintance of *elongata*, *gracilis*, *ternata*, *jeffreysi* and *normani*.

Gen. Scrupocellaria, J. van Beneden.

4. *Scrupocellaria scabra*, J. van Beneden.

July 22, 1900, the winter haven, about 30 fath.; August 4, 1900, Sjöpölse Ness, 15—20 fath.; Sept. 10, 1900, off Forvisnings Valley 2—20 fath.; Sept. 20, 1900, head of Gaase Fjord; July 8, 1901, Ren Bay; July 9, 1901, between Ren Bay and Cape Land's End; July 12 1901, bay at Land's End; July 19, 1901, lower part of Gaase Fjord.

In specimens from the lower part of Gaase Fjord (July 19, 1901) the aperture was 0.4 mm. long, and 0.25 mm. wide.

Gen. Bugula, Oken.

5. *Bugula murrayana*, Johnston.

July 12, 1901, bay near Land's End.

The principal form appears to be rare, while var. *fruticosa* occurred quite frequently in the collection.

[1] Ann. Mag. Nat. Hist., ser. 7, vol. 17, p. 91.

5 a. *Bugula murrayana, var. fruticosa,* PACKARD.

August 8, 1900, the winter haven; September 19, 1900, off Forvisnings Valley, 2—20 fath.; September 20, 1900, the head of Gaase Fjord, 3—20 fath.; July 5, 1901, the Sound; July 12, 1901, bay near Land's End. In specimens from the head of Gaase Fjord (September 20, 1900), the length of the aperture is 0.9—1.2 mm.

6. *Bugula harmsworthi,* WATERS.
Pl. I, figs. 1—5.

1900. *Bugula Harmsworthi,* WATERS, Bryozoa from Franz Josef Land, Journ. Linn. Soc., vol. 28, p. 54, pl. 7, fig. 13, pl. 8, fig 1.

August 1, 1900, off the mouth of Stordalen, about 10 fath.;

August 8, 1900, the winter haven, on *Escharopsis sarsi,* SMITT.

It is of no little interest to be able to demonstrate the presence of this *Bugula,* which WATERS originally described from Franz Josef Land, in west arctic waters. There is reason for assuming that the species has a somewhat more general distribution in arctic waters. The specimens hitherto found have been characterised by their small size (the colony on *Escharopsis* from the winter haven of 1900, was about 1 cm. in height), and if this is a general feature, the colonies can be easily overlooked. The aperture occupies the greater part of the front of the zoœcia. The spines in the distal corners are of various lengths (figs. 1 & 3); there are often two in each corner, but may also be three in one of them (fig. 2). The terminal wall often presents an appearance like that shown in fig. 3.

On the inner lateral wall, there are two rosette-plates (fig. 4); but I could not find the lower of these in all of them. The oœcium is cup-shaped; when seen from above, it was circular in section, but semicircular from the side. It is possible, however, that the oœcia I had the opportunity of seeing, were not fully developed.

Gen. Cellaria, Lamouroux.

7. *Cellaria articulata,* FABR.

July 8, 1901, Ren Bay; July 9, 1901, between Ren Bay and Cape Land's End; July 12, 1901, bay at Land's End.

From Ren Bay (July 8, 1901) there was a splendid bunch of this species, 90 mm. in height. The branches were to some extent covered with other Bryozoa, e. g. *Menipea gracilis, Scrupocellaria scabra, Flustra serrulata, Schizoporella plana,* etc. The species are known

from Queen Charlotte Islands (HINCKS), and from Greenland (FABRICIUS, BUSK, NORMAN, VANHÖFFEN). I know of only one locality in the east arctic waters where it is found, namely Ice Fjord in Spitsbergen, from which place it is recorded by F. A. SMITT[1].

Gen. Flustra, Lin.

8. *Flustra membranaceo-truncata,* SMITT.

Syn. BIDENKAP kat., p. 9.

September 9, 1900, off Forvisnings Valley, 2—20 fathoms;
September 20, 1900, the head of Gaasefjord, 3—20 fathoms.

There were numerous colonies from the head of Gaase Fjord, with irregular zoaria, sometimes with narrow-leaved lobes. They were often attached to worm-casts. The length of the zoœcia was 1.2—1.3 mm.

9. *Flustra serrulata,* BUSK.

Pl. I, fig. 6.

1881. *Flustra serrulata,* BUSK, Journ. Linn. Soc, Vol. 15, p. 234, pl. 13, figs. 2, 3, 4.
1886. *Membranipora serrulata,* LEVINSEN, Bryozoer fra Karahavet, p. 12, pl. 27, figs. 1 & 2.
1896. *Flustra serrulata,* WATERS, Journ. Roy. Micr. Soc., 1896. p. 283, pl. 8, figs. 1, 2 & 3.
1896. *Flustra serrulata,* HENNIG, Ofvers. Kgl. Vet. Akad. Förh. 1896, No. 5, p. 355.

July 22, 1900, the winter haven, about 30 fath.; August 7, 1900, Öst Cape, 10—25 fath.; incrusting hydroids; August 8, 1900, the winter haven, sometimes incrusting *Escharopsis sarsi*; Sept. 9, 1900, off Forvisnings Valley, 2—20 fath.; July 8, 1901, Ren Bay, incrusting *Cellaria articulata;* July 18, 1901, the mouth of Gaase Fjord; July 19, 1901, lower part of Gaase Fjord.

At some stations, this species has occurred in great quantities, for instance, at the winter haven, about 30 fath. (July 22, 1900). It generally formed free colonies (fig, 6), but also incrusted other objects, and was thus to some extent single-layered in its structure. There was no trace of either oœcia or avicularia. The length of the zoœcia in specimens from the winter haven was about 1.2 mm., their width 0.4 mm. In specimens from Ren Bay (July 8, 1901), the corresponding measurements were 1.3 and 0.46 mm. There were two lateral and two distal rosette-plates.

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[1] Öfvers. Kgl. Vet. Akad. Förh. 1867, pp. 361, 384, Pl. 20, fig. 17.

The species was previously known from Franklin Pierce Bay (BUSK), Inglefield Gulf (HENNIG), the Kara Sea (LEVINSEN). It thus appears to belong to those species of which the occurrence in the east arctic waters is rare.

Gen. Membranipora, Blainville.

10. *Membranipora, catenularia,* JAMESON.

Syn. BIDENKAP kat., p. 5.

July 22—25, 1900, the neighbourhood ot the winter haven, small chains upon rock.

11. *Membranipora craticula,* ALDER.

Syn. BIDENKAP kat., p, 13.

July 22, 1899, the winter haven, 8 fath., on algœ.

July 22, 1900, the neighbourhood of the winter haven; July 8, 1901, Ren Bay; July 9, 1901, between Ren Bay and Cape Land's End, on algæ; July 12, 1901, bay at Land's End, on algæ.

This species was not of infrequent occurrence among the specimens, but I could not find any form that I could with certainty classify as *M. lineata,* LIN.

Dr. HENNIG[1] states that the frontal area in specimens from west Greenland, measured 0.34 mm. in length, and 0.18 mm. in width. In colonies from the bay at Land's End (July 12, 1901), I found the corresponding measurements to be 0.33 and 0.21 mm.

12. *Membranipora arctica,* D'ORBIGNY.

Syn. NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 590.

July 15, 1902, off Havhest Mountain, N. Devon, incrusting stones.

NORMAN (l. c.) designates this species as *Callopora Sophiæ,* BUSK, setting a note of interrogation to *Reptoflustrina arctica,* D'ORB. WATERS[2], however, in a later work, makes it probably that D'ORBIGNY's species from Spitsbergen is the one that SMITT, LORENZ and others have described from arctic regions. (See also remarks of WATERS in Journ. Linn. Soc., vol. 28, p. 60.) It must therefore surely be right to employ the name that D'ORBIGNY gave. I have also found this species in the north of Norway. In specimens from Sværholt in Finmark, the frontal

[1] Öfvers. Kgl. Vet. Akad. Förh., 1896, p. 356.
[2] Ann. Mag. Nat. Hist., Ser. 7, vol, 15, p. 12.

area was from 0.26 to 0.3 mm. in length, from 0.2 to 0.26 mm. in breadth. There were as a rule 2 or 3 spines on each side, and the lateral avicularia were very often found. When boiled in potasium hydrate, the mandibles fell off, and the hollow in the median avicularium became visible. This hollow proved to be connected with the zoœcial cavity by from 2 to 5 pores. In the colonies from N. Devon, the lateral spines had fallen off. The length of the area was from 0.33 to 0.39 mm., its breadth 0.26 mm. When the spines are absent, the species may be mistaken for *M. unicornis*, var. *armifera*. NORMAN has pointed out, however, a good distinguishing mark; in *armifera* the point of the mandible is directed downwards or outwards, while in *arctica* it is directed upwards or inwards.

13. *Membranipora unicornis*, FLEM., *var. armifera*, HINCKS.

1867. *Membranipora lineata*, forma *americana*, SMITT, Öfvers. Kgl. Vet. Akad. Förh. 1867, pp. 366 & 400, Pl. 20 fig. 31.
1892. *Membranipora armifera*, HINCKS, Ann. Mag. Nat. Hist., Ser. 6, vol. 9, p. 155, Pl. 8, fig. 4.
1898. *Membranipora Sophiæ*, var. *armifera*, WATERS, Journ. Linn. Soc., vol. 27, p. 680, Pl. 48, fig. 18.
1903. *Callopora unicornis*, var. *armifera*, NORMAN, Ann. Mag. Nat. Hist., Ser. 7, vol. 11, p. 591, Pl. 13, figs. 10 & 11.

September 19, 1900, off Forvisnings Valley; September 20, 1900, head of Gaase Fjord, 3—20 fath.; July 9, 1901, between Ren Bay and Cape Land's End; July 12, 1901, bay at Land's End, on algæ; August 16 1901, Gaase Fjord, about 7 fath.; August 30, 1901, Gaase Fjord, 8 m.

NORMAN, who has unravelled the synonymy of this form (l. c., p. 591), looks upon *M. armifera*, HINCKS, as a variety of *M. unicornis*; and there is much to be said in favour of this view.

In the typical *M. unicornis*, there are 2 spines on each side of the upper part of the area. I have moreover once seen in a colony from Bergen, instead of the one spine, a small laterally situated avicularium. On the other hand no one has observed an avicularium on each side in *M. unicornis*, while the appearance of two such is of frequent occurrence in var. *armifera*.

With regard to *armifera*, I refer the reader to NORMAN's excellent description (l. c., p. 592). I have made some measurements of the frontal area in the typical form, and in *armifera*.

In a colony of *M. unicornis* from Bergen, the length of the frontal area was 0.39 mm., its breath 0.26 mm. There was a form trom the 2nd Fram Expedition (August 30, 1901), in which the dimensions of the

area were exactly the same, and it also had no lateral avicularia, but, on the other hand, one of medium size above the oœcium. On the distal part of the oral margin there were a couple af spines, one of which formed a cylindrical tube, while the other was pointed. This form will therefore have to been referred to var. *armifera*, of which typical specimens were found in the same place (August 30, 1901), with the length of the area from 0.52 to 0.65 mm., and its breadth 0.39 mm. A colony was found on *Smittina jeffreysi* from Gaase Fjord (August 16, 1901), which best answers to HINCKS description of *M. armifera*[1].

The zoœcia were very large, their length being from 1.0 to 1.3 mm., their breadth 0.6 mm. The area occupies almost the whole of the front of the zoœcium, its length being 0.78 mm., its breadth 0.5 mm. Occasionally a spine was found on one side, and a small avicularium on the other. The lateral walls of the zoœcia were furnished with 4 polyporous rosette-plates, and the transverse wall between the zoœcia had a belt of pores on its lower part. The pores were thus not gathered into the two groups of rosette-plates, as is the case, for instance, in *M. nigrans* (fig. 7).

The oœcia were small and spherical, with a transverse rib that was not so marked as usual. With the oœcium there generally appeared an unusually large avicularium with pointed mandible, which would sometimes be hooked, sometimes straight. In addition to this, there was also sometimes seen a small, medially-situated avicularium at the proximal end of the zoœcium, with a pointed mandible, that was directed sidewards. Occasionally, moreover, a small lateral avicularium was observed, of which the pointed mandible was directed either downwards or to the side.

Among the specimens from the 2nd Fram expedition, I found no *Membranipora* that I could put with the boreal *M. unciornis*, FLEM.

14. *Membranipora nigrans*, HINCKS.
Pl. I, figs. 7—9.

1882. *Membranipora nigrans*, HINCKS, Report on the Polyzoa of the Queen Charlotte Islands. Ann. Mag. Nat. Hist., ser. 5, vol. 10, p. 9 (reprint), Pl. 19, fig. 2.
1900. *Membranipora macilenta*, WATERS, Journ. Linn. Soc., vol. 28, p. 61, Pl. 8, fig. 10.
1903. *Callopora nigrans*, NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 593, vol. 12, Pl. 8, figs. 1 & 2.

[1] Ann. Mag. Nat. Hist., Ser. 7, vol. 9, p. 155, Pl. 8, fig. 4.

September 19, 1900, off Forvisnings Valley, on algæ; Sept. 20, 1900, the head of Gaase Fjord, on algæ; July 5, 1901, the Sound, incrusting stones; July 12, 1901, bay at Land's End; August 30, 1901, Gaase Fjord on algæ.

This interesting *Membranipora* formed a dark brown incrustation on algœ and stones. On colonies from Gaase Fjord (August 30, 1901), the length of the zoœcia was from 0.78 to 0.97 mm., their breadth 0.39 mm. There are four polyporous rosette-plates on each side. There are 2 rosette-plates (fig. 7) in the transverse walls, situated near the basal wall. The oœcia were of various shapes. On all of them there was a frontal part which was not calcified, and which was covered with a membrane. At the bottom of the oœcium 2 small rosette-plates were observed, through which the oœcium communicated with the zoœcium lying above it (fig. 8). The avicularia, which were at the distal end of the zoœcium, two on each side, had a pointed mandible. They are connected by a rosette-plate (fig. 9) with the hollow of the zoœcium. The presence of a similar rosette-plate at the bottom of an avicularium has been demonstrated by LEVINSEN[1] in *Membranipora aurita*, HINCKS. On the other hand I do not think a connection has been proved between the oœcium and the zoœcium above it, as is the case in *M. nigrans*.

15. *Membranipora cymbæformis*, HINHKS.

September 9, 1900, off Forvisnings Valley, 2—20 fath., on hydroids and algæ; Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath., on hydroids; July 8, 1901, Ren Bay, on algæ; July 12, 1901, bay at Land's End, on algæ.

16. *Membranipora trifolium*, S. WOOD.

July 22, 1900, the neighbourhood of the winter haven, incrusting stones; July 12, 1901, bay at Land's End.

Gen. Cribrilina, Gray.

17. *Cribrilina annulata*, FABR.

Syn. BIDENKAP kat., p. 18.

July 9, 1901, between Ren Bay and Cape Land's End, on algæ; July 12, 1901, bay at Land's End, two small colonies on algæ; August 30, 1901, Gaase Fjord, 8 m., on algæ.

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[1] Fauna danica, Bryozoa, Pl. 4, fig. 35.

WATERS[1] has described a form from Franz Josef Land, which NORMAN[2] has taken to be a variety of *C. annulata*, and called var. *spitsbergensis*. It is without the oral spines, the frontal carina, and the dentiform projection on the lower oral margin.

The specimens I had for examination from the 2nd Fram Expedition must, however, be classed as the principal form.

Gen. Harmeria, Norman.

18. *Harmeria scutulata*, BUSK.

Syn. BIDENKAP kat., p. 19 (*Cribrilina scutulata*).

July 20, 1900, the winter haven, on algæ; July 8, 1901, Ren Bay on algæ.

Gen. Doryporella, Norman.

19. *Doryporella spathulifera*, SMITT.

Syn. BIDENKAP kat., p. 20 (*Lepralia spathulifera*).

July 12, 1901, bay at Land's End, on algæ.

Gen. Porina, D'Orbigny.

20. *Porina tubulosa*, NORMAN.

Syn. BIDENKAP kat., p. 15.

July 22, 1900, the winter haven, on algæ; July 9, 1901, between Ren Bay and Cape Land's End; July 12, 1901, bay at Land's End, on algæ.

Gen. Hippothoa, Lamouroux.

21. *Hippothoa hyalina*, LIN.

Syn. BIDENEAP kat., p. 18 (*Celleporella hyalina*).

July 22, 1899, the winter haven, 8 fath., on algæ; September 19, 1900, off Forvisnings Valley, 2—20 fath., on algæ; July 8, 1901, Ren Bay, on algæ; July 12, 1901, bay at Land's End, on algæ; August 30, 1901, Gaase Fjord, 8 m., on algæ.

This species has a cosmospolitan distribution.

22. *Hippothoa expansa*, DAWSON.

Syn. HINCKS, Brit. Mar. Pol. (1880), p. 291, pl. 1, fig. 1.

July 18, 1900, the winter haven, about 30 fafh., on a stone.

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[1] Journ. Linn. Soc., vol. 28, p. 64, Pl. 8, fig. 21.

[2] Ann. Mag. Nat. Hist., Ser. 7, vol. 12, p. 103, pl. 8, fig. 11.

23. *Hippothoa divaricata,* LAMOUROUX.
Syn. BIDENKAP kat., p. 17.

July, 1900, the winter haven and adjoining waters, on stones.

Gen. Leieschara, M. Sars[1].

24. *Leieschara subgracile,* D'ORBIGNY
Syn. BIDENKAP kat., p. 18 (*Myriozoum subgracile*).

July 22, 1901, the winter haven, fine colonies, about 30 fathoms.

If *Myriozoum truncatum,* PALLAS, can be placed in the same genus as *subgracile* and *coarctata,* which Canon NORMAN doubts, the name *Leieschara* must give place to *Myriozoum,* DONATI. *Leieschara coarctata,* M. SARS, is known from Alaska, Greenland, the north of Norway, Jan Mayen, Spitsbergen and Franz Josef Land; and *subgracile* has a similar distribution, except that it has not, up to the present, been found in the north of Norway.

Gen. Schizoporella Hincks.

25. *Schizoporella plana,* DAWSON.

August 24, 1898, Rice Strait, on algæ; July, 1900, the neighbourhood of the winter haven, incrusting stones; June 28, 1901, the mouth of Hvalros Fjord, incrusting stones; July 8, 1901, Ren Bay, on algæ; July 19, 1901, Gaase Fjord, incrusting stones; July 15, 1902, off Havhest Mt., N. Devon, incrusting stones.

HINCKS[2] and NORMAN[3] agree in thinking that the form that SMITT described under name of *Myriozoum crustaceum* is identical with *Lepralia plana,* DAWSON[4]. WATERS[5] transferred the species to the genus *Schizoporella,* which is indeed its right place.

26. *Schizoporella biaperta,* MICHELIN.
Pl. I, figs. 12—14.

1859. *Lepralia biaperta,* BUSK, Mon. Foss. Pol. Crag. p. 47, Pl. 7, fig. 5.
1867. *Escharella linearis,* f. *biaperta,* SMITT, Öfvers. Kgl. Vet. Akad. Förh., 1867 (appendix), pp. 14, 98, Pl. 24, figs. 70—73.
1880. *Schizoporella biaperta,* HINCKS, Brit. Mar. Poly., p. 255, Pl. 40, figs. 7—9.

[1] Cf. NORMAN, Notes on the Natural History of East Finmark; Ann. Mag. Nat. Hist., Ser 7. vol. 12, p. 110.
[2] Ann. Mag. Nat. Hist., Ser. 6, vol. 9, p. 137.
[3] Ann. Mag. Nat. Hist., Ser. 7, vol. 12 p. 110.
[4] See NORMAN's synonyms (l. c.).
[5] Journ. Linn. Soc., vol. 28, p. 64.

July 22, 1900, the neighbourhood of the winter haven, incrusting stones; July 19, 1901, Gaase Fjord, incrusting stones.

In specimens from the 2nd Fram Expedition, the mandible of the avicularia was unusually small (fig. 3). SMITT (l, c. p. 98) mentions that in his specimens (from Greenland), on a zoœcium there might be one avicularium with a pointed mandible, and one with a rounded mandible. SMITT has also drawn a similar one (Pl. 24, fig. 73), In the specimens I had to examine, there was as a rule one avicularium with rounded mandible on each side of the oral aperture, as indicated in fig. 12; but in a few cases I also found that in addition to the two avicularia at the oral aperture, there was a third below the lateral oral avicularium on the left side; and this third avicularium had a pointed mandible.

There is reason to suppose that the boreal specimens that HINCKS examined and made drawings of, and the arctic ones that SMITT and I have examined belong to the same species. It is true there are no marginal pores in HINCKS's drawings, but these may easily be overlooked, especially if the colonies are not examined with a light that falls through them. Similarly BUSK's *Lepralia biaperta* from the Crag must belong to the same species. On the other hand, it is probable that *Lepralia linearis*, var. *biaperta*, WATERS[1], and *Hippothoa biaperta* and *divergens*, SMITT[2], should rather be removed from the boreal and arctic form bearing the name of *biaperta*.

Schizoporella biaperta is also known from the Miocene of Calabria[3].

27. *Schizoporella lineata*, NORDGAARD.

1895. *Smittia lineata*, NORDGAARD, Berg. Mus. Aarb. 1894—95, No. 2, p. 27, Pl. 2, fig. 2.
1903. *Smittia lineata*, NORMAN, Ann. Mag. Nat. Hist., Ser. 7, vol. 12, p. 122, Pl. 9, figs. 14, 15.
1905. *Schizoporella lineata*, NORDGAARD, Hydr. Biol. Inv. Norw. Fj., p, 167, Pl. 5, figs. 33, 34.

July 12, 1901, bay at Land's End on algæ.

The zoœcia were 0.7 mm. in length, and 0.5 mm. in breadth; there was a row of pores by the lateral walls. The median avicularium had an almost semicircular mandible. I am not quite sure whether this species can be maintained. It is possible that my forms come under

[1] Bryozoa of the Bay of Naples. Ann. Mag. Nat. Hist., Ser. 5, vol. 3, p. 37, Pl. 11, fig. 1 & 2.
[2] Floridan Bryozoa, part. II, p. 46, Pl. 8, figs. 173—176; p. 47, Pl. 9, figs. 177, 179.
[3] See ANTONIO NEVIANI, Briozoi fossili di Carrubare, Roma, 1905.

Schizoporella auriculata, HASSALL; but this I cannot at present decide with certainty.

28. *Schizoporella reticulato-punctata*, HINCKS.

Syn. Hydr. Biol. Inv. Norw. Fj., p. 166.

July 22, 1900, the winter haven, about 30 ft.; September 19, 1900, off Forvisnings Valley, 2—20 ft.; September 20, 1900, the head of Gaase Fjord, 3—20 ft.; July 8, 1901, Ren Bay.

29. *Schizoporella stormi*, NORDGAARD.

Pl. I, figs. 10 & 11.

1905. *Schizoporella stormi*, NORDGAARD, Hydr. Biol. Inv. Norw. Fj., p. 166, Pl. 5, figs. 1, 2.

1900, the north side of North Devon, incrusting stones; July 22, 1900, the winter haven, incrusting stones; July 13, 1901, a little north of Cape Land's End, incrusting stones.

There was perfect similarity between the specimens from the 2nd Fram Expedition and the colonies from Hammerfest and the North Cape. Avicularia did not often occur, and oœcia still less often, the latter being punctured like the frontal wall of the zoœcia, and with an indication of the ring of projections that are so marked in the next species.

Fig. 1 on Pl. 5 in Hydr. Biol. Inv. Norw. Fj., gives the impression that the mandible is rather stumpy; but this is a mistake. It is subulate. An excrescence or elevation may sometimes be seen on the front of the oœcia.

30. *Schizoporella bispinosa*, NORDGAARD, n. sp.

Pl. II, fig. 15.

July 12, 1901, bay at Land's End, on algæ.

This form exhibits a great similarity to *Schizoporella stormi*, but for safety's sake I have given it name of its own. I have never seen *S. stormi* with spines at the oral aperture; whereas they seem to occur pretty regularly in *bispinosa*. The zoœcia have the same dots upon the frontal wall in both species, but there are fewer perforations in *bispinosa* than in *stormi*. In the few cases in which I have seen oœcia, they have had a very much more marked ring of prominences (fig. 15) in *bispinosa*. On the oœcia of both forms, a prominence may sometimes be seen, which is somewhat pointed upwards. The avicularium is situated below the margin of the oral aperture, a little to the

right or the left; and the mandible is very long and pointed. The operculum is of the same shape as in the preceding species, but the opercular ribs do not appear to be so marked as in that species. As a rule there are only two oral spines, but occasionally I have also seen three such spines.

31. *Schizoporella levinseni*, NORDGAARD.

1905. *Schizoporella levinseni*, NORDGAARD, Hydr. Biol. Inv. Norw. Fjords, p. 166 Pl. 5, figs. 3 & 4.

August, 1900, the north side of North Devon, incrusting stones.

At the above-named place, I took a little reddish incrustation with a few zoœcia, which I referred, with some hesitation, to *levinseni*. The paucity of material prevented an altogether exact investigation. The lower margin of the oral aperture was cut right off by a small median sinus. There were neither avicularia nor oœcia. The perforation upon the frontal wall of the zoœcia was like that in the specimens from the north of Norway, and the shape of the zoœcia varied, there being both rounded oval, and very angular zoœcia.

32. *Schizoporella condylata*, NORDGAARD, n. sp.
Pl. II, figs. 16—18.

July, 1900, the winter haven, incrusting stones.

I conclude that this *Schizoporella* must be a new species, and will therefore state its most important characteristics. The limits of the zoœcia are marked by distinct lines or sutures; and these are also found to some extent on the oœcia (fig. 16). The frontal wall of the zoœcia has few perforations, which at any rate in the young zoœcia, are not arranged like a row of marginal pores. Both zoœcia and oœcia are punctured, the oœcia having no perforations. Avicularia could not be discovered. On the lower margin of the oral aperture, there is a broad sinus, and the operculum has a corresponding lobe (fig. 17). The condyles, which serve as a support to the operculum, were as a rule very marked. Fig. 18 shows the interzoœcial connection in a young colony. I will assume that *S. condylata* is a different species to those previously described by me, *levinseni* and *hexagona* (Hydr. Biol. Inv. Norw. Fj., p. 166). *Condylata* exhibits a conspicuous difference from *levinseni*, but it is a more difficult matter to separate it from *hexagona*. Of the latter too, I have so little, that a detailed comparison cannot be made. They seem, however, to be two different species, the smaller

zoœcia of *hexagona* having no pores in the frontal wall, while the operculum also exhibits a somewhat different form to that in *condylata*.

33. *Schizoporella producta*, PACKARD.
Pl. II, figs. 19—21.

1888. *Smittia producta*, HINCKS, Polyzoa of the St. Lawrence. Ann. Mag. Nat. Hist., Ser. 6, vol. 3, p. 430, Pl. 21, fig. 2.

July 5, 1901, the Sound, incrusting stones; July 18, 1901, the winter haven, incrusting stones.

HINCKS (l. c.) has described forms of *Smittia producta* from the St. Lawrence, very carefully, and judging from this description, I think there can be no doubt that it is the species that I scraped off stones from the above-named places. And as HINCKS has made it very probable that his forms from the St. Lawrence correspond with *Lepralia producta*, PACKARD, from the coasts of Labrador, it must be right to retain PACKARD's name. I have little to add to HINCK's description. The frontal wall of the zoœcia was furnished with large pores (fig. 19), and in young specimens an arrangement of the interzoœcial pore-tubes might be seen on the basal wall similar to that in *Schizoporella condylata*. Judging from the shape of the oral aperture and the operculum (fig. 21), it would seem natural to refer the species to the genus *Schizoporella*. In specimens from Greenland (the „Valorous", 1875), for which I am indebted to the kindness of Canon NORMAN, I saw a confirmation of HINCKS's statement that in young zoœcia the lower margin of the oral aperture is cut off almost straight. This character points to the genus *Eschara* (*Lepralia*).

34. *Schizoporella bidenkapi*, NORDGAARD, n. sp.
Pl. II, figs. 22—24.

August 4, 1900, Sjöpölse Ness, 15—25 ft., incrusting mussel shells.

Although the oral aperture differs greatly from the typical form of the aperture in the genus *Schizoporella*, I have nevertheless referred the forms in question to this genus. There is only dried material consisting of a greyish white incrustation on fragments of mussel shells. The zoarium consisted of large zoœcia, whose frontal wall was thickly perforated with pores, of which the marginal ones differed from the others in being somewhat larger (fig. 22). The colonies were highly calified, and there being no marked depressions between the zoœcia, gave the colonies a fairly even appearance on the surface. The oral aperture

was nearly oval, but was also sometimes of a shape that somewhat recalled *Schizoporella sinuosa.* There were no avicularia to be seen. The oœcia, which were of extremely rare occurrence, were almost as broad as they were long. There was an indication of a median pore, from which a line or suture ran to the margin of the oral aperture; but with this exceptions there were neither hollows nor perforations (fig. 23). The operculum (fig. 24) was furnished with a lobe, which was bent to one side. When the flap of the operculum is lying horizontally, only the projection of this lobe is seen.

I have taken the liberty of calling this species after Hr. OLAF BIDENKAP, formerly curator at the Tromsö Museum.

Upon an examination of the above species, I was induced to look through my specimens of *Schizoporella sinuosa,* BUSK. It then appeared *inter alia,* that this species also had an opercular lobe that was bent to one side, which in many cases gives it the appearance of a thickening of a lower margin. For this very reason, I have apprehended and drawn the operculum inaccurately in an earlier work[1]. It proved also, that the form from Herlö Sound near Bergen, which I had taken to be *S. sinuosa,* diferred not a little from the one I had taken in the Trondhjem Fjord and in the north of Norway. They ought at any rate to be distinguished from one another as varieties; in reality, I think they ought to be considered as independent species.

On *Modiola modiolus* from Herlö Sound, not far from Bergen, I have a *Schizoporella* which, in a living state, formed a yellow incrustation, which when dried, assumed a bright reddish brown colour. In the frontal wall of the zoœcia there were large pores, of which those on the margin were larger than the others (fig. 25). The oœcia had a large median pore; and the width of the opercular lobe amounted to about half the width of the operculum (fig. 27). The interzoœcial pore tubes exhibited an arrangement that is usual in the genus *Schizoporella*; there were two terminal pore-chambers (fig. 26).

It is probable that fig. 5 (Pl. XLII in Brit. Mar. Pol.) is meant for this form; and it is also almost certain that this is what LEVINSEN (*Fauna danica*) calls *Schizoporella sinuosa.*

In the specimens from the north of Norway, the zoœcia were larger and the frontal perforation closer than in colonies from Herlö Sound (fig. 31). But the marginal pores differed here too from the others. The oral aperture was of the same shape in both; but on the colonies

[1] Hydr. Biol. Inv. Norw. Fj., p. 165, Pl. 3, fig. 10.

from the Trondhjem Fjord and the north of Norway, I could see no median pore in the oœcia, which were moreover closely set with depressions (fig. 29). The opercular lobe was bent to one side; when the operculum was horizontal, only the projection of the lobe could be seen (fig. 32). In fig. 30 the lobe is seen, while the flap itself has been somewhat compressed.

The colour of the dried incrustation was a dull brown.

As far as I can understand, it is this form that BUSK originally described under the name *Lepralia sinuosa*.

It is at any rate certain that there is a complete similarity between my specimens from the north of Norway, and a dull brown colony from Shetland, which I received from Canon NORMAN, under the name of *Schizoporella sinuosa*, BUSK. There was no median pore in the oœcia in this either, the oœcia being moreover furnished with depressions.

It is possible that after a thorough examination of a large number of specimens, the form from Herlö Sound cannot be accorded higher rank than a variety; but I will set it up temporarily as a species, calling it *Schizoporella magniporata*; and I will here give the most important synonyms for both species.

Schizoporella magniporata, NORDGAARD, n. sp.
Pl. II, figs. 25—27.

1894. *Schizoporella sinuosa*, LEVINSEN, Fauna danica, Bryozoa, p. 66, Pl. 5, figs. 42 & 43.

Schizoporella sinuosa, BUSK.

1860. *Lepralia sinuosa*, BUSK, Quart. Journ. Mic. Soc., Vol. 8, 1860, p. 125, Pl. 24, figs. 2 & 3.
1867. *Escharella linearis*, f. *secundaria*, SMITT, Öfv. Kgl. Vet. Akad. Förh., Appendix, pp. 14 & 99, Pl. 24, figs. 74—77.
1880. *Schizoporella sinuosa*, HINCKS (part), Brit. Mar. Poly. p. 266, Pl. 42, fig. 3(?).

I suppose that *magniporata* has on the whole a more southern distribution than *sinuosa*, and both are certainly nearly allied to the previously described *Sch. bidenkapi*.

Gen. Eschara[1].

35. *Eschara suturata*, NORDGAARD, n. sp.
Pl. III, figs. 33—35.

July, 1900, the neighbourhood of the winter haven, incrusting stones; July 13, 1901, a little north of Cape Land's End, incrusting stones.

[1] Cf. NORMAN, Notes on the Natural History of East Finmark. Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 110.

This form somewhat resembled *Schizoporella condylata*. In a dried condition, both forms had a brownish colour, which was especially concentrated at the oral aperture. There was also considerable resemblance in the appearance of the zoœcia, when the shape of the oral aperture is disregarded; and the oœcia in both presented the same raised lines. They cannot, however, be regarded as different stages of development of the same species, and I will therefore give a short diagnosis.

The zoœcia are separated by distinct lines or sutures, which are also to some extent found on the oœcia (fig. 34). The frontal wall of the zoœcia, as also that of the oœcia, is coarsely punctured, but there are few perforations (fig. 33). The majority of these are arranged in the form of a row of marginal pores on each side. There were no avicularia to be seen. The shape of the oral aperture is that which characterises the genus *Eschara (Lepralia)*, but the operculum (fig. 35) resembles that in *Schizoporella*. The species cannot thus be considered to be a typical *Eschara*. The interzoœcial connections are long pore-channels, which also call *Schizoporella* to mind. It may perhaps be regarded as a connecting or transition form between the two above-named genera.

36. *Eschara nordlandica*, NORDGAARD.

1905. *Eschara nordlandica*, NORDGAARD, Hydr. Biol. Inv. Norw. Fj., p. 167, Pl. 4, figs. 32—35.

July, 1900, the neighbourhood of the winter haven.

It seems certain that some incrustations from the neighbourhood of the winter haven belonged to the species that I described from the north of Norway. The little elevation below the oral aperture is not found in the specimens from the 2nd Fram Expedition; but this was also very frequently the case in the Norwegian specimens. The strongly-marked ribs on the operculum are a characteristic feature. The species is new to the west Arctic fauna.

37. *Eschara hipposus*, SMITT.
Pl. III, figs. 36 & 37.

1867. *Lepralia hipposus*, SMITT, Öfvers. af Kgl. Vet. Akad. Förh., 1867 (Appendix) pp. 20 & 127, Pl. 26, figs. 99—105.

July 19, 1901, the lower part of Gaase Fjord.

The zoœcia in the colonies from the 2nd Fram Expedition, exactly resembled SMITTS's drawings. There were marginal pores, and as a rule

there was a little elevation below the oral aperture. The operculum (fig. 37) exhibited the properties characteristic of the genus. This species was found by LOVÉN in Finmark (SMITT), and is also reported from Greenland, the Murman Coast and Spitsbergen (SMITT, BIDENKAP).

38. *Eschara sincera*, SMITT.

Syn. BIDENKAP Kat., p. 28 (*Mucronella sincera*).

July 3, 1900, the winter haven, on *Cellepora ventricosa*; July, 22 1900, the winter haven, about 30 ft.; August 4, 1900, Sjöpölse Ness. 15—25 ft.; September 19, 1900, off Forvisnings Valley, 2—20 ft: July 12, 1901, bay at Land's End, on *Cellepora incrassata*.

The zoœcia on the colonies from the winter haven (July 22, 1900) were from 1.2 to 1.3 mm. in length, and from 0.46 to 0.5 mm. in breadth.

Gen. Discopora, Lamarck[1].

Umbonula, Hincks.

39. *Discopora (Mucronella) pavonella*, ALDER.

July 8, 1901, Ren Bay, a little colony grown round a seaweed stalk.

Among other places, the species occurs in the Pliocene of Calabria (A. NEVIANI).

Gen. Porella, Gray.

40. *Porella saccata*, BUSK.

Pl. III, fig. 38.

Syn. BIDENKAP Kat., p. 21.

July 22, 1900, the winter haven, about 30 ft.; August 1, 1900, right off the mouth of Stordalen, 10 ft.; August 4, 1900, of Sjöpölse Ness, 15—25 ft.; Sept. 20, 1900, the head of Gaase Fjord, 3—20 ft.

This fine *Porella* seems to be comparatively common in arctic waters. The specimens from the winter haven (July 22, 1900) were unusually large and beautiful (see fig. 38). One of them was 5 cm. in height and 6.5 cm. in breadth.

40 a. *Porella saccata*, var. *rostrata*, HINCKS.

1888 *Porella, elegantula*, var. *rostrata*, HINCKS, Polyzoa of the St. Lawrence, Ann. Mag. Nat. Hist., ser. 6, vol. I, p. 223, Pl. 15, fig. 5.

Sept. 19, 1900, off Forvisnings Valley, 2—20 f.

Two small colonies of this easily recognisable variety — of whose zoœcia HINCKS has given good drawings — were found in the above-

[1] Cf. NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 112.

named locality. One of the specimens consisted of a single stem, 11 mm. in height, the lower portion of which was round, with a diam. of 1.5 mm. The other was a fragment (14 mm. in length) with flattened branches, and forked at the point. This variety has hitherto only been known from the St. Lawrence (HINCKS) and from the above-named Station in the 2nd Fram Expedition.

41. *Porella plana*, HINCKS.
Pl. III, fig. 39.

1888. *Porella skenei*, f. *plana*, HINCKS, Ann. Mag. Nat. Hist., ser. 6, vol. 1, p. 221, Pl. 14, fig. 6.
1900. *Porella plana*, WATERS, Journ. Linn. Soc., vol. 28, Pl. 11, figs. 11—13.
1902. *Porella plana*, K. A. ANDERSSON, Zool. Jahrb., vol. 16, p. 543.

July 31, 1900, the winter haven.

A free-growing, compressed, and higly calcified *Porella* from the above-named locality proved to be of this species. The colony was about 2 cm. in height, with a distance of 2.5 cm. between the extreme points of the branches. The zoœcia exactly resembled those figured by HINCKS (l. c., Pl. 14, fig. 6). The arrangement of the avicularia was also the same as that given by HINCKS, there being one central and two lateral. The surface of the zoœcia was granulated, and there were marginal pores in the frontal wall (cf. Waters, l. c., fig. 13). The operculum, on the other hand, (fig. 39) was cut off rather straighter than WATERS has represented it.

42. *Porella concinna*, BUSK.
Syn. BIDENKAP Kat., p. 22.

Aug., 1900, the north side of N. Devon, incrusting stones; July 22, 1900, the winter haven, 30 fath.; July 8, 1901, Ren Bay.

There seems to be some difference between the boreal and the arctic forms of this species; but the difference is scarcely so great as to allow of a separation.

In the arctic forms there were also large marginal pores, and the oral denticle was rather narrow. In some specimens from Ren Bay, the oœcia were more elongated than they have been in colonies that I have seen from more southern latitudes.

43. *Porella acutirostris*, SMITT.
Syn. BIDENKAP Kat., p. 22.

July 22, 1900, the winter haven, about 30 fath., incrusting stones; July 12, 1901, bay at Land's End.

The zoœcia and oœcia were thickly punctured. On the whole, there seemed to me to be a close resemblance to SMITT's and WATERS' drawings. On some specimens from the winter haven (July 22, 1900), marginal pores were distinctly visible.

44. *Porella alba*, NORDGAARD, n. sp.
Pl. III, figs. 43—46.

Sept. 19, 1900, off Forvisnings Valley, 2—20 fath.; July 8, 1901, Ren Bay, on algæ; July 12, 1901, bay at Land's End, on algæ.

Round incrustations of this species, especially on algæ, were found in the bay at Land's End; and at first I thought they must be *Porella inflata*, WATERS[1]. It proved, on a closer examination, that this idea was not maintable. I now believe that the above *Porella* is a new species, and will therefore briefly characterise it.

The frontal wall of both the oœcia and the zoœcia is finely punctured. On boiling a colony in lye, and looking at it with the light falling through it, there proved to be marginal pores (fig. 43). The oral aperture is oval or semicircular, and resembles that in *P. acutirostris* rather than that in *inflata*. The insertions of the muscles are high up on the operculum (fig. 44). The avicularium is on a prominence just below the oral aperture; and in the mandible (fig. 45), $l < b$. The mandible has a „median lucida" as in *P. inflata* a character which may be regarded as a connecting point of the two species. Neither in *P. acutirostris* nor in *P. alba* have I found any indication of a median oral denticle; and it is therefore probable that these two species will in time be removed from the genus *Porella*.

45. *Porella proboscidea*, HINCKS.
Syn. BIDENKAP Kat., p. 22.

July 15, 1902, off Havhest Mt., N. Devon, incrusting stones.

The oœcia are quite smooth, but the frontal wall of the zoœcia is much perforated, and there are often ribs and transverse bars.

46. *Porella umbonata*, NORDGAARD, n. sp.
Pl. III, figs. 40—42.

July 22, 1900, the neighbourhood of the winter haven, incrusting stones; Aug., 1900, the winter haven, incrusting stones.

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[1] Journ. Linn. Soc., vol. 28, p. 83, Pl. 10, figs. 1—5.

This form, which is near *P. proboscidea*, ought by rights to be separated as a species of its own. The colonies of *umbonata* formed incrustations upon stones; they are easily distinguished from the first named species by the fact that the frontal wall of the zoœcia (fig. 40) has only a few marginal pores, whereas in *proboscidea* it is abundantly perforated. But small hollows are found on the frontal wall. On the lateral walls, there was a similar arrangement of rosette-plates to that in *proboscidea*[1]. The basal walls of the zoœcia were thin and smooth. The oœcia (fig. 40) were almost globular, and were furnished anteriorly with small hollows without perforation. The operculum (fig. 42) had a distinct thickening of the margin. The avicularium is situated on the upper side of the rostrum, and the mandible (fig. 41) is semicircular.

Gen. Escharopsis, Verrill[2].

47. *Escharopsis sarsi*, SMITT.

Syn. BIDENKAP Kat., p. 23 (*Escharoides*).

July 22, 1900, the winter haven, about 30 fath.; Aug. 4, 1900, Sjöpölse Ness, 12—25 fath., on *Balanus* and old *Cellepora* branches; Aug. 8, 1900, the winter haven.

The branches of the colonies were throughout narrower than, for instance, in specimens from Tromsö Sound in the north of Norway. There were a large number of specimens from the winter haven (July 12, 1900).

Gen. Monoporella, Hincks[3].

48. *Monoporella spinulifera*, HINCKS.

Syn. BIDENKAP Kat., p. 29 (*Mucronella*).

To this may be added the following:

1889. *Muconella spinulifera*, HINCKS, Ann. Mag. Nat. Hist., ser. 6, vol. 3, p. 431, Pl. 21, fig. 3.
1903. *Monoporella spinulifera*, NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 115.

July, 1900, the neighbourhood of the winter haven, incrusting stones; Aug., 1900, the north side of N. Devon; July 18, 1901, the winter haven, about 30 fath.; July 19, 1901, Gaase Fjord, incrusting stones.

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[1] See Hydr. Biol. Inv. Norw. Fj., Pl. 4, fig. 8.
[2] See NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 123.
[3] See NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 115.

Gen. Escharella, Gray.

Mucronella, Hincks[1].

49. *Escharella ventricosa,* HASSALL.

Syn. BIDENKAP Kat., p. 27 (*Mucronella*).

July 22, 1900, the winter haven, upon algæ and incrusting stones; Aug., 1900, the north side of N. Devon incrusting stones; Sept. 20, 1900, the head of Gaase Fjord, on algæ; July 12, 1901, bay at Land's End, on algæ; July 13, 1901, a little north of Cape Land's End; July 15, 1902, off Havhest Mt., N. Devon, incrusting stones.

This species appears to be fairly common in the region investigated by the 2nd Fram Expedition.

50 & 51. *Escharella abyssicola,* NORMAN & *laqueata,* NORMAN.

Syn. BIDRNKAP Kat., p. 28 & 29 (*Mucronella*).

July 22, 1900, the neighbourhood of the winter haven, incrusting stones; Aug., 1900, the north side of N. Devon, incrusting stones; Aug. 3, 1900, Fosheim's Peak and the valley on the west side of the fjord.

The commonest *Escharella* is *ventricosa,* but there also occurred a form with much larger zoœcia, and with the peristome drawn out.

This should probably be referred to *abyssicola,* although specimens also occurred that were more like *laqueata.* The relation between *abyssicola* and *laqueata* ought to be more closely investigated; but at present I have not sufficient material for that purpose.

52. *Escharella labiata,* BOECK.

Syn. BIDENKAP Kat. p. 28 (*Mucronella*).

Aug., 1900, the north side of N. Devon, incrusting stones.

Among some detached colonies, a few zoœcia of this species were also found. They were recognisable by their short, broad, median denticle and the lateral perforation.

Gen. Escharoides, Milne-Edwards.

53. *Escharoides Jacksoni,* WATERS.

1897. *Mucronella coccinea,* BIDENKAP, Bryozoen von Öst-Spitsbergen. Zool. Jahrb., vol. 10, p. 624, pl. 25, figs. 5 & 6.

1900. *Smittia jacksoni,* WATRRS, Bryozoa from Franz Josef Land. Journ. Linn. Soc., vol. 28, p. 87, pl. 12, fig. 18.

1902. *Mucronella jacksoni,* K. A. ANDERSSON, Bryozoen. Zool. Jahrb., vol. 16, p. 547.

1905. *Escharoides jacksoni,* NORDGAARD, Hydr. Biol. Inv. Norw. Fj., p. 170, pl. 3, fig. 19.

[1] See NORMAN, Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 117.

Sept. 19, 1900, outside Forvisnings Fjord, on *Balanus;* Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath.

In his „Notes on the Natural History of East Finmark"[1], Canon NORMAN maintains that the form that has hitherto been called *Mucronella coccinea,* Abildgaard, must be regarded as the type of MILNE-EDWARDS' genus *Escharoides;* and the reasons given for this seem to be satisfactory. As a natural consequense of this, the form *jacksoni* must also be entered as an *Escharoides* species.

It is possible that this species also will prove to be circumpolar; for besides being found in the above-mentioned places, it is now known from East Greenland (K. A. ANDERSSON), the north of Norway (NORDGAARD), East Spitsbergen (BIDENKAP), King Carl's Land (K. A. ANDERSSON) and Franz Josef Land (WATERS).

Gen. Smittina.[2]

Smittia, Hincks.

54. *Smittina smitti.* KIRCHENPAUER.

Syn. BIDENKAP Kat., p. 25.

Jnly 22, 1900, the winter haven, about 30 fath.

The operculum was extremely thin, which indeed is the case in all typical *Smittina* species.

55. *Smittina jeffreysi,* NORMAN.

Pl. IV, fig 48.

Syn. BIDENKAP Kat., p. 25.

Sept. 19, 1900, outside Forvisnings Fjord; Aug. 16, 1901, Gaase Fjord, about 7 fath.

Unusually beautiful colonies of this species (see fig. 48) were found in Gaase Fjord.

56. *Smittina minuscula,* SMITT.

Pl. III, figs. 46 & 47.

1867. *Escharella porifera,* f. *minuscula,* SMITT, Öfv. Kgl. Vet. Akad. Förh., 1867, Appendix, pp. 9 & 73, pl. 24, figs. 33—35.

July 12, 1901, bay near Land's End, 2 small colonies on algæ.

Under *Escharella porifera,* SMITT has placed no less than 5 forms, which systematists of the present day will find so very different that

[1] Ann. Mag. Nat. Hist., ser. 7, vol. 12, pp. 116 & 117.

[2] See NORMAN Ann. Mag. Nat. Hist., ser. 7, vol. 12, p. 120.

they ought properly speaking to be regarded as separate species. I will even go so far as to say that two of them must be referred to another genus.

Canon NORMAN, in „A Month on the Trondhjem Fjord" (Ann. Mag. Nat. Hist., ser. 6, vol. 13, p. 128), has suggested that SMITT's forms, *minuscula* and *majuscula*, should be united unner the name of *Smittia arctica*; and several later writers have adopted this arrangement. While working up the material from the north of Norway, I came upon SMITT's form *majuscula*, and I assumed that it must be regarded as an independent species. Unfortunately I overlooked the fact that NORMAN regarded *majuscula* as the type of his species, while *minuscula* was looked upon as a variety of it. After having now had an opportunity of seeing a typical *minuscula*, I still maintain that NORMAN's *S. arctica* ought to be divided; and I now suggest that SMITT's *Escharella porifera* be diveded in the following manner:

1. *Schizoporella porifera*. SMITT.

Escharella porifera, f. *typica*, SMITT, Öfv. Kgl. Vet. Akad. Forh., 1867, Appendix, pp. 9 & 70, pl. 24, figs. 30—32.

2. *Smittina minuscula*, SMITT.

Escharella porifera f. *minuscula*, SMITT, l. c. p. 9, pl. 24, figs. 33—35.

3. *Smittina arctica*, NORMAN.

Escharella porifera, f. *majuscula*, SMITT, l. c. p. 9, pl. 24, figs. 36—38.

Smittia arctica, NORMAN, A Month on the Trondhjem Fjord. Ann. Mag. Nat. Hist,, ser. 6, vol. 13, p. 128.

4. *Schizoporella reticulato-punctata*, HINCKS.

Escharella porifera, f. *edentata*, SMITT, l. c. p. 9, pl. 24, fig. 39.

1877. *Lepralia reticulato-punctata*, HINCKS.

Ann. Mag. Nat. Hist., ser. 4, vol. 19, p. 103, pl. 10, figs. 3 & 4.

5. *Smittina cancellata*, SMITT.

L. c. p. 9, pl. 24, figs. 40, 41.

The last-named I have not seen.

The forms *porifera* and *reticulato-punctata* are not typical species of the genus *Schizoporella*; but for the time being I know of no better place to put them in.

Gen. Rhamphostomella, Lorenz.

57. *Rhamphostomella scabra*, FABR.

Syn. BIDENKAP Kat., p. 31.

July 8, 1901, Ren Bay.

While *Rhamphostomella costata* was of common occurence among the specimens from the 2nd Fram Expedition, *scabra* appeared there from only one locality. The two species are distinguishable from one another by the different size of the avicularia, and still more by the fact that *costata* has a median oral denticle, while *scabra* is without one. The puncturing on the back of the colony in *scabra*, which I have drawn in „Hydr. Biol. Inv. Norw. Fj.", Pl. 5, fig. 10, seems to be a very variable character, and the direction of the ribs cannot serve either, as a distinguishing mark between the two species, as some of the ribs in *costata* too, may continue on to the prominence below the proximal oral margin. In *R. scabra* from Ren Bay, the zoœcia were 0,9 mm. in length and 0,5 mm. in width.

58. *Rhamphostomella costata*, LORENZ.

Syn. RIDENKAP Kat., p. 31.

July 22, 1900, the winter haven, about 30 fath.; Sept. 19, 1900, off Forvisnings Valley, 2—20 fath., on algæ and hydroids; Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath.; June 28, 1901, the mouth of Hvalros Fjord, on *Halecium muricatum*[1]; July 8, 1901, Ren Bay, on algæ; July 12, 1901, bay near Land's End; July 19, 1901, the lower part of Gaase Fjord.

The average length of the zoœcia was from 0,8 to 0,9 mm., and their breadth 0,4 mm. In the colonies from Ren Bay, some of the zoœcia were furnished with large vicarious avicularia, some of which stood parallel with the longitudinal direction of the zoœcia, some perpendicular to, or forming an acute angle with it. The species appears to be common in the west arctic region, and it has also been found on Jan Mayen, in the north of Norway, Spitsbergen and Franz Josef Land.

59. *Rhamphostomella plicata*, SMITT.

Pl. IV, figs. 49 & 50.

1867. *Cellepora plicata* (part), SMITT, Öfv. Kgl. Vet. Akad. Förh. (Appendix), pp. 30 & 184, pl. 28, figs. 189 & 190.

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[1] Determined by HJ. BROCH.

July 8, 1901, Ren Bay.

This species is distinguishable from the next one *(R. hincksi)* by the circumstance that the proximal margin of the oral aperture is more rounded, the aperture has not so marked a triangular shape as is the case with *hincksi.* The most conspicuous difference, however, is that *plicata* has a distinct median denticle that is absent in *hincksi* (cf. figs. 49 and 51). The frontal wall has no ornamentation; but in the colonies from Ren Bay, the same puncturing was found on the back of the zoœcia as is given by SMITT in fig. 190 (l. c.). The length of the zoœcia varied between 0.85 and 1.04 mm., their breadth between 0.46 and 0.52 mm.

The peristome rose on one side partly in the form of a tongue, and beside the large median denticle, there was sometimes an indication of a small denticle on each side.

In the mandible of the avicularia (fig. 50), $l \geqq 2b$.

The specimens described by SMITT were from Spitsbergen.

60. *Ramphostomella hincksi*, NORDGAARD, nom.nov.
Pl. IV, fig. 51.

1877. *Cellepora plicata,* HINCKS, Polyzoa from Iceland and Labrador. Ann. Mag. Nat. Hist., ser. 4 vol. 19, p. 106, pl. 11, figs. 3 & 4.

Aug. 4, 1900, Sjöpölse Ness, on *Escharopsis sarsi;* Aug. 8, 1900, the winter haven, on *Escharopsis sarsi*; Sept. 19, 1900, off Forvisnings Valley, 2—20 fath.; July 8, 1901, Ren Bay; Aug. 16, 1901, Gaase Fjord, about 7 fath.

In the above-named work, HINCKS has described and figured a form which I suppose is so different from the typical *Rh. plicata,* SMITT, that it ought to be separated as a species of its own. HINCKS's description is as follows:

„In this species the cells are ovate, somewhat depressed; surface smooth and glistening, sometimes traversed by ribs radiating from the circumference; mouth subtriangular, slightly arched above the sides running to a point in front so as to form an acute angle; peristome thin and slightly raised at the sides; on one side a prominent mucro bearing a large elongate-oval avicularium with rounded mandible, looking obliquely sideways. Oœcium semicircular, punctured in front."

This description fits well the specimens that occurred among those from the 2nd Fram Expedition. The zoœcia were fairly large, the length being 0.85 mm., and the breadth about 0.39 mm. The ornamentation of the frontal wall is not particularly marked, but yet there are

sometimes indications of ribs (see fig. 51). The basal wall was not punctured. In the upper half of the lateral wall, there were 2 or 3 polyporous rosette-plates. In the mandible of the avicularia $l \begin{smallmatrix} > b \\ < 2b \end{smallmatrix}$

61. *Rhamphostomella spinigera,* Lorenz.
Pl. IV, figs. 52—55.

Syn. Bidenkap Kat., p, 32.

August 4, 1900, Sjöpölse Ness, on *Balanus*; July 8, 1901, Ren Bay.

There were four spines on the margin of the oral aperture (fig. 52). When there were oœcia, there was generally only one spine on each side. The median denticle is large and characteristic, but variable in form (figs. 53 & 54). In the mandible $l \begin{smallmatrix} > b \\ < 2b \end{smallmatrix}$ The length is only a little greater than the breadth. The length of the zoœcia was from 0.9 to 1.2 mm., their breadth about 0.6 mm.

The frontal wall of the zoœcia has a reticulated ornament (fig. 55). and is furnished on both sides with a row of marginal pores. In the upper half of the lateral walls there are two or three polyporous rosette-plates. The basal wall is smooth and without puncturing.

62. *Rhamphostomella ovata,* Smitt.
Pl. IV, fig. 56.

Syn Bidenkap Kat., p. 32.

September 19, 1900, off Forvisnings Valley, 2—20 fath.; July 12, 1901, bay near Land's End; Aug. 16, 1901, Gaase Fjord, about 7 fath.

The oœcia are thickly and minutely punctured, not perforated thereby distinguishing this species from the other hitherto known species of this genus. In young zoœcia the oral aperture is almost circular, in older ones it is oval. The frontal wall of the zoœcia is punctured and perforated with large pores; and there may sometimes be traces of ribs. The basal wall has sometimes a peculiar transverse striation. In the mandible $l \begin{smallmatrix} > b \\ < 2b \end{smallmatrix}$ The length as a rule, is only a little greater than the width, and the free end is rounded. The length of the zoœcia was from 0.65—0.78 mm., their breadth about 0.5 mm.

63. *Rhamphostomella radiatula,* Hincks.

Syn. Bidenkap Fort., p. 32.

July 12, 1901, bay near Land's End, on algæ.

In this species the peristome is elongated upwards over the oœcia. The frontal wall of the zoœcia is furnished with ribs and depressions.

The best drawing of the species is to be found in LORENZ's „Bryozoen von Jan Mayn."

64. *Rhamphostomella bilaminata*, HINCKS.

Pl. IV, fig. 57.

Syn. BIDENKAP Fort., p. 32.

Also

1905. *Rhamphostomella plicata*, NORDGAARD, Hydr. Biol. Inv. Norw. Fj. p. 171, pl. 5, figs. 14 & 15.

September 19. 1900, off Forvisnings Valley, 2—20 fath.; July 12, 1901, bay at Land's End.

The peristome is folded a little outwards. The avicularium, which is borne on a lateral prominence, is considerably smaller than in *plicata*. The length of the mandible is only a little greater than its width. Occasionally a few ribs are found upon the frontal wall of the zoœcia. I presume that on SMITT's Plate 28[1], figs 189 & 190 represent *Rh. plicata*, while fig. 191 is *bilaminata*. The length of the zoœcia varies greatly (from 0.5 to 0.9 mm.), the width being from 0.4 to 0.5 mm. The frontal wall had as a rule no special ornament, but the basal wall had a strongly-marked puncturing, although this character appears to be very variable. The median denticle on the lower oral margin is very marked, and there are indications of a little short denticle on each side of it. As a rule there are few pores in the oœcia, but there is great variation in the number of pores.

The only representatives hitherto known of the genus *Rhamphostomella* are from northern cold waters. Neither WATERS[2] nor CALVET[3] give any species of the genus from southern cold seas.

Among the specimens from the 2nd Fram Expedition, all the species of the genus known at present occurred, except *Rh. fortissima*, Bidenkap[4].

In order to facilitate the determination of these species, the following little table is given:

A. Without median denticle.

a. With large, ribbed zoœcia:

Rh. scabra.

b. Frontal wall entire and quite even:

[1] Öfv. Kgl. Vet. Akad. Förh., 1867.
[2] Bryozoa. Voyage du S.Y. „Belgica". Antwerp, 1904.
[3] Bryozoen. Hamburger Magalhaensische Sammelreise, Hamburg, 1904.
[4] Die Bryozoen. Fauna Arctica (RÖMER & SCHAUDINN edit.), 1900.

Rh. hincksi.

c. Frontal wall perforated; oœcium with small depressions, but no pores:

Rh. ovata.

B. With distinct median denticle.

a. Large zoœcia with strongly-marked ribs:

Rh. costata.

b. Large zoœcia with smooth frontal wall and distinct puncturing on the basal wall:

Rh. plicata.

c. The zoœcia with marginal pores and reticulated ornamentation of the frontal wall, and 4 oral spines:

Rh. spinigera.

d. The zoœcia crowded together; frontal wall generally without ornament. Peristome folded outwards:

Rh. bilaminata.

e. The zoœcia crowded together; the peristome drawn up over the oœcium, and the frontal wall furnished with ribs and depressions:

Rh. radiatula.

In addition to the above there also occurred among the specimens from the 2nd Fram Expedition, the following:

65. *Rhamphostomella contigua*, SMITT.

1867. *Cellepora ramulosa* f. *contigua* SMITT, Öfv. Kgl. Vet. Akad. Förh., 1867 (Appendix), pp. 31 & 189, pl. 28, figs. 198–201.

1905. *Rhamphostomella contigua*, NORDGAARD, Hydr. Biol. Inv. Norw. Fj., p. 172, pl. 5, figs. 18–20.

July 22, 1900, the neighbourhood of the winter haven; 1900, the north side of N. Devon, incrusting stones; July 13, 1901, a little north of Cape Land's End, incrustation on stones.

According to the form of the operculum, this species cannot well be regarded as a *Cellepora*, and in my above-named work I referred the species to *Rhamphostomella*, because I knew of no better place to put it in; but it can hardly be regarded as a typical form of this genus. In higly calcified colonies from the neighbourhood of the winter haven (July 22, 1900), little or nothing of the spines on the oral margin were visible.

NORMAN[1] informs us that his *Cellepora whiteavesi*, MS. in the „Valorous" Report = *Rh. contigua*, SMITT.

Gen. Cellepora. Fabricius.

66. *Cellepora incrassata*, SMITT.

Syn. BIDENKAP Kat., p. 34.

July 24, 1900, the winter haven; Aug. 1, 1900, right off the mouth of Stordalen, 10 fath.; Aug. 3, 1900, Fosheim Peak and the valley on the west side of the fjord, 2—20 fath.; Aug. 4, 1900, Sjöpölse Ness 15—25 fath.; Aug. 7, 1900, East Cape, 10—25 fath.; Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath.; July 12, 1901, bay at Land's End.

67. *Cellepora ventricosa*, LORENZ.

Syn. BIDENKAP Kat., p. 32.

July 3, 1900, the winter haven; July 25, 1900, the winter haven; Aug. 4, 1900, Sjöpölse Ness, 15—25 fath.; July 12, 1901, bay at Land's End.

When the two species are placed side by side *ventricosa* is distinguishable by its remarkably large zoœcia.

Gen. Retepora, Lamarck.

68. *Retepora wallichiana*, BUSK.

Syn. BIDENKAP Kat., p. 31.

July 22, 1900, the winter haven, about 30 fath.; Aug. 3, 1900, Fosheim Peak and the valley on the west side of the fjord, 2—20 fath.; Sept. 19, 1900, off Forvisnings Valley; Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath.; July 19, 1901, the lower part of Gaase Fjord.

Sub-order Cyclostomata.

Gen. Crisia, Lamouroux.

69. *Crisia denticulata*, LAMARCK.

July 18, 1900, the winter haven, about 20 fath.; July 22, 1900, the winter haven, about 30 fath.; July 29, 1900, the winter haven, about 6 fath.; Sept. 19, 1900, off Forvisnings Valley, 2—20 fath.;

[1] Ann. Mag. Nat. Hist., ser. 7, vol. 17, p. 92.

Sept. 20, 1900, the head of Gaase Fjord, 3—20 fath.; July 8, 1900, Ren Bay; July 9, 1901.

In several specimens there were oœcia, situated, as usual, at the ends of the internodes. They were sometimes 1.04 mm. in length, with a maximum width of 0.47 mm.

Gen. Tubulipora, Lamarck.

70. *Tubulipora flabellaris*, FABR.

Cf. HARMER, On the Development of Tubulipora, Quart. Journ. Mic Soc. vol. 41, No. 3.

July 22, 1900, the winter haven, young colonies on algæ; Sept. 19, 1900, off Forvisnings Valley, 2—20 fath., on algæ; July 8, 1901, Ren Bay, on algæ.

HARMER has shown that the oœciostome in this species is a flattened tube, and the oœciopore a slit. The latter, in specimens from the 2nd Fram Expedition, was about 0.13 mm. in length. The largest of the colonies found had a width of 9 mm.

Gen. Idmonea, Lamouroux.

71. *Idmonea atlantica*, FORBES.

Cf. WATERS, Bryozoa from Franz Josef Land, Part II. Cyclostomata, Ctenostomata and Endoprocta. Journ. Linn. Soc., vol. 29.

Sept. 19, 1900, off Forvisnings Valley 2—20 fath.; Aug. 16. 1901, Gaase Fjord, about 7 fath.

I could not find oœcia in any of the colonies, but on the whole it must be said that there was a good resemblance to specimens of this species that I have seen from more southern latitudes.

In the specimens from the station off Forvisnings Valley, the length of the zoœcia was 0.52—0.65 mm., their thickness about 0.14 mm. The distance between the rows of zoœcia was about 0.6 mm.

In the specimens from the second-named locality, the length of the zoœcia was 0.65—0.78 mm., their thickness about 0.195 mm.

The distance between the rows of zoœcia was about 0.6 mm. The number of zoœcia in each row was found not to exceed 4 in any specimen.

Gen. Diastopora, Lamouroux.

72. *Diastopora obelia*, var. *arctica*, WATERS.

Cf. WATERS, Bryozoa from Franz Josef Land, Part II, Journ. Linn. Soc., vol. 29, p. 171, pl. 21, fig. 1.

July 22, 1900, the winter haven, about 30 fath.; Aug. 4, 1900, Sjöpölse Ness, 15—25 fath.

The colonies from the winter haven were attached to *Flustra serrulata*. There were oœcia. The oral aperture of the zoœcia was 0.13 mm. in diameter, and the diameter of the tubules was about half that. In *Diastopora obelia*, the diameter of the tubules is comparatively less.

Gen. Lichenopora, Defrance.

73. *Lichenopora verrucaria*, Fabr.

July 22, 1900, the winter haven, upon algæ; July 8, 1901, Ren Bay on algæ; July 9, 1901, between Ren Bay and Cape Land's End; July 12, 1901, bay at Land's End, on algæ.

The diameter of the largest specimen was 5 mm. In several cases the trumpet-like oœciostome was observable.

74. *Lichenopora crasiuscula*, Smitt.

Discoporella crasiuscula, Smitt, Öfvers. Kgl. Vet. Akad. Förh., 1866, pp. 406 & 482, pl. 11, figs. 7—9.

Lichenopora crasiuscula, Waters, Journ. Linn. Soc., vol. 29, p. 177.

July 18, 1900, the winter haven; July 5, 1901, the sound; July 8, 1901, Ren Bay; July 18, 1901, the mouth of Gaase Fjord.

Smitt states that the colonies of *crasiuscula* are rather raised, so as to be almost hemispherical. I have compared colonies of *hispida* from By Fjord near Bergen and from the Trondhjem Fjord, with *crasiuscula* from the 2nd Fram Expedition, and have found that as a rule *hispida* forms thinner, more compressed colonies than *crasiuscula*. The zoœcia, moreover, in the latter, project less from the calcarous mass than is the case in *hispida*, which, on this account, appears to the naked eye as if furnished with distinct radial ribs.

In both forms, the walls of the pores are finely denticulated (stellate pores).

The largest specimen of *crasiuscula* from the 2nd Fram Expedition was 7 mm. in diameter.

Sub-order. Ctenostomata.

Gen. Alcyonidium, Lamouroux.

75. *Alcyonidium, mytili,* DALYELL.

July 12, 1901, bay at Land's End, little colony on a seaweed.

Among the specimens from the 2nd Fram Expedition, there was only one small colony; but this is sufficient to extend the already considerable area of distribution of this species.

The zoœcia were about 0.6 mm. in length, and about 0.26 broad. In a colony from the coast outside Bergen, the corresponding measurements were found to be from 0.65 to 0.78 mm., and about 0.39 mm. The species has so large a distribution, that it may almost be said to be cosmopolitan. It has been found in Spitsbergen and King Carl's Land (K. A. ANDERSSON), Jan Mayen (LORENZ), the Norwegian coast, Denmark (LEVINSEN), the Baltic (MÖBIUS), the French side of the Channel (BAROIS), the Mediterranean and the Adriatic (CALVET, WATERS), Australia, Port Philip, (KIRKPATRICK), south of Tierra del Fuego, Isle Navarin, Puerto Toro (CALVET[1]), Alaska (ROBERTSON).

76. *Alcyonidium mamillatum,* ALDER.

July 9, 1901, between Ren Bay and Cape Land's End.

On *Buccinum* from the above locality, an *Alcyonidium* was found which I believe is identical with *mamillatum.* The latter has also previously been found in arctic seas. It is given by LEVINSEN from the Kara Sea, by SMITT from Spitsbergen and Novaja Semlja, by LORENZ, from Jan Mayn by K. A. ANDERSSON from East Greenland, and by VANHÖFFEN from West Greenland. It is also known from Gullmar Fjord, Bohuslen (SMITT) and from Northumberland, deep water (ALDER).

In „Öfvers af Kgl. Vet. Akad. Förh.", 1866 (p. 497), SMITT has given *mamillatum* as a form of *A. hirsutum*; and of the figures belonging to *hirsutum* (Pl. 12, figs. 3—8), only figs. 5 and 6 are given by HINCKS in Brit. Mar. Pol. as of the species *mamillatum.*

As figs. 5 and 6 represent zoœcia of a specimen from Gullmar Fjord, while figs. 3 and 4 are of zoœcia of a colony from Bell Sound, Spitsbergen, this of itself indicates a difference between the arctic and the boreal specimens of the species; but whether the difference is sufficiently great to allow of a systematic separation, I am at present unable to decide. In the specimen that I found among those from the 2nd Fram Expedition, the young zoœcia showed a great resemblance to

[1] Hamburger Magalhaensische Sammelreise. Bryozoen, p. 38. Hamburg 1904.

SMITT's fig. 3 on pl. 12. The semicircular thickening that recalls the operculum in *Cheilostomata* was present. In a colony from Bell Sound, SMITT found the length of the zoœcia to vary between 0.7 and 0.85 mm. In the specimen from the 2nd Fram Expedition, the length of the zoœcia was from 0.9 to 1.17 mm., and their breadth from 0.39 to 0.52 mm. I am most inclined to regard *Alcyonidium mamillatum* as an originally arctic species, which, in the most southerly of the places where it is found, is a relict form the Glacial Period, and has thus become somewhat dwarfed in those localities.

77. *Bowerbankia imbricata*, ADAMS.

July 19, 1901, the lower part of Gaase Fjord.

On *Bugula murrayana*, var. *fruticosa* from the above locality, there were found creeping colonies of a *Bowerbankia* which I have identified with *imbricata*. Among the Bryozoa collected by Captain H. W. FEILDEN in the North Polar Expedition, BUSK[1] found only one ctenostomatous species, which occurred on *Bugula fruticosa*. He describes it as follows: „Zoœcia in opposite pairs at very distant intervals on a slender tubular stem." And he adds: „In case it be new, it might be termed *Farella*, or, if with a gizzard, perhaps *Bowerbankia arctica*." The specimen mentioned was in such a bad condition that no more minute examination could be made. Since that time, no arctic *Farella* has been found, and the name *Farella arctica* ought for the present to be put aside. VANHÖFFEN[2], on the other hand, found a form in the Karajak Fjord in Greenland, which he names *Bowerbankia arctica*, BUSK. This name would indeed be right if the form found by VANHÖFFEN were specifically different from *imbricata*; but it is most probable that it was *imbricata* that occurred in the Karajak Fjord; for HINCKS mentions the species from the White Sea and Queen Charlotte Islands and ALICE ROBERTSON from Alaska, thus giving *imbricata* an arctic distribution. Nor could I find any systematic difference between specimens from the Bergen coast and the colonies from the lower end of Gaase Fjord. The first-named have as a rule free colonies, in which the zoœcia are gathered into small groups, while the arctic were creeping. The arctic specimens also seem to have larger zoœcia (up to 1.3 mm.);

[1] Journ. Linn. Soc., vol. 15, p. 240, pl. 13, fig. 9.
[2] Die Fauna u. Flora Grönlands. Grönland-Expedition der Gesellschaft für Erdkunde zu Berlin. 1891—1893, vol. II, p. 234.

but no systematic distinguishing feature could be discovered. Until the arctic *Bowerbankia* proves to be different from *imbricata* therefore, the name *arctica* must be set on one side.

Some Remarks on certain Species and their Distribution.

I thus believe that among the specimens brought back by the 2nd Fram Expedition, I have demonstrated the occurrence of the following species:

1. *Gemellaria loricata*, LIN.
2. *Menipea gracilis*, I. v. BENEDEN.
3.* — *elongata*, SMITT.
4. *Scrupocellaria scabra*, I. v. BENEDEN.
5. *Bugula murrayana*, JOHNSTON.
6 a. — — var. *fruticosa*, PACKARD.
6.* — *harmsworthi*, WATERS.
7.* *Cellaria articulata*, FABR.
8. *Flustra membranaceo-truncata*, SMITT.
9.* — *serrulata*, BUSK.
10. *Membranipora catenularia*, JAMESON.
11. — *craticula*, ALDER.
12. — *arctica*, D'ORBIGNY.
13.* — *unicornis*. FLEM., var. *armifera*, HINKCS.
14.* — *nigrans*, HINCKS.
15. — *cymbæformis*, HINCKS.
16. — *trifolium*, S. WOOD.
17. *Cribrilina annulata*, FABR.
18. *Harmeria scutulata*, BUSK.
19. *Doryporella spathuliferra*, SMITT.
20. *Porina tubulosa*, NORMAN.
21. *Hippothoa hyalina*, LIN.
22.* — *expansa*, DAWSON.
23. — *divaricata*, LAMOUROUX.
24.* *Leieschara subgracile*, D'ORBIGNY.
25. *Schizoporella plana*, DAWSON.
26.* — *biaperta*, MICHELIN.
27. — *lineata*, NORDGAARD.
28. — *reticulato-punctata*, HINCKS.
29. — *stormi*, NORDGAARD.
30.* — *bispinosa*, NORDGAARD, n. sp.
31. — *levinseni*, NORDGAARD.
32.* — *condylata*, NORDGAARD, n. sp.
33.* — *producta*, PACKARD.
34.* — *bidenkapi*, NORDGAARD, n. sp.
35.* *Eschara suturata*, NORDGAARD, n. sp.
36. — *nordlandica*, NORDGAARD.
37. — *hipposus*, SMITT.
38. — *sincera*, SMITT.

39. *Discopora pavonella*, ALDER.
40. *Porella saccata*, BUSK.
40 a.* — — var *rostrata*, HINCKS.
41.* — *plana*, HINCKS.
42. — *concinna*, BUSK.
43. — *acutirostris*, SMITT.
44.* — *alba*, NORDGAARD, n. sp.
45. — *proboscidea*, HINCKS.
46.* — *umbonata*, NORDGAARD, n. sp.
47. *Escharoptis sarsi*, SMITT.
48. *Monoporella spinulifera*, HINCKS.
49. *Escharella ventricosa*, HASSALL.
50. — *abyssicola*, NORMAN.
51. — *laqueata*, NORMAN.
52. — *labiata*, BOECK.
53. *Escharoides jacksoni*, WATERS.
54. *Smittina smitti*, KIRCHENPAUER.
55. — *jeffreysi*, NORMAN.
56.* — *minuscula*, SMITT.
57. *Rhamphostomella scabra*, FABR.
58. — *costata*, LORENZ.
59.* — *plicata*, SMITT.
60.* — *hincksi*, NORDGAARD, n. nom.
61.* — *spinigera*, LORENZ.
62.* — *ovata*, SMITT.
63. — *radiatula*, HINCKE.
64. — *bilaminata*, HINCKS.
65. — *contigua*, SMITT.
66. *Cellepora incrassata*. SMITT.
67. — *ventricosa*, LORENZ.
68. *Retepora wallichiana*, BUSK.
69. *Crisia denticulata*, LAMARCK.
70. *Tubulipora flabellaris*, FABR.
71. *Idmonea atlantica*, FORBES.
72.* *Diastopora obelia*, var. *arctica*, WATERS.
73. *Lichenopora verrucaria*, FABR.
74.* — *crasiuscula*, SMITT.
75. *Alcyonidium mytili*, DALYELL.
76.* — *mamillatum*, ALDER.
77. *Bowerbankia imbricata*, ADAMS.

An asterisk before a name indicates that up to the present the species has not been observed on the Norwegian shores. The number of such species makes up about one third of the whole. There is reason to suppose that continued search would reduce this third to some extent; but there would be almost sure to be a considerable remainder which probably be sought for in vain on the Norwegian coast. When, on the other hand, the higher latitudes of the arctic region are reached, the number of species that are common to both increases and the resemblance between the east and west arctic Bryozoan fauna must be admitted to be very great. There seems, however, to be a difference, and it

may be worth while to find out in which direction this difference manifests itself.

In the arctic fauna, there is only one species of the Genus *Cellaria*, namely, *C. articulata*, FABR. (*C. borealis*, BUSK). This genus also seems to be especially associated with the southern hemisphere. This is possibly connected with the circumstance pointed out by F. CANU, that the Bryozoan fauna of the southern hemisphere is of an old character[1]. Among the British *Cellaria* species, *C. fistulosa*, LIN. is of recent distribution from Malangen Fjord in the north of Norway to Australia and New Zealand, and the species is found in a fossil state in Tertiary deposits in S. W. Victoria (WATERS) and in the Eocene of Calabria (NEVIANI). *C. sinuosa*, HASSALL, has not such a wide recent distribution, but is found in fossil state in the Crag (BUSK), in the Italian Pliocene (MANZONI), and in Tertiary strata in South Australia (see HINCKS, B. M. P ., p. 110). *C. johnsoni*, BUSK, has been found in the present day from Shetland to Madeira, and in the fossil state in the Calabrian Miocene (NEVIANI). The genus *Cellaria* occupy a somewhat isolated position in the present fauna, and for this reason alone, one is inclined to look upon it as a veteran genus. WATERS[2] says moreover that he has come to the conclusion „that *Cellaria* and *Onychocella* branched from a common ancestor before the Cretaceous". But it is not easy to arrive at any certain result with regard to the age of the various species. As far as I know, *C. articulata* has not been found as a fossil; and it is possible that it has originated from some Tertiary primitive form or other, and has little by little established its characters under the severe natural conditions which took the place of the mild climate of the Tertiary Period. The comparatively limited field of its distribution may also possibly be regarded as an indication that the age of the species is not very great. The distribution of a species ought scarcely to be looked at only in the light of the hydrographic conditions. It thus appears to be a more or less general rule that a wide distribution in time corresponds with a wide distribution in space. While HINCKS and ROBERTSON state that *C. articulata* is abundant at Queen Charlotte Islands, and according to the descriptions of several investigators, is thought to be quite common off Greenland, and was found by the 2nd Fram Expedition in several places on the east side of Hell Gate, there

[1] „Un caractère nettement archaïque quand on considère les genres surtout". Cf. F. CANU, Les Bryozoaires du Patagonien, p. 5. Mémoires de la Soc. Géol. de France, Paléontologie, vol. 12, fasc. 3, mem. no. 33. Paris, 1904.
Bryozoa, p. 36. Expéd. Antarctique Belge.

is only one report of its occurrence in the east arctic region (Ice Fjord on Spitsbergen, according to SMITT). The reason that the species is not found in the numerous sounds and currents of East Spitsbergen, can scarcely be that they cannot thrive there. And if, in reality, it is not more widely distributed in the east arctic region than our present acquaintance with this matter indicates, the reason must be sought in the fact that the species has not yet had time enough for a circumpolar distribution.

There is another thing that may possibly be deduced from the distribution of this species. As it occurs in abundance off Greenland and in the North American archipelago, but very sparsely off Spitsbergen, it is highly probable that Greenland lies nearer to the distribution-centre than Spitsbergen, whither it must have come from the west. A similar chain of reasoning may be applied to *Flustra serrulata.* In the east arctic region, this species has only been found in the Kara Sea (LEVINSEN), and it is natural to suppose that it has come thither from Greenland.

The species described as new cannot in the mean time be employed in zoö-geographical considerations, and with regard to the others, the greater number of them are circumpolar, while again others such as *Schizoporella producta,* PACKARD, and *Porella saccata,* var. *rostrata,* HINHKS, are up to the present found only in west arctic waters.

There thus appears to be a difference between the west and east arctic waters as regards the Bryozoan fauna, and one would think that a careful study of the distribution of the different species, would lead to important conclusions regarding the locality in which the arctic conditions first took the place of the Tertiary. The above seems to point to the probability that the first creation of the arctic forms took place north of America, and not north of Europe. On the whole, it is possible that the great changes in the natural conditions of the earth are the most important, or one of the most important, of the species-forming reasons.

HINCKS described a *Cellaria* from Queen Charlotte Islands, *C. mandibulata,* which, on account of its occurrence might possibly be supposed to be arctic. This is not the case, however, for A. ROBERTSON[1] now states that the above-named species has a large distribution, and is most general in southern waters. *C. articulata* is thus left as the sole representative of its genus in the arctic fauna. On the other hand,

[1] Non-incrusting chilostomatous Bryozoa of the West Coast of N. America. Univeristy of California Publications. Zoology. Vol 12, no. 5, p. 289.

CANU[1] gives 3 species of *Cellaria* from Patagonia; and from the Belgian antarctic expedition, WATERS mentions 4 species, one of which, *C. lata*, is described as new. Even in this there is an indication that CANU's general remark on the relation between the Bryozoan fauna in the northern and in the southern hemispheres, may probably have a special application to the character of the arctic and antarctic fauna. The similarity in the hydrographic conditions of the arctic and antarctic waters in the present day, is not reflected at all in the Bryozoan fauna, as there are few species in common[2]. And whatever the reasen may be, this dissimilarity is connected with the fact that the age of the species seem throughout to be less in the arctic than in the antarctic Bryozoan world, which on the whole bears the impress of age.

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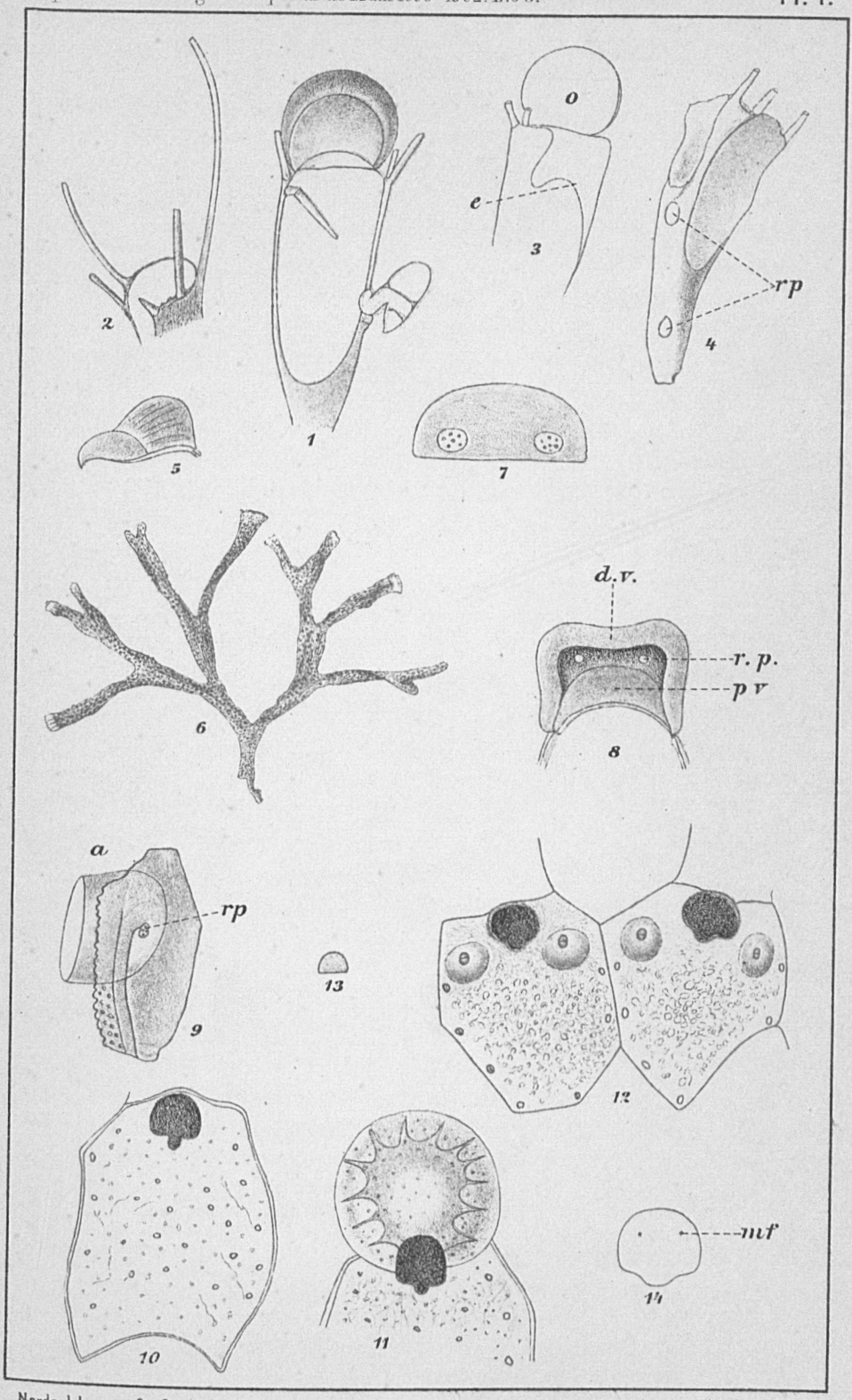
[1] Les Bryozoaires du Patagonien.

[2] See WATERS, Bryozoa, Expédition Antarctique Belge; CALVET, Bryozoen, Hamburger Magalhaensische Sammelreise.

Pl. I.

Pl. I.

Fig. 1—5. *Bugula harmsworthi*, WATERS, $^{8}/_{8}$ 1900, Vinterhavnen.
- 1. Zoœcium and Oœcium. frontal view, $^{60}/_{1}$.
- 2. The anterior part of a Zoœcium, lateral view, $^{52}/_{1}$.
- 3. Zoœcia, dorsal view, o, Oœcium, e, terminal wall, $^{52}/_{1}$.
- 4. Zoœcium, lateral view, rp, rosette-plates, $^{52}/_{1}$.
- 5. Avicularium, $^{83}/_{1}$.
- 6. *Flustra serrulata*, BUSK, $^{22}/_{7}$ 1900, Vinterhavnen. $^{1}/_{1}$.
- 7—9. *Membranipora nigrans*, HINCKS, $^{30}/_{8}$ 1901, Gaasefjord.
- 7. Terminal wall with rosette-plates, $^{83}/_{1}$.
- 8. Oœcium, frontal view, rp, rosette-plates, dv, distal wall, pv, proximal wall of the oœcium, $^{52}/_{1}$.
- 9. Lateral wall of the zoœcium, a, avicularium, $^{52}/_{1}$.
- 10—11. *Schizoporella stormi*, NORDG., $^{22}/_{7}$ 1900, Vinterhavnen.
- 10. Frontal wall of the Zoœcium, $^{52}/_{1}$.
- 11. Oœcium, $^{52}/_{1}$.
- 12—14. *Schizoporella biaperta*, MICHELIN, $^{22}/_{7}$ 1900, Vinterhavnen.
- 12. Zoœcia, $^{52}/_{1}$.
- 13. Mandible, $^{83}/_{1}$.
- 14. Operculum, mf, muscular insertion, $^{83}/_{1}$.



Nordg. del. except fig. 6 which Bucher del.

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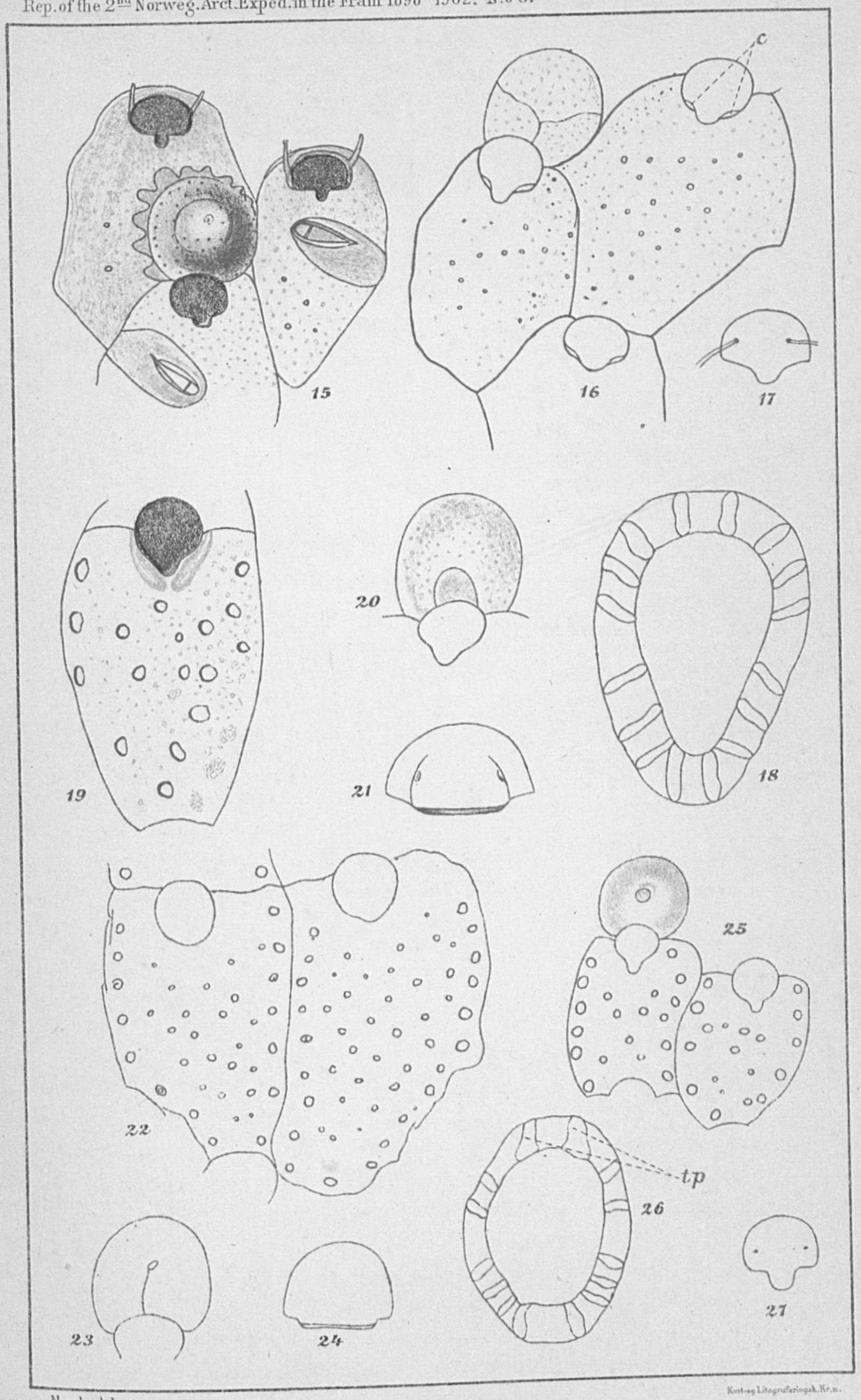
Pl. II.

Pl. II.

Fig. 15. *Schizoporella bispinosa*, Nordg., n. sp., $^{12}/_{7}$ 1901, Bugt ved Landsend, $^{52}/_{1}$.
- 16—18. *Schizoporella condylata*, Nordg., n. sp., $^{22}/_{7}$ 1900, Vinterhavnen.
- 16. Zoœcia and Oœcia, $^{52}/_{1}$.
- 17. Operculum, $^{83}/_{1}$.
- 18. Pore-chambers, $^{52}/_{1}$.
- 19—21. *Schizoporella producta*, Packard, $^{5}/_{7}$ 1901, Sundet.
- 19. Zoœcium, $^{52}/_{1}$.
- 20. Oœcium, $^{52}/_{1}$.
- 21. Operculum, $^{83}/_{1}$.
- 22—24. *Schizoporella bidenkapi*, Nordg., n. sp., $^{4}/_{8}$ 1900, Sjøpølseneset.
- 22. Zoœcia, $^{52}/_{1}$.
- 23. Oœcia, $^{52}/_{1}$.
- 24. Operculum, $^{83}/_{1}$.
- 25—27. *Schizoporella magniporata*, Nordg., n. sp., $^{10}/_{7}$ 1902, Herløsund, Bergen.
- 25. Zoœcia and Oœcium, $^{52}/_{1}$.
- 26. Pore-chambers, tp, terminal p. c., $^{52}/_{1}$.
- 27. Operculum, $^{83}/_{1}$.



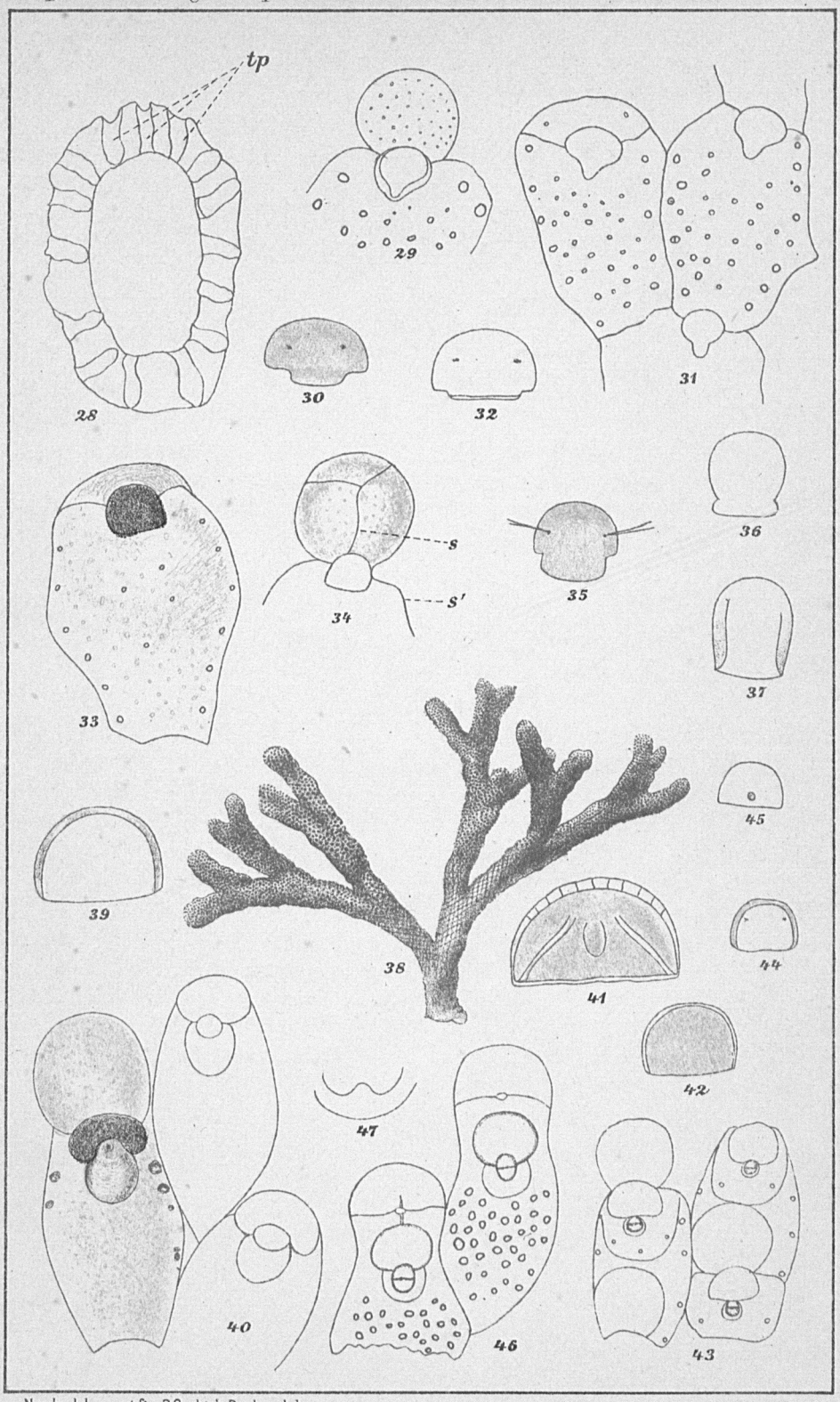
Nordg. del.

Kunst- og Litografiningsk. Kr.a.

Pl. III.

Pl. III.

Fig. 28. *Schizoporella sinuosa*, Busk, 1894, Heg i Trondhjemsfjorden, pore-chambers, tp, terminal p. c., $^{52}/_{1}$.
- 29—30. *Schizoporella sinuosa*, Busk, $^{14}/_{2}$ 1899, Østnesfjord, Lofoten.
- 29. Oœcium and the anterior part of the zoœc., $^{52}/_{1}$.
- 30. Operculum, $^{83}/_{1}$.
- 31—32. *Schizoporella sinuosa*, Busk, $^{16}/_{2}$ 1899, Digermulen, Lofoten.
- 31. Zoœcia, $^{52}/_{1}$.
- 32. Operculum, $^{83}/_{1}$.
- 33—35. *Eschara suturata*, Nordg., n. sp., $^{13}/_{7}$ 1901, North of Cape Land's End.
- 33. Zoœcium, $^{52}/_{1}$.
- 34. Oœcium, s and s_1 are sutural lines, $^{52}/_{1}$.
- 35. Operculum, $^{83}/_{1}$.
- 36—37. *Eschara hipposus*, Smitt, $^{19}/_{7}$ 1901, Ytre Gaasefjord.
- 36. Oral aperture, $^{83}/_{1}$.
- 37. Operculum, $^{83}/_{1}$.
- 38. *Porella saccata*, Busk, $^{22}/_{7}$ 1900, Vinterhavnen, $^{1}/_{1}$.
- 39. *Porella plana*, Hincks, $^{31}/_{7}$ 1900, Vinterhavnen, Operculum, $^{83}/_{1}$.
- 40—42. *Porella umbonata*, Nordg., n. sp., Aug. 1900, Vinterhavnen.
- 40. Zoœcia with oœcium, $^{52}/_{1}$.
- 41. Mandible, $^{260}/_{1}$.
- 42. Operculum, $^{83}/_{1}$.
- 43—46. *Porella alba*, Nordg., n. sp., $^{12}/_{7}$ 1901, Bugt ved Landsend.
- 43. Zoœcia, $^{52}/_{1}$.
- 44. Operculum, $^{83}/_{1}$.
- 45. Mandible, $^{260}/_{1}$.
- 46—47. *Smittina minuscula*, Smitt, $^{12}/_{7}$ 1901, Bugt ved Landsend.
- 46. Zoœcia, $^{52}/_{1}$.
- 47. Oral denticle, $^{60}/_{1}$.



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Kart-og Litograferingsk. Kr.a.

Pl. IV.

Pl. IV.

Fig. 48. *Smittina jeffreysi*, Norman, $^{16}/_{8}$ 1901, Gaasefjord, $^{1}/_{1}$.
- 49—50. *Rhamphostomella plicata*, Smitt, $^{8}/_{7}$ 1901, Renbugten.
- 49. Zoœcia and oœcia, $^{60}/_{1}$.
- 50. Mandible, $^{83}/_{1}$.
- 51. *Rhamphotomella hincksi*, Nordg., n. nom., $^{8}/_{7}$ 1901, Renbugten, Zoœcia and Oœcia, $^{52}/_{1}$.
- 52—55. *Rhamphostomella spinigera*, Lorenz, $^{8}/_{7}$ 1901, Renbugten.
- 52. Oœcium and the anterior part of the Zoœc., $^{52}/_{1}$.
- 53—54. Different forms of oral denticles, $^{83}/_{1}$.
- 55. Ornamentation on the frontal wall of the Zoœc., $^{52}/_{1}$.
- 56. *Rhamphostomella ovata*, Smitt, $^{10}/_{9}$ 1900, off Forvisningsdalen, Zoœcium and Oœcium, $^{52}/_{1}$.
- 57. *Rhamphostomella bilaminata*, Hincks, $^{19}/_{9}$ 1900, off Forvisningsdalen, Zoœcium and Oœcium, $^{52}/_{1}$.

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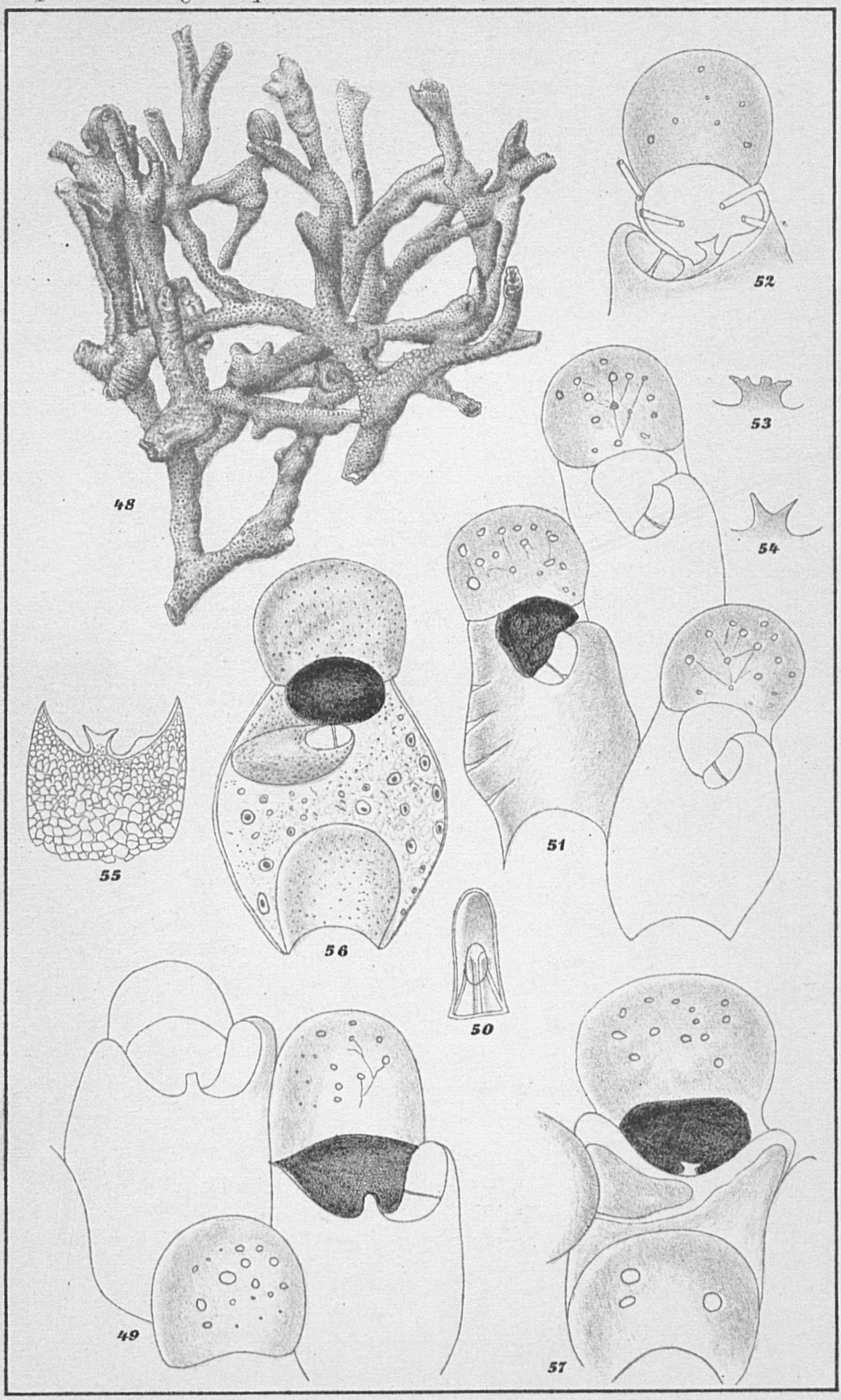

Nordg. del. except fig. 48 which Bucher del.

Kristiania Videnskabsselskabets Skr. II.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 9.

FUNGI

COLLECTED BY H. G. SIMMONS ON THE 2ND NORWEGIAN POLAR EXPEDITION, 1898—1902.

DETERMINED BY
E. ROSTRUP.

AT THE EXPENCE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

PUBLISHED BY

VIDENSKABS-SELSKABET I KRISTIANIA
(THE SOCIETY OF ARTS AND SCIENCES OF KRISTIANIA)

KRISTIANIA
PRINTED BY A. W. BRØGGER
1906

Fungi

Collected by H. G. Simmons on the 2nd Norwegian Polar Expedition, 1898—1902.

Determined
by
E. Rostrup.

Most of the collecting was done on Ellesmere Land (indicated by *E* in the list), a smaller number of specimens having come from the west coast of Greenland (indicated by *G* in the list). Out of the 80 species given in the following list, 73 belong to Ellesmere Land, whence also come all the 8 new species of fungi of which a description is here given. The fungi brought home, with a few exceptions, are associated with the phanerogamous vegetation — the very great majority with dead stalks and leaves of plants — and are less frequently found as true parasitic fungi. It is therefore more especially Sphæriaceæ and Sphæropsideæ (pycnidial forms) that are represented in the following list. Many of these fungi that are associated with particular hosts, occur so frequently that it is not easy to find a specimen of those plants that has not its last year's stalks or withered leaves occupied by numerous perithecia and pycnidia. Many of the fungi recorded from a single locality, especially those of the genera Pleospora and Sphærella, are really found wherever the hosts are met with. In the case of these species, the locality given only indicates the particular places in which the fungus was submitted to a careful microscopical examination.

Ustilaginaceae.

Sphacelotheca Hydropiperis (SCHUM.) de Bary.

In the ovary of *Polygonum viviparum:* E. Gaase Fjord, anchoring-ground in Havne Fjord.

Ustilago Caricis (PERS.).

In the ovary of *Elyna Bellardi:* E. Fram's Fjord.

Uredinaceae.

Puccinia Saxifragae SCHLECHT.

Leaves of *Saxifraga nivalis:* G. Foulke Fjord.

Melampsora arctica ROSTR.

Leaves of *Salix arctica:* G. Foulke Fjord. E. Eskimopolis, Muskusoxe Fjord, Havne Fjord, Fram's Haven.

Agaricaceae.

Mycena pumila (BULL). Among moss: E. Fram's Haven.

Collybia dryophila (BULL). E. Anchoring-ground in Havne Fjord.

Tricholoma caelatum (FR.). E. Stordalen near Havne Fjord.

Omphalia umbellifera (L.). E. Among moss: Eskimopolis.

Hebeloma fastibilis (FR.). E. Cocked Hat Island.

Naucoria festiva (FR.). E. Cape Rutherford.

N. melinoides (FR.). E. Skrællingø in Alexandra Fjord; Anchoring-ground in Havne Fjord.

N. nimbosa (FR.). E. Sir Angles Peak, Gaase Fjord.

Galera hypnorum (BATSCH). E. Bedford Pim Island, Skrællingø in Alexandra Fjord, Øredalen, Havne Fjord.

Psalliota campestris (L.). E. Fram's Fjord.

Ps. Rodmani (PECK). E. Fram's Fjord.

Psathyrella polaris n. sp.

Pileus membranaceus, ovato-campanulatus, 0,5 cm. latus, luteo-ochraceus, sulcato-striatus; stipes albus, laxus, 1—2 cm. altus; sporae aterrimae, ellipsoideae, 8—9 μ l.. 5—6 μ cr. In stercore Bovis maschatis. E. Gaase Fjord.

Russulina lutea (HUDS.). E. Fram's Haven.

Cantharellus lobatus (PERS.). E. On clumps of moss. Gaase Fjord.

Gasteromycetes.

Lycoperdon gemmatum (BATSCH). E. Cape Rutherford, Fram's Fjord, anchoring-ground in Havne Fjord.

Pezizaceae.

Sclerotinia Vahliana ROSTR.

Eriophorum Suheuchzeri. E. Fram's Haven, Øredalen.

Mollisia graminis (DESM.)

Catabrosa algida: E. Bedford Pim Island; Fram's Haven.

Trochila Potentillae ROSTR.

Potentilla rubricaulis: G. Foulke Fjord.

Trochila juncicola ROSTR.

Luzula nivalis. E. Gaase Fjord.

Trochila ignobilis KARST.

Elyna spicata: E. Fram's Fjord.

Niptera melatephra (LASCH.).

Eriophorum polystachyum: E. Anchoring-ground in Havne Fjord.

Hysteriaceae.

Lophodermium arundinaceum (SCHRAD.).

Glyceria distans: E. Havne Fjord.

Festuca ovina: E. Bedford Pim Island, Gaase Fjord.

Lophodermium maculare (FR.).

Leaves of *Myrtillus uliginosus:* E. Havne Fjord.

Sphæriaceae.

Sporormia intermedia AWD.

On excrements of musk oxen: E. Beitstad Fjord.

Pleospora herbarum (PERS.).

Everywhere on withered stalks and leaves of dicotyledonous plants: *Arnica alpina, Taraxacum hyparcticum, Campanula uniflora, Armeria sibirica, Pedicularis capitata* and *lanata, Chamœnerium*

latifolium, Potentilla rubricaulis and *nivea, Saxifraga aizoides, cernua, groenlandica, hirculus* and *nivalis, Draba nivalis* and *fladnizensis, Papaver radicatum, Ranunculus sulphureus* and *affinis, Melandryum affine, Stellaria langipes, Alsine verna, Polygonum viviparum, Oxyria digyna.* These hosts, which are attacked by Pleospora herbarum, are all found in various parts of Ellesmere Land, with the exception of *Potentilla nivea* and *Polygonum viviparum,* wich are from Foulke Fjord in Greenland.

Pleospora Drabae SCHROET.

Draba alpina: E. Bedford Pim Island.

Pleospora vulgaris NIESSL.

Pedicularis hirsuta: G. Egedesminde. — *Potentilla emarginata:* E. Skrællingø.

Cystopteris fragilis: E. Havne Fjord. — *Lycopodium Selago:* E. Bedford Pim Island.

Pleospora pentamera KARST.

Frequent upon various monocotyledons, in many places on Ellesmere Land: *Luzula confusa* and *arcuata, Carex nardina* and *stans, Arctagrostis latifolia, Aira cæspitosa* var. *arctica, Trisetum subspicatum, Poa abbreviata, glauca* and *cenisea.*

Pleospora platyspora SACC.

Braya purpurascens: E. Havne Fjord.

Pleospora infectoria FUCKEL.

Catabrosa algida: E. Havne Fjord.

Pyrenophora comata (NIESSL)

Potentilla pulchella: E. Gaase Fjord. — *Arenaria ciliata:* E. Havne Fjord. — *Oxyria digyna:* E. Fram's Haven.

Leptosphæria Silenes NOT.

Silene acaulis. E. Havne Fjord.

Leptosphæria microscopica KARST.

Stalks of *Eriophorum polystachyum:* E. Øredalen, Havne Fjord.

Leptosphæria epicarecta COOKE.

Carex stans: E. Fram's Haven, Lastræadalen.

Chætosphæria byssiseda ROSTR.

Potentilla emarginata: E. Gaase Fjord.

Sphærulina Pleuropogonis n. sp.

Peritheciis gregariis, vaginicolis, fuscis; ascis clavato-fusoideis, 55—65 μ l., 10—12 μ cr., aparaphysatis; sporidiis cylindraceis, utrinque obtusis, hyalinis vel pallide flavescentibus, 19—20 μ l., 5—6 μ cr., oblique monostichis. In vaginis *Pluropogonis Sabinei.* E. Fram's Fjord.

Venturia chlorospora Fr.

Salix arctica: E. Bedford Pim Island. Hayes Sound.

Stigmatea Ranunculi Fr.

Ranunculus sulfureus: E. Gaase Fjord. — *R. Sabinei*: E. Galgodden.

Sphærella Taraxaci Karst.

Leaves of *Taraxacum hyparcticum:* E. Fram's Haven.

Sphærella pachyasca Rostr.

Chamænerium latifolium, Ranunculus affinis, Eutrema Edwarsii, all near Havne Fjord; *Saxifraga Hirculus:* E. Fram's Fjord, Sir Ingles Peak. *Ranunculus hyperboreus:* E. Cape Rutherfjord.

Sphærella trichophila Karst.

Pedicularis flammea: G. Godhavn.

Sphærella ootheca Sacc.

Dryas octopetala. E. Gaase Fjord. — *D. integrifolia:* E. Havne Fjord, Gaase Fjord.

Sphærella arthopyrenioides Awd.

Papaver radicatum: E. Gaase Fjord, Bedford Pim Island, Lastræadalen, Eskimopolis.

Sphærella Cruciferarum (Fr.).

Braya purpurascens: E. Havne Fjord. — *Draba subcapitata.* E. Gaase Fjord.

Sphærella Stellarianearum (Rbh.).

Halianthus peploides: G. Foulke Fjord.

Sphærella Polygonorum (Crié).

Polygonum viviparum: E. Skrællingø. G. Foulke Fjord.

Sphærella Tassiana Not.

Everywhere on withered stalks and leaves of monocotyledonous plants: *Juncus biglumis, Eriophorum Scheuchzeri* and *polystachyum, Elyna Bellardi, Carex membranopacta, C. stans, C. ustulata, C. pedata, C. incurva, Arctagrostis latifolia, Aira cæspitosa* var. *arctica, Alopecurus alpinus, Catabrosa algida, Trisetum subspicatum, Poa*

abbreviata, P. cenisea, P. evagans, Glyceria Vahliana and *G. distans.* These hosts, which are attacked by Sphærella Tassiana, are all found in various parts of Ellesmereland. Also upon *Glyceria tenella:* Foulke-Fjord in Greenland.

Sphærella pusilla AWD.

Aira cæspitosa var. *arctica, Catabrosa algida* and *Poa glauca*: E. Gaase Fjord. *Carex membranopacta:* E. Havne Fjord.

Sphærella Luzulae COOKE.

Luzula arcuata: E. Fram's Fjord.

Sphærella Wichuriana SCHROET.

Eriophorum palystachyum: E. Bedford Pim Island.

Sphæropsideae.

Phoma Sceptri KARST.

Pedicularis lapponica, P. flammea and *P. hirsuta*: G. Disco.

Phoma Cichoracearum SACC.

Stalks of *Taraxacum hyparcticum*: E. Fram's Haven.

Phoma potentillica ALLESCHER.

Potentilla emarginata: G. Foulke Fjord.

Phoma alpina SPEG.

Saxifraga groenlandica: E. Gaase Fjord.

Phoma Caricis (FR.).

Carex membranopacta: E. Lastræadalen.

Coniothyrium Saxifragae n. sp.

Peritheciis gregariis, epiphyllis, atrofuscis, hemisphaericis, opacis; sporulis oblongis, sæpe medio subconstrictis, fuscis, pariete crasso, 9—10 μ l., 5 μ cr., In foliis *Saxifragae tricuspidatae.* E. Cape Rutherford.

Diplodia Simmonsii n. sp.

Peritheciis minutissimis, dense gregariis, globosis, atris, 0,1—0,2 m. m. crassis, foliicolis, innatis, contextu parenchymatico, fusco, sporulis oblongis vel ellipsoideis, 1—septatis, fuligineis, 12—19 μ l., 6—9 μ cr. In foliis *Luzulae arcuatae*: E. Fram's Haven.

Stagonospora Caricis (OUD.).

Carex nardina: E. Fram's Fjord. — *C. misandra*: E. Havne Fjord.

Stagonospora Eriophori n. sp.

Peritheciis sparsis, globulosis, nigris; sporulis exacte cylindraceis, utrinque obtusis, septatis, guttulatis, hyalinis vel subflavidis, 45—52 μ l., 3 μ cr. In foliis *Eriophori polystach.* E. Havne Fjord.

Stagonospora Alopecuri n. sp.

Peritheciis gregariis, prominentibus, perexiguis, globulosis; sporulis cylindraceo-bacillaribus, utrinque obtusis, 3—septatis, hyalinis vel pallide flaveolis, 25—32 μ l., 5—6 μ cr. In foliis *Alopecuri alpini.* E. Fram's Haven.

Septoria cercosperma Rostr.

Pedicularis hirsuta et *P. flammea*: G. Disco. — *Ranunculus affinis*: E. Havne Fjord.

Septoria semilunaris Joh.

Eutrema Edwardsii: E. Havne Fjord.

Septoria minuta Karst.

Luzula arcuata: E. Fram's Haven.

Septoria Eriophori Oud.

Eriophorum polystachyum: G. Foulke Fjord.

Septoria nebulosa Rostr.

Poa glauca: E. Gaase Fjord.

Septoria punctoidea Karst.

Elyna Bellardi and *Kobresia caricina*: E. Havne Fjord.

Melanconiaceae.

Coryneum Cassiopes n. sp.

Acervulis sparsis, atris, applanatis, epiphyllis; conidiis clavatis vel pyriformibus, 3—septatis, fuscis, loculo infimo hyalino, 20—21 μ l., 7—8 μ cr. In foliis *Cassiopes tetragonae.* E. Bedford Pim Island.

Dematieae.

Chromosporium vitellinum Sacc. et Ellis.

On wood. Old dwelling-place, Eskimopolis.

Goniosporium puccinoides (K. et S.).

Kobresia caricina and *K. bipartita*: E. Havne Fjord.

Cladosporium herbarum (PERS.).

Frequent upon many dying plants: *Taraxacum hyparcticum, Draba hirta, Stellaria longipes,* etc.

Cladosporium graminum CDA.

Hierochloa alpina: E. Twin Glacier Valley. — *Alopecurus alpinus*: E. Cocked Hat Island.

Cladosporium epimyces Cooke.

On decayed agarics: E. Eskimopolis.

Coniothecium asperulum DUR. et MONT.

Potentilla Vahliana: E. Gaase Fjord. — *P. emarginata*: E. Skrællingø. *P. rubricaulis*: G. Foulke Fjord.

Coniothecium coloratum (PECK).

On the wood of *Salix arctica*: E. Fram's Haven.

Heterosporium groenlandicum ALLESCHER.

Ranunculus affinis: E. Havne Fjord.

Stilbeae.

Stilbum Simmonsii n. sp.

Sparsum, foliicolum, melleum, 1 m. m. altum. Stipitibus fibrosis, glabris, 0,6 m. m. altis, 0,3 crassis, capitulis hemisphæricis; conidiis bacillaribus, 2—3 μ l., 0,5 μ cr. Hab. in foliis *Eriophori polystach.* E. Havne Fjord, anchoring-ground.

Printed october 1906.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 10.

EINAR WAHLGREN:

COLLEMBOLA FROM THE 2ND FRAM EXPEDITION 1898–1902

AT THE EXPENCE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

PUBLISHED BY

VIDENSKABS-SELSKABET I KRISTIANIA

KRISTIANIA
PRINTED BY A. W. BRØGGER
1907

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Collembola

bearbeitet

von

Einar Wahlgren.

Während die altweltliche arktische Collembolenfauna durch mehrere Forschungsreisen verhältnismässig gut bekannt ist, ist unsere Kenntnis von Collembolen aus dem arktischen (resp. subarktischen) Nordamerika natürlich sehr beschränkt. SCHØTT[1] erwähnt zwei Arten von Orten am Beringsund. EMERY[2] berichtet von einer *Isotoma*-Art, die auf dem Malaspinagletscher am Eliasberge lebt. FOLSOM[3] beschreibt zehn Arten aus dem Alaska-territorium. Die meisten Collembolenfunde stammen jedoch aus Grönland. Zusammenstellungen der hier gefundenen Arten und der hierauf bezüglichen Litteratur sind im Jahre 1900 von SCHÄFFER[4] und dem Verf.[5] gemacht, weshalb ich hier auf eine nähere Besprechung derselben verzichte.

Die unten erwähnten Arten stammen aus einer in dieser Hinsicht früher völlig unbekannten Gegend, dem Ellesmere Land, zugleich einem der nördlichsten Gebiete, aus denen Collembolen bekannt sind, und können darum auf tiergeographisches Interesse rechnen.

---

[1] H. SCHØTT. Zur Systematik und Verbreitung paläarctischer Collembola. K. Sv. Vet.-Ak. Handl. 1893.

[2] Die Forschungsreise S. K. H. des Prinzen Ludwig Amadeus von Savoyen, Herzog der Abruzzen, nach dem Eliasberge im Alaska. — Leipzig 1900.

[3] J. W. FOLSOM. Papers from the Harrimann Alaska Expedition. XXVII. Apterygoten. — Proc. Washington Ac. Sc. Vol. IV; 1902.

[4] C. SCHÄFFER. Die arktischen und subantarktischen Collembola. — Fauna arctica, Bd. I, Lief. 2; 1900.

[5] E. WAHLGREN. Collembola während der schwedischen Grönlandsexpedition 1899 auf Jan Mayen und Ost-Grönland eingesammelt. — Öfvers. K. Vet.-Ak. Förh. 1900.

1. *Achorutes tullbergi* Schäff.

var. concolor Carp.

Syn. *Achorutes dubins* Tullb. *v. concolor* Carp.

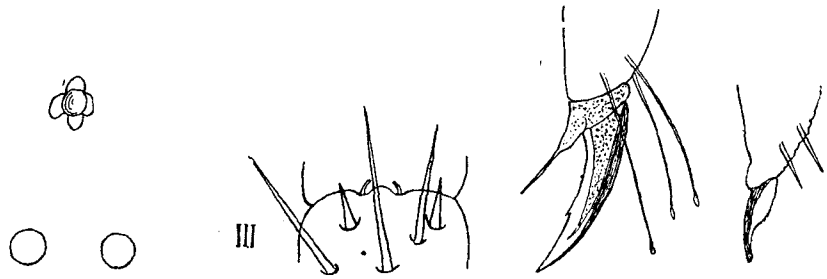

Fig. 1. Postantennalorgan. Fig. 2. Antennalorgan III. Fig. 3. Fuss. Fig. 4. Mucro.

Von dieser Form wurden etwa 20 Exemplare auf Cocked Hat, einer kleinen Insel im Kane Basin nahe dem Ellesmere Land, 30. VII. 1899 eingesammelt.

Sie stimmen in allen wesentlichen Merkmalen mit der Beschreibung und den Abbildungen Carpenter's[1] überein, doch sind die Postantennaltuberkel nur vier, und die obere Klaue hat einen winzigen Innenzahn. Die Zahl der Postantenaltuberkel ist doch wohl bei dieser wie bei anderen *Achorutes*-arten etwas variabel, und der Klauenzahn ist möglicherweise früher übersehen worden. Der Bau der Mucrones und des Postantennalorgans III geht aus den Figuren hervor.

Die Hauptform dieser Art ist früher aus Sibirien (Jenisej-Gebiet), Novaja Semlja und Spitzbergen, die Varietät vom Franz Joseph-Land bekannt.

2. *Neanura gigantea* Tullb.

Von dieser Art wurde ein einziges kleines Individuum bei dem Winterhafen des „Fram" in Havnefjord 10/6 1900 gefunden. Die Farbe des Tieres ist dunkelblau, „mørkt blåagtig",[2] wie Tullberg von den Typusexemplaren schreibt, nicht „indigo blue, with conspicous blackish tubercles"[3] wie nach Folsom die Farbe der Alaska-form ist. Sämtliche Borsten sind wie bei *Neanura ornata* Fols. serrat.

Die Art ist früher an mehreren Orten in Sibirien und Alaska gefunden.

---

[1] G. H. Carpenter. Collembola from Franz-Josef Land. — Sc. Proc. R. Dublin, Soc. 1900.

[2] T. Tullberg. Collembola borealia. — Nordiska Collembola, pag. 41. — Öfvers. K. Vet.-Ak, Förh. 1876.

[3] J. W. Folsom. l. c. pag. 88.

3. *Isotoma reuteri* Schött.

Durch Vergleichung mit Exemplaren, die ich von Schött bekommen, habe ich mich von der Identität dieser Art völlig überzeugen können. In die Artdiagnose Schött's hat sich ein Fehler eingeschlichen. Er schreibt nämlich über den Mucro: „La dent apicale est la plus grande.“[1] Sowohl an seinen Exemplaren als an denjenigen der Expedition ist aber der anteapicale Zahn grösser als der apicale, was auch mit Schött's früherer Figur[2] von dem Mucro dieser Art stimmt.

Zwei Exemplare wurden im Winterhafen in Havnefjord, Juni 1900, in einer Pflanzenpresse angetroffen (Simmons).

Die Art ist früher nur in Sibirien (Tschuktschen-Halbinsel) gefunden, wo sie sich in fliessendem Wasser unter Wasserpflanzen aufhielt.

4. *Isotoma viridis* Bourl.

f. typica.

Ein Exemplar 5/6 und eines 10/6 1900 bei dem Winterhafen in Havnefjord gefunden.

Diese Art ist arktisch (wie auch in gemässigten und warmen Gebieten) sehr weit verbreitet: Grönland, Jan Mayen, Bären-Insel, Spitzbergen, Novaja Semlja, Sibirien, Alaska.

5. *Isotomurus palustris* Müll.

f. prasina Reut.

Zwei Exemplare 10/6 1900 bei dem Winterhafen in Havnefjord.

Diese Art, eine der am weitesten verbreiteten, ist arktisch früher auf Novaja Semlja und in Sibirien (am Jenisej, auf Jalmal) gefunden.

6. *Sira erudita* Nic.

Syn. *Degeeria erudita* Nic.

Zu dieser Art rechne ich nicht ohne Bedenken ein Exemplar, welches bei dem Winterhafen in der Rice Strait 30/6 1899 angetroffen worden ist. Die Bestimmung, auch der Gattung, ist recht unsicher, da das Exemplar, wenn es wirklich eine *Sira* ist, ganz abgeschuppt ist. Die Zeichnung weist aber eine Färbung auf, auf welche sehr gut die Beschreibung Nicolet's von *Degeeria erudita*, die sicher eine *Sira* ist, passt. Ich

[1] H. Schött. Études sur les Collemboles du Nord, pag. 23. — Bih. K. Sv. Vet.-Ak. Handl. 1902.

[2] H. Schött. Zur Systematik etc. Tafel VI, Fig. 29.

zitiere: Corps — — tacheté de brun sur un fond d'un blanc sale ou légèrement lavé de brun rouge. Tête de même couleur avec une tache brune en forme d'équerre au milieu. Yeux noirs. Autennes, pattes, queue et dessous du corps beaucoup plus pâles que le dessus, et sans taches."[1] Zu dieser Beschreibung füge ich nur, dass das rostbräunliche Pigment, wie bei *Lepidocyrtus ruber* SCHÖTT ringelförmig verteilt ist.

Über ihr Vorkommen schreibt NICOLET: „Se trouve assez communément dans les bibliothèques, sur les vieux livres, les vieux papiers et dans les armoires qui renferment du linge."[1] Ist die Art vielleicht zusammen mit dem Pflanzenpapier oder ähnlichem nach dem hohen Norden fortgeschleppt worden?

Sira pruni NIC., von welcher diese Form wahrscheinlich nur eine Varietät ist, ist früher in Sibirien (am Jenisej) gefunden.

Ausserdem enthält die Sammlung drei Exemplare einer entomobryinen oder lepidocyrtinen Entomobryide, die sich aber in so schlechtem Zustande befinden (sie sind ganz abgefärbt, maceriert, durchscheinend, eigentlich nichts anders als Exuvien), dass sie ganz unbestimmbar sind. Sie wurden in einer Pflanzenpresse im Winterhafen in Havnefjord, Juni 1900 (SIMMONS) angetroffen.

Natürlich ist die Zahl der gefundenen Arten allzu klein, um weitgehende Schlüsse zu erlauben. Sämtliche sind früher arktisch bekannt und zwar alle aus Sibirien. Dagegen ist es recht erstaunlich, dass — abgesehen von der weit verbreiteten *Isotoma viridis* — keine von ihnen auch grönländisch ist; aus Grönland kennt man doch schon etwa zwanzig Arten.

[1] H. NICOLET. Recherches pour servir à l'histoire des Podurelles, pag. 74, Neufchatel 1841.

Gedruckt 15 Februar 1907.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 11.

N. BRYHN:

BRYOPHYTA
IN ITINERE POLARI NORVAGORUM SECUNDO COLLECTA

(FORTEGNELSE OVER DE UNDER DEN 2DEN NORSKE POLAREXPEDITION INDSAMLEDE MOSER)

AT THE EXPENCE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

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I Januar 1903 modtog jeg fra Hr. Professor Dr. N. WILLE den under den 2den norske Polarexpedition i det arktiske Amerika indsamlede Mosesamling til Bestemmelse.

Expeditionen foregik som bekjendt i Aarene 1898—1902 med Polarskibet „Fram" under Ledelse af Nordpolsfareren Capt. OTTO SVERDRUP. Moserne er, med faa Undtagelser, alle indsamlede af Expeditionens Botaniker Hr. Dr. HERM. G. SIMMONS.

Den mig tilsendte Samling var meget stor — 8 store Kasser fulde — med mange Tusinde Mosetuer, fordelte under henved 1700 Nummere.

Materialet har ikke været let at bearbeide. I de arktiske Egne bliver Mosernes Habitus saa ofte forandret. Det tørre Klima har bevirket, at Planternes Fordampningsoverflade er formindsket. Saaledes har de arktiske Moser udpræget Tilbøielighed til at danne traadformige Nyskud, og alle Blade er som Regel usædvanlig korte; især er Bladpladen ofte yderst reduceret, ifald Skededel og Plade findes.

De fleste Arter optræder i smaa Former, der oftere giver Indtryk af at være forkrøblede Hungerformer.

Paafaldende og afvigende fra det sædvanlige er de ofte livlige Farver. Bladenes Cellemembraner er farvede gule, røde, brune eller sortrøde til Beskyttelse mod det stærke Lys, Dag og Nat, under den kortvarige Væxtperiode.

Kun forholdsvis faa Arter sætter Frugt, væsentlig kun de akrokarpe Bladmoser, fornemmelig de tvekjønnede Arter af Slægten *Bryum*. Men Frugterne har saa ofte vist sig at være beskadigede eller helt afrevne, hvilket muligens kan skyldes den slemme Snespurv (*Emberiza nivalis*), der ifølge Professor BERGGRENS Erfaring fra Spitzbergen for en stor Del lever af Mosefrugter.

Kun ganske faa Arter optræder massevis og i rene eller nogenlunde rene Tuer. Næsten udelukkende forekommer der i denne Samling tætte

Blandingstuer, ofte med indtil 20—30 Arter i samme Tue. Forøvrigt meget forskjellige Arter har, naar de voxer i samme Tue, Tilbøielighed til at antage et saadant Habitus, at de alle ligner hverandre, hvilket ikke formindsker Vanskeligheden ved Bestemmelsen.

Jeg har anvendt den Fremgangsmaade, at jeg under hvert Nummer har udvalgt de Tuer, der saa ud til at indeholde de fleste Arter. Disse har jeg saa efter Opblødning sønderplukket og sorteret under stærkt forstørrende Briller. Og saa tilsidst, Alt under Mikroskopet.

Heldigvis har jeg havt 2 udmærkede Medarbeidere, ellers vilde ikke denne Afhandling faaet sin Afslutning i saavidt rimelig Tid.

Den bekjendte Specialist i nordiske *Hepaticæ* Hr. B. KAALAAS har været min Medarbeider med Hensyn til denne Gruppe. Vi har confereret angaaende hver enkelt Bestemmelse, og de nye Arter er beskrevne af os begge i Fællesskab.

Den udmærkede Kjender af nordiske *Bryum*former Hr. E. RYAN, der desværre er afgaaet ved Døden, længe før denne Afhandling kunde afsluttes, har været mig til uvurderlig stor Hjælp under Bearbeidelsen af denne vanskelige Slægt. Ogsaa vi har confereret angaaende hver enkelt Bestemmelse og Beskrivelse af alle de nye Arter er udarbeidet af os begge i Fællesskab.

I det Følgende vil der, efter en meget kort Fremstilling af hver enkelt Lokalitets Moseflora med nogle Bemærkninger om enkelte Arters Forekomst og Udbredelse forøvrigt, blive leveret en systematisk Fortegnelse over alle de iagttagne Arter samt Beskrivelse over de nye Former, ledsaget af nogle faa Afbildninger.

Tilsidst følger Fortegnelse over alle de Arter, der er paatrufne under hvert enkelt af Samlingens Nummere. Denne Fortegnelse er nærmest tænkt som Veiledning for de Institutioner eller Personer, der muligens bliver tildelt Exemplarer af Samlingens talrige Dubletter, for at man i Tilfælde kan have nogen Anelse om, hvilke Arter man kan vente at finde under vedkommende Nummer.

Selvfølgelig er efter Undersøgelsen hele det undersøgte Materiale tilbagesendt til Christiania Universitets botaniske Musæum.

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Specielt har de dette sidste Værk ledsagende ypperlige Karter været mig til megen Nytte under Angivelse af Nordgrændser.

I.

Under Expeditionen anløbes først Egedesminde og Godhavn i Vest-Grønland, beliggende ved omtrent 69° nordlig Bredde. Under det kortvarige Besøg indsamledes her omtrent 40 Arter Moser, blandt hvilke de allerfleste har mindre Interesse, saasom de fra gammel Tid er vel kjendte som arktiske Arter og allerede før samlede i Grønland. Blandt de indsamlede Arter har dog et Par Stykker betydelig Interesse, nemlig *Lophozia Baueriana*, ny for Jordens vestlige Halvkugle, *Cynodontium strumiferum* cfr., ny for det arktiske Amerika, og *Hypnum pseudorufescens*, tidligere kjendt kun fra 2—3 Steder i Europa.

Det næste Sted, hvor der samledes Moser, var Foulkefjord i Nord-Vest-Grønland, under 78° 20′ nordlig Bredde. Her samledes for første Gang følgende nye Arter, der senere atter blev indsamlede ogsaa paa andre Steder: *Lophozia harpanthoides, Plagiochila arctica, Fissidens arcticus* og *Polytrichum fragile.*

Fra Grønland er der endnu ikke, saavidt mig bekjendt, hidtil publiceret nogen Liste over Moser, samlede saa langt mod Nord. Jeg anser det derfor af Interesse her at anføre samtlige ved Foulkefjord indsamlede 86 Arter.

Hepaticæ.

Clevea hyalina.
Lophozia qvadriloba.
— *qvinqvedentata.*
— *Binsteadii.*
— *ventricosa.*
— *alpestris.*
— *harpanthoides.*
Sphenolobus minutus.
Plagiochila arctica.
Blepharostoma trichophyllum.
Anthelia Juratzkana.
— *julacea.*
Cephalozia verrucosa.
— *grimsulana.*

Musci veri.

Hymenostylium curvirostre.
Dicranoweisia crispula.
Oncophorus Wahlenbergii.
— *virens.*
Dicranum elongatum.
Fissidens arcticus.
Ceratodon purpureus.
Ditrichum flexicaule.
Distichium capillaceum.
— *Hagenii.*
Didymodon rubellus.
Desmatodon systylius.
Tortella tortuosa.
Tortula ruralis.
Schistidium apocarpum.
Rhacomitrium lanuginosum.
Orthotrichum Blyttii.
Encalypta rhabdocarpa.
Leptobryum pyriforme.
Plagiobryum demissum.
Webera nutans.
— *cruda.*
— *commutata.*
Bryum pendulum.
— *arcticum.*
— *terrestre.*
— *lapponicum.*
— *salinum.*
— *oeneum.*
— *cirratum.*
— *nitidulum.*
— *subnitidulum.*
— *teres.*
— *argenteum.*
— *elegans.*
— *Stirtoni.*
Bryum neodamense.
— *obtusifolium.*
— *crispulum.*
— *ventricosum.*
Mnium medium.
Cinclidium subrotundum.
Meesea triqvetra.
Bartramia ityphylla.
Aulacomnium palustre.
— *turgidum.*
Philonotis alpicola.
Timmia norvegica.
— *austriaca.*
Polytrichum juniperinum.
— *alpinum.*
— *fragile.*
Myurella julacea.
— *apiculata.*
Orthothecium chryseum.
— *strictum.*
Brachythecium salebrosum.
Camptothecium nitens.
Isopterygium pulchellum.
Amblystegium filicinum.
Campylium stellatum.
Hypnum revolvens.
— *intermedium.*
— *polycarpon.*
— *uncinatum.*
— *brevifolium.*
— *latifolium.*
— *sarmentosum.*
— *turgescens.*
— *polare.*
— *revolutum.*
Hylocomium proliferum.

Saa kom Turen til Ellesmere Land, hvor Expeditionens Deltagere tilbragte den første Vinter. Med Vinterkvarteret Framshavn som Udgangspunkt udførtes der i Høsten 1898 og Sommeren 1899 adskillige botaniske Excursioner, hvorved dette Lands Kyststrækninger og Øer under en nordlig Bredde af 78° 40′—79° sandsynligvis blev nogenlunde grundig undersøgte.

Her opdagedes følgende nye Arter: den sparsomt forekommende *Lophozia violascens*, de flerestedes samlede *Diplophyllum incurvum* og *Gymnostomum læve*, de sparsomt forekommende *Bryum gemmaceum*, *Bryum subfoveolatum*, *Bryum cyclophylloides* og *Bryum pertenellum* samt *Orthothecium acuminatum* og *Hypnum hyperboreum*. I det Hele hjembragtes fra det aldrig før undersøgte Ellesmere Land følgende 211 Arter.

Hepaticæ.

Clevea hyalina.
Riccardia pingvis.
Cesia corallioides.
Marsupella arctica.
Arnellia fennica.
Aplozia sphærocorpa.
— *atrovirens.*
— *pumila.*
— *polaris.*
Lophozia Baueriana.
— *Floerkei.*
— *qvinqvedentata.*
— *Binsteadii.*
— *polita.*
— *quadrtloba.*
— *excisa.*
— *marchica.*
— *violascens.*
— *murmanica.*
— *obtusa.*
— *ventricosa.*
— *porphyroleuca.*
— *alpestris.*
— *Wenzelii.*
Lophozia badensis.
— *heterocolpa.*
— *Mülleri.*
— *harpanthoides.*
Sphenolobus minutus.
Plagiochila arctica.
Blepharostoma setiforme.
— *trichophyllum.*
Anthelia julacea.
— *Juratzkana.*
Odontoschisma Macounii.
Cephalozia pleniceps.
— *bicuspidata.*
— *media.*
— *Bryhnii.*
— *verrucosa.*
— *grimsulana.*
Ptilidium ciliare.
Diplophyllum incurvum.
Scapania rosacea.
— *æqviloba.*
— *Bartlingii.*
— *undulata.*

Sphagnaceæ.

Sphagnum Girgensohnii.

Musci veri.

Andreæa papillosa.
Gymnostomum læve.
Hymenostylium curvirostre.
Dicranoweisia crispula.
Cynodontium schisti.
— *gracilescens.*
Dichodontium pellucidum.
Oncophorus virens.
— *Wahlenbergii.*
Dicranum congestum.
— *brevifolium.*
— *spadiceum.*
— *elongatum.*
— *sphagni.*
Fissidens arcticus.
— *impar.*
— *osmundioides.*
Seligeria polaris.
Blindia acuta.
Ceratodon purpureus.
Ditrichum flexicaule.
— *glaucescens.*
Distichium capillaceum.
— *Hagenii.*
— *inclinatum.*
Pottia latifolia.
Desmatodon systylius.
— *suberectus.*
— *Laureri.*
Didymodon rubellus.
— *alpigena.*
— *rufus.*
Tortella fragilis.
— *tortuosa.*
Tortula mucronifolia.
Tortula ruralis.
Schistidium apocarpum.
— *gracile.*
— *confertum.*
Grimmia ovata.
— *elongata.*
— *torqvata.*
Rhacomitrium brevisetum.
— *canescens.*
— *lanuginosum.*
Amphidium lapponicum.
Orthotrichum speciosum.
— *Killiasii.*
Encalypta commutata.
— *rhabdocarpa.*
— *contorta.*
— *procera.*
Voitia hyperborea.
Tayloria acuminata.
Tetraplodon mnioides.
— *pallidus.*
Haplodon Wormskjoldii.
Splachnum vasculosum.
Mielichhoferia Porsildii.
Leptobryum pyriforme.
Anomobryum concinnatum.
Plagiobryum demissum.
Webera nutans.
— *cruda.*
— *commutata.*
Bryum autumnale.
— *lacustre.*
— *groenlandicum.*
— *inclinatum.*
— *minus.*

Bryum gemmaceum.
— *opdalense.*
— *curvatum.*
— *subtumidum.*
— *retusum.*
— *subfoveolatum.*
— *Limprichtii.*
— *calophyllum.*
— *oeneum.*
— *cirratum.*
— *cuspidatum.*
— *nitidulum.*
— *pertenellum.*
— *teres.*
— *pallescens.*
— *elegans.*
— *Stirtoni.*
— *argenteum.*
— *cyclophyllum.*
— *cyclophylloides.*
— *neodamense.*
— *obtusifolium.*
— *pallens.*
— *langvidum.*
— *ventricosum.*
— *crispulum.*
— *tomentosum.*
— *arcticum.*
— *micans.*
— *pendulum.*
— *Fridtzii.*
— *confluens.*
Mnium orthorrhynchum.
— *medium.*
— *affine.*
— *hymenophylloides.*
— *subglobosum.*
Cinclidium subrotundum.
— *polare.*
— *hymenophyllum.*
Catascopium nigritum.
Meesea trichodes.
— *triqvetra.*
Aulacomnium turgidum.
— *palustre.*
Conostomum boreale.
Philonotis alpicola.
Timmia austriaca.
— *norvegica.*
Psilopilum lævigatum.
Polytrichum alpinum.
— *fragile.*
— *juniperinum.*
— *strictum.*
— *hyperboreum.*
Myurella julacea.
— *apiculata.*
Heterocladium Macounii.
Orthothecium chryseum.
— *intricatum.*
— *strictum.*
— *binervulum.*
— *acuminatum.*
Brachythecium salebrosum.
Camptothecium nitens.
Eurynchium strigosum.
Isopterygium pulchellum.
Amblystegium Sprucei.
— *filicinum.*
Campylium stellatum.
— *protensum.*
— *polygamum.*
Hypnum revolvens.
— *intermedium.*
— *uncinatum.*
— *polycarpon.*
— *hyperboreum.*
— *exannulatum.*
— *tundræ.*
— *brevifolium.*

Hypnum latifolium.
— *latinerve.*
— *Bambergeri.*
— *Vaucheri.*
— *revolutum.*
— *hamulosum.*
— *polare.*
Hypnum giganteum.
— *trifarium.*
— *sarmentosum.*
— *turgescens.*
— *badium.*
Hylocomium proliferum.

Fra Smiths Sund sattes Kursen sydover mod Jones Sund. Her anløbes først North Lincoln, hvor der under et kort Ophold i Framfjord, beliggende ved omtrent 76° 20′ nordlig Bredde, indsamledes 83 Arter Moser, hvoraf ingen nye.

Uagtet der her ikke blev udført mere end 2 bryologiske Excursioner, og Landet saaledes maa ansees for at være mindre vel undersøgt, vil jeg dog nedenfor anføre samtlige iagttagne Arter, saasom der hidtil ikke findes nogen Moseliste fra North Lincoln.

Hepaticæ.

Clevea hyalina.
Arnellia fennica.
Lophozia Baueriana.
— *qvinqvedentata.*
— *qvadriloba.*
— *alpestris.*
— *ventricosa.*
— *Mülleri.*
Lophozia harpanthoides.
Sphenolobus minutus.
Plagiochila arctica.
Blepharostoma trichophyllum.
Cephalozia verrucosa.
— *grimsulana.*
Diplophyllum incurvum.

Musci veri.

Oncophorus Wahlenbergii.
— *virens.*
Dicranum spadiceum.
— *groenlandicum.*
Fissidens adiantoides.
Ceratodon purpureus.
Ditrichum flexicaule.
Distichium capillaceum.
— *Hagenii.*
Didymodon rubellus.
— *rufus.*
Tortella tortuosa.
Tortula ruralis.
Schistidium apocarpum.
Rhacomitrium lanuginosum.
Orthotrichum Killiasii.
Encalypta commutata.
— *rhabdocarpa.*

Tetraplodon mnioides.
Webera cruda.
— *nutans.*
Bryum calophyllum.
— *oeneum.*
— *elegans.*
— *Stirtoni.*
— *teres.*
— *obtusifolium.*
— *cyclophyllum.*
— *neodamense.*
— *crispulum.*
— *ventricosum.*
Mnium affine.
— *orthorrhynchum.*
Cinclidium polare.
— *subrotundum.*
— *hymenophyllum.*
Catascopium nigritum.
Meesea triqvetra.
— *trichodes.*
Aulacomnium turgidum.
— *acuminatum.*
Philonotis alpicola.
Timmia austriaca.
Timmia norvegica.
— *bavarica.*
Polytrichum alpinum.
Myurella apiculata.
— *julacea.*
Orthothecium chryseum.
— *strictum.*
Brachythecium salebrosum.
Camptothecium nitens.
Eurynchium strigosum.
Amblystegium filicinum.
Campylium stellatum.
Hypnum revolvens.
— *intermedium.*
— *uncinatum.*
— *polycarpon.*
— *latifolium.*
— *brevifolium.*
— *tundræ.*
— *revolutum.*
— *giganteum.*
— *trifarium.*
— *sarmentosum.*
— *turgescens.*
Hylocomium proliferum.

Fra North Lincoln fortsattes i Høsten 1899 Reisen langs Jones Sund vestover. Herunder opdagedes Kong Oscars Land, dette store, hidtil ukjendte, ved de mange Fjorde dybt indskaarne Land.

Her blev Expeditionens Deltagere paa Grund af Naturforhindringer nødsagede til at overvintre 3 Gange. Under dette lange paatvungne Ophold blev der arbeidet flittig, og der udførtes mange Excursioner. Hver enkelt Fjord blev undersøgt mere eller mindre nøiagtig.

Resultatet blev ogsaa meget godt, idet der i Aarenes Løb indsamledes 233 Moser, hvoriblandt 17 for Videnskaben nye Arter, nemlig de mærkværdige *Scapania Simmonsii* og *Funaria polaris* samt ikke mindre end 15 Arter af Slægten *Bryum: hyperboreum, laxirete, lili-*

putanum, parvum, brachythecium, cancelliforme, corioideum, angustidens, semiovatum, Simmonsii, glomeratum, nodosum, densum, penduliforme og *teretinerve*, de fleste smaa og uanselige.

Fra Kong Oscars Lands undersøgte Kyststrækning mod Syd, der er beliggende under 76° 20′—76° 50′ nordlig Bredde, findes i Samlingen ialt følgende Arter.

Hepaticæ.

Clevea hyalina.
Grimaldia pilosa.
Chomocarpon commutatus.
Marchantia polymorpha.
Riccardia pingvis.
Cesia corallioides.
Marsupella arctica.
Arnellia fennica.
Aplozia sphærocarpa.
— *atrovirens.*
— *polaris.*
Lophozia qvinqvedentata.
— *qvadriloba.*
— *excisa.*
— *marchica.*
— *violascens.*
— *murmanica.*
— *ventricosa.*
— *Wenzelii.*
— *alpestris.*
Lophozia Mülleri.
— *harpanthoides.*
— *badensis.*
Mesoptychia Sahlbergii.
Sphenolobus minutus.
Plagiochila arctica.
Blepharostoma trichophyllum.
Anthelia pulacea.
— *Juratzkana.*
Ptilidium ciliare.
Odontoschisma Macounii.
Cephalozia pleniceps.
— *biloba.*
— *verrucosa.*
— *grimsulana.*
Bazzania triangularis.
Diplophyllum incurvum.
— *gymnostomophilum.*
Scapania irrigua.
— *Simmonsii.*

Musci veri.

Andreæa papillosa.
Gymnostomum rupestre.
— *læve.*
Hymenostylium curvirostre.
Dicranoweisia crispula.
Dichodontium pellucidum.
Oncophorus virens.
— *Wahlenbergii.*
Dicranella heteromalla.
Dicranum fuscescens.
— *congestum.*
— *Bergeri.*
— *brevifolium.*
— *spadiceum.*
— *elongatum.*
— *sphagni.*
— *groenlandicum.*
Fissidens exiguus.

Fissidens arcticus.
— *impar.*
— *adiantoides.*
Seligeria polaris.
Blindia acuta.
Ceratodon purpureus.
Ditrichum flexicaule.
— *glaucescens.*
Distichium capillaceum.
— *Hagenii.*
— *inclinatum.*
Pottia latifolia.
— *Heimii.*
Didymodon rubellus.
— *alpigena.*
— *rufus.*
Desmatodon latifolius.
— *suberectus.*
— *systylius.*
— *Laureri.*
Tortella tortuosa.
— *fragilis.*
Aloïna rigida.
Tortula mucronifolia.
— *ruralis.*
— *aciphylla.*
Schistidium apocarpum.
— *gracile.*
Grimmia anodon.
— *ovata.*
Rhacomitrium canescens.
— *lanuginosum.*
Orthotrichum speciosum.
— *Killiasii.*
— *alpestre.*
Encalypta commutata.
— *vulgaris.*
— *rhabdocarpa.*
— *apophysata.*
— *contorta.*
Encalypta procera.
Voitia hyperborea.
Tayloria acuminata.
Tetraplodon mnioides.
— *pallidus.*
Haplodon Wormskjoldii.
Funaria polaris.
— *hygrometrica.*
Mielichhoferia Porsildii.
Leptobryum pyriforme.
Webera cruda.
— *nutans.*
— *commutata.*
Bryum autumnale.
— *globosum.*
— *lacustre.*
— *hyperboreum.*
— *inclinatum.*
— *laxirete.*
— *terrestre.*
— *minus.*
— *liliputanum.*
— *parvum.*
— *brachythecium.*
— *cancelliforme.*
— *corioideum.*
— *angustidens.*
— *semiovatum.*
— *opdalense.*
— *stenodon.*
— *Graefianum.*
— *Limprichtii.*
— *Simmonsii.*
— *calophyllum.*
— *campylocarpum.*
— *oeneum.*
— *cirratum.*
— *glomeratum.*
— *nodosum.*
— *nitidulum.*

Bryum teres.
— *densum.*
— *pallescens.*
— *elegans.*
— *Stirtoni.*
— *argenteum.*
— *cyclophyllum.*
— *neodamense.*
— *obtusifolium.*
— *agattuense.*
— *pallens.*
— *ventricosum.*
— *crispulum.*
— *tomentosum.*
— *arcticum.*
— *micans.*
— *pendulum.*
— *Fridtzii.*
— *penduliforme.*
— *compactum.*
— *teretinerve.*
Mnium orthorrhynchum.
— *Blyttii.*
— *medium.*
— *affine.*
— *hymenophylloides.*
— *subglobosum.*
— *punctatum.*
Cinclidium subrotundum.
— *arcticum.*
— *polare.*
— *hymenophyllum.*
Catascopium nigritum.
Meesea trichodes.
— *triqvetra.*
Aulacomnium palustre.
— *acuminatum.*
— *turgidum.*
Bartramia ityphylla.
Plagiopus Oederi.
Conostomum boreale.
Philonotis alpicola.
— *cæspitosa.*
Timmia austriaca.
— *norvegica.*
— *bavarica.*
Psilopilum lævigatum.
Polytrichum alpinum.
— *piliferum.*
— *hyperboreum.*
— *juniperinum.*
— *strictum.*
Myurella julacea.
— *apiculata.*
Leskea nervosa.
Thuidium abietinum.
Pterygynandrum filiforme.
Orthothecium rufescens.
— *intricatum.*
— *strictum.*
— *binervulum.*
— *chryseum.*
— *acuminatum.*
Brachythecium salebrosum.
Camptothecium nitens.
Eurynchium strigosum.
— *diversifolium.*
— *cirrosum.*
Isopterygium pulchellum.
Amblystegium Sprucei.
— *filicinum.*
Campylium stellatum.
— *protensum.*
— *polygamum.*
Hypnum revolvens.
— *intermedium.*
— *Cossoni.*
— *uncinatum.*
— *polycarpon.*
— *Berggreni.*

Hypnum latifolium.
— *brevifolium.*
— *tundræ.*
— *revolutum.*
— *Vaucheri.*
— *hamulosum.*
— *Bambergeri.*
Hypnum palustre.
— *polare.*
— *giganteum.*
— *sarmentosum.*
— *turgescens.*
Ctenidium procerrimum.
Hylocomium proliferum.

Fra Kong Oscars Land blev der ogsaa gjort botaniske Excursioner sydover og vestover til de i bryologisk Henseende forhen fuldstændig ukjendte Øer North Devon og North Kent.

Ogsaa fra North Devon findes der en for Videnskaben ny Art, nemlig den vakre og høist eiendommelige *Bryum paganum.* Ialt blev der paa North Devons Nordkyst, beliggende under omtrent 76° nordlig Bredde, og fra de 2 nærliggende Smaaøer, Borgøen og Djævleøen, indsamlet følgende 64 Arter.

Hepaticæ.

Marchantia polymorpha.
Aplozia atrovirens v. gracilis.
Arnellia fennica.

Musci veri.

Ceratodon purpureus.
Distichium capillaceum.
— *inclinatum.*
Ditrichum flexicaule.
Pottia Heimii.
Didymodon rubellus.
Desmatodon latifolius.
— *suberectus.*
Tortula mucronifolia.
— *ruralis.*
Schistidium apocarpum.
Orthotrichum Killiasii.
Encalypta commutata.
— *rhabdocarpa.*
— *contorta.*
Haplodon Wormskjoldii.
Splachnum vasculosum.
Mielichhoferia Porsildii.
Webera cruda.
Bryum pendulum.
— *arcticum.*
— *arcuatum.*
— *calophyllum.*
— *oeneum.*
— *nitidulum.*
— *subnitidulum.*
— *teres.*
— *argenteum.*
— *elegans.*
— *Stirtoni.*

Bryum paganum.
— *neodamense.*
— *ventricosum.*
Mnium affine.
— *medium.*
— *orthorrhynchum.*
— *subglobosum.*
Philonotis alpicola.
Timmia austriaca.
— *norvegica.*
— *bavarica.*
Myurella julacea.
— *apiculata.*
Orthothecium chryseum.
— *strictum.*
Brachythecium salebrosum.
Camptothecium nitens.
Isopterygium pulchellum.
Amblystegium Sprucei.
— *filicinum.*
Campylium stellatum.
Hypnum uncinatum.
— *polycarpon.*
— *brevifolium.*
— *latifolium.*
— *tundræ.*
— *Bambergeri.*
— *Vaucheri.*
— *revolutum.*
— *turgescens.*
Ctenidium procerrimum.

Til Øen North Kent, der ligger udenfor Kong.Oscars Lands Vestkyst, hinsides Helvedesporten, blev der gjort kun en Excursion. Undersøgt blev den nordligste Del af Øen, beliggende under omtrent 76° 50′ nordlig Bredde. Herfra er hjembragt følgende 51 Moser, alle samlede oppe paa Plateauet i en Høide over Havfladen af 300–350 Meter.

Hepaticæ.

Lophozia ventricosa.
— *alpestris.*
— *harpanthoides.*
Lophozia qvadriloba.
Plagiochila arctica.
Diplophyllum incurvum.

Musci veri.

Gymnostomum læve.
Hymenostylium curvirostre.
Dicranoweisia crispula.
Dicranum spadiceum.
— *sphagni.*
Ceratodon purpureus.
Distichium capillaceum.
— *Hagenii.*
Ditrichum flexicaule.
Didymodon rubellus.
— *rufus.*
Tortella tortuosa.
Tortula ruralis.
Schistidium apocarpum.
— *gracile.*
Rhacomitrium canescens.

Rhacomitrium lanuginosum.
Encalypta commutata.
— *procera.*
Webera cruda.
— *nutans.*
Bryum obtusifolium.
— *pallens.*
— *crispulum.*
Cinclidium polare.
— *subrotundum.*
Plagiopus Oederi.
Catascopium nigritum.
Meesea triqvetra.
Philonotis alpicola.
Timmia austriaca.
Timmia norvegica.
Polytrichum alpinum.
Myurella apiculata.
Orthothecium chryseum.
Brachythecium salebrosum.
Camptothecium nitens.
Isopterygium pulchellum.
Hypnum revolvens.
— *intermedium.*
— *uncinatum.*
— *latifolium.*
— *tundræ.*
— *Vaucheri.*
— *revolutum.*

Under hele Expeditionen blev der indsamlet 290 Arter, hvortil kommer nogle Former, der af de fleste Forfattere har været betragtet som Arter, nemlig *Lophozia bantryensis, Brachythecium turgidum, Amblystegium curvicaule* og *Hypnum orthothecioides,* hvilke i denne Afhandling bliver opførte som Varieteter.

De under Expeditionen paa hver Lokalitet opdagede nye Arter er tidligere opregnede under Fortegnelse over vedkommende Lokalitets Moser. Hertil kommer en tidligere kjendt, men ikke beskreven ny Art, *Lophozia murmanica,* samt nogle tidligere som Varieteter beskrevne Former, nemlig *Marsupella arctica, Cephalozia verrucosa* og *Cinclidium polare,* hvilke i nærværende Afhandling bliver ophøiede til Arter.

Herved bliver Videnskaben beriget med ialt 35 nye Arter. Muligens bør ogsaa en her beskreven Varietet: *Bryum nitidulum* var. *fenestratum* helst betragtes som en selvstændig Art.

En Overraskelse var det at paatræffe i Samlingen enkelte Arter, der hidtil har været betragtede som udpræget eller ialfald forholdsvis sydlige Planter, saaledes f. Ex. *Lophozia marchica, Cephalozia biloba, Cynodontium gracilescens, Fissidens exiguus, Aloïna rigida, Tayloria acuminata, Heterocladium Macounii* og *Hypnum pseudorufescens.*

I det Hele er et betydelig stort Antal Nordgrændser blevne mere eller mindre langt forrykkede.

Med Sikkerhed er følgende Arter nye for Jordens vestlige Halvkugle:

Hepaticæ.

Lophozia murmanica.
Cephalozia biloba.
Diplophyllum gymnostomophilum.
Lophozia Baueriana.

Musci veri.

Rhacomitrium brevisetum.
Bryum autumnale.
— *opdalense.*
— *curvatum.*
— *subtumidum.*
— *salinum.*
— *stenodon.*
— *lapponicum.*
Bryum Graefianum.
— *campylocarpum.*
— *Fridtzii.*
— *confluens.*
Aulacomnium acuminatum.
Hypnum latinerve.
— *pseudorufescens.*

I enhver Henseende er vor Kundskab om Mosernes Forekomst i arktiske Egne, takket være denne Expedition, bleven betydelig udvidet, næsten i samme Forhold, som vor geografiske Viden.

Et Blik paa de foranstaaende Moselister viser, at de samme Navne findes atter og atter. I Virkeligheden er ogsaa disse arktiske Egnes Mosevegetation i store Træk temmelig ensformig og dens Habitus er betinget af forholdsvis faa Arter, der enten optræder i større samlet Mængde, eller ogsaa findes omtrent overalt, hvor Moser kan voxe. Blandt disse, de mest almindelige Arter, vil jeg nævne følgende, alle med en enkelt Undtagelse (*Lophozia harpanthoides*) før vel kjendte som Beboere af arktiske Egne:

Hepaticæ.

Lophozia qvinqvedentata.
— *ventricosa.*
— *qvadriloba.*
— *harpanthoides.*
Sphenolobus minutus.
Blepharostoma trichophyllum.
Cephalozia verrucosa.

Musci veri.

Dicranoveisia crispula.
Dicranum spadiceum.
— *elongatum.*
Ceratodon purpureus.
Ditrichum flexicaule.
Distichium capillaceum.
Didymodon rubellus.
Tortula ruralis.
Schistidium apocarpum.
Rhacomitrium lanuginosum.
Tetraplodon mnioides.
Haplodon Wormskjoldii.
Webera cruda.
— *nutans.*
Bryum calophyllum.
— *oeneum.*
— *elegans.*
— *obtusifolium.*
— *ventricosum.*
— *pendulum.*
Meesea triqvetra.
Aulacomnium turgidum.
Philonotis alpicola.
Timmia austriaca.
Polytrichum alpinum.
Myurella julacea.
— *apiculata.*
Orthothecium chryseum.
Brachythecium salebrosum.
Camptothecium nitens.
Amblystegium filicinum.
Campylium stellatum.
Hypnum revolvens.
— *uncinatum.*
— *latifolium.*
— *brevifolium.*
— *revolutum.*
— *Bambergeri.*
— *sarmentosum.*
— *turgescens.*

De allerfleste blandt de nyopdagede Arter synes at være sjeldne. Saavidt man hidtil ved, har kun *Lophozia harpanthoides, murmanica* og *violascens, Plagiochila arctica, Diplophyllum incurvum, Scapania Simmonsii, Gymnostomum læve, Fissidens arcticus, Polytrichum fragile* og *Orthothecium acuminatum* en større Udbredelse.

Det er muligt, at flere af de nye Arter ved fornyet Undersøgelse vil vise sig at have en stor Udbredelse. Muligt er det ogsaa, at en Flerhed blandt dem ikke saa snart atter bliver gjenfunden.

Foruden disse før aldeles ukjendte Arter og dertil nogle nye Varieteter findes der i Samlingen adskillige andre Arter og Varieteter, som er eiendommelige for de rent arktiske Egne, saasom hidtil kun kjendte fra et eller flere rent arktiske Lokaliteter eller, for nogle faa Arters Vedkommende, fra det nordlige Norge.

Blandt disse maa følgende nævnes:

Hepaticæ.

Marsupella arctica.
Aplozia polaris.
Mesoptychia Sahlbergii.
Odontoschisma Macounii.

Musci veri.

Andreæa papillosa.
Seligeria polaris.
Distichium Hagenii.
Rhacomitrium brevisetum.
Voitia hyperborea.
Funaria hygrometrica var. *arctica.*
Mielichhoferia Porsildii.
Bryum globosum.
— *groenlandicum.*
— *terrestre.*
— *minus.*
— *nitidulum.*
— *teres.*
Bryum agatluense.
— *langvidum.*
— *arcuatum.*
Cinclidium polare.
Aulacomnium acuminatum.
Timmia austriaca v. *arctica.*
Polytrichum hyperboreum.
Brachythecium salebrosum var. *arcticum.*
Hypnum latinerve.
— *latifolium.*
— *brevifolium.*
— *tundræ.*
— *Berggreni.*

Derimod har de fleste øvrige under disse høie nordlige Breddegrader paatrufne Moser en mere eller mindre betydelig udstrakt Udbredelse ogsaa under mere sydlige Breddegrader. Herpaa kan anføres nogle Exempler.

Blandt de omtalte Hepaticæ voxer saaledes følgende Arter ogsaa i Nord-Europa, Mellem-Europa og i Caucasus:

Marchantia polymorpha.
Chomocarpon commutatus.
Clevea hyalina.
Riccardia pingvis.
Cesia corallioides.
Aplozia sphærocarpa.
Lophozia Mülleri.
— *ventricosa.*
— *porphyroleuca.*
— *qvinqvedentata.*
Sphenolobus minutus.
Blepharostoma trichophyllum.
Ptilidium ciliare.
Anthelia julacea.
Cephalozia bicuspidata.
— *media.*
Bazzania triangularis.
Scapania æqviloba.
— *undulata.*
— *irrigua.*

Samlingens eneste Repræsentant for Gruppen Sphagnaceæ (*Sphagnum Girgensohnii*) og henved Halvparten af samtlige Musci veri findes paa dertil egnede Lokaliteter mere eller mindre almindelig udbredt over en stor Del af Jordens nordlige Halvkugle, nemlig fra de egentlige Polarlande nedover Britisk Nordamerika og de Forenede Stater, hele nordlige Del af Asien og næsten hele Europa.

Disse Arter er følgende:

Gymnostomum rupestre.
Hymenostylium curvirostre.
Dicranoweisia crispula.
Oncophorus virens.
— *Wahlenbergii.*
Dicranella heteromalla.
Dicranum brevifolium.
— *elongatum.*
— *fuscescens.*
— *Bergeri.*
— *spadiceum.*
Fissidens adiantoides.
— *osmundioides.*
Blindia acuta.
Ceratodon purpureus.
Ditrichum flexicaule.
— *glaucescens.*
Distichium capillaceum.
— *inclinatum.*
Pattia Heimii.
— *latifolia.*
Desmatodon latifolius.
— *suberectus.*
— *systylius.*
Didymodon rubellus.
Tortella fragilis.
— *tortuosa.*
Tortula aciphylla.
— *ruralis.*
— *mucronifolia.*
Schistidium apocarpum.
— *gracile.*
Grimmia anodon.
Grimmia ovata.
Rhacomitrium canescens.
— *lanuginosum.*
Amphidium lapponicum.
Orthotrichum alpestre.
— *speciosum.*
Funaria hygrometrica.
Encalypta commutata.
— *vulgaris.*
— *rhabdocarpa.*
— *contorta.*
— *apophysata.*
Tetraplodon mnioides.
Leptobryum pyriforme.
Webera cruda.
— *nutans.*
— *commutata.*
Bryum arcticum.
— *pendulum.*
— *inclinatum.*
— *lacustre.*
— *cirratum.*
— *pallescens.*
— *argenteum.*
— *cyclophyllum.*
— *pallens.*
— *ventricosum.*
Mnium affine.
— *medium.*
— *orthorrhynchum.*
— *punctatum.*
Catascopium nigritum.
Meesea triqvetra.

Meesea trichodes.
Aulacomnium palustre.
— *turgidum.*
Bartramia ityphylla.
Plagiopus Oederi.
Timmia austriaca.
— *norvegica.*
— *bavarica.*
Polytrichum alpinum.
— *juniperinum.*
— *strictum.*
— *piliferum.*
Myurella apiculata.
— *julacea.*
Leskea nervosa.
Pterygynandrum filiforme.
Thuidium abietinum.
Orthothecium chryseum.
— *rufescens.*
Brachythecium salebrosum.
Camptothecium nitens.
Eurrhynchium strigosum.
Amblystegium Sprucei.
— *filicinum.*
Isopterygium pulchellum.
Campylium polygamum.
— *stellatum.*
— *protensum.*
Hypnum revolvens.
— *uncinatum.*
— *polycarpon.*
— *exannulatum.*
— *fluitans.*
— *palustre.*
— *cordifolium.*
— *giganteum.*
— *stramineum.*
— *trifarium.*
— *turgescens.*
— *sarmentosum.*
— *revolutum.*
— *Vaucheri.*
Scorpidium scorpioides.
Hylocomium proliferum.

I Caucasus og i Himalaya gjenfindes ikke saa ganske faa Arter, for Exempel følgende:

Hymenostylium curvirostre.
Oncophorus virens.
— *Wahlenbergii.*
Ceratodon purpureus.
Distichium capillaceum.
— *inclinatum.*
Funaria hygrometrica.
Desmatodon latifolius.
Didymodon rubellus.
Tortella fragilis.
— *tortuosa.*
Tortula ruralis.
Schistidium apocarpum.
— *gracile.*
Grimmia ovata.
Amphidium lapponicum.
Orthotrichum speciosum.
Encalypta commutata.
— *vulgaris.*
— *rhabdocarpa.*
— *contorta.*
Leptobryum pyriforme.
Webera cruda.
— *nutans.*
Bryum pendulum.
— *ventricosum.*
— *pallescens.*
— *cuspidatum.*

Bryum cirratum.
— *argenteum.*
Mnium medium.
— *orthorrhynchum.*
— *punctatum.*
Aulacomnium palustre.
Bartramia ityphylla.
Plagiopus Oederi.
Timmia bavarica.
Polytrichum juniperinum.
Myurella julacea.
Leskea nervosa.
Thuidium abietinum.
Orthothecium intricatum.
Brachythecium salebrosum.
Eurrhynchium strigosum.
Isopterygium pulchellum.
Amblystegium filicinum.
Campylium protensum.
Hypnum uncinatum.
— *exannulatum.*
— *palustre.*
— *revolutum.*
— *Vaucheri.*

Ogsaa paa Jordens sydlige Halvkugle gjenfindes enkelte Arter med Voxesteder paa New-Zealand, Tasmania eller i New South Wales.

Blandt disse kan anføres følgende Arter:

Marchantia polymorpha.
Blindia acuta.
Ceratodon purpureus.
Distichium capillaceum.
Didymodon rubellus.
Tortula ruralis.
Schistidium apocarpum.
Rhacomitrium lanuginosum.
Funaria hygrometrica.
Leptobryum pyriforme.
Webera cruda.
— *nutans.*
Bryum argenteum.
Aulacomnium palustre.
Polytrichum alpinum.
— *juniperinum.*
— *strictum.*
— *piliferum.*
Amblystegium filicinum.
Campylium polygamum.
Hypnum uncinatum.
— *fluitans.*
— *sarmentosum.*

II.

Systematisk Fortegnelse.

A. Hepaticæ.

Marchantioideæ.

1. *Clevea hyalina* (Sommerf.) Lindb.

Forekommer meget sparsomt, oftest kun i en steril Thallusgren blandt andre Moser, oftest *Didymodon rubellus, Ditrichum flexicaule, Timmia norvegica, Distichium capillaceum, Hymenostylium curvirostre* og *Orthothecium chryseum.*

Arten er paavist fra følgende Voxesteder. North Lincoln: Framfjord; Kong Oscars Land: Havnefjord (c. fr.) og Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Bedford Pim Isl., samt mellem Ft. Juliane og Mt. Køla-Paulsen.

2. *Grimaldia pilosa* (Hornem.) Lindb.

Meget sjelden paa fugtig Jord. Kong Oscars Land: Havnefjord i Selskab med *Distichium capillaceum* og *Dichodontium pellucidum*, samt ved Gaasefjord i Selskab med *Aplozia polaris, Voitia hyperborea* og *Hypnum tundræ.* Paa begge Steder samlet meget sparsomt og kun paa førstnævnte Sted med Frugt.

3. *Chomocarpon commutatus* (Corda) Lindb.

Samlet kun paa et eneste Sted: Havnefjord i Kong Oscars Land, hvor den er samlet i forholdsvis righoldige, omend smaa og forkrøblede Exemplarer, dog med Frugt. Den fandtes her i Selskab med *Encalypta commutata, Bryum pallens, Orthothecium chryseum* og *Hypnum brevifolium.*

4. *Marchantia polymorpha* L.

Denne Art er bemærket kun i den vestlige Del af det undersøgte Landomraade, nemlig paa følgende Steder: Kong Oscars Land:

Gaasefjord, hvor Planten flere Gange er samlet med Frugt (Frugtskafterne kun 1 cm. lange); North Devon og de 2 nærliggende Smaaøer Borgøen og Djævleøen, fra hvilke 2 Øer ingen anden Levermose hidtil er kjendt.

Alle disse 4 til Marchantioideæ henhørende Arter er tidligere samlet i arktiske Egne, og samtlige har Nordgrændse over Spitzbergen, hvor ialfald *Grimaldia* synes at være meget sjelden.

Metzgerioideæ.

5. *Riccardia pingvis* (L.) B. Gr.

Synes ligesaa lidt her, som i andre arktiske Egne, at være almindelig forekommende; ialfald findes den kun fra følgende 3 Steder: Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Lastræadalen (♂), overalt uden Frugt og overalt blandet med mange andre Sumpmoser, specielt *Hypnum revolvens*, *Orthothecium chryseum* og *Marsupella arctica*.

Nordgrændse over Spitzbergen.

Epigoniantheæ.

6. *Cesia corallioides* (Nees) Carruth.

Kan neppe være almindelig, saasom den er hjemført meget sparsomt og kun fra følgende 2 Voxesteder: Kong Oscars Land: Gaasefjord, hvor den er samlet blandt *Andreæa papillosa*; Ellesmere Land: Glacier Valley, hvor den er funden blandt *Sphenolobus minutus*.

Arten har Nordgrændse over Spitzbergen, hvor den heller ikke synes at forekomme i Mængde.

7. *Marsupella arctica* (Berggr.) Bryhn & Kaalaas sp. n. (*Sarcoscyphus emarginatus* (Ehrh.) Hartm. v. *arcticus* Berggr.

Dioica, atro-fusca, sicca subnigra, sine nitore, elongata gracilisqve, valde regulariter et subdissite biseriato-foliata, qvoad habitum inter *Cesiam alpinam* vel *revolutam* et *Marsupellam Jørgensenii* ludens, caspites densos ad 10 cm. usqve altos formans.

Caulis tenuis, e rhizomate ramoso ascendens, parte superiore erectus, sat rigidus, siccus fragilis, ad 0,3 mm. crassus, inferne flavo-fuscus, superne fuscus vel atro-fuscus, eradiculosus, stolones numerosos, rubrotomescentes e lateribus emittens et ramos complures longos, sæpe laxefoliatos, ex axillis foliorum proferens.

Folia exacte disticha, inferiora minora et sqvamæformia, cetera valde regularia et æqvimagna, 0.8—1 mm. longa et lata, crassa et rigida, sub lente fusca vel fusco-purpurea, distantia, haud attingentia, haud decurrentia, fere horizontaliter vel sub angulum supra 60° patentia, orbicularia vel transverse ovalia, concavissima, ut fere semiglobosa, apice rotundato vix vel brevissime emarginata, lobis rotundatis, margine haud scarioso leniter inflexa.

Cellulæ foliorum basilares mediæ majores, elongato-rectangulæ, ad 0.03 mm. usqve longæ, marginem versus gradatim minores, 0.017—0.022 mm. longæ, rotundato-hexagonæ, marginales in una serie qvadratæ, sæpe intentius coloratæ, 0.01—0.012 mm. solum longæ latæqve, omnes valde collenchymaticæ, trigonis conspicuis pulchre rubris, parce chlorophylliferæ, cuticula leniter verrucosa.

Perianthia apicalia, innovatione una sæpe suffulta ideoque in caulibus vetustioribus compluria seriata, gemmas ovales formantia. Bracteæ foliis majores latioresqve sæpe apice solum retusæ. Perianthium (juvenile) bracteis brevius, intimis spatio brevi concretum, subtentoriforme, ore truncato integro vel crenulato, e cellulis elongatis, tenuibus, constructum. In perichætio uno radicellos purpureos e pagina bractei exeuntes observavimus. Archegonia pauca.

Cætera ignata.

Denne Plante blev af Prof. Berggren henført som Varietet under *Marsupella emarginata* (Ehrh.) Dum., men er sikkert paa Grund af Habitus og de eiendommelige Blade en fra *Marsupella emarginata* forskjellig udmærket god Art.

Den er indsamlet dels i rene Tuer, dels blandet med andre Sump- eller Vandmoser, saasom *Scapania undulata, Anthelia Juratzkana, Cephalozia grimsulana, Riccardia pingvis, Blindia acuta, Hypnum trifarium, Hypnum sarmentosum* og *Hypnum badium.*

Efter de indsamlede Exemplarer at dømme, synes den at forekomme rigelig, dog næsten udelukkende i den nordligste Del af det undersøgte Landomraade, nemlig i Ellesmere Land, hvor den er samlet ved Cape Rutherford, ved Cape Viole og i Lastræadalen. Fra Gaasefjord i Kong Oscars Land kun nogle faa Individer blandt *Scapania Simmonsii.*

Arten er tidligere kjendt saavel fra Grønland som fra Spitzbergen.

8. *Arnellia fennica* (Gottsche) Lindb.

Ikke sjelden paa sumpig Jord, Excrementer eller Dyrelevninger, sparsomt indsprængt blandt andre Moser, oftest *Distichium capillaceum,*

Ditrichum flexicaule, Orthothecium chryseum, Encalypta rhabdocarpa eller en eller anden Art *Mnium* eller *Bryum* eller *Cinclidium.*

Exemplarer findes fra følgende Voxesteder: North Devon: Havhestberget; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Excrementbugten og Landsend; North Lincoln: Framfjord; Ellesmere Land: Bedford Pim Isl. samt mellem Ft. Juliane og Mt. Køla-Paulsen (79° n. Br.).

De fleste Former er kraftige og vel udviklede, hyppig, som saa mange Hepaticæ i denne Samling, med meget forlængede og temmelig fjerntbladede Stilke. Exemplarerne er som Regel fuldstændig sterile, kun fra Gaasefjord findes Hunplanter.

Arten er tidligere kjendt ogsaa fra flere andre arktiske Egne, specielt Sibirien, samt fra Italien og har sin Nordgrændse over Spitzbergen, hvor den vistnok forekommer meget sparsomt.

9. *Aplozia pumila* (With.) Dum.

Meget sjelden og med Sikkerhed paavist kun fra et eneste Sted paa Ellesmere Land, nemlig Framshavn under 78° 45′ nordlig Bredde, hvor den fandtes med Perianthier, men sparsomt indblandet mellem *Aplozia polaris, Diplophyllum incurvum, Ceratodon purpureus, Bryum lacustre* og *Orthothecium strictum.*

10. *Aplozia atrovirens* (Schleich.) Dum.

Sikre Exemplarer findes fra et Par Steder i Kong Oscars Land: Sydkapfjord og Gaasefjord under 76° 30′ nordlig Bredde, hvor Planten er samlet med Perianthier, dels i mere ublandede smaa Tuer, dels meget sparsomt indblandet blandt Tuer af *Bryum minus, Bryum elegans, Myurella julacea* og *Orthothecium strictum.*

Var. gracilis Bryhn & Kaalaas var. nov.

Differt a forma typica gracilitate, colore flavo-viridi et foliis dissitis fere orbicularibus.

Denne nye Varietet synes i disse høinordiske Egne at forekomme mere hyppig, end Hovedarten. Den er paavist fra følgende Steder. Kong Oscars Land: Gaasefjord og Landsend; Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Planten forekommer som Regel sparsomt indsprængt i Tuer af andre Moser, oftest *Tetraplodon mnioides, Voitia hyperborea, Encalypta commutata, Timmia norvegica* og *Myurella apiculata.* Exemplarer med vel udviklet Frugt kun fra det sidst nævnte Voxested.

Saavel *Aplozia pumila* som *Aplozia atrovirens* har deres tidligere kjendte Nordgrændse ved 70—71° paa Grønlands Østkyst.

11. *Aplozia polaris* (Lindb.).

Synes at være mere almindelig udbredt, end de øvrige Arter inden Slægten. Den er nemlig paavist fra følgende Steder. Kong Oscars Land: Havnefjord, Sydkapfjord (♂), Gaasefjord (c. perianth.) og Isachsens Fjord; Ellesmere Land: Framshavn (c. fr.), Cape Rutherford, Glacier Valley og Beitstadfjorden.

Den er imidlertid paa de fleste Steder samlet yderst sparsomt og indsprængt i Tuer af andre Moser, fornemmelig *Blepharostoma trichophyllum*, *Cephalozia grimsulana* og *verrucosa*, *Odontoschisma Macounii*, *Blindia acuta*, *Ditrichum flexicaule*, *Tortella tortuosa*, *Philonotis alpicola*, *Orthothecium strictum* og *chryseum* samt forskjellige Arter af Slægten *Bryum*.

Med den dioike Blomsterstand slutter denne Art sig nøie til foregaaende Art, især dennes Varietet *gracilis*.

Den er forskjellig ved de tætbladede Stilke og de næsten cirkelrunde Blade, der langs Randen er kantede med en Rad rectangulære Celler. Alle Bladceller er noget fortykkede, og der findes tydelige Trigoner i Cellehjørnerne, hvad der ikke er Tilfældet med hverken *Aplozia atrovirens* eller *Aplozia pumila*. Ogsaa Perianthiet har en forskjellig Form, idet det er kølleformigt.

Arten er tidligere kjendt kun fra Grønland og Spitzbergen.

12. *Aplozia sphærocarpa* (Hook.) Dum. var. *lurida* (Dum.).

Sikre Exemplarer findes kun fra et eneste Voxested, nemlig Gaasefjord i Kong Oscars Land under 76° 30′ nordlig Bredde.

Sandsynligvis hører ogsaa Exemplarer fra Lastræadalen og Cape Rutherford i Ellesmere Land (78° 50′ n. B.) herhen; men kun Exemplarer fra førstnævnte Sted er forsynede med Perianthier. Planten voxer her i Selskab med *Cephalozia verrucosa*, *Aulacomnium turgidum*, *Campylium stellatum* og andre Sumpmoser.

Artens tidligere kjendte Nordgrændse var ved 70—71° paa Grønlands Østkyst og i Finmarken.

13. *Lophozia Mülleri* (Nees) Dum.

Exemplarer findes fra følgende Steder: North Lincoln: Framfjord; Kong Oscars Land: Renbugten og Gaasefjord; Ellesmere Land: Cape Viole (c. fr.), Glacier Valley, mellem Ft. Juliane og Mt. Køla-Paulsen (c. per.) samt ved Beitstadfjorden.

Denne Plante kan nævnes som et Exempel, blandt de mange, paa, hvordan Mosearterne i de arktiske Lande formaar at adaptere sig efter Omgivelserne. Den er nemlig observeret i Selskab saavel med udprægede Sump- eller Vandplanter, f. Ex. *Scorpidium scorpioides, Hypnum turgescens* og *latifolium, Catascopium nigritum, Meesea triqvetra* og *Cephalozia grimsulana,* som med Arter, der i Almindelighed voxer paa tørre Steder, f. Ex. *Arnellia fennica, Hymenostylium curvirostre,* forskjellige Arter af Slægten *Encatypta* samt *Hypnum Vaucheri.*

Endvidere er den ogsaa observeret i Selskab med kalkfiendtlige Moser, f. Ex. *Rhacomitrium lanuginosum* og *Campylium stellatum,* uagtet den selv er en Kalkplante, der i Almindelighed er samlet i Selskab med Arter, der foretrækker Kalk, blandt hvilke kan anføres, foruden de fleste blandt de ovenfor nævnte, *Distichium capillaceum, Myurella julacea* og *Amblystegium Sprucei.*

Var. bantryensis (Hook.) Kaal.

Findes kun fra et eneste Voxested, nemlig Havnefjord i Kong Oscars Land, hvor den er samlet i vel udviklede og karakteristiske Exemplarer sammen med *Blepharostoma trichophyllum, Ditrichum flexicaule* og *Orthothecium chryseum.*

Lophozia Mülleri er tidligere samlet ogsaa i andre arktiske Egne: Finmarken, Jan Mayen, Grønland og Spitzbergen.

14. *Lophozia heterocolpa* (Thed.) Howe.

Exemplarer findes fra følgende Steder. Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord (c. per.); Ellesmere Land: Lastræadalen, Cape Viole, Bedford Pim Isl., mellem Ft. Juliane og Mt. Køla-Paulsen samt ved Beitstadfjorden under 79° nordlig Bredde.

Denne Art synes altsaa at være omtrent lige udbredt som *Lophozia Mülleri,* og den forekommer oftest paa samme Maade indsprængt i enkelte Individer blandt Tuer af andre Moser, oftest *Blepharostoma trichophyllum, Cephalozia verrucosa, Lophozia harpanthoides, Distichium capillaceum, Ditrichum flexicaule, Cinclidium subrotundum* og *Orthothecium chryseum.*

Disse arktiske Exemplarer adskiller sig fra europæiske Former derved, at de kun undtagelsesvis har de hos disse saa almindelige forlængede Endeskud med smaa treradede Blade, der bærer Hobe af Gonidier, og derfor er ganske meget forandrede i Form og Størrelse. Derimod findes

meget almindelig Gonidier paa Spidserne af Plantens almindelige Blade, der ikke er synderlig forandrede i Udseende paa Grund heraf.

Artens tidligere kjendte Nordgrændse ved 70—71° i Sibirien, Finmarken og Østgrønland.

15. *Lophozia harpanthoides* Bryhn & Kaalaas sp. nov.

Flavo-viridis, fusco-viridis vel fuscescens, gregata vel surculis singulis inter alios muscos sparsis solitaria.

Caulis 10—20 mm., rarius ad 30 mm., altus, flavo-viridis vel fuscescens, sat rigidus, flexuosus, radicellis densis hyalinis vel leniter flavescentibus radicellosus, simplex vel ramum unum alterumve longum emittens, sectione transversa ovalis [e dorso ad ventrem compressus], diametro usqve ad 0.28 mm. metiens, cellulas corticales unistratas, fuscescenti-incrassatas, exhibens.

Folia vulgo dense conferta, rarius magis distantia, inferioribus exceptis æqvimagna, obliqve affixa, haud decurrentia, erecto-patentia, ad anticum valde vergentia, ovato-qvadrata vel rotundato-qvadrata, profunde concava, margine ventrali magis qvam dorsali curvato, usqve ad 1 mm. longa et 0.8 mm. lata, ad sextam—qvartam incisa. Incisura foliorum, nunqvam gibba, varia, vulgo rotundato-semilunaris, ut in foliis *Harpanthi Flotowii* (unde nomen specificum), nonnumqvam latior et brevior, qvam semilunaris, rarissime in folio uno alterove acuta. Lobi foliorum ambo pro more parvi, obtusi vel rotundati, incurvi et conniventes, rarius (præcipue in foliis inferioribus), acutiores.

Cellulæ foliorum omnes rotundato-multangulæ, e medio ad marginem paullum decrescentes, 0.024—0.015 mm. magnæ, valde flavido — vel fuscescenti-incrassatæ, trigonis maxime conspicuis, lumine sæpe satis distincte stellariformi, corpora æthereo-oleosa, exinde mire magna, includentes.

Foliola ubiqve præsentia, aut integra, subulato-lanceolata, dentibus duobus e basi egressis munita, aut bipartita, semper erecto-adpressa, apice incurvo, e serie una cellularum formato.

Gonidia rara, in apicibus foliorum posita, subreniformia, purpurea.

Cætera ignota.

Hæc species nova *Lophoziæ heterocolpæ* certe affinis; distincte diversa tamen videtur præsertim forma et magnitudine incisuræ foliorum, cellulis minoribus multo magis incrassatis et formatione gonidiorum.

Denne Art forekommer omtrent paa samme Maade, som de to foregaaende Arter, nemlig som Regel indsprængt i Tuer af andre Moser, hovedsagelig saadanne, der foretrækker kalkholdigt Underlag; men den

er uden nogen Sammenligning mere almindelig udbredt og forekommer meget mindre sparsomt, end disse og den følgende beslægtede Art. Overgangsformer mellem denne og de beslægtede Arter er ikke iagttagne.

Exemplarer findes fra følgende Steder: North Lincoln: Framfjord under 76° 20′ nordlig Bredde; Kong Oscars Land: Havnefjord, Gaasefjord, Renbugten, Excrementbugten og Landsend; North Kent (350 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Glacier Valley, Lastræadalen, Bedford Pim Isl., Skrællingøen og Cape Rutherford under 78° 50′ nordlig Bredde.

16. *Lophozia badensis* (Gottsche) Schiffn.

Denne er i disse arktiske Egne betydelig mere sjelden, end de foran omtalte beslægtede Arter. Den findes kun fra et Par Steder, nemlig Havnefjord og Gaasetjord i Kong Oscars Land og fra Framshavn i Ellesmere Land under 78° 45′ nordlig Bredde.

Ogsaa denne Art findes i denne Samling som Regel spredt blandt andre Moser og overalt uden Frugt. Den tidligere kjendte Nordgrændse var ved omtrent 70° i Finmarken og Sibirien.

17. *Lophozia obtusa* (Lindb.) Evans.

Meget sjelden. Sikre Exemplarer findes kun fra Lastræadalen i Ellesmere Land under 78° 45′ nordlig Bredde, hvor den er observeret krybende over *Dicranum spadiceum* og *Philonotis alpicola*, blandet med *Lophozia ventricosa*, *qvinqvedentata* og *polita*, *Odontoschisma Macounii* og *Cephalozia media*.

Planterne er mere spæde og fjerntbladede, end europæiske Exemplarer af Arten, forøvrigt fuldstændig overensstemmende.

Arten var i Amerika før kjendt kun fra Alaska og dens tidligere kjendte Nordgrændse var ved 70°, i Finmarken.

18. *Lophozia ventricosa* (Dicks.) Dum.

Denne Art hører blandt de mest almindelige Moser i disse Egne. Den er under mange forskjellige Former indsamlet i mere eller mindre talrige Exemplarer fra de fleste undersøgte Voxesteder. Som Regel forekommer den indsprængt i Mosetuer enkeltvis eller i smaa Klynger paa nogle faa Individer; kun undtagelsesvis forekommer den mere rigelig.

De fleste Former er sterile, spæde og forkrøblede, med smaa og spredtstillede Blade. Frugtbærende Exemplarer kun fra Cape Viole i Ellesmere Land (78° 40′ n. Br.). Derimod er Planten næsten altid rigelig forsynet med Gonidier.

Arten har sin Nordgrændse over Spitzbergen.

19. *Lophozia porphyroleuca* (Nees).

Meget sjelden og kun fra 2 Steder i Ellesmere Land: Skrællingøen, hvor den voxer meget sparsomt blandt *Dicranum elongatum*, endvidere fra Eskimopolis, hvor den er samlet i rigelige, vel udviklede, dog sterile, Exemplarer i Selskab med *Dicranum spadiceum*, *Polytrichum strictum* og *alpinum* samt *Cephalozia grimsulana*. Begge Steder ligger under 78° 50′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 70—71° i Sibirien, Grønland og Finmarken.

20. *Lophozia alpestris* (Schleich.) Evans.

Forekommer paa samme Maade, som *Lophozia ventricosa*, og ligesom denne oftest i tynde og slappe Former med smaa og spredtstillede Blade, som Regel fuldstændig sterile, men med en rigelig Mængde Gonidier.

Arten er mindre almindelig, end *Lophozia ventricosa*. Exemplarer, der maa henføres hertil, findes fra følgende Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Gaasefjord og Renbugten; North Kent (350 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole (c. fr.), Cape Rutherford, Bedford Pim Isl. og Skrællingøen samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Nordgrændse over Spitsbergen.

21. *Lophozia Wenzelii* (Nees) Stephani.

Ogsaa denne Art forekommer som Regel sparsomt indsprængt i Mosetuer, bestaaende af den mest forvirrede Blanding af Sumpmoser.

Exemplarer findes i Samlingen fra Havnefjord og Gaasefjord i Kong Oscars Land og fra følgende Steder i Ellesmere Land: Framshavn, Bedford Pim Isl. og Eskimopolis.

Blandt disse er kun Exemplarer fra Havnefjord og Eskimopolis fuldt lig europæiske Former, de øvrige er smaa, spæde og giver Indtryk af at være forkrøblede.

Arten er, foruden i flere andre arktiske Lande, ogsaa paavist fra Spitsbergen, hvor den har sin Nordgrændse.

Blandt de indsamlede Exemplarer af disse 4 sidst omtalte nær beslægtede Arter, *Lophozia ventricosa*, *porphyroleuca*, *alpestris* og *Wenzelii*, findes der ganske vist typiske Exemplarer, eller ialfald lignende de fra Europa beskrevne Former i saa høi Grad, at der ikke kan være Tvivl om, hvor de skal føres hen.

Men der findes ogsaa meget talrige Overgangsformer, der ikke med absolut Sikkerhed kan bestemmes.

22. *Lophozia murmanica* KAALAAS sp. nov.

Cæspitosa, cæspitibus laxis, mollibus spongiosisve, pallide viridis vel olivacea, 2—3 cm. longa et cum foliis 1.6 mm. lata.

Caulis tenuis, 0.3 mm. crassus, pallide flavo-viridis, partibus vetustioribus subfusco-flavidis, postice concolor, rarius leniter purpurascens, parum flexuosus, parte superiore adscendens, subtus tota longitudine parum hyalino-radicellosus, ramosus, ramis sæpe fasciculatis, sectione transversa ellipticus, postice (subtus) subplanus cellulis superficialibus circiter 10, antice rotundatus, cellulas superficiales 14, vel plures, ostendens, cellulis totius caulis 0.02—0.035 mm. latis, omnibus hyalinis, exceptis superficialibus posticis interdum exigue incrassatis et purpurascentibus.

Folia magis minusve dissita, inferiora paullum confertiora, pallide viridia, translucentia, laxa tenuiaqve, obliqve, fere longitudinaliter affixa, ad anticum parum vergentia, rotundato-qvadrata, latiora qvam longiora, ad basin distincte angustiora, sed haud cuneata, usqve ad 0.77 mm. longa et 0.8 mm. lata, concava, antice pro more vix decurrentia, folio uno alterove autem longe angustissimeqve decurrenti inqve ala extrema dentem longum paraphylloideum gerenti, apice vulgo bifida, sæpe autem trifida vel rarissime qvadrifida.

Incisura foliorum variabilis, ut plurimum brevis, lata et rotundata, rarius ad partem folii tertiam extensa ideoqve acutior et angustior.

Lobi foliorum ut plurimum brevi et obtusiusculi, interdum acutiores vel apiculati, vulgo inæqvales, lobo postico majore magisqve obtuso, subincurvi.

Margines foliorum, et posticus et anticus, dente uno alterove, præsertim ad basin, sæpe muniti. Folia trifida vulgo profundius secta, incisuris acutis lobisqve acutioribus.

Foliola satis crebra, præprimis in parte caulis superiore, magnitudine formaqve variabilia, subulata vel lanceolata, integra.

Cellulæ foliorum basilares elongato-rectangulæ, usqve ad 0.035 mm. longæ, mediæ rotundato-qvadratæ vel rotundato-multangulæ, circiter 0.028 mm. longæ latæqve, margtnales minores (0.02 mm.), omnes translucentes et parce chlorophylliferæ, parum et conformiter incrassatæ, trigonis vix conspicuis, cuticula lævissima.

Cetera desunt.

Species certe *Lophoziæ Wenzelii* affinis et forsan ejus varietas; diversa tamen videtur præsertim foliis sæpe trifidis et denticulatis, nec non foliolorum præsentia.

Specimina originalia ad Litsam, Lapponiæ murmanicæ, a clarissimo BROTHERO mense Augusto anni 1887 lecta et ab eo missa, jam anno 1888 KAALAAS denominavit, sed adhuc descriptionem haud publicavit.

Denne nye forhen ikke publicerede Art findes i Samlingen kun fra 2 Steder, nemlig fra Gaasefjord i Kong Oscars Land, hvor Planten er indsamlet yderst sparsomt i nogle faa Individer, indsprængt i Tuer af *Lophozia harpanthoides, Amblystegium Sprucei, Mnium orthorrhynchum, Brachythecium salebrosum* v. *arcticum* og *Tortula ruralis.* Det andet Voxested er Cape Rutherford i Ellesmere Land under 78° 50′ nordlig Bredde, hvor Planten ogsaa er samlet sparsomt, dels krybende over *Aulacomnium turgidum,* dels indsprængt i Tuer, bestaaende af *Webera cruda, Bryum arcticum, Distichium Hagenii* og *Brachythécium salebrosum* v. *arcticum.*

Exemplarer fra Cape Rutherford er mere forlængede og mere fjerntbladede, end Originalexemplarer fra Litsa, men de har den samme bleggrønne Farve, den samme Bladform og samme Cellevæv. Exemplarer fra Gaasefjord har meget ofte trefligede Blade og samtidig noget større Bladceller.

Det ovenfor nævnte Sted Litsa paa Murmankysten er beliggende under 68° 40′ nordlig Bredde. Denne nye Arts Nordgrændse bliver altsaa strax betydelig forrykket.

23. *Lophozia excisa* (DICKS.) DUM.

Forekommer meget sjelden, undertiden i smaa rene Tuer, oftest sparsomt indsprængt.

Sikre Exemplarer findes fra følgende 2 Steder i Kong Oscars Land: Havnefjord, hvor Planten er samlet, rigt forsynet med Perianthier i Selskab med *Cephalozia verrucosa, Tortula ruralis* og *Camptothecium nitens* samt *Hypnum revolutum* og *uncinatum* var. *orthothecioides*; og fra Gaasefjord under 76° 45′ nordlig Bredde i 350 Meters Høide over Havet, i Selskab med *Distichium capillaceum, Tortula ruralis, Webera cruda, Bartramia ityphylla* og *Hypnum revolutum.* Paa dette sidstnævnte Sted er Planten samlet med vel udviklet Frugt.

Artens tidligere kjendte Nordgrændse var 70° 10′ ved Tolstoinos i Sibirien.

24. *Lophozia marchica* (NEES) STEPH.

Meget sjelden og kun i enkelte sterile Individer indsprængt i tætte Tuer af andre Sumpmoser. De iagttagne Exemplarer er muligens noget mindre frodige, end europæiske, men forresten meget vel stemmende med Artens typiske Form.

Exemplarer findes fra Gaasefjord i Kong Oscars Land og fra Beitstadfjorden i Ellesmere Land under 79° nordlig Bredde.

Paa det førstnævnte Sted er den samlet i Selskab med *Cinclidium hymenophyllum* og *arcticum*, *Timmia austriaca* f. *arctica*, *Orthothecium chryseum*, *Camptothecium nitens* og *Hypnum intermedium*.

Paa det andet Sted fandtes den i tætte Tuer, bestaaende af *Aplozia polaris*, *Diplophyllum incurvum*, *Didymodon alpigena* og *rubellus*, *Bryum calophyllum* og *pendulum*, *Cinclidium subrotundum*, *Meesea triqvetra*, *Philonotis alpicola*, *Orthothecium strictum*, *Hypnum brevifolium*, *Scorpidium scorpioides* og flere andre.

Denne sjeldne Art er ny for de arktiske Lande. Tidligere er den neppe samlet nordenfor Jemtland i Sverige under omtrent 63° nordlig Bredde.

25. *Lophozia violascens* BRYHN & KAALAAS sp. nov.

Plantæ steriles inter alios muscos sparsæ vel cæspites parvos, intricatos, subfusco-purpureos vel violascentes, superne albido-virides, formantes, crasse filiformes, simplices, 1—1.5 cm. altæ.

Caulis erectus, pro ratione crassus et carnosus, sed tenax, inferne subfusco-purpureus, superne violascens vel interdum albido-viridis, subtus tota longitudine dense radicellosus, radicellis hyalinis, 0.2—0.4 mm. crassus, e cellulis tenuimembranaceis ad 0.028 mm, latis et usqve ad 0.07—0.1 mm. longis ædificatus.

Folia inferiora sat dissita, parva, diametrum caulis vix superantia, apicibus sæpe purpureo-tinctis, superiora minus remota, sensim majora, violascentia, apicalia confertiora, æqvimagna, vulgo albido-viridia, omnia fere transverse affixa, erecto-patentia vel leniter appressa, ad anticum paullo vergentia, tenuia et translucentia, concava, qvadrata vel rotundato-qvadrata, infimis exceptis vulgo 0.6 mm. longa, marginibus integerrimis vel in foliis summis hic illic erosis, apice truncata vel breviter emarginata, incisura perlata et rotundata, nonnunqvam tamen angustiore et profundiore, lobis foliorum ambobus brevibus et obtusis, haud raro inæqvalibus, rarissime uno alterove acutato.

Cellulæ foliares rectangulæ—multangulæ, 0.03—0.035 mm. magnæ, translucentes, fere omnino echlorophylliferæ, tenuimembranaceæ, trigonis

vix conspicuis, cuticula foliorum juniorum lævissima, vetustiorum leniter striata.

Foliola pro more nulla, interdum in summis apicibus obvia, parva, subulata.

Gonidia rara, magna, ovata, violascentia, e marginibus foliorum erosis egressa.

Perfecte sterilis solum lecta.

Denne nye Art har et ganske eiendommeligt Udseende, og den synes ved Farve, Bladform og Cellevæv at være skarpt adskildt fra alle andre hidtil kjendte Arter inden Slægten. Muligens er den nærmest beslægtet med *Lophozia grandiretis* (Lindb.), om hvilken den minder, specielt med Hensyn til Cellevæv.

Planten er paavist meget sparsomt og kun fra 2 Steder, nemlig Havnefjord i Kong Oscars Land under 76° 30′ nerdlig Bredde og Bedford Pim Isl. i (eller ved) Ellesmere Land under 78° 40′ nordlig Bredde.

Ved Havnefjord er den samlet i Selskab med *Lophozia ventricosa, Cephalozia verrucosa, Bazzania triangularis, Ditrichum flexicaule, Cinclidium polare, Orthothecium chryseum* og *Hypnum Bambergeri.*

Paa Bedford Pim Isl. fandtes den sammen med *Lophozia alpestris, harpanthoides* og *qvadriloba, Blepharostoma trichophyllum, Anthelia julacea, Cephalozia verrucosa, Myurella julacea* og *Orthothecium chryseum.*

26. *Lophozia Baueriana* Schiffner.

Af denne Art er kun ganske faa sterile Exemplarer plukket ud af Tuer, bestaaende af en Mangfoldighed af Sumpmoser. Exemplarer, samtlige fuldstændig lig europæiske, findes fra Vest-Grønland: Egedesminde; North Llncoln: Framfjord; Ellesmere Land: Framshavn og Glacier Valley under 78° 45′ nordlig Bredde.

Arten er ny for Amerika og tidligere neppe samlet nordenfor Sarjek i svensk Lappland under omtrent 67° 20′ nordlig Bredde.

27. *Lophozia qvinqvedentata* (Huds.) Cogn.

Denne Art er ved Siden af *Lophozia ventricosa, Blepharostoma trichophyllum* og *Cephalozia verrucosa* den mest almindelige Levermose i disse Egne. Fra de fleste undersøgte Steder er hjembragt mere eller mindre talrige Exemplarer. Dog forekommer den sjelden i rene Tuer, næsten udelukkende i Blandingstuer. Exemplarer med Perianthier findes i Samlingen kun fra Gaasefjord.

De allerfleste indsamlede Exemplarer tilhører var.: *turgida* LINDB., eller Overgangsformer mellem denne og Hovedarten.

Denne arktiske Varietet, der ogsaa findes almindelig udbredt i Skandinaviens nordlige og alpine Egne, er i udprægede Former særdeles afvigende fra den typiske Hovedart. Den er, som bekjendt, karakteriseret ved den gulbrune eller brune Farve, de korte Stilke, de tættere taglagte og mere fremadvendte Blade, hvorved Planten næsten bliver trind, den mere udsvingede Ventralrand, de næsten ligestore, mere brede og mindre tilspidsede Bladlapper og endelig de uhyre collenchymatisk fortykkede Celler med ofte udpræget stjerneformet Lumen.

28. *Lophozia Floerkei* (W. M.) SCHIFFN.

Hører blandt de mindst almindelige Arter i disse Egne, og den er kun samlet paa nogle faa Steder i Ellesmere Land: Framshavn, Glacier Valley og Lastræadalen, overalt sparsomt indsprængt i Tuer af *Dicranum congestum* eller *Rhacomitrium lanuginosum*.

Baade denne Art og *Lophozia qvinqvedentata* er tidligere vel kjendte som Beboere af Polarlande, og de har begge deres Nordgrændse over Spitzbergen.

29. *Lophozia Binsteadii* (KAAL.) EVANS.

Sjelden og sammen med *Sphenolobus minutus, Blepharostoma trichophyllum* og *Cephalozia verrucosa* sparsomt indsprængt i tætte Tuer af *Dicranum spadiceum* og *Ditrichum flexicaule* paavist kun fra følgende faa Voxesteder. Kong Oscars Land: Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Bedford Pim Isl. og Cape Rutherford under 78° 50′ nordlig Bredde.

De fleste Exemplarer er ganske typiske, kun en Del af Exemplarerne fra Gaasefjord og fra Framshavn synes at danne Overgangsformer til *Lophozia qvinqvedentata* var. *turgida*, der uden Tvivl er nær beslægtet med nærværende Art.

Lophozia Binsteadii er tidligere kjendt kun fra den skandinaviske Halvø og fra Grønland. Dens tidligere kjendte Nordgrændse var omtrent ved 73° paa Grønlands Østkyst.

30. *Lophozia qvadriloba* (LINDB.) EVANS.

Exemplarer af nogenlunde typiska Former, mere eller mindre fuldstændig lig Exemplarer af den Lindbergske Plante fra Skandinavien, findes kun fra følgende faa Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Glacier Valley. Kun fra sidstnævnte Sted findes mere rigelige Exemplarer og med Perianthier.

Meget mere almindelig udbredt, end den typiske Form, er:

var. *heterophylla* Bryhn & Kaalaas var. nov.

Differt e typo gracilitate (caulis cum foliis vix ultra 0.75 mm. crassus), colore fuscescenti-nigricante. caulibus distincte tereti-foliatis, foliis approximatis, confertis vel imbricatis, vario modo profunde lobatis, lobis vulgo binis vel ternis vel rarius qvaternis.

E varietate: *glareosa* Jørg. caulibus tereti-foliatis marginibusqve loborum pro more reflexis diversa.

De mest udprægede Former af denne nye Varietet er habituelt særdeles forskjellige fra Hovedarten. De har ofte stor Lighed med *Sphenolobus minutus*.

Men ved Undersøgelse af et større Materiale findes enhver mulig Overgangsform fra den simpleste Form med overveiende tofligede Blade til den næsten fuldt typiske Hovedform, endog i samme Tue, ja endogsaa paa samme Individ. Der er saaledes gjentagne Gange paa de længste Individer iagttaget en vis regelmæssig Afvexling mellem tofligede og tre- eller firefligede Blade. Først kommer 4—6 Par tofligede Blade, derpaa 4—6 Par tre- eller firefligede, saa atter 4—6 Par tofligede o. s. v. Dette synes at tyde paa, at de tofligede Blade fremkommer ved hver Vegetationsperiodes Begyndelse og de tre- og firefligede først senere.

Varieteten *heterophylla* synes at være almindelig udbredt i disse Egne over hele Distriktet; men den synes, ligesom ogsaa Hovedarten, næsten overalt at voxe sparsomt og indsprængt blandt Sumpmoser.

Exemplarer findes fra følgende Steder. North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Renbugten, Gaasefjord og Landsend; North Kent (350 M. o. H.); Ellesmere Land: Framshavn, Cape Rutherford, Lastræadalen, Bedford Pim. Isl. og Beitstadfjorden, overalt i fuldstændig steril Tilstand.

Lophozia qvadriloba er, foruden i Europa og i Sibirien, desuden ogsaa forhen samlet i Alaska, hvor den sandsynligvis, efter Beskrivelsen af de dersteds indsamlede Exemplarer at dømme, forekommer som Varieteten *heterophylla*, samt paa Spitzbergen (Nordgrændse).

31. *Lophozia polita* (Nees).

Meget sjelden og meget sparsomt indsprængt i Mosetuer.

Ellesmere Land: Framshavn i Selskab med *Lophozia Binsteadii*, *Odontoschisma Macounii*, *Cephalozia verrucosa*, *Distichium Hagenii*,

Bryum calophyllum, Hypnum tundræ og andre. Foruden ved Framshavn kun i Lastræadalen, hvor den er samlet i Selskab med *Lophozia Wenzelii, Odontoschisma Macounii, Oncophorus Wahlenbergii, Dicranum spadiceum, Cinclidium hymenophyllum* og flere andre.

Arten er tidligere kjendt, foruden fra Europa, ogsaa fra Spitzbergen, hvor den har Nordgrændse ved 80° 30′; derimod er den endnu ikke kjendt fra Sibirien, Grønland eller Alaska.

32. *Lophozia Kunzeaua* (Hübener) Schiffn.

Denne findes i Samlingen kun fra et eneste Sted, nemlig fra Egedesminde paa Grønlands Vestkyst, hvor den er samlet i forholdsvis rigelige, kraftige og vel udviklede, omend sterile Exemplarer. Arten er tidligere kjendt fra Grønland og andre arktiske Lande, ogsaa Spitzbergen (Nordgrændse).

33. *Mesoptychia Sahlbergii* Lindb.

Yderst sjelden, kun fuldstændig steril og yderst sparsomt indsprængt i Mosetuer.

Kong Oscars Land: Renbugten, hvorfra er paavist 2 Individer blandt *Lophozia qvinqvedentata* v. *turgida*, samt Gaasefjord, hvor den er paavist noget mindre sparsomt i Tuer, bestaaende af *Blepharostoma trichophyllum, Cephalozia verrucosa, Arnellia fennica, Lophozia ventricosa* og *qvinqvedentata, Distichium capillaceum, Mnium orthorrhynchum* og *Blyttii, Eucalypta commutata, Aulacomnium acuminatum, Camptothecium nitens* og *Campylium stellatum*.

Paa begge Steder er den samlet under omtrent 76° 40′ nordlig Bredde.

Denne meget sjeldne Art er tidligere kjendt kun fra Sibirien (Jeniseidalen) og fra Alaska, paa begge Steder under 68—69° nordlig Bredde.

34. *Sphenolobus minutus* (Crantz) Steph.

Blandt de mest almindeligt forekommende Arter. Mere eller mindre talrige Exemplarer er indsamlet fra de fleste undersøgte Steder. Den findes dog sjelden i nogenlunde rene Tuer, mest enkeltvis indsprængt, specielt i tætte Tuer af *Dicranum elongatum*. De fleste Exemplarer er tynde og traadformede, ofte næsten haarfine, med meget concave Blade og ofte indbøiede Bladlapper. Exemplarer med Perianthier kun fra Gaasefjord og Cape Viole.

Arten er tidligere vel kjendt som en arktisk Plante og samlet i de fleste undersøgte Egne, ogsaa paa Spitzbergen (Nordgrændse).

35. *Plagiochila arctica* Bryhn & Kaalaas sp. nov.

Parce gregata, vel inter alios muscos surculis singulis sparsa, flavo-viridis vel fusco-viridis, partibus vetustioribus sæpe fuscis, suberecta, 1—2, rarius ad 5 cm. alta et cum foliis explanatis ad 2 mm. lata, pro more valde ramosa, densifoliatis ramis ut plurimum brevibus et subfasciculatis, rarius subsimplex, fere filiformis laxioreqve foliata, e latere magis minusve complanata.

Caulis e rhizomate repente suberectus, flexuosus, apice sæpe reclinatus, flavo-fuscus, circiter 0.3 mm. crassus, subtus radicellis satis densis, hyalinis vel leniter flavescentibus, sublævibus obteetus, pro more ramos breves, erectos, sæpe subfasciculatos gerens et e latere ventrali stolones complures crassos et rigidos, dense radicellosos, sub angulum obtusum in terram demittens, sectione transversa ovalis, e dorso ad ventrem compressus, in diametro a cellulis circiter 12, qvarum corticalibus uni-vel bistratis minoribus, 0.015—0.02 mm. magnis, ceteris qvoad magnitudinem irregularibus, 0.02—0.05 mm. longis latisqve, tenuimembranaceis, compositus.

Folia caulis ramorumqve tenuia, inferiora parva et plus minusve dissita, superiora accrescentia et dense conferta, omnia obliqve affixa, antice decurrentia, ut plurimum erecta et subappressa, e latere complanata (fere ut in *Nardia compressa*), margine dorsali pro more leniter reflexo, ventrali subplano vel parum inflexo, rotundato-reniformia vel rarius rotundato-ovalia, semper latiora qvam longiora, usqve ad 0.28 mm. lata et 0.22 mm. longa, concava, margine integra.

Folia irregularia, apice truncata vel leniter emarginata, margine angulata vel dentibus latis et brevibus remote dentata, interdum etiam visa.

Cellulæ foliorum marginales in serie una subqvadratæ, 0.028 mm. magnæ, basilares elongato-multangulæ, circiter 0.046 mm. longæ, ceteræ per totum folium rotundato-multangulæ, æqvimagnæ, circiter 0.035 mm., omnes fere echlorophylliferæ, tenuimembranaceæ, parietibus parum et subconformiter incrassatis, trigonis haud conspicuis, cuticula leniter verrucosa.

Foliola sat crebra, subulato-lanceolata, erecta vel subappressa, interdum bifida, ad 0.3 mm. longa.

Cætera ignota.

E formis minoribus minimisqve *Plagiochilæ asplenioides*, valde variabilis, notis supra relatis satis superqve diversa videtur, præsertim foliis transverse complanatis, margine foliorum ventrali haud revoluto, ut et cellulis foliorum multo majoribus, fere echlorophylliferis.

E *Pedinophyllo interrupto* differt præprimis rhizomate repente et foliis decurrentibus, complanatis, subreniformibus, nec non stolonibus descendentibus numerosis.

Denne nye Art synes at være almindelig udbredt, specielt over den sydlige Del af det undersøgte Landomraade. Meget sjelden er den samlet noget mere rigelig. Som Regel findes den sparsomt indsprængt i Mosetuer og oftest i Selskab med flere eller færre blandt følgende nedenfor opregnede Arter:

Aplozia polaris, Arnellia, Lophozia harpanthoides og *qvadriloba, Sphenolobus, Odontoschisma Macounii, Cephalozia pleniceps* og *verrucosa, Blepharostoma trichophyllum, Diplophyllum incurvum, Hymenostylium, Oncophorus Wahlenbergii, Distichium capillaceum, Didymodon rubellus, Ditrichum flexicaule, Tortula ruralis, Encalypta contorta* og *rhabdocarpa, Plagiopus, Mnium orthorrhynchum, Timmia austriaca* og *norvegica, Orthothecium chryseum, Camptothecium nitens, Isopterygium pulchellum, Hypnum tundræ* og *Vaucheri.*

Arten voxer altsaa væsentlig sammen med Planter, der foretrækker kalkholdigt Underlag, eller ialfald ikke er kalkfiendtlige.

Exemplarer findes fra følgende Voxesteder.

North Lincoln: Framfjord under 76° 20′ nordlig Bredde; Kong Oscars Land: Havnefjord, Gaasefjord og Renbugten; North Kent (300 M. o. h.); N. V. Grønland: Foulkefjord; Ellesmere Land: Cape Rutherford og Beitstadfjorden under 79° nordlig Bredde.

(*Plagiochila asplenioides* er i det arktiske Amerika kjendt kun fra Alaska og har sin hidtil kjendte Nordgrændse i Finmarken ved 70°. *Pedinophyllum interruptum* angives at være samlet paa Øen Dtsko ved Grønlands Vestkyst, ligeledes under omtrent 70° nordlig Bredde).

Trigonantheæ.

36. *Odontoschisma Macounii* (Aust.) Underw.

Exemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Gaasefjord og Landsend; Ellesmere Land: Framshavn, Cape Viole, Glacier Valley, Lastræadalen, Bedford Pim Isl. og Cape Rutherford.

Planten er overalt steril og kun fra et Par Steder indsamlet i nogenlunde rigelige Exemplarer og i forholdsvis rene Tuer; som Regel forekommer den sparsomt indsprængt blandt andre Moser, blandt hvilke kan anføres: *Blepharostoma trichophyllum, Sphenolobus, Cephalozia pleniceps* og *verrucosa, Lophozia qvinqvedentata, Plagiochila arctica,*

Oncophorus Wahlenbergii, Distichium capillaceum, Ditrichum flexicaule, Aulacomnium turgidum, Dicranum spadiceum, Timmia austriaca. Polytrichum alpinum, Orthothecium chryseum og *Hypnum turgescens.*

Denne Art er særdeles karakteristisk, uagtet den viser adskillig Tilbøielighed til at variere. Den er saaledes snart tætbladet, snart spredtbladet; Bladene er saavel afstumpede i Spidsen, som grundt udrandede eller dybt indskaarne; Amphigastrierne varierer betydelig i Størrelse.

Arten er en udpræget arktisk Plante med hidtil kjendt Sydgrændse ved 66° nordlig Bredde (paa Alstenø i Nordland) og med Nordgrændse over Spitzbergen. Forøvrigt forhen kjendt kun fra Grønland og Alaska.

37. *Cephalozia pleniceps* (Aust.) Lindb.

Findes ikke sjelden, men meget sparsomt indsprængt i Mosetuer, fornemmelig Tuer af *Dicranum*, og næsten altid i Selskab med *Blepharostoma trichophyllum, Lophozia qvinqvedentata* og *Cephalozia verrucosa*, ofte ogsaa med *Anthelia Juratzkana, Odontoschisma* og *Cephalozia grimsulana.*

Exemplarer, hvoraf de allerfleste elendig spæde, er iagttagne fra følgende Steder.

Kong Oscars Land: Sydkapfjord og Gaasefjord; Ellesmere Land: Framshavn, Glacier Valley, Cape Viole, Lastræadalen (c. perianth), Cape Rutherford og Skrællingøen under 78° 50′ nordlig Bredde.

Tidligere kjendte Nordgrændse ved omtrent 74° 10′ ved Cape Mary paa Grønlands Østkyst.

38. *Cephalozia media* Lindb.

Findes i sterile Exemplarer kun fra Lastræadalen i Ellesmere Land under omtrent 78° 45′ nordlig Bredde, hvor den sammen med *Odontoschisma Macounii, Lophozia obtusa* og *Philonotis alpicola* fandtes indsprængt i Tuer af *Dicranum spadiceum.*

Tidligere kjendte Nordgrændse ved Cape Parry paa Grønlands Østkyst under 72° 30′.

39. *Cephalozia bicuspidata* (L.) Dum.

Sjelden og sparsomt indsprængt blandt andre Moser, næsten altid i Selskab med *Cephalozia pleniceps* og *verrucosa* eller *grimsulana* og *Lophozia qvinqvedentata* var. *turgida.*

Exemplarer, der nogenlunde stemmer med den typiske Form, findes kun fra følgende ganske faa Steder i Ellesmere Land: Cape Viole (c. perianth.), Glacier Valley og Skrællingøen.

Noget mindre sjelden er den paa samme Maade, som Hovedarten, førekommende:

var. *arctica* BRYHN & KAALAAS var. nov.

Differt e typo parvitate, foliis pellucidis sinu obtuso bifidis, lobis ovali-lanceolatis multo latioribus et obtusioribus, parallelis vel conniventibus (ut in *Cephalozia leucantha*, cujus folia illis hujus varietatis similia).

Findes, ligesom Hovedarten, i Samlingen kun fra Ellesmere Land: Bedford Pim Isl. (c. perianth.), Glacier Valley (c. perianth.), Cape Viole, Cape Rutherford og Beitstadfjorden.

Cephalozia bicuspidata er tidligere kjendt fra flere arktiske Lande og har sin Nordgrændse over Spitzbergen.

40. *Cephalozia biloba* LINDB.

Findes kun fra et eneste Sted, nemlig Havnefjord i Kong Oscars Land under 76° 30′ nordlig Bredde. Planten voxer her i smaa grønne Hobe mellem *Aulacomnium palustre* og *Brachythecium salebrosum* var. *arcticum*.

Exemplarerne er vel udviklede, rigelig forsynede med Perianthier og fuldstændig typiske.

Denne sjeldne Arts Forekomst i Kong Oscars Land var en stor Overraskelse. Den er nemlig ny for de arktiske Lande og tidligere kjendt kun fra Stavanger i Norge og fra Helsingfors i Finland.

41. *Cephalozia Bryhnii* KAALAAS.

Findes i Samlingen ligeledes kun fra et eneste Sted, Cape Rutherford i Ellesmere Land under 78° 50′ nordlig Bredde, fra hvilket Sted Planten er paavist, omend sparsomt, i typiske og med Perianthier forsynede Exemplarer.

Den fandtes her i Selskab med *Cephalozia verrucosa* og *grimsulana*, *Blepharostoma trichophyllum*, *Anthelia Juratzkana*, *Marsupella arctica*, *Lophozia alpestris* og forskjellige Arter af Slægten *Bryum*.

Denne sjeldne Art er tidligere kjendt kun fra nogle faa Steder i Norge og fra Frankrig, og den er tidligere ikke samlet nordenfor Alten i Finmarken ved henimod 70° nordlig Bredde.

42. *Cephalozia verrucosa* (JENS.) BRYHN & KAALAAS sp. nov.
Cephalozia divaricuta (FRANC.) DUM. var. *verrucosa* C. JENS.

Ad descriptionem JENSENII in „Mosser fra Øst-Grønland" supplementum inseqvens addendum est.

Monoica, ramis masculis longis, floribus femineis innovationes ventrales elongatas coronantibus, bracteis femineis bijugis, raro unijugis, nunqvam trijugis.

Denne Art synes uden Sammenligning at være den hyppigst forekommende Levermose i disse Egne og ikke sjelden med Perianthier, ogsaa af og til med vel udviklet Frugt.

Den er sjelden iagttaget i nogen større samlet Mængde, den findes oftest spredt blandt de mest forskjellige Moser, saavel xerophile som hygrophile, eller den omspinder større Mosers Stilke (f. Ex. *Dicrana* eller *Aulacomnia*) ligesom med en fin Haarbeklædning.

Mere eller mindre talrige Exemplarer findes fra følgende Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Gaasefjord, Renbugten, Excrementbugten, Landsend og Isachsens Fjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Glacier Valley, Cape Viole, Lastræadalen, Bedford Pim Isl., Cocked Hat Isl., Cape Rutherford, Eskimopolis, Beitstadfjorden, Skrællingøen i Alexandrafjord samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Arten er tidligere samlet ved Scoresby Sound paa Grønlands Østkyst under 70—71° nordlig Bredde samt — ved Hamburg.

43. *Cephalozia grimsulana* (JACK).

Ikke sjelden, dog mindre almindelig end foregaaende Art og ligesom denne mest udbredt i den nordlige Del af det undersøgte Landomraade. Den findes ligesom foregaaende Art sjelden i nogen større samlet Mængde, oftest spredt blandt andre hygrophile Moser, ikke sjelden smukt fructificerende.

Exemplarer findes fra følgende Steder.

North Lincoln: Framfjord; Kong Oscars Land: Gaasefjord, Sydkapfjord og Isachsens Fjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole, Cocked Hat Isl., Cape Rutherford, Skrællingøen, Eskimopolis samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Findes tidligere anført kun for Europa. Dog er den Mulighed ikke udelukket, at den er identisk med *Cephalozia divaricata* var. *incurva* LINDB., anført fra Grønland og fra Spitzbergen.

44. *Bazzania triangularis* (SCHLEICH.) R. BR.

Iagttaget kun fra et eneste Sted, nemlig Havnefjord i Kong Oscars Land nnder 76° 30′ nordlig Bredde, hvorfra 2—3 Individer er fundne i en liden Tue af *Lophozia violascens, Cephalozia verrucosa* og *Blepharostoma trichophyllum.*

Er i det arktiske Amerika tidligere anført kun for Alaska og er tidligere neppe samlet nordenfor 70° nordlig Bredde (i Finmarken).

Ptilidioideæ.

45. *Blepharostoma trichophyllum* (L.) DUM.

Spredt blandt alle mulige Sumpmoser findes denne Art almindelig udbredt i disse Egne. Mere eller mindre talrige Exemplarer er observerede fra de allerfleste undersøgte Voxesteder, med Perianthier dog kun fra Bedford Pim Isl. (78° 40′ n. B.).

Var.: *brevirete* BRYHN & KAALAAS var. nov.

Folia foliis formæ typicæ æqvilonga (0.4—0.5 mm.), pro more dissita; crura foliorum a cellulis numerosioribus subqvadratis, circiter 0.02 mm. magnis, constructa.

Denne nye Varietet adskilles fra Normalformen ved Bladfligenes Celler, der hos Normalformen er rectangulære (gjerne lidt indsnevrede paa Midten), aldrig mere end 12 i Antal og 0.03—0.04 mm. lange, medens de hos Varieteten er kvadratiske og 14—17 (oftest 16) i Antal.

Denne Varietet kan ikke betragtes som en forkrøblet Form, Exemplarerne hører blandt de største og kraftigste, der af denne Art er indsamlede under Expeditionen. Den synes ikke at voxe sammen med Normalformen og er mindre almindelig, end denne.

Exemplarer findes fra Kong Oscars Land: Excrementbugten (76° 30′ n. B.); Ellesmere Land: Framshavn, Cape Rutherford, Eskimopolis og Skrællingøen i Alexandrafjord (78° 50′ n. B.).

46. *Blepharostoma setiforme* (EHRH.) LINDB.

I Samlingen findes Exemplarer kun fra Egedesminde i Vest Grønland og fra Bedford Pim Isl., udenfor Ellesmere Lands Kyst. Fra det førstnævnte Sted er indsamlet temmelig rene Tuer af Exemplarer, der aldeles ligner europæiske. Paa Bedford Pim Isl. forekommer Planten i næsten haarfine Exemplarer sparsomt indsprængt blandt *Lophozia alpestris, qvinqvedentata* var. *turgida* og *Binsteadii, Cephalozia verrucosa, Blepharostoma trichophyllum* og *Ptilidium ciliare.*

Planten er ligesom foregaaende Art en almindelig arktisk Art med Nordgrændse over Spitzbergen ved 80° 40′ nordlig Bredde.

47. *Anthelia Juratzkana* (Limpr.) Trevis.

Efter de indsamlede Exemplarer at dømme, synes denne Art i disse Egne ikke, som sædvanlig, at danne Massevegetation. Den er iagttaget fra følgende Steder, oftest temmelig sparsomt indsprængt blandt andre Moser, fornemmelig *Blepharostoma trichophyllum* og *Cephalozia verrucosa*. Kong Oscars Land: Havnefjord og Gaasefjord (c. fr.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Glacier Valley, Bedford Pim Isl. og Cape Rutherford.

Nordgrændse over Spitzbergen.

48. *Anthelia julacea* (L.) Dum.

Forekommer kun i enkelte sterile Individer, sparsomt indsprængt i Mosetuer fra følgende Steder. Kong Oscars Land: Gaasefjord og Isachsens Fjord; Ellesmere Land: Lastræadalen og Cape Rutherford under 78° 50′ nordlig Bredde.

Arten er tidligere med Sikkerhed kjendt fra Alaska, Grønlands Østkyst og Finmarken under 70—71° nordlig Bredde. Den findes ogsaa anført fra Spitzbergen, men fra en Tid, da man endnu ikke var bleven opmærksom paa, at *Anthelia julacea* og *Juratzkana* er to forskjellige Arter.

49. *Ptilidium ciliare* (L.) Hampe.

Exemplarer findes fra følgende Steder.

Vest Grønland: Egedesminde; Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Glacier Valley og Bedford Pim Isl. Kun fra førstnævnte Sted nogenlunde rigelige Exemplarer i forholdsvis rene Tuer, ellers spredt blandt alle mulige, helst hygrophile Moser.

Nordgrændse over Spitzbergen.

Scapanioideæ.

50. *Diplophyllum gymnostomophilum* Kaal.

Meget sjelden og meget sparsomt forekommende.

Kong Oscars Land: Havnefjord og Isachsens Fjord under 78° nordlig Bredde.

Paa det førstnævnte Sted er Planten samlet flere Gange i Selskab med flere eller færre af følgende Moser: *Lophozia qvadriloba* var.

heterophylla, Diplophyllum incurvum, Tetraplodon mnioides, Leptobryum pyriforme, Bryum arcticum, Timmia austriaca, Myurella apiculata, Hypnum uncinatum, Bambergeri og *hamulosum.*

Fra det andet Sted er iagttaget et eneste Individ blandt *Aplozia polaris, Cephalozia verrucosa, Fissidens arcticus, Orthothecium strictum* og *chryseum.*

Findes kun steril, men med en rigelig Mængde tocellede Gonidier.

Arten er tidligere kjendt kun fra den skandinaviske Halvø med Nordgrændse over Ranen under omtrent 66° 30′ nordlig Bredde.

51. *Diplophyllum incurvum* Bryhn & Kaalaas sp. nov.

Dioicum; inter alios muscos sparsum, luteo-fuscescens vel fuscescens, apice solum luteo-virens vel virescens, statu sterili pro more tenue, subfiliforme obqve folia densa et ad anticum vergentia subtere, retro valde convexum; qvoad magnitudinem maxime variabile, 0.5—2 cm. altum et foliis arcte explanatis 1.5—2.25 mm. latum.

Caulis inferne fuscus, superne flavus vel flavo-viridis, serpentino-flexuosus, apice pro more leniter recurvus, sat rigidus, 0.2 mm. crassus, vel ultra, retro radicellis densis longis flavescentibus, sæpe fasciculatim confertis, ad apicem usqve instructus, vulgo omnino simplex, rarissime innovationes 1—2 subapicales proferens, dense foliatus foliisqve ita ad anticum incurvatis, ut latus plantæ ventrale convexum fit. — Sectio caulis transversa elliptica, cellulis corticalibus 2—3 stratis, valde fuscescenti-incrassatis, cæteris hyalinis, omnibus æqvimagnis circiter 0.015 mm. magnis.

Folia dense conferta, æqvimagna vel ad apicem parum decrescentia, ad 1.2 mm. usqve longa, crassiuscula, transverse affixa, antice et postice medium caulis attingentia, patentia vel magis minusve divaricata, et siccitate et humiditate ad anticum valde vergentia, ad dimidium vel ad duas tertias secta, lobis duobus inæqvalibus rotundato-complicatis ideoqve ecarinatis.

Lobus foliorum ventralis pro ratione major, brevis et latus (latior qvam longus), patens vel divaricatus et valde incurvatus, obliqve ovali-rotundatus vel rotundato-reniformis, profunde concavus, obtusus vel ob proferentiam gonidiorum in apicem plus minusve longum productus, marginibus integris.

Lobus foliorum dorsalis minor, pars tertia vel qvinta solum lobi ventralis, obliqve ad anticum porrectus, obliqve ovato-reniformis, convexus, obtusus, rarius acutatus, integerrimus.

Cellulæ foliorum, angularibus qvadratis exceptis, rotundato-multangulæ, basilares circiter 0.023 mm., mediæ 0.018–0.02 mm., marginales 0.015 mm. magnæ, omnes optime conformiterqve incrassatæ, trigonis parum conspicuis, cuticula leniter verruculosa.

Gonidia in apice foliorum summorum, acervos sæpe formantia, elliptrica, flavo-fusca, bicellularia.

Plantas perpaucas femineas colesuliferas observavimus, sterilibus robustiores, breviores densiusqve foliatas, innovationes duas sub perianthio proferentes.

Bracteæ perichætii foliis majores magisqve erectæ, lobis fere æqvimagnis et conformibus, acutis, dentatis.

Perianthia, adhuc juvenilia solum, ad 0.7 mm. alta, fere perfecte cylindracea et lævia, ore longe dentato, dentibus ciliatis.

Planta mascula ignota.

E *Diplophyllo gymnostomophilo* verosimiliter proximo diversum colore luteo-fuscescenti vel fusco et foliis brevibus, latis et ad anticum incurva.

Denne nye Art synes at være almindelig udbredt i disse Egne og er samlet paa mange Sleder, dog som Regel sparsomt indsprængt blandt andre Moser; helst saadanne, der foretrækker kalkholdigt Underlag.

Exemplarer findes fra følgende Steder. North Lincoln: Framfjord under 76° 20′ nordlig Bredde; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Renbugten; North Kent (300 M. o. H.); Ellesmere Land: Framshavn (c. perianth.), Bedford Pim Isl., Lastræadalen, Glacier Valley (*forma monstrosa*), Cape Rutherford, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

52. *Scapania Bartlingii* (Nees) Hampe.

Findes i ganske faa sterile Exemplarer fra et Par Steder i Ellesmere Land: Cape Viole og Lastræadalen under 78° 40′—78° 45′ nordl. Bredde.

Paa det førstnævnte Sted er Planten samlet i Selskab med: *Sphenolobus minutus, Cephalozia verrucosa, Webera nutans* og *Bryum arcticum*; paa det andet Sted sammen med *Sphenolobus minutus, Webera nutans, Plagiobryum demissum* og *Bryum pendulum*.

Denne sjeldne Art er tidligere kjendt ogsaa fra Grønland, Beeren Eiland og Spitzbergen (Nordgrændse), paa hvilke Steder den ogsaa forekommer meget sparsomt.

53. *Scapania rosacea* (CORDA) DUM.

Ligeledes meget sparsomt samlet paa nogle faa Steder i Ellesmere Land, nemlig Bedford Pim Isl. (sammen med *Lophozia qvinqvedenlata, Cephalozia verrucosa, Bryum minus* og *Polytrichum fragile*), Cape Viole (sammen med *Cephalozia pleniceps, verrucosa* og *grimsulana, Odontoschisma Macounii, Lophozia Mülleri* og *Polytrichum fragile*) samt Cape Rutherford ved 78° 50′ nordlig Bredde (sammen med *Sphenolobus minutus, Blepharostoma trichophyllum, Diplophyllum incurvum, Cephalozia verrucosa, Lophozia ventricosa, Binsteadii, qvinqvedentata* og *harpanthoides*).

Paa alle 3 Steder er kun nogle faa Individer plukkede ud af disse brogede Blandingstuer.

Artens tidligere kjendte Nordgrændse var ved Hurry Inlet paa Grønlands Østkyst og Jan Mayen ved 71°.

54. *Scapania æqviloba* (SCHWGR.) DUM.

Yderst sjelden. Ellesmere Land: Framshavn under 78° 45′ nordlig Bredde, sparsomt indsprængt blandt *Distichium capiltaceum* og *Lophozia harpanthoides*.

Arten er tidligere neppe samlet nordenfor Talvik i Finmarken (70° n. B.).

55. *Scapania undulata* (L.) DUM.

Nogle faa tynde Individer med stærkt fortykkede Cellevægge er plukkede ud af en tæt Mosetue fra Cape Rutherford i Ellesmere Land.

Den fandtes i Selskab med *Oncophorus Wahlenbergii, Aulacomnium turgidum* og *Timmia austriaca*.

Arten er før vel kjendt fra arktiske Egne og har Nordgrændse over Spitzbergen.

56. *Scapania irrigua* (NEES) DUM. var. *alpina* BRYHN.

Kun fra Gaasefjord i Kong Oscars Land under 76° 30′ nordlig Bredde, hvor denne Art voxer sparsomt indsprængt blandt en Mangfoldighed af andre Sumpmoser.

Exemplarerne fra Gaasefjord ligner fuldstændig den fra Norge beskrevne Varietet, brune og tætbladede med meget fortykkede Bladceller og med særdeles store Trigoner o. s. v.

Artens tidligere kjendte Nordgrændse saavel i Amerika, som i Europa og i Asien ligger mellem 70 og 71°.

57. *Scapania Simmonsii* Bryhn & Kaalaas. sp. nov.

Cæspitosa, robusta, usqve ad 6 cm. alta et cum foliis 2.5 mm. lata, vel ultra, fusca, nigrescens, stricta et rigida, siccitate fragilis, maxime densifolia, simplex vel perparce ramosa.

Caulis rigidus et strictus, fere rectus, fuscus vel atro-fuscus, 0.3—0.4 mm. crassus, fere eradicellosus, sectione transvera ellipticus, cellulis peripheric is in stratis duobus maxime fusco-incrassatis, cæteris in diametro 10—12 tenuimembranaceis et hyalinis, 0.02—0.025 mm. magnis, pro more omnino simplex, rarius ramum unum alterumve longum emittens.

Folia 1—1.4 mm. longa et 1 mm. lata, densissima, crassa et subcarnosa, rigida et fragilia, fusca vel fusco-nigrescentia, opaca, subæqvimagna, transverse affixa, patentia — deflexa, extus dense et subtiliter scabrida, ad dimidium vel ad duas tertias secta, lobis duobus inæqvimagnis, arctissime complicatis et ad posticum valde revolutis ideoqve sæpe fere tubulata, carina falcato-deflexa haud alata.

Lobus foliorum anticus (dorsalis) minor, in fronte supra caulem protractus, obliqve reniformis vel obliqve cordatus, lobo postico appressus et cum eodem ad posticum repandus, pro more integerrimus, rarius dentem unum alterumve obtusum exhibens.

Lobus foliorum posticus (ventralis) duplo—triplo major, ob partem basilarem valde rotundatam retro ultra caulem longe extensus, obliqve ovatus, obtusus vel acutatus, margine integer vel dentibus nonnullis remotis, obtusis latisqve munitus, ad posticum valde revolutus ideoqve fere tubulatus.

Cellulæ foliares sæpe pulchre seriatæ, opacæ, plurimæ rotundato-multangulæ, 0.02—0.024 mm. magnæ, basilares paullo elongatæ, ad 0.028 mm. usqve longæ, marginales in serie una qvadratæ, 0.014—0.015 mm. modo magnæ, omnes valde purpureo — vel fusco-incrassatæ, trigona maxima ad angulos cellularum et lumina stellariformia ostendentes.

Cuticula maxime verrucosa.

Folia inferiora innovationum juvenilium haud raro subplana, lobis anticis minus obtusis non nihil decurrentibus, superiora gradatim magis magisqve repanda.

Cetera desunt.

Species distincta e *Scapania uliginosa* proxima præsertim foliis revolutis et reflexis ut et reti foliorum valde incrassato optime diversa.

Exemplarer findes fra to Steder i Kong Oscars Land: Havnefjord (76° 30′ n. B.) og Gaasefjord under 76° 50′ nordlig Bredde og i en Høide over Havet af 350 Meter.

Paa det første Sted er Planten samlet meget sparsomt og indsprængt blandt andre Sumpmoser. Fra det andet Sted foreligger rigelige Exemplarer, dels i forholdsvis rene Tuer, dels som Bestanddel af Blandingstuer.

B. Sphagnaceæ.

58. *Sphagnum Girgensohnii* Russ.

Af denne Art, den eneste *Sphagnum*, der findes i den hele Samling, foreligger der rigelige, omend sterile Exemplarer fra Lastræadalen i Ellesmere Land under 78° 45′ nordlig Bredde.

De tætte Tuer er paa Kryds og Tvers gjennemvævede af Levermoser, fornemmelig *Lophozia qvinqvedentata* var. *turgida*, *Sphenolobus minutus*, *Blepharostoma trichophyllum*, *Cephalozia pleniceps* og *Odontoschisma Macounii*.

Arten synes tidligere ikke at være samlet nordenfor Scoresby Sound paa Grønlands Østkyst under 70—71° nordlig Bredde.

C. Musci veri.

Andreæaceæ.

59. *Andreæa papillosa* Lindb.

Exemplarer findes fra Kong Oscars Land: Gaasefjord; Ellesmere Land: Framshavn, Glacier Valley og Bedford Pim Isl., overalt med Frugt.

Planten voxer paa vaade Stene eller paa vaad Jord i indtil 6 cm. dybe, rødbrune, sjelden grønne, Tuer, enten rene eller indsprængt med *Ditrichum flexicaule*, *Blindia acuta*, *Seligeria polaris* eller *Hypnum revolutum*.

Arten forekommer ogsaa paa Alaska, Grønlands Østkyst, paa Beeren Eiland og Spitzbergen.

Weisiaceæ.

60. *Gymnostomum rupestre* Schl.

Findes i Samlingen kun fra Kong Oscars Land: Havnefjord og Gaasefjord under 76° 30′ nordlig Bredde.

Planten forekommer deroppe som en kortbladet, altid steril Form, der oftest voxer paa fugtig Jord og danner indtil 3 cm. dybe Tuer, der

enten er rene, eller ogsaa isprængte med *Ditrichum flexicaule, Ceratodon,* en eller anden *Myurella* eller *Hypnum revolutum.*

Artens Nordgrændse er i Asien ved 60° og i Europa ved 70°.

61. *Gymnostomum læve* Brynh sp. nov.

Cæspites densi, ad 5 cm. usqve alti, fusci, superne atro-virides vel cæruleo-virides, parum cohærentes.

Caulis rotundato-angulatus, fasciculo centrali distincto, 0.01—0.015 mm. crasso.

Folia humiditate erecta vel erecto-patentia, siccicate imbricata, 0.75—1 mm. longa et 0.25—0.3 mm. lata, e basi ovato in apicem breviorem lanceolatum et obtusum subito angustata (Tab. I, Fig. 1), marginibus plana et integerrima,

Costa foliorum valida (0.035 × 0.06 mm.), excurrens, indicibus medianis 4—6, fasciculo stereïdarum inferiore lato, cellulis ventralibus dorsalibusqve.

Cellulæ foliares qvoad formam magnitudinemqve illis *Gymnostomi rupestris* persimiles, sed lævissimæ, papillis nullis.

Cætera ignota.

Species, ut videtur, distinctissima e *Gymnostomo rupestri* proximo diversa foliis latis et brevibus, subito in apicem obtusum contractis, lævibus et siccitate imbricatis.

Voxer paa fugtig Jord, vaade Stene og Berge enten i rone Tuer eller i Selskab med *Didymodon rubellus, Ditrichum flexicaule, Distichium capillaceum,* en eller anden *Myurella* eller *Encalypta, Hymenostylium, Hypnum Bambergeri* eller *Grimmia anodon.*

Exemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Gaasefjord og Excrementbugten; North Kent (300 M. o. H.); Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

62. *Hymenostylium curvirostre* (Ehrh.) Lindb.

Ikke sjelden paa Berge og fugtig Lerjord, ogsaa paa Polaroxe-excrementer.

Kong Oscars Land: Gaasefjord; North Kent (300 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Rutherford, Lastræadalen, samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Forekommer her som en kortbladet Form med Bladene mere eller mindre tydelig ordnede i 3 Rader. Den er ikke samlet med Frugt og danner sjelden rene Tuer. Dens almindeligste Ledsagere er: *Tortula*

ruralis, Brya varia, Arnellia, Encalypta rhabdocarpa, Ceratodon, Ditrichum flexicaule og *Distichium capillaceum.*

Arten har sin Nordgrændse over Spitzbergen.

63. *Dicranoweísia críspula* (HEDW.) LINDB.

Ikke sjelden og rigelig paa Stene, især i Bække, samt paa vaad Jord og Grus, almindeligvis i rene Tuer og oftere med Frugt.

Exemplarer findes paa følgende Steder:

Kong Oscars Land: Havnefjord og Gaasefjord (c. fr.); North Kent (300 M. o. H.); Ellesmere Land: Framshavn, Cape Viole, Cape Rutherford (c. fr.), Bedford Pim Isl. (c. fr.) og Cocked Hat Isl.

Arten er vel kjendt fra før af som en arktisk Art; den er før samlet paa Alaska, Grønland, Beeren Eiland, Novaja Semlja, Sibirien og paa Spitzbergen, hvor Nordgrændse.

Rhabdoweisiaceæ.

64. *Cynodontium schisti* (WAHLENB.) LINDB. c. fr,

Meget sjelden og kun i ringe Mængde fra et eneste Sted, nemlig Lastræadalen i Ellesmere Land under 78° 45′ nordlig Bredde i Selskab med *Diplophyllum incurvum, Tortella tortuosa* var. *fragilifolia* og *Isopterygium pulchellum.*

Artens tidligere kjendte Nordgrændse var ved 70° paa Grønlands Østkyst.

65. *Cynodontium gracilescens* (W. & M.) SCHIMP. c, fr.

Yderst sparsomt fra samme Sted, som foregaaende Art, i Selskab med *Tortella fragilis, Desmatodon subcrectus, Distichium Hagenii* og *Distichium capillaceum.*

Arten er tidligere ikke angivcn for arktiske Lande.

66. *Cynodontium strumiferum* (EHRH.) DE NOT. c. fr.

Meget sjelden og kun fra Vest-Grønland: Egedesminde under 69° nordlig Bredde.

Ny for det arktiske Amerika. Nordgrændse i Europa ved 70°.

67. *Dichodontium pellueidum* (L.) SCHIMP.

Meget sjelden og sparsomt forekommende paa fugtig Jord eller Polaroxeexcrementer blandt andre Moser, kun i steril Tilstand.

Kong Oscars Land: Moskusfjord og Gaasefjord; Ellesmere Land: Beitstadfjorden under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 74° over Beeren Eiland.

Dicranaceæ.

68. *Oncophorus virens* (Sw.) Brid.

Ikke almindelig, i Sumpe. Exemplarer findes fra Kong Oscars Land: Havnefjord, Gaasefjord (c. fr.) og Renbugten; N. V. Grønland: Foulkefjord; Ellesmere Land: Glacier Valley.

var. *serratus* Bryol. Eur.

North Lincoln: Framfjord.

69. *Oncophorus Wahlenbergii* Brid.

Mere almindelig, end foregaaende Art, og ofte fructificerende.

Kong Oscars Land: Havnefjord, Gaasefjord, Renbugten og Landsend; North Lincoln: Framfjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole, Lastræadalen, Glacier Valley, Eskimopolis, Cape Rutherford, Skrællingøen og Cocked Hat Isl.

Begge Arter er udbredt over en stor Del af Jordens nordlige Halvkugle og har Nordgrændse ved 80° 40′ paa Spitzbergen.

70. *Dicranella heteromalla* (L.) Schimp.

Meget sjelden og kun i steril Tilstand.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde, sparsomt paa Polaroxeexcrementer blandt *Voitia hyperborea* og *Bryum pallens.*

Tidligere kjendte Nordgrændse var ved omtrent 69° i Alaska og paa Kola Halvøen.

71. *Dicranum Bergeri* Bland.

Sterile Exemplarer findes fra et eneste Sted i Kong Oscars Land, nemlig Havnefjord under 76° 30′ nordlig Bredde, hvor Planten er observeret i Selskab med *Cephalozia verrucosa, Lophozia harpanthoides, Sphenolobus minutus, Timmia austriaca* og *Campylium stellatum.*

Tidligere kjendte Nordgrændse ved 72° i Øst-Grønland.

72. *Dicranum fuscescens* Turn.

Ligeledes yderst sjelden og ligeledes kun fra Havnefjord i Kong Oscars Land, hvor Planten er samlet sparsomt, men i rene Tuer.

Nordgrændse ved 80° 40′ over Spitzbergen.

73. *Dicranum brevifolium* LINDB.

Blandt de sjeldnere Arter i disse Egne.

Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen, overalt i forholdsvis rene Tuer.

Arten er kjendt ogsaa fra Grønland eg Spitzbergen.

74. *Dicranum congestum* BRID.

Mere almindelig, end de foregaaende Arter *Dicranum*. Den er samlet paa flere Steder, men overalt sparsomt. Exemplarer findes fra følgende Steder.

Vest-Grønland: Egedesminde; Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Framshavn, Cape Viole og Eskimopolis under 78° 50′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 72° i Øst-Grønland.

75. *Dicranum spadiceum* ZETT.

Synes i disse Egne at være den mest almindelige Art inden Slægten. Den optræder dog ikke saa ofte paa Slægtens almindelige Vis i Masse med tætte forholdsvis rene Tuer; oftest findes den som Bestanddel af Blandingstuer.

Exemplarer findes fra følgende Steder.

Vest-Grønland: Egedesminde; North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Gaasefjord og Renbugten; North Kent (300 M. o. H.); Ellesmere Land: Framshavn, Cape Viole, Cape Rutherford, Lastræadalen, Eskimopolis, Skrællingøen, Bedford Pim Isl. og Cocked Hat Isl.

Er fra før af en vel kjendt arktisk-alpin Art med Nordgrændse over Spitzbergen.

76. *Dicranum groenlandicum* BRID.

Overraskende sjelden og hjembragt kun fra følgende faa Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord under 76° 30′ nordlig Bredde. Paa begge Steder samlet rigelig og i relativt rene Tuer.

Artens forhen kjendte Nordgrændse var ved 72° paa Grønlands Østkyst (Scoresby Sound).

77. *Dicranum sphagni* WAHLENB.

Synes temmelig almindelig, idet Exemplarer i mere eller mindre rigelig Mængde findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Gaasefjord og Landsend; North Kent (300 M. o. H.); Ellesmere Land: Framshavn, Cocked Hat Isl. og Beitstadfjørden.

78. *Dicranum elongatum* Hedw.

Meget almindelig, dog sjelden i rene Tuer og i typiske Exemplarer, oftest som Overgangsformer til foregaaende Art. I hele Samlingen er denne den eneste *Dicranum* med Frugt.

Exemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord (c. fr.), Renbugten, Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole, Glacier Valley, Cape Rutherford, Eskimopolis. Skrællingøen, Bedford Pim Isl. samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Arten er ligesom foregaaende Art meget udbredt paa Spitzbergen og i andre arktiske Egne.

Fissidentaceæ.

79. *Fissidens exiguus* Sull.

Kun fra et eneste Sted.

Kong Oscars Land: Gaasefjord, hvor Planten under 76° 30′ nordlig Bredde er samlet paa fugtig Lerjord i yderst ringe Mængde og i steril Tilstand blandt *Distichium capillaceum* og *Hagenii, Didymodon rubellus* og forskjellige Arter *Bryum*.

Ny for de arktiske Lande

80. *Fissidens arcticus* Bryhn sp. nov. (Tab. I, Fig. 2).

Gregarius vel inter alios muscos surculis singulis mixtus, læte viridis, ætate fuscescens.

Caulis erectus, e basi denudato 5—20 mm. altus, simplex vel parce ramosus, cum foliis vix 1.25 mm. latus.

Folia vulgo 6—12 juga, erecto-patentia, lanceolata, apice acuto, circiter 1 mm. longa et circiter 0.33 mm. lata, costa luteo-viridi paullo infra apicem evanida.

Lamina vera circiter ad tertiam supremam folii producta. inferne cellulis biseriatis, superne cellulis uniseriatis limbata.

Lamina apicalis integra vel cellulis prominulis minutissime serrulata.

Lamina dorsalis, vera triplo angustior, ad tertiam infimam costæ sensim evanida.

Lamina et apicalis et dorsalis elimbata.

Cellulæ foliares 0,007—0.009 mm. magnæ, rotundatæ, excepta cellula una alterave marginali oblongo-qvadrata, obscuræ.

Cætera ignota.

Denne Art, hidtil den eneste *Semilimbidium*, der er kjendt fra arktiske Egne, findes i Samlingen fra følgende Steder.

Kong Oscars Land: Gaasefjord (76° 30′ n. B.), Landsend og Isachsens Fjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Lastræadalen under 78° 45′ nordlig Bredde, overalt paa sumpig Jord og overalt overmaade sparsomt, i Selskab med andre Moser, blandt hvilke kan nævnes *Cephalozia grimsulana*, *Lophozia ventricosa*, *Aplozia polaris*, *Anthelia Juratzkana*, *Dichodontium*, *Meesea triqvetra*, *Timmia austriaca*, *Polytrichum alpinum*, *Hypnum Bambergeri*, *latifolium*, *revolvens* og *turgescens*.

81. *Fissidens impar* Mitten.

Meget sjelden og kun fra 2 Steder, nemlig Kong Oscars Land: Gaasefjord og Ellesmere Land: Beitstadfjorden under 79° nordlig Bredde.

Paa begge Steder er Planten samlet paa vaad Lerjord, særdeles sparsomt indsprængt i tætte Mosetuer.

Ny for de arktiske Egne.

82. *Fissidens osmundioides* (Sw.) Hedw.

Meget sjelden og kun sparsomt indsprængt i Mosetuer.

Ellesmere Land: Cape Viole, Glacier Valley og Lastræadalen.

Arten har sin Nordgrændse over Spitzbergen.

83. *Fissidens adiantoides* (L.) Hedw.

Meget sjelden, kun i den sydlige Del af det undersøgte Landomraade og ligesom de foregaaende Arter kun som Bestanddel af tætte Blandingstuer. Exemplarer er paaviste fra følgende 2 Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord under 76° 30′ nordlig Bredde.

Denne Art er ligesom de foregaaende Arter *Fissidens* kun samlet i steril Tilstand. Dens tidligere kjendte Nordgrændse var ved 70° i Finmarken.

Seligeriaceæ.

84. *Seligeria polaris* Berggr.

Forekommer paa vaade Stene og paa vaad Lerjord i oftest rene, indtil 3 cm. høie, rigt frugtbærende Tuer.

Exemplarer findes fra Kong Oscars Land: Gaasefjord, Havnefjord (76° 30′ n. B.) og Renbugten; Ellesmere Land: Cape Rutherford.

Arten er tidligere kjendt kun fra Spitzbergen.

85. *Blindia acuta* Huds.

Sterile, dog rigelige, Exemplarer findes fra Kong Oscars Land: Gaasefjord; Ellesmere Land: Cape Viole, Glacier Valley, Lastræadalen, Cape Rutherford og Mt. Køla-Paulsen.

Arten er ogsaa kjendt fra Spitzbergen (Nordgrændse) og andre arktiske Egne.

Ditrichaceæ.

86. *Ceratodon purpureus* (L.) Brid.

Denne Art, der findes omtrent overalt over hele Jorden, er ogsaa her i disse Egne overalt en af de mest almindelige Moser, dog som Regel steril. Med Frugt kun fra Gaasefjord (1 eneste Individ).

87. *Ditrichum flexicaule* (Schleichn.) Hampe,

Overalt meget almindelig under forskjellige Former og i rigelig Mængde, dog altid steril.

Arten er almindelig udbredt ogsaa i andre arktiske Lande (Spitzbergen, Novaja Semlja, Alaska, Sibirien o. s. v.). Næsten altid i Selskab med *Distichium capillaceum.*

88. *Ditrichum glaucescens* (Hedw.) Hampe.

Sjelden og meget sparsomt forekommende i sterile Exemplarer som Bestanddel af Blandingstuer.

Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Bedford Pim Isl.

Ogsaa i andre arktiske Egne sjelden, saaledes er dette Tilfældet paa Spitzbergen, Grønland og Alaska.

89. *Distichium capillaceum* (Sw.) Bryol. Eur.

Er her, ligesom i alle øvrige arktiske hidtil undersøgte Egne, almindelig overalt og ofte i rene, rigt frugtbærende Tuer.

90. *Distichium Hagenii* Ryan.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord; North Kent (300 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Lastræadalen, Cape

Rutherford, Bedford Pim Isl., Skrællingøen, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Arten er tidligere kjendt kun fra Finmarken og Grønlands Vestkyst og dens tidligere kjendte Nordgrændse var ved omtrent 70°.

91. *Distichium inclinatum* (EHRH.) BRYOL. EUR. c. fr.

Mindre almindelig og sparsomt indsprængt i Tuer af de 2 foregaaende Arter.

Sikre Exemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Landsend; Borgøen ved North Devon; Ellesmere Land: Framshavn og Glacier Valley.

Arten findes ogsaa i Grønland og paa Spitzbergen.

Pottiaceæ.

92. *Pottia latifolia* (SCHWGR.) C. MÜLL. c. fr.

Meget sjelden. Exemplarer findes kun fra Havnefjord og Gaasefjord i Kong Oscars Land.

Var. *pilifera* BRID. c. fr.

Endnu mere sjelden, end Hovedarten, og kun fra Beitstadfjorden i Ellesmere Land.

Arten er tidligere kjendt ogsaa fra andre rent arktiske Egne: Grønland og Spitzbergen.

93. *Pottia Heimii* (HEDW.) BRYOL. EUR. var. *obtusifolia* R. BR.

Ikke almindelig og samlet kun i den sydlige Del af det undersøgte Landomraade. Exemplarer findes fra følgende Steder.

Kong Oscars Land: Moskusfjord og Gaasefjord; Borgøen ved North Devon; Cardigan Strait: Djævleøen. Alle disse Steder ligger under omtrent 76° 30′ nordlig Bredde.

Arten forekommer, foruden i Nord- og Mellem-Europa, ogsaa paa Spitzbergen (Nordgrændse), Beeren Eiland, Grønland, Alaska, i Nordamerikas Forenede Stater, Chile (Andesbjergene) og i Sibirien.

94. *Desmatodon suberectus* (DRUMM.) LIMPR.

Forekommer ikke sjelden, men sparsomt, paa vaad Jord eller paa Excrementer, altid med Erugt. Exemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Gaasefjord og Moskusfjord; North Devon; Cardigan Strait: Djævleøen; Ellesmere Land; Lastræadalen og Glacier Valley.

Arten er tidligere kjendt fra Nord- og Mellem-Europa, Grønland, Nordamerikas Forenede Stater, Sibirien og Spitzbergen, hvor den har sin Nordgrændse.

95. *Desmatodon latifolius* (Hedw.) Br. Eur. var. *muticus* Brid.

Meget sjelden og kun i sterile Exemplarer fra Borgøen ved North Devon og fra Gaasefjord i Kong Oscars Land.

Arten har sin Nordgrændse over Spitzbergen.

96. *Desmatodon systylius* Bryol. Eur. c. fr.

Kong Oscars Land: Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn under 78° 45′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 74° paa Grønlands Østkyst (Cape Mary).

97. *Desmatodon Laureri* Scrultz c. fr.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Nordgrændse over Spitzbergen.

98. *Didymodon rubellus* (Hoffm.) Bryol. Eur.

Forekommende som en kortbladet Form er denne Art en af de mest almindelige Moser i disse Egne og hjembragt i mere eller mindre talrige Exemplarer fra ethvert undersøgt Sted, dog kun paa faa Steder samlet med Frugt, nemlig paa følgende Steder i Ellesmere Land: Framshavn og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Arten er ogsaa paa Spitzbergen samlet med Frugt.

99. *Didymodon alpigena* Venturi.

Synes at være meget mindre almindelig, end foregaaende Art, men forekommer til Gjengjæld oftere i rene Tuer og som Regel med Frugt.

Sikre Exemplarer findes fra følgende Steder.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Framshavn og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere angivne Nordgrændse var ved 74° paa Grønlands Østkyst.

100. *Didymodon rufus* LORENTZ.

Synes at forekomme meget mere almindelig, end sidstnævnte Art, og næsten udelukkende i rene Tuer, dog altid i steril Tilstand. Exemplarer findes fra følgende Steder.

Vest-Grønland: Egedesminde; North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Gaasefjord og Moskusfjord; North Kent (300 M. o. H.); Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen samt Beitstadfjorden under 79° nordlig Bredde.

Artens tidligere angivne Nordgrændse var ved Røhss Fjord paa Grønlands Østkyst ved omtrent 73°.

101. *Tortella tortuosa* (L.) LIMPR.

Ikke sjelden paa sumpig Jord. Rigelige Exemplarer i forholdsvis rene Tuer findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Renbugten, Gaasefjord, Excrementbugten og Landsend; North Kent; N. V. Grønland: Foulkefjord; Ellesmere Land: Lastræadalen og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 70° 15′ i Finmarken og paa Grønlands Vestkyst.

102. *Tortella fragilis* (DRUMM.) LIMPR.

Ligeledes paa sumpig Jord og ikke sjelden; men meget mere sparsomt forekommende og næsten udelukkende som Bestanddel af tætte Blandingstuer.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Sydkapfjord; Ellesmere Land: Framshavn, Cape Rutherford, Cape Viole, Lastræadalen, Glacier Valley og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Arten har sin Nordgrændse over Spitzbergen.

103. *Aloïna rigida* (HEDW., SCHULTZ) KINDB.

Yderst sjelden og yderst sparsomt samlet.

Exemplarer findes kun fra Moskusfjord i Kong Oscars Land under 76° 30′ nordlig Bredde, paa Lerjord. Herfra findes nogle faa Individer uden Frugt blandt andre Moser (*Tortula mucronifolia* og *ruralis, Encalypta contorta* og *rhabdocarpa, Ceratodon purpureus* og *Arnellia*).

Tidligere ikke angiven for arktiske Lande.

104. *Tortula mucronifolia* SCHWGR. c. fr.

Ikke sjelden paa Jord og Excrementer blandt andre Moser, især Arter af *Encalypta*, *Didymodon* eller *Bryum*.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Vendomkap og Landsend; Cardigan Strait: Djævleøen; Ellesmere Land: Framshavn og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Nordgrændse over Spitzbergen.

105. *Tortula ruralis* (L.) EHRH.

Denne Art er en af de allermest almindelige Moser i disse Egne og den er indsamlet paa ethvert af de undersøgte Steder. Den voxer paa sumpig Jord og paa Berge i oftest rene, lige til 25 cm. dybe, Tuer. Exemplarer med Frugt kun fra Cape Viole i Ellesmere Land.

Nordgrændse paa Spitzbergen ved 80° 10′.

106. *Tortula aciphylla* BRYOL. EUR.

Meget sjelden og i ringe Mængde.

Kong Oscars Land: Moskusfjord og Gaasefjord, paa begge Steder under 76° 30′ nordlig Bredde.

Arten er ikke ny for arktisk Amerika, saasom den før er samlet paa Alaska. Dens tidligere kjendte Nordgrændse var ved omtrent 71° paa Novaja Semblja.

Grimmiaceæ.

107. *Schistidium apocarpum* (L.) BRYOL. EUR.

Denne er i disse Egne saa almindelig, som neppe nogen anden Mose, paa de mest forskjellige Lokaliteter, paa tørre Berge, fugtig Jord, i Sumpe eller flydende i Vand, og under mange forskjellige Former, oftest uden Haarspids paa Bladene.

Den forekommer som Regel i rene, ofte 5—10 cm. dybe, Tuer, og ikke sjelden rigt frugtbærende.

Blandt de mere karakteristiske Varieteter kan nævnes følgende.

Var. *filiforme* LINDB.

Indsamlet paa tørre Berge fra følgende Steder. Kong Oscars Land: Havnefjord og Sydkapfjord; North Devon: Havbestberget; Cardigan Strait: Djævleøen; Ellesmere Land: Skrællingøen.

Var. *ovatum* BRYHN var. nov.

Differt e typo foliis humiditate haud rocurvatis, late ovatis (vulgo 0.8 × 1.5 mm.) obtusis vel breviter obtuseqve acuminatis.

Denne nye Varietet ligner habituelt ganske *Schistidium alpicola* (Sw.) LIMPR., men er forskjellig fra denne ved Mangel paa Centralstreng i Stilken, de tilbagerullede Bladkanter og de mere eller mindre bugtede Bladceller.

Exemplarer er samlede paa følgende Steder. North Lincoln: Framfjord; Kong Oscars Land: Havnefjord; Ellesmere Land: Framshavn og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen, sandsynligvis overalt paa meget vaade Steder eller i Vand.

Var. *abrupticostatum* BRYHN var. nov.

Differt e typo foliis late lanceolatis, obtusis, costa valida longe infra apicem folii desistente, capsula pallide-lutescenti, stomatibus perfecte evolutis nullis.

Denne nye Varietet ligner i høi Grad *Schistidium lineare* (CHAL.) LIMPR., fra hvilken den adskilles ved de bredt tilbagerullede Bladkanter og de noget bredere Blade med langt nedenfor Bladspidsen pludselig ophørende Nerve.

Rigelige Exemplarer fra Havnefjord i Kong Oscars Land, hvor Planten er samlet paa Stene i Bække.

108. *Schistidium gracile* (SCHL.) LIMPR.

Meget mindre almindelig, end foregaaende Art, dog ikke sjelden og oftere med Frugt.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Vendomkap; Cardigan Strait: Djævleøen; Ellesmere Land: Framshavn, Cape Rutherford, Cocked Hat Isl. og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Var. *scabrius* BRYHN var. nov.

Differt e typo foliis utraqve pagina dense et grosse mamillosis.

Kong Oscars Land: Gaasefjord; North Kent.

Saavel *Schistidium apocarpum* som *gracile* har deres Nordgrændse over Spitzbergen ved omtrent 80° 40′.

109. *Schistidium confertum* (FUNCK) BRYOL. EUR. c. fr.

Exemplarer af denne Art findes i Samlingen kun fra Beifstadfjorden i Ellesmere Land, under 79° nordlig Bredde.

Arten er tidligere kjendt, foruden fra Europa og Nord-Amerika, ogsaa fra Abyssinien, Caucasus og Persien; men den er hidtil ikke angiven for noget arktisk Land.

110. *Grimmia anodon* Bryol. Eur. c. fr.

Rigelige og fuldt typiske Exemplarer findes fra Gaasefjord i Kong Oscars Land under 76° 30′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 70° 10′ i Finmarken. Den er ogsaa samlet paa Grønlands Østkyst under omtrent 70° nordlig Bredde.

111. *Grimmia elongata* Kaulf. c. fr.

Rigelige Exemplarer af denne Art er samlet paa stenet Jord i Selskab med *Schistidium apoparpum* ved Beitstadfjorden i Ellesmere Land under omtrent 79° nordlig Bredde.

Plantens tidligere kjendte Nordgrændse var ved 69—70° i Finmarken og paa Grønlands Vestkyst.

112. *Grimmia ovata* W. M. c. fr.

Denne Art findes i rene Tuer, men med mindre vel udviklet Frugt, fra flere Steder. Kong Oscars Land: Havnefjord; Ellesmere Land: Framshavn og Bedford Pim Isl. under 78° 45′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 71°, paa Grønlands Østkyst.

113. *Grimmia torqvata* Hornsch. st.

Er samlet rigelig i rene Tuer paa flere Steder i Ellesmere Land: Glacier Valley, Cape Viole og Lastræadalen, under omtrent 78° 40′ nordlig Bredde.

Arten findes paa Grønlands Østkyst, hvor den hidtil ikke er samlet nordenfor 72° 40′.

114. *Rhacomitrium brevisetum* Lindb. c. fr.

Yderst sjelden og samlet kun ved Beitstadfjorden i Ellesmere Land, under 79° nordlig Bredde, paa Bergvægge i Selskab med *Schistidium gracile, Rhacomitrium lanuginosum, Hypnum revolutum,* og *Hylocomium proliferum.*

Denne meget sjeldne Plante er ny for Jordens vestlige Halvkugle og tidligere kjendt kun fra Sachalin under omtrent 52° nordlig Bredde.

115. *Rhacomitrium canescens* WEIS st.

Typiske Exemplarer findes fra Gaasefjord i Kong Oscars Land og fra North Kent (300 M. o. H.).

Var. *ericoides* (WEB.) BRYOL. EUR.

Ellesmere Land: Framshavn.

Var. *prolixum* BRYOL. EUR.

Kong Oscars Land: Gaasefjord.

Var. *epilosum* SCHLIEPH.

Ellesmere Land: Bedford Pim Isl.

Saavel Hovedarten, som Varieteterne, er samlet rigelig og i rene Tuer. Arten er paa Spitzbergen almindelig lige til 80° 40′ n. B.

116. *Rhacomitrium lanuginosum* EHRH. st.

Blandt de mest almindelige Moser i disse Egne paa tørre Berge, fuglig Jord og i Sumpe. Exemplarerne er i Almindelighed frodige, vel udviklede og ofte samlede i rene Tuer.

Denne Art har en overmaade stor Udbredelse; den gjenfindes saaledes helt nede paa Tierra del Fuego og Kerguelen, og den trives lige godt i Javas og St. Helenas fugtige og varme Luft, som i den kolde og tørre Luft paa Spitzbergen, hvor den gaar til Vegetationens Grændse vertikalt og horizontalt.

Orthotrichaceæ.

117. *Amphidium lapponicum* (HEDW.) SCHIMP.

Sjelden og sparsomt forekommende paa fugtig Jord i Selskab med *Cephalozia verrucosa* og *Ditrichum flexicaule.*

Kong Oscars Land: Gaasefjord (c. fr.) og Isachsens Fjord; Ellesmere Land: Bedford Pim Isl. og Beitstadfjorden.

Arten hører ogsaa paa Spitzbergen blandt de mere sjeldne Moser.

118. *Orthotrichum speciosum* NEES c. fr.

Temmelig sjelden paa Stene og Berge, oftest i Selskab med *Hypnum revolutum.* Typiske Fxemplarer findes fra følgende Steder.

Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Glacier Valley, Cape Rutherford og Skrællingøen samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 74° 35′ paa Grønlands Østkyst.

119. *Orthotrichum Killiasii* C. M. c. fr.

Mere almindelig, end foregaaende, idet Exemplarer findes fra følgende talrige Steder.

Kong Oscars Land: Havnefjord, Sydkapfjord og Gaasefjord; North Devon: Havhestberget; North Lincoln: Framfjord; Ellesmere Land: Framshavn, Glacier Valley, Lastræadalen, Cape Rutherford, Eskimopolis, Bedford Pim Isl. og Cocked Hat Isl.

Fra de fleste af disse Steder findes der Exemplarer, der maa betragtes som Overgangsformer til foregaaende Art.

Nordgrændse over Spitzbergen.

120. *Orthotrichum Blyttii* (Schimp.) Hagen var. *polare* Bryhn var. nov.

Differt e typo capsulis minoribus (capsula operculata sine collo vulgo 1.5 mm., cum collo 2 mm. longa), stomatibus uniseriatis, dentibus peristomii elimbatis et ciliolis papillosis.

Denne nye Varietet synes at være meget sjelden. Den findes i Samlingen kun fra N. V. Grønland: Foulkefjord under 78° 20′ nordlig Bredde, hvor den er samlet paa Stene og i Selskab med *Schistidium opocarpum* var *filiforme*.

121. *Orthotrichum alpestre* Hornsch. c. fr.

Exemplarer findes kun fra Havnefjord og Gaasefjord i Kong Oscars Land under 76° 30′ nordlig Bredde, hvor Plantan er samlet sparsomt paa Stene i Selskab med *Orthotrichum speciosum* og *Tortula ruralis*.

Artens tidligere kjendte Nordgrændse var ved 74° paa Beeren Eiland.

Encalyptaceæ.

122. *Encalypta commutata* Bryol. Germ.

Exemplarer findes fra North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Renbugten, Gaasefjord, Excrementbugten, Landsend og Isachsens Fjord; North Devon; Cardigan Strait: Djævleøen; North Kent; Ellesmere Land: Framshavn, Glacier Valley, Lastræadalen, Bedford Pim Isl. og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Voxer paa fugtig Jord eller paa Excrementer, ofte med Frugt og som Regel i Selskab med forskjellige *Pottiaceer*, *Splachnaceer* eller *Bryum*-Arter.

Arten findes ogsaa, omend sparsomt, paa Spitzbergen, Beeren Eiland, Grønland og Alaska.

123. *Encalypta vulgaris* (HEDW.) HOFFM. c. fr.

Meget sjelden paa stenet fugtig Jord blandt *Ditrichum flexicaule* og *Distichium capillaceum*.

Kong Oscars Land: Gaasefjord uader 76° 30′ nordlig Bredde.

Var. *pilifera* SCHIMP.

Ogsaa Varieteten findes kun fra Gaasefjord.

Artens tidligere kjendte Nordgrændse var ved 70° 25′ i Finmarken.

124. *Encalypta rhabdocarpa* SCHWGR.

Især i den sydlige Del af de undersøgte Egne almindelig og oftest med rigelig Frugf.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Sydkapfjord og Excrementbugten; North Devon: Havhestberget øg Borgøen; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Lastræadalen, Skrællingøen, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Var. *pilifera* (FUNCK) BRYOL. EUR.

Varieteten findes kun fra Gaasefjord og Sydkapfjord i Kong Oscars Land.

Arten har Nordgrændse over Spitzbergen ved omtrent 80°.

125. *Encalypta apophysata* BRYOL. GERM.

Sjelden og kun i den sydlige Del af det undersøgte Landomraade.

Kong Oscars Land: Havnefjord (c. fr.), Gaasefjord (c. fr.) og Renbugten under 76° 40′ nordlig Bredde, hvor Planten er samlet rigelig og i rene Tuer.

Artens tidligere kjendte Nordgrændse var ved 74° 20′ paa Grønlands Østkyst.

126. *Encalypta contorta* (WULF.) HOPPE.

Sjelden og kun i enkelte sterile Individer indsprængt i Mosetuer.

Kong Oscars Land: Havnefjord og Gaasefjord; North Devon: Havhestberget og Borgøen; Cardigan Strait: Djævleøen; Ellesmere

Land: Cape Rutherford og Bedford Pim Isl. samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Tidligere kjendte Nordgrændse var omtrent ved 70° 30′ paa Grønlands Østkyst.

127. *Encalypta procera* Bruch c. fr.

Vakre og sikre Exemplarer findes fra følgende Steder. Kong Oscars Land: Havnefjord og Gaasefjord; North Kent (300 M. o. H.); Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde, overalt sparsomt indsprængt i Mosetuer.

Arten er kjendt ogsaa fra Grønland og Spitzbergen.

Splachnaceæ.

128. *Voitia hyperborea* Grev. & Arn. c. fr.

Paa Excrementer af Ren og Polaroxe, oftest blandet med *Tetraplodon mnioides, Haplodon Wormskjoldii,* forskjellige Arter *Bryum, Orthothecium chryseum* og *strictum, Didymodon rubellus* og *alpigena.*

Exemplarer, tildels rigelige, findes fra Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Landsend; Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Arten findes forøvrigt paa Spitzbergen, Novaja Semlja, Grønland og Melville Ø,

129. *Tayloría acuminata* (Scheich.) Hornsch. c. fr.

Meget sjelden paa sumpig Jord, indsprængt i Mosetuer. Exemplarer findes kun følgende 2 Steder. Kong Oscars Land: Havnefjord, i Selskab med *Brachythecium salebrosum, Camptothecium nitens, Orthothecium chryseum, Timmia austriaca* og *norvegica, Bryum oeneum* og *arcticum, Tortula ruralis, Philonitis alpicola* og andre; Ellesmere Land: Beitstadfjorden under 79° nordlig Bredde i Selskab med *Bryum cirratum.*

Arten findes ikke tidligere angiven for arktiske Lande.

130. *Tetraplodon mnioides* (Sw.) Bryol. Eur. c: fr.

Paa Excrementer og Cadavere, ofte i rene Tuer, i disse Egne ligesaa almindelig, som i alle øvrige hidtil undersøgte arktiske Lande.

131. *Tetraplodon pallidus* Hagen c. fr.

Paa lignende Underlag, som foregaaende, og oftest i Selskab med denne eller med *Voitia* eller *Haplodon.*

Kong Oscars Land: Gaasefjord; Ellesmere Land: Glacier Valley, Cape Rutherford og Eskimopolis samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Exemplarer fra samtlige Steder er fuldstændig congruente med Originalexemplarer fra Norge.

132. *Haplodon Wormskjoldii* (Horn.) Lindb.

I Sumpe paa Excrementer og Cadavere her ligesaa almindelig forekommende, som i alle andre hidtil undersøgte arktiske Lande, oftest rigt frugtbærende og i mere eller mindre rene Tuer.

133. *Splachnum vasculosum* L.

Meget sjelden og kun steril.

North Devon: Havhestberget i 10 Cm. dybe Tuer, paa Excrementer, i Selskab med *Haplodon*; Ellesmere Land: Framshavn, her ligeledes paa Excrementer, i Selskab med *Hypnum polycarpon*.

Nordgrændse over Spitzbergen ved 80° 20′.

Funariaceæ.

134. *Funaria polaris* Bryhn sp. nov.

Autoica. Cæspitosa, cæspitibus luteo-viridibus, humilibus.

Caulis brevis, vix ultra 5 mm. altus, nigrescens, inferne radicellosus.

Folia siccitate parum mutata, difficile emollita, humiditate erecto-patentia, inferiora parva et sparsa, coronalia in gemmam densam congesta, carinato-concava, ovato-lanceolata, acumine subrecurvo acute acuminata, marginibus planis, elimbatis et integerrimis, coronalia circiter 1.5 mm. lata et duplo longiores.

Costa tenuis, basi 0.04 mm. lata, luteo-fuscescens, cum apice evanida, lævissima.

Cellulæ foliares hexagono-rectangulæ, parce, chlorophylliferæ, apicales hexagonæ, basilares laxiores rectangulæ, inanes, omnes lævissimæ.

Seta tenuis, ad 20 mm. usqve alta, sicca et humida flexuosa, apice arcuato, ætate erecta, pallide lutea, ætate fuscescens, sinistrorsum torta.

Theca inclinata vel demissa, ætate erecta, leniter obliqva, subsymmetrica, pyriformis, cum collo 2.5 mm. longa et 1 mm. crassa, collo sporangio æqvilongo, leniter striata, lutea, ætate fusca.

Annulus compositus (triplex), facile revolubilis, 0.065 mm. latus, purpureus.

Peristomium, longe sub orificio nascens, simplex. Dentes, ab externo visi, dextrum versus obliqvati in tholum depressum conniventes, circiter 0.3 mm. longi et 0.065 mm. lati, lanceolato-subulati, inferne dense alteqve lamellati, flavo-rufescentes, apice hyalini, dense papillosi.

Spori 0.015 mm. magni, ochracei, læves.

Operculum conicum, diametro 0.5 mm. latum, luteum, margine purpureum, cellulis in spiram dispositis.

Species optima e congeneribus proximis *Funaria æqvidente* et *Funaria kashmirensi* notis supra relatis satis superqve diversa.

Denne vakre og karakteristiske nye Art er samlet i rigelige Exemplarer, men kun paa et eneste Sted: Havnefjord i Kong Oscars Land, under 76° 30′ nordlig Bredde. Planten voxer her paa fugtig Jord i Selskab med *Tortula mucronifolia*, *Leptobryum pyriforme*, *Brachythecium salebrosum* var. *turgidum*, *Bryum ventricosum*, *globosum*, *pendulum* og *nitidulum* var. *fenestratum*.

135. *Funaria hygrometrica* (L.) Sibth. var. *arctica* Bergg.

Blandt de mest sjeldne Moser og dertil meget sparsomt forekommende.

Kong Oscars Land: Stenkulsfjorden og Gaasefjord paa fugtig Lerjord i Selskab med *Desmatodon suberectus* og *Pottia Heimii* var. *obtusifolia*.

Denne Varietet er tidligere kjendt fra Spitzbergen, Sibirien, Klondyke og Grønland.

Bryaceæ.

136. *Mielichhoferia Porsildii* Hagen.

Denne hidtil lidet kjendte Plante voxer i Bergsprækker eller paa sumpig Jord, enten i rene Tuer eller i Selskab med andre Moser, f. Ex. *Mnium affine*, *Timmia bavarica*, *Tortula ruralis*, *Amblystegium filicinum* var. *curvicaule*.

Exemplarer findes i Samlingen fra følgende Steder. Kong Oscars Land: Havnefjord og Gaasefjord (c. fr.); North Devon: Havhestberget; Ellesmere Land: Eskimopolis, under 78° 50′ nordlig Bredde.

Arten er tidligere kjendt kun fra Disko i Vest-Grønland, under omtrent 69° 30′ nordlig Bredde.

137. *Leptobryum pyriforme* (L.) SCHIMP.

Ikke sjelden øg ofte i rigt frugtbærende rene Tuer.

Kong Oscars Land: Havnefjord og Gaasefjord; N. V. Grønland: Foulkefjord: Ellesmere Land: Framshavn, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Planten hører paa Spitzbergen blandt de mest sjeldne Moser.

138. *Anomobryum concinnatum* (SPRUCE) LINDB. st.

Findes kun fra Cape Rutherford i Ellesmere Land under 78° 50′ nordlig Bredde.

Planten er paa dette Sted samlet yderst sparsomt paa sumpig Jord blandt *Blepharostoma trichophyllum, Cephalozia verrucosa, Didymodon rubellus, Bryum tomentosum* og *confluens, Myurella julacea* og *Campylium stellatum.*

Artens tidligere kjendte Nordgrændse var over Disko (Vest-Grønland) under omtrent 69° 30′.

139. *Plagiobryum demissum* (H. & H.) LINDB. c. fr.

Meget sjelden paa sumpig Jord i Selskab med *Sphenolobus minutus, Didymodon rubellus, Bryum pendulum, Cinclidium polare, Conostomum boreale, Timmia norvegica, Mnium affine, Orthothecium chryseum* og andre Moser.

Exemplarer findes kun fra Foulkefjord i N. V. Grønland og fra Lastræadalen i Ellesmere Land under omtrent 78° 45′ nordlig Bredde.

Tidligere kjendte Nordgrændse var ved 70° paa Grønlands Østkyst.

140. *Webera cruda* (L.) BRUCH.

Denne hører blandt de mest almindelige Moser i disse Egne og er samlet paa ethvert af de undersøgte Steder. Arten voxer her oftest paa sumpig Jord og findes ikke sjelden med vel udviklet Frugt.

141. *Webera nutans* (SCHREB.) HEDW.

Omtrent ligesaa almindelig, som foregaaende Art, dog sjeldnere med Frugt.

142. *Webera commutata* SCHIMP.

Meget mindre almindelig, end de to foregaaende Arter, og ikke samlet med Frugt.

Kong Oscars Land: Gaasefjord og Renbugten; Ellesmere Land: Framshavn, Bedford Pim Isl. (♂) og Eskimopolis.

Var. *filum* Bryol. Eur.

N. V. Grønland: Foulkefjord (♀ & ♂); Ellesmere Land: Beitstadfjorden.

Alle disse 3 Arter *Webera* naar paa Spitzbergea til Vegetationens yderste Nordgrændse.

143. *Bryum autumnale* Limpr. c. fr.

Kong Oscars Land: Havnefjord (i Selskab med *Bryum pendulum* og *compactum*), Renbugten (i Selskab med *Bryum pallens* og *ventricosum*), Gaasefjord (i Selskab med *Bryum pendulum, arcticum* og *ventricosum*); Ellesmere Land: Glacier Valley under 78° 45′ nordlig Bredde (i Selskab med *Bryum pendulum* og *confluens*).

Arten er tidligere kjendt kun fra Norge (Dovre og Finmarken).

144. *Bryum globosum* Lindb. c. fr.

Sjelden paa Lerjord eller paa Excrementer, og kun fra Kong Oscars Land: Havnefjord, Sydkapfjord og Moskusfjord.

Paa det førstnævnte Sted fandtes Planten i Selskab med *Ceratodon purpureus, Tetraplodon mnioides, Tortula mucronifolia* og *ruralis, Funaria polaris, Haplodon Wormskjoldii, Bryum pallens, ventricosum, pendulum* og *nitidulum*. Paa det sidstnævnte Sted i Selskab med *Voitia hyperborea, Tetraplodon mnioides, Encalypta commutata, Bryum calophyllum, arcticum, tomentosum* og *pendulum*.

Arten er forøvrigt kjendt fra Spitzbergen, Grønland, Sibirien og Norge.

145. *Bryum lacustre* Bland. c. fr.

Sjelden paa sumpig Jord og paa Excrementer.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Framshavn under 78° 45′ nordlig Bredde i Selskab med *Voitia hyperborea, Distichium Hagenii, Pottia Heimii* var. *obtusifolia, Desmatodon suberectus* samt *Orthothecium chryseum* og *strictum*.

Tidligere kjendte Nordgrændse for denne Art var ved 74° over Beeren Eiland.

146. *Bryum hyperboreum* Bryhn & Ryan sp. nov.

Cæspites densi, circiter 1 cm. alti, intus terra limoso-arenacea obruti, superne luteo-virides.

Surculus pluries divisus, tomento pallide fusco papilloso dense obtectus.

Caulis 0.2 mm. crassus, rufus.

Folia caulina non decurrentia, siccitate adpressa, apice torta, humiditate erecto-patentia; infima in tomento occulta remota, minuta. lanceolata, margine plano, seriebus cellularum duabus limbato, costa sub apice evanida, supra mediam innovationem subito majora, comam polyphyllam formantia; comalia inferiora ovata, concava, breviter acuminata; superiora ad insertionem vinoso-rubra, sensim longiora longiusqve acuminata, ovato-lanceolata. 2.2 mm. longa et 0.9—1 mm. lata, apice acuto, margine late revoluto cellularum seriebus qvatuor limbato.

Cellulæ foliorum basilares rectangulæ, 0.05—0.07 × 0.02—0.025 mm. magnæ, angulares ovales fuscescentes, illæ folii superioris hexagonæ, margines versus sensim longiores et angustiores; parietes cellularum valde incrassatæ, collenchymaticæ, trigonis maxime conspicuis.

Costa foliorum mediocriter valida, basi fusca, ceterum viridi-lutea, in foliis supremis in cuspidem integram fuscescentem summo apice hyalinam excurrens.

Folia innovationum caulinis minora, adpressa, brevius cuspidata, costa haud excurrenti, margine plana elimbata.

Folia perichætialia e basi lato sensim lanceolata, externa costa excurrente cuspidata, intima minora semicostata, omnia margine plana et elimbata.

Inflorescentia synoica. Archegonia pauca; antheridia numerosa, 0.4 mm. longa, rosea; paraphyses numerosæ, roseolæ, apice lutescentes.

Seta tenuis, rubro-fuscescens, 9—12 mm. alta.

Capsula subregularis, pendula, deoperculata 3 mm. longa et 1.5 mm. crassa, obovata, fusca, opaca vel subnitens, sicca longitudinaliter rugulosa et foveolata, sub orificio haud angustata. Collum duas tertias capsulæ longum, curvatum, contra setam sensim attenuatum, siccitate plicatum et contra sporangium constrictum.

Cellulæ exothecii irregulares, marginales in seriebus 2—3 parvæ, pachydermaticæ, rotundatæ, transverse rectangulæ vel qvadratæ, submarginales in seriebus nonnullis majores multangulæ et qvadratæ, ceteræ qvadratæ, rectangulæ, trigonæ vel ovales, parietibus sinuosis et irregulariter incrassatis; etiam illæ colli irregulares, qvadratæ, rectangulæ, transverse rectangulæ vel trigonæ, Stomata ovalia, 0.04 mm. magna.

Operculum conicum, fuscescens, 0.32 mm. altum.

Annulus duplex—triplex, 0.09 mm. latus, revolubilis.

Exostomii dentes approximati, e fundo aurantio-badio, rotundato, 0.32 mm. longi, basi 0.08—0.09 mm. lati, siccitate erecti apicibus obtusis incurvis, firmi, badii, summo parte tertia lutescenti, luteo-limbati, limbo

papilloso et crenulato; scutula breviter rectangula, subtilissime striato-punctata, suturis optime conspicuis, mediana recta; lamellæ circiter 20, intervallis æqvimagnis, altæ, margine libero medio impressæ, inter se liberæ.

Endostomium liberum, lutescens, minutissime punctulatum; membrana basilaris 0.1 mm. alta; processus lineares, usqve ad fundum peristomii rimosi.

Cilia rudimentaria.

Spori lutescentes, 0.028—0.032 mm. magni.

Denne nye Art tilhører Inclinatumgruppen, om den ogsaa minder noget om *Hemisynapsium*. Arten er karaktertstisk ved de faste, brede, i den nedre 2/3 rødbrune Peristomtænder, ved de yderst smale Processer, der er spaltede helt ned til Peristomets Basis, som ved Bladenes, specielt ved Cellehjørnerne, stærkt fortykkede Celler.

Forekommer paa Jord eller paa Excrementer og synes at være meget sjelden. Sparsomme Exemplarer findes fra Kong Oscars Land: Moskusfjord og Gaasefjord under 76° 30′ nordlig Bredde. Paa det første Sted i Selskab med *Bryum oeneum, pendulum, arcticum* og *pallescens, Voitia, Arnellia* og andre Arter. Paa det andet Sted sammen med *Bryum glomeratum, Ceratodon, Distichium Hagenii* og *Orthothecium chryseum.*

147. *Bryum groenlandicum* Arnell.

Sparsomme Exemplarer findes fra kun et eneste Sted. Ellesmere Land: Cocked Hat Isl. under 78° 45′ nordlig Bredde.

Arten er tidligere kjendt fra Grønlands Østkyst (Cape Stewart) under 70° 30′ nordlig Bredde.

148. *Bryum inclinatum* (Sw.) Bryol. Eur.

Nogenlunde typiske Exemplarer kun fra følgende ganske faa Steder.

Kong Oscars Land: Havnefjord; Ellesmere Land: Eskimopolis og Skrællingøen.

Findes ogsaa angiven for Spitzbergen, Grønland og andre arktiske Egne.

149. *Bryum laxirete* Bryhn & Ryan. sp. nov.

Cæspites molles, circiter 3 cm. alti, intus fuscescentes, superne virides.

Surculus sparsifoliatus, innovationes subcomales plures, foliis inferne remotis parvis, apice majoribus congestis, instructas. emittens, tomentum intricatum dense grosseqve papillosum proferens.

Caulis ruber, 0.4—0.6 mm. crassus, pentagono-rotundatus, fasciculo centrali bene definito, 0.05—0.1 mm. crasso et fasciculis stereïdarum tribus e costis foliorum decurrentibus formatis instructus; rete intermedium laxum, tenue, rubrum, circum fasciculum centralem e cellnlis majoribus leptodermibus, ceterum e cellulis minoribus magis incrassatis constructum.

Folia caulina mollia, humiditate erecto-patentia, siccitate vario modo torta, accrescentia, haud decurrentia, e basi angusto viridi lanceolata, sensim in apicem plus minus longum, dentibus obtusatis angulo recto exsertis dentatum, contracta, margine plus minusve reflexa vel revoluta et seriebns 1—3 cellularum ætate fuscescentium limbata.

Folia coronalia in comam grandifoliam congesta, summa 3 mm. longa, angusta lanceolata, in apicem acutum dentatum 0.45 mm. longum sensim angustate, margine revoluta et limbata.

Cellulæ foliares leptodermes, parietibus ætate lutescentibus, basilares rectangulæ, 0.1 mm. longæ et 0.02 mm. latæ, in cetero folio hexagono-rhombeæ, 0.06—0.08 mm. longæ et 0.022 mm. latæ.

Costa basi 0.09 mm. lata, sensim attenuata, longe decurrens, luteo-fuscescens, in foliis mediis in apice vel cum eo desinens, in summis in cuspidem dentatam excurrens, dorso valde prominens, cellulis dorsalibus turgidis, ducibus 4, fasciculo stereïdarum valido fusco.

Folia perichætialia e basi lato in apicem tæniæformem, flexuosum, grosse dentatum 0.9 mm. longum, sensim angustata, costa sub apice evanida, intima margine plana et elimbata.

Inflorescentia synoica, floribus femineis raris. Archegonia 0.57—0.6 mm. longa, pauca; antheridia 0.3 mm. longa, rufescentes; paraphyses longiores, crassæ, hyalinæ vel lutescentes.

Seta tenuis, fuscescens, 2—2.5 cm. longa, apice hamato pallidior.

Capsula pendula, deoperculata ad 4 mm. usqve longa et circiter 1 mm. crassa. Collum sporangio æqvilongum, curvatum. lutescens, in sicco contra sporangium constrictum, plicatum, in setam sensim attenuatum, cellulis epidermicis irregularibus, plurimis qvadratis et elongato-rectangulis cum transverse rectangulis et rotundatis, parietibus sinuosis, mixtis, stomatibus oblongis, 0.048 mm. longis, poro ovali. Sporangium collo æqvilongum, anguste obovatum, dorso alto gibbosum, lutescens, ætate fuscescens, in sicco sub ore haud contractum, cellulis epidermicis irregulariter rotundato-qvadratis vel rotundato-rectangulis, parietibus sinuosis, marginalibus in seriebus 5—6 paullo latioribus qvam longioribus.

Exostomii dentes erecti, apice inflexi, e fundo flavo, 0.045 mm. alto, subtus bene definito, 0.3 mm. longi et basi 0.66—0.07 mm. lati, lineari-lanceolati, ipso apice obtusi, flavo-fuscescentes, summa tertia lutescentes, papilloso-punctulati. Lamellæ circiter 18, leniter arcuatæ, inter se liberæ, margine limbatæ. Scutula qvadrata subtilissime punctulata, suturis distinctis vix papillosis, mediana pæne recta,

Endostomium ab exostomio liberum; membrana basilaris tenuissima, lutescens, vix punctulata, 0.15 mm. alta; processus lineares, secus carinam rimis angustis pertusi, exostomio breviores. Cilia nulla.

Annulus flavus, triplex—qvadruplex, difficile solubilis.

Operculum conicum, basi 0.65 mm. latum, sporangio concolor.

Spori fuscescentes, 0.022—0.0275 mm. magni, punctati.

Denne nye Art ligner i Kapselform paafaldende *Bryum arcuatum* og *Bryum arcticum*, men hører paa Grund af Peristomets Bygning til Inclinatumgruppen. Fra alle andre Arter i denne Gruppe er den forskjellig blandt andet ved den ufarvede Bladgrund, den langt nedløbende Bladnerve, den eiendommelige Bladspids og den lange krumme Kapselhals.

Exemplarer findes fra Havnefjord og Gaasefjord i Kong Oscars Land, under 76° 30′ nordlig Bredde. Den voxer paa sumpig Jord, sparsomt i Selskab med *Bryum pendulum*, *Riccardia pingvis*, *Cinclidium polare*, *Philonotis alpicola*, *Aulacomnium acuminatum* og *Amblystegium filicinum* var. *curvicaule*.

150. *Bryum terrestre* Hagen.

Exemplarer findes fra følgende Steder.

Kong Oscars Land: Moskusfjord og Gaasefjord; N. V. Grønland: Foulkefjord under 78° 20′ nordlig Bredde.

Arten er tidligere kjendt kun fra Cape Bennet paa Grønlands Østkyst under 73° 30′ nordlig Bredde og under Navn af *Bryum Dusénii* Arnell.

151. *Bryum minus* Arnell.

Exemplarer findes fra følgende Steder.

Kong Oscars Land: Sydkapfjord og Gaasefjord; Ellesmere Land: Bedford Pim Isl., under 78° 40′ nordlig Bredde.

Arten er tidligere kjendt kun fra Hurry-Inlet paa Grønlands Østkyst under 70° 40′ nordlig Bredde.

152. *Bryum liliputanum* BRYHN & RYAN sp. nov.

Cæspites densi, 4—5 mm. tantnm alti, intus fusci, superne ætate lutescentes.

Surculus brevis, inferne subnudus, foliis versus apicem congestis, innovationibus penicelliformibus ramosus, tomento rubro-fusco verrucoso denso vestitus.

Folia caulina accrescentia, comalia subito majora, humiditate concavo-carinata, erecto-patentia, apice subrecurva, e basi viridi angusto haud decurrente ovato-lanceolata, 1.5 mm. longa et 0.45 mm. lata, in cuspidem brevem denticulatam angustata, margine plus minusve reflexo seriebus duabus cellularum incrassatarum lutescentium optime limbata.

Cellnlæ foliares incrassatæ, parietibus lutescentibus, basilares elongato-rectangulæ circiter 0.07 mm. longæ et 0.02 mm. latæ, per totum folium cæterum rhomboïdeæ vel hexagono-rhomboideæ circiter 0.04 mm. longæ et 0.02 mm. latæ.

Costa foliorum valida, rubescenti-fuscescens, in apice dissoluta vel in cuspidem excurrens.

Folia perichætialia intima breviora qvam caulina coronalia breviter mucronata, margine plano elimbata.

Inflorescentia synoica; antheridia pauca, brevi-pedunculata, ovalia, 0.25 mm. longa; archegonia item pauca.

Seta tenuis, 6—7 mm. longa, inferne flava, superne lutescens, apice arcuata.

Capsula pendula, deoperculata 1.7 mm. longa et 0.75 mm. crassa. Collum 0.7 mm. longum, curvatum, contra sporangium humiditate haud attenuatum, siccitate constrictum, in setam defluens, plicatum, epidermide e cellulis fere uniformibus qvadrato-rectangulis formato, stomatibus satis numerosis ovalibus, 0.033 mm. longis. Sporangium ad orificium 0.48 mm. diametro latum, obovatum, siccitate ovale, flavum, subnitens, sub orificio haud constrictum, cellulis epidermicis valde incrassatis, parietibus earum haud flexuosis, plurimis elongato-rectangulis, submarginalibus in seriebus duabus qvadratis, marginalibus in seriebus duabus transverse rectangulis.

Exostomii dentes prope orificium affixi ad insertionem aurantium, siccitate in tholum conniventes, 0.26 mm. longi et basi 0.05 mm. lati, spatio 0.02—0.04 mm. inter se remoti, aurantii, versus apicem lutescentes, sublæves, sensim attenuati, mediocriter late limbati; scutula inferiora qvadrata, dense punctata, suturis distinctis, mediana pæne recta; lamellæ altæ, 12—16, normaliter efformatæ, inter se liberæ inqve eadem distantia remotæ.

Endostomium liberum; membrana basilaris 0.1 mm. alta, pallide lutescens, vix papillosa; processus lanceolati, papillosi, carinati. inferne foraminibus oblongis, sæpe confluentibus, secus carinam pertusi.

Cilia rudimentaria.

Spori 0.024—0.026 mm. magni, lutescentes, papillulosi.

Cætera ignota.

Denne nye Art tilhører Inclinatumgruppen. Den udmærker sig ved alle Deles Dværgagtighed, ved Kapselens Form, hvilken i tør Tilstand minder om *Bryum arcticum*, ved de smale, langt adskildte, Ydertænder, de med fortykket Randsøm forsynede Blade og ved de hos denne Gruppe sjelden forekommende kvadratiske Rygskjolde.

Fra *Bryum minus* adskilles den let ved Kapselens Form og den bøiede Hals, ved de tydeligt kantede Peristomtænder og de regelmæssige Lameller.

Exemplarer findes kun fra et eneste Sted, nemlig Havnefjord i Kong Oscars Land under 76° 30′ nordlig Bredde. hvor Planten er samlet meget sparsomt indblandet blandt *Distichium capillaceum*, *Bryum arcticum*, *Bryum parvum* og *Orthothecium chryseum*.

153. *Bryum parvum* Bryhn & Ryan sp. nov.

Cæspites densi, 6 mm. alti, luteo-fusci, summo apice virides.

Surculus erectus, pluries innovando ramosus, tomento luteo-fusco papilloso dense vestitus; innovationes 2 mm. longi, inferne tomentosæ foliis destitutæ, apice folia pauca gerens.

Caulis ruber.

Folia caulina accrescentia, haud decurrentia, infima in tomento occulta remota, parva, 0.4 mm. longa, rubra, ovato-triangularia, breviter acuminata, margine plano elimbata, costa tenui ad medium vel nulla; folia caulina media a basi rubro ovato lanceolata, longius acuminata, margine plano elimbata, costa sub apicem evanida; folia suprema carinata, siccitate conniventes apicibus tortis, humiditate stricto-erecta, non decurrentia, 1.8 mm. longa et 0.4 mm. lata, e basi vinoso angusto anguste lanceolata, e folio medio subito in aristam 0.45 mm. longam, flexuosulam, grosse dentatam contracta, margine versus apicem dentata, ceterum integerrima, late recurvata et seriebus cellularum 2—3 incrassatarum limbo distincto cincta.

Cellulæ foliares leptodermes, basilares rectangulæ, 0.04—0.06 mm. longæ et 0.01—0.013 mm. latæ, parietibus pulchre rubris, mediæ et superiores rhomboideo-hexagonæ 0.03—0.05 mm. longæ et 0.012 mm. latæ,

parietibus ætate lutescentibus, marginales lineares, parietibus incrassatis luteolis.

Costa foliorum in caulem decurrens, basi rubra, 0.084 mm. crassa, ceterum lutea vel fusco-lutescens, in foliis supremis longe excurrens.

Folia perichætialia externa e basi lato anguste lanceolata, 1.5 mm. longa et 0.37 mm. lata apice longo lævi setæformi, interna breviora, ovato-lanceolata, apice dentato, margine plana et elimbata.

Inflorescentia synoica; antheridia pauca; archegonia numerosa; paraphyses lutescentes, inferne rufescentes,

Seta tenuis, 0.1 mm. crassa, rufo-fuscescens, circiter 7 mm. longa, apice arcuata.

Capsula horizontalis—nutans subcano-fuscescens, deoperculata 1.15 mm. longa; collum crassum, 0.45 mm. longum in setam defluens, siccitate contra sporangium constrictum plicatumqve, cellulis epidermicis regularibus, qvadratis, stomatibus ovalibus 0.035 mm. longis; sporangium obovatum, sub orificio haud contractum, ætate late hians, fere urceolata, cellulis epidermicis regularibus qvadratis vel breviter rectangulis, parietibus illarum parum incrassatis nec flexuosis, marginalibus in serie una transverse rectangulis, minoribus.

Peristomium 0.24 mm. altum, prope orificium affixum.

Exostomii dentes luteoli, ad basin latitudine inæqvales, 0.033—0.055 mm. lati, sensim in apicem subobtusum lutescentem sublævem attenuati, distincte et late limbati; scutula qvadrata dense punctata, suturis transversalibus distinctis, mediana subtilissima, recta; lamellæ remotæ, 8—10, liberæ inter se, normaliter evolutæ.

Endostomium lutescens, læve, liberum, exostomio haud adhærens; membrana 0.09 mm. alta; processus lanceolati, dentibus breviores, secus carinam rimoso-pertusi.

Cilia desunt.

Spori fusco-lutescentes, 0.022 mm. magni, dense papillulosi.

Tilhørende Inclinationsgruppen udmærker denne usædvanlig dværgagtige Art sig blandt andet ved Bladenes lange børsteformige Spids, ved den i ældre Tilstand næsten bægerformede Kapsel, Peristomets ringe Høide og Lamellernes Faatallighed.

Exemplarer findes kun fra Havnefjord i Kong Oscars Land (76° 30′ n. B.), sparsomt i de samme Mosetuer, som foregaaende Art (*Bryum liliputanum*).

154. *Bryum brachythecium* BRYHN & RYAN. sp. nov.

Cæspites densi, 8—10 mm. alti, intus terra limoso-arenacea obruti, superne læte virentes.

Surculus valde ramosus, innovationes numerosas et steriles imbricatim foliatas et fertiles inferne foliis remotissimis, apice congestis comantibus, instructas emittens, tomentum intricatum flavo-fuscescentem papillulosum uberrime proferens.

Caulis rubro-lutescens.

Folia caulina siccitate adpressa, humiditate erecto-patentia, apice subrecurva, basi virides, haud decurrentia, ovato-lanceolata, breviter acuminata, 0.9—1 mm. longa et 0.45 mm. lata, margine plana vel in summis leniter recurva, limbo cellularnm seriebus 1—2 lutescentium incrassatarum circumcincta.

Folia comalia concavo-carinata, ovata vel ovato-lanceolata, haud decurrentia, 1.2—1.45 mm. longa et 0.65 mm. lata, sensim in apicem lævem mediocriter longum angustata, costa in apice dissoluta instructa, margine reflexo cellularum seriebus 1—2 elongatarum limbata.

Cellulæ foliares plurimæ hexagonæ-rhombeæ, 0.05—0.07 mm. longæ et 0.015—0.2 mm. latæ, basilares breviter rectangulo-rhombeæ, parietibus haud rubris, mediocriter incrassatis lutescentibus. In foliis comalibus cellulæ angulares nonnullæ ovales fuscescentes adsunt.

Costa mediocriter valida, fusco-lutescens, nunqvam excurrens.

Folia innovationum sterilium et siccitate et humiditate adpresso-imbricata, densa, concavo-carinata, apice rubrecurvo, ovata, breviter, acuminata, 0.55 mm. longa et 0.35 mm, lata, margine plana, limbo nullo cincta, cellulis folii dimidii inferioris rectangulo-qvadratis, superioris dimidii rectangulo-rhombeis.

Folia perichætialia intima breviora qvam comalia, margine plana et elimbata, costa in apice desinente instructa.

Inflorescentia synoica. Nec desunt flores masculi in innovationibus brevibus subcomalibus. Archegonia pauca, 0.45 mm. longa; antheridia etiam pauca, oblonga brevi-pedunculata, 0.35 mm. longa; paraphyses lutescentes, basi rufescenti.

Seta 5—6 mm. longa, crassiuscula, inferne rufo-fuscescens, superne pallidior, apice hamata.

Capsula pendula, seta adpressa, lutescens, ætate luteo-fuscescens, opaca, deoperculata 1.2—1.5 mm. longa et 0.73—0.75 mm. crassa; collum 0.48—0.6 mm. longum, crassum, latere versus setam spectante leniter gibbosum; coloris sporangii, contra sporangium haud constrictum,

contra setam abrupte desinens, siccitate haud mutatum, cellulis epidermicis qvam maxime irregularibus, rotundatis, multangulis, qvadratis, rectangulis et variis, parietibus illarum valde flexuosis, stomatibus satis numerosis, irregularibus, plurimis ovalibus, 0.044 mm. longis; sporangium obovatum, medium siccitate paullulum angustatum, ætate late hians, fere urceolatum; exothecii cellulæ ob parietes valde undulatos admodum irregulares, ovales, multangulæ, qvadratæ et rectangulæ inter se mixtæ, marginales in seriebus duabus minores qvadratœ vel transverse rectangulæ.

Exostomii dentes siccitate erecti, apicibus inflexis, fundo rufo-fuscescenti, 0,044 mm. alto cribroso, deorsum irregulariter prolongato, 0.38 mm. longi et 0.06—0.07 mm. lati, dimidio inferiore lineares, dein sensim angustati, aurantii, summa tertia lutescenti, limbo indistincto circumditi, dense papilluloso-punctulati; scutula qvadrata subtilissime punctulata, suturis conspicuis, mediana angulata; lamellæ circiter 12, inter se æqvaliter remotæ et liberæ, margine posteriore medio leniter impressæ.

Endostomium exostomio haud adnatum, flavescens; membrana 0.11 mm. alta, subtilissime punctata; processus breviores qvam dentes, anguste lanceolati, foraminibus angustis rimæformibus secus carinam pertusi.

Cilia rudimentaria.

Spori 0.022—0.027 mm. magni, luteo-fuscescentes, subtile papillulosi.

Cætera ignota.

Denne Art henhører ogsaa uden Tvivl blandt Inclinatumgruppens i de arktiske Egne vistnok overordentlig talrige Arter, uagtet den ogsaa ved de svagt dobbeltbuede Lameller minder om Hemisynapiumgruppen.

Blandt Inclinationsgruppens Arter ligner den ved sin ringe Størrelse mest *Bryum liliputanum* og *Bryum parvum*. Fra den første adskilles den let ved den forskjellige Bladform, Bladnerve, Kapselhals og det forskjellige Kapselcellevæv.

Fra *Bryum parvum* adskilles den ved den forskjellige Kapselhals og de meget afvigende Blade.

Fra *Bryum minus* er den forskjellig saavel i Bladform som Kapselform.

Exemplarer findes fra Gaasefjord i Kong Oscars Land under 76° 50′ nordlig Bredde. Planten er samlet yderst sparsomt paa Polaroxeexcrementer i Selskab med *Bryum arcticum*, *Voitia hyperborea*, *Tetraplodon pallidus* og *mnioides*, *Tortula mucronifolia*, *Desmatodon suberectus* og *Aplozia polaris*.

155. *Bryum gemmaceum* BRYHN & RYAN sp. nov.

Cæspites densissimi, fusci, 4 mm. tantum alti.

Surculus erectus, innovationes numerosas 0.5—1 mm. altas gemmiformes vinoso-tinctas emittens, tomento fusco ramosissimo papilloso dense tectus.

Caulis rufescens, inferne subnudus.

Folia caulina et comalia inferiora late ovalia, margine plana et limbo nullo cincta, apice obtusa, comalia superiora gemmæformiter densissime congesta, haud decurrentia, 1 mm. longa et 0.5 mm. lata, ovata, breviter acuminata, margine plano haud vel indistinctissime limbata.

Costa foliorum nunqvam continua, in foliis caulinis inqve comalibus inferioribus tenuis, sæpe ad series cellularum elongatarum duas reducta, longe infra apicem evanida; illa foliorum comalium supriorum mediocriter valida, inferne rubra, ceterum luteo-virens, infra apicem evanescens.

Cellulæ foliares basilares rectangulæ, coloratæ, parietibus rubris, angulares numero pauco rotundato-qvadratæ, conflatæ, folii medii et superioris rhombeæ vel breviter hexagonæ, marginales paullo longiores, plurimæ mediocriter incrassatæ, parietibus sinuosis.

Inflorescentia synoica. Archegonia 5—7, 0.45 mm. longa; antheridia 1—2, breviora, rubescentia; paraphyses haud numerosæ, rufo-lutescentes, longiores qvam archegonia.

Seta crassiuscula, 7 mm. longa, flexuosa, fuscescens.

Capsula pendula, operculata versus 2 mm. longa et 1 mm. crassa, obovata-clavæformis, subcano-lutea, subnitens; collum sporangio subæqvilongum, siccitate contra illud parum constrictum et longitudinaliter plicatum, in setam defluens, cellulis epidermicis qvadratis vel breviter rectangulis, parietibus illarum valde incrassatis et sinuosis, stomatibus pæne circularibus, 0.045 mm. latis; sporangium sub orificio haud angustatum, cellulis epidermicis valde incrassatis, non regularibus, qvadratis et rectangulis cum rotundatis mixtis, marginalibus in seriebus qvatuor transverse rectangulis.

Exostomii dentes prope orificium affixi, fundo aurantio, 0.33 mm. longi et basi 0.06 mm. lati, lutei, dimidio inferiore lineares, dein subito angustati, anguste limbati, papilloso-punctati; scutula rectangula interdum qvadrata, suturis conspicuis, mediana angulata; lamellæ 16, altæ, non conjunctæ.

Endostomium liberum, lutescens, punctulatum; membrana 0.2 mm. alta, processus superne rimosi, inferne foraminibus ovalibus pertusi.

Cilia nulla.

Annulus simplex.

Operculum humiliter conicum, umbonatum, 0.75 mm. latum, margine crosum.

Spori 0.02—0.025 mm. magni, luteo-virides, subtile punctati.

Denne lille ogsaa til Inclinatumgruppen hørende Art er inden denne Gruppe karakteristisk ved de korte, brede og stumpe, i Kanten plane og ukantede Blade samt den korte Bladnerve. Dens Habitus er eiendommeligt ved den korte Stilk med de talrige knopformige Nyskud og den graagule Kapsel.

Ellesmere Land: Framshavn under 78° 45′ nordlig Bredde, hvor Planten er samlet paa sumpig Jord meget sparsomt blandt *Bryum arcticum, pendulum* og *oeneum, Didymodon alpigena* samt *Lophozia Wenzelii* og *harpanthoides.*

156. *Bryum corioïdeum* Bryhn & Ryan sp. nov.

Cæspites densissimi, 8 mm. profundi, fusci.

Surculus erectus, superne innovationes singulas binasve gemmæformes subcomales, inferne flagella numerosa densifoliata proferens, tomento intricato grosse papilloso fusco tectus.

Caulis ruber.

Folia caulina accrescentia, haud decurrentia, parva, 0.45—0.85 mm. longa et 0.32—0.5 mm. lata, ovalia—ovata, apice obtusa, margine recurvo seriebus cellularum 1—2 elongato-rectangularium, haud distincte limbata, costa sub apice desinente.

Folia apicalia siccitate in comam oblongam gemmæformem conniventes, humiditate erecta, concava, e basi lato auriculæ instar dilatato ovalia, 1—1.25 mm. longa et 0.63—0.74 mm. lata inferiora obtusa, superiora subito breviterqve angustata vel acuminata, margine anguste recurvato seriebus 1—2 cellularum indistincte limbata.

Cellulæ folii superioris hexagono-rhombeæ, marginales qvadratæ, basilares rectangulæ, angulares bistratæ rotundato-inflatæ, parietibus incrassatis et perforatis, plurimæ luteæ, basilares rufo-fuscescentes.

Costa foliorum rufo-fuscescens, mediocriter valida, in apice evanescens.

Folia flagellorum parva, sicca et humida dense imbricata, concava, inferiora late ovalia, superiora lanceolata apice obtuso, omnia margine plano elimbata, costa sub apice evanida.

Inflorescentia heteroica vel polyoica, floribus bisexualibus et masculis. Flores masculi parvi globosi in pedunculo fere nudo, 4 mm. longo; antheridia numerosa, inæqvalia, 0.25—0.45 mm. longa; paraphyses

rubro-flavæ. Flos bisexualis oblongus, archegoniis paucis, 0.5—0.6 mm. longis, antheridiis etiam paucis, 0.4 mm. longis, paraphysibus longioribus rubro-luteis.

Seta 7—9 mm. longa, mediocriter crassa, fusca, apice hamata.

Capsula pendula, regularis, anguste obovata, deoperculata 1.5—1.75 mm. longa et 0.75 mm crassa, pallide fuscescens, siccitate sub orificio leniter, sed late, angustata, sporangio in collum æqvilongum vix plicatum defluente.

Exothecium coriaceum, rigidum, cellulis marginalibus in seriebus duabus parvis qvadratis vel transverse rectangulis, submarginalibus majoribus variis, qvadratis, trigonis, rotundato-multangulis, ceteris maxime irregularibus, parietibus illarum maxime incrassatis, sinuosis et flexuosis. Cellulæ epidermicæ colli modo simili irregulares et incrassatæ, stomatibus numerosis, 0.033—0.42 mm. longis, ovalibus vel fere ovali—qvadratis.

Peristominm 0.36 mm. altum, humiditate et siccitate in conum connivens, prope orificium affixum, insertione rubro-fusco 0.053 mm. profundo, segmentis subrectangularibus integris.

Dentes exostomii basi 0.06—0.07 mm. lati, inter se remoti, ad tertiam supremam rubro-fusci, e medio in apicem acutum lutescentem subtile papilloso-punctatum attenuati, margine mediocriter late limbati et papilloso-crenulati; scutula dense punctulata qvadrata, infima solum breviter rectangula, dimidium longiora, qvam lata, suturis conspicuis, mediana recta, transversalibus ad latera in limbum excurrentibns; lamellæ circiter 20, inter se liberæ, margine libero recto.

Endostomium brevius qvam dentes, lutescens, subtile punctulatum, cum exostomio haud cohærens; membrama 0.12 mm. alta; processus e basi lato lanceolati, carinati, foraminibus ovalibus—oblongis, sæpe confluentibus pertusi.

Cilia terna, brevia, appendiculis nullis.

Annulus duplex, difficile solubilis.

Operculum conicum, apice brevi et crasso.

Spori 0.02—0.022 mm. magni, fusco-virentes, dense papillosi.

Denne nye Art synes at staa *Bryum brachythecium* nærmest. Fra denne adskilles den ved den rødbrune Bladgrund, de kortere og mere stumpe Blade, kortere Bladceller, 2-laget Cellevæv i Bladhjøruerne, Kapselens afvigende Form, de rødbrune mindre bredt kantede Tænder med mere talrige Lameller og ved de bedre udviklede Cilier.

Sparsomme Exemplarer findes fra Moskusfjord i Kong Oscars Land under 76° 30′ nordlig Bredde. Planten er samlet paa Polaroxe-excrementer i Selskab med *Bryum teres, arcticum* og *tomentosum*.

157. *Bryum angustidens* BRYHN & RYAN sp. nov.

Cæspites densi, 2.5 cm. alti, intus incano-fusci, zonati, superne virides.

Surculus pluries innovando ramosus, innovationibus gemmæformibus numerosis superpositis inferne subnudis nodosus, tomento fusco verrucoso vestitus.

Caulis 0.25 mm. crassus, ruber, sectione transversa ovalis; rete intermedium laxum, tenue, rubrum, versus peripheriam e cellulis minoribus paullo magis incrassatis formatum; fasciculus centralis irregularis inter cellulas intermedias arcte inclusus.

Folia caulina parva, partim in tomento occulta, pauca, late ovalia, fere sqvamæformia, margine plana, costa duas tertias folii percurrenti.

Folia comalia subito majora, concava, in gemmam ovato—oblongam dense congesta, externa parva ovalia, obtusa vel subito et breviter acuminata, interna varia, aut ovato-ovalia cum vel sine acumine brevi aut late ovata in mucronem brevem e costa excurrenti formatum minus subito angustata, circiter 2.2 mm. longa et 1-3 mm. lata, omnia margine elimbata et plus minusve late reflexa.

Cellulæ foliares mediocriter incrassatæ, corpora oleosa sæpe includentes, basilares elongato-rectangulæ, parietibus rubris, ad angulas dilatatos rotundato-inflatæ, vulgo bistratæ, illæ folii medii et superioris breviter rhombeo—hexagonæ, marginales e basi ad medium folium in seriebus pluribus qvadratæ.

Costa inferne lata rubra, superne sensim angustior luteo-virens, non nisi in foliis comalibus nonnullis excurrens.

Folia perichætialia e basi lato sensim angustata, interna margine plana, brevi-costata.

Inflorescentia heteroica, floribus bisexualibus paucis et masculis numerosis; archegonia circiter 8, 0.7 mm. longa; antheridia pauca, 0.6 mm. longa; paraphyses longiores, inferne rufescentes.

Seta 1 cm. longa, luteo-fuscescens, rigida, apice paullo crassiore hamata.

Capsula pendula, operculata 2—2.5 mm. longa et 0.8 mm. crassa, pallide luteo-canescens, oblonga, regularis, sub orificio haud constricta, siccitate haud mutata, cellulis epidermicis marginalibus in seriebus 2—3 transverse rectangulis, ceterum breviter rectangulo—rotundatis, parietibus illarum sinuosis et incrassatis. Sporangium in collum sensim defluens. Collum tumidum breve, longitudine dimidium sporangii, fusco-lutescens, siccum longitudinaliter rugulosum, cellulis epidermicis irregularibus, qva-

dratis, rectangulis, rotundato-multangulis, stomatibus late ovalibus, 0.044 mm. longis.

Peristomium 0.5 mm. altum, insertione 0.1 mm. profunda, aurantia, cribrosa. Dentes exostomii pallide lutescentes, supra medium hyalini, e basi angusto (0.068 mm.) dimidio inferiore lineares vel medium versus paullo dilatati, qvo dens medius latissimus fit; e medio dente in apicem longum acutum, distincte limbatum, subtile striolato-punctulatum, sensim attenuati; scutula rectangula, 0.012 mm. alta, subtile punctulata, suturis indistinctis, mediana partim angulata; lamellæ 30, infernæ approximatæ, margine recto, inter se liberæ vel in medio dente sepimento uno alterove obliqvo conjunctæ.

Endostomium ab exostomio liberum; membrana 0.12 mm. alta, lutescens, subtile punctulata, plicata; processus e basi late oblongo subito attenuati, exostomio breviores, inferne foraminibus 3—5 ovalibus—rotundis perforati, superne rimoso-pertusi.

Cilia terna—qvaterna, 0.078 mm. longa, filiformia, nodulosa.

Annulus 0.078 mm. altus, triplex, fragmentarie secedens.

Operculum 0.64 mm. altum, alte conicum, apiculo crasso distincto munitum, pallidius qvam sporangium.

Spori 0.013—0.024 mm. magni, fuscescentes, læves, male evoluti.

Blandt alle Inclinatumgruppens Arter er denne nye Art karakteristisk ved de talrige opover Stilken siddende fertile knopformige Sidegrene, ved de brede ukantede Blade med kvadratiske Randceller og de oppustede, ofte 2-lagede Hjørneceller, det ualmindelig høie Laag, dertil de lange smale Tænder, der er bredest paa Midten, samt endelig ved Tilstedeværelsen af indtil 4 Cilier, hvorved den kan synes at danne en Overgang mellem *Cladodium* og *Eubryum*.

Exemplarer findes fra Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde.

Planten voxer her paa sumpig Jord sparsomt i Selskab med *Bryum teres*, *Ditrichum flexicaule*, *Didymodon rubellus*, *Camptothecium nitens* og *Campylium stellatum*.

158. *Bryum semiovatum* Bryhn & Ryan sp. nov.

Cæspites laxi, ægre cohærentes, circiter 8 mm. alti, maximam partem terra arenaceo-limosa sepulti, apice rufo-fuscescentes.

Surculus ramosus, et inferne et superne innovationes aut steriles flagelliformes, rufescentes, densifoliatas apice parvifoliatas, aut fertiles folia accrescentia gerentes, emittens, tomento rufo papilloso haud copiose vestitus.

Caulis ruber.

Folia caulina media ovato-lanceolata, acuminata, 1.3 mm. longa et 0.6 mm. lata, margine plano seriebus 1—2 cellularum limbata, cellulis marginalibus bistratis incrassatis badiis, costa in apice dissoluta.

Folia apicalia siccitate erecto-appressa, humiditate erecto-patentia, concavo-carinata, haud decurrentia, e basi angustiore oblongo-lanceolata vel ovato-lanceolata, mucronata, 1.4—1.55 mm. longa et 0.55 mm. lata, margine plus minusve late reflexo seriebus 2—3 cellularum elongatarum limbata, cellulis marginalibus fuscis bistratis, cellulis basilaribus fuscis elongato-rectangulis, illis folii medii rectangulo-rhombeis, 0.03—0.06 mm. longis et 0.02 mm. latis, apicalibus hexagonis, omnibus valde incrassatis, costa fusca validissima in mucronem validum excurrenti.

Folia innovationum sterilium haud decurrentia, oblongo-lanceolata, acuminata, apice dentata, margine plano plus minusve distincte fusco-limbata, costa in apice dissoluta.

Folia perichætialia e basi lato sensim angustata, acuminata, margine plano serie singula cellularum rectangularum limbata, costa sub apice dissoluta.

Inflorescentia heteroica, floribus bisexualibus numerosis et masculis raris. Antheridia, 0,3 mm. longa rufescentia, et archegonia, 0.54 mm. longa, numerosa; paraphyses longiores lutescentes.

Seta 10 mm. longa, mediocriter crassa, fuscescens.

Capsula pendula, luteo-fusca, 2 mm. longa et 1 mm. crassa, irregularis, semiovata, ovo longitudinaliter dimidiato similis, latere versus setam spectante applanato, et sicca et humida immutata. Collum duas qvintas sporangii longum, in illud sensim transgressum, contra setam abrupte definitum. Cellulæ epidermicæ sporangii irregulares, valde incrassatæ, elongato-rectangulæ et qvadratæ cum ovalibus mixtæ, marginales in seriebus tribus minores transverse rectangulæ, parietibus maxime incrassatis. Rete colli maxime incrassatum e cellulis variis, qvadratis, transverse rectangulis, multangulis, ovalibus formatum, stomatibus immersis rotundis, 0.044 mm. magnis.

Peristomium 0.3 mm. altum, siccitate inflexum, insertione 0.055 mm. profunda rufo-lutescens.

Exostomii dentes basi 0.068 mm. lati, sensim attenuati, apice obtuso, e basi ad tertiam supremam pallide aurantii, ceterum lutescentes et striolato-punctulati, margine anguste limbato crenulati; scutula qvadrata vel breviter rectangula, subtilissime punctulata, suturis conspicuis, transversalibus crassioribus ad latera excurrentibus, mediana pæne recta; la-

mellæ circiter 20, inter se liberæ, altæ, ad latera rotundatæ, margine, et anteriore et posteriore libero, arcuato.

Endostomium exostomio liberum; membrana 0.11 mm. alta, lutescens, sublævis; processus anguste lanceolati vel lineares, margine undulati, exostomio breviores, inferne foraminibus anguste ovalibus, superne rimoso-perforati.

Cilia rudimentaria.

Spori 0.022—0.029 mm. magni, fusco-lutescentes, subtile punctati.

Cætera ignota.

Denne meget eiendommelige Art er karakteristisk ved den rødbrune Farve, de flagellagtige Nyskud, Bladenes tykvæggede Celler med 2-laget Randsøm og ikke mindst ved den uregelmæssige og afvigende Kapselform. Den maa nærmest henregnes til Inclinatumgruppen, hvis man ikke skulde foretrække at betragte den som Repræsentant for en ny Gruppe: Semiovatumgruppen.

Sparsomme Exemplarer findes fra Moskusfjord i Kong Oscars Land under 76° 30′ nordlig Bredde, hvor Planten er samlet paa sandblandet Dynd blandt *Tortula mucronifolia*, *Ditrichum flexicaule*, *Timmia austriaca*, *Myurella julacea*, *Fissidens arcticus* og *Cephalozia verrucosa*.

159. *Bryum cancelliforme* Bryhn & Ryan sp. nov.

Cæspites densissimi, arcte cohærentes, 2 cm. alti, intus incano-fuscescentes, summo apice lutescenti-virides.

Surculus ramosissimus, innovationes numenerosas et fertiles et steriles flagelliformes emittens, tomento ferrugineo vestitus.

Caulis ruber.

Folia caulina inferiora parva, sæpe sqvamæformia in tomento occulta, superiora haud decurrentia, ovata, breviter acuminata, patentia, apice subrecurvo, 0.7 mm. longa et 0.33 mm. lata, margine plano elimbata, costa in apice dissoluta.

Folia apicalia in comam densam congesta, humiditate erecto-patentia, rigida, concavo-carinata, 1,5—1.8 mm, longa et 0.65—0.85 mm. lata, ovato-lanceolata, supra medium in apicem brevem subdendatum angustata, margine limbato e basi versus apicem reflexa.

Cellulæ basilares rectangulæ, 0.05—0.055 mm. longæ et 0.02—0.025 mm. latæ, parietibus rubris, ad angulos paullo dilatatos qvadratæ, illæ folii medii et superioris rhombeæ-hexagonæ circiter 0.044 mm. longæ et 0.15 mm. latæ, marginales in seriebus 2—3 prosenchymaticæ, ad 0.085 mm. longæ, parietibus incrassatis lutescentibus.

Costa basi rubro 0.096 mm. crassa, superne attenuata, rubro-fuscescens, nunqvam excurrens.

Folia innovationum sterilium concava, et sicca et humida appressa, ovato-ovalia, breviter acuminata, margine plano elimbata, costa in apice dissoluta.

Folia perichætialia e basi lato sensim in apicem elongatum attenuata, margine plano elimbata.

Inflorescentia heteroica, floribus bisexualibus numerosis et masculis raris. Antheridia 0.32—0.35 mm. longa; pistillidia 0.57 mm. longa numerosiora; paraphyses rufescentes, apice lutescenti.

Seta 9—12 mm. longa, recta vel flexuosa, inferne rufo-fusca, superne luteo-fusca.

Capsula horizontalis vel nutans, deoperculata 1.5—2.25 mm. longa et 0.72—0.9 mm. crassa, regularis obovata, maturitate virenti-lutea, ætate fuscescens, siccitate rugosa, sub orificio, ut videtur, haud constricta. Sporangium in collum æqvilongum defluens.

Cellulæ exothecii et sporangii et colli regulares, marginales in seriebus 3—4 qvadratæ, ceteræ breviter rectangulæ et qvadratæ, stomatibus ovalibus, 0.044 mm. latis.

Peristomium 0.29 mm. altum. Insertio rubro-fusca, inæqvaliter (0.022—0·053 mm.) profunda, cribrosa. Dentes exostomii irregulares, aut singuli aut bini et terni connati, irregulariter fissi et perforati, margine late limbati, ad medium lineares colore aurantio, supra medium plus minusve subito, etiam per intervalla, in apicem nodosum sublævem lutescentem angustati. Dentes singuli basi 0.06, bini connati 0.088 terniqve connati 0.12 mm. lati. Scutula perangusta, sæpe vix ultra 0.0044 mm. lata, indistincte punctulata, suturis validis, mediana recta crassa, transversalibus crassissimis ad latera excurrentibus et sæpe cum illis dentis vicini per lineam divisuralem connatis, ætate rubro-fuscis verrucoso-papillosis; lamellæ 16—20 approximatæ, crassæ, in dentibus singulis sepimentis obliqvis, in dentibus connatis sepimentis rectis per lineam (suturam) medianam, margine arcus duos præbentes, inter se sporadice conjunctæ.

Endostomium luteum, læve; membrana 0.088 mm. alta, exostomio adhærens; processus liberi, parte qvarta—tertia breviores, qvam exostomium, anguste lineari-lanceolati, rimoso-perforati.

Cilia rudimentaria vel nulla.

Annulus 0.066 mm. latus, triplex.

Operculum humiliter conicum, 0.54 mm. latum, obtusulum, capsulæ concolor.

Spori 0.015—0.021 mm. magni, luteo-virentes.

Karakteristisk for denne Art er de uregelmæssigt sammenvoxede og spaltede Peristomtænder, de smale Rygfelter og de uhørt grove Midt- og Sidelinier, hvorved Peristomets Tænder faar et gitterlignende Udseende. Maa henregnes blandt Inclinatumgruppens snart næsten utallige Arter eller ogsaa betragtes som Repræsentant for en egen Gruppe: Brya cancelliformia.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde paa sumpig Jord sparsomt indblandet i Tuer af *Hypnum tundræ.*

160. *Bryum opdalense* Limpr. c. fr.

Meget sjelden. Exemplarer findes kun fra Glacier Valley i Ellesmere Land under 78° 45′ nordlig Bredde, hvor Planten er samlet paa fugtig Jord i Selskab med *Oncophorus Wahlenbergii, Orthothecium chryseum, Hypnum sarmentosum* og *badium.*

Var. *carneum* Bryhn & Ryan var. nov.

Cæspites humiliores, 5 mm. alti, terra limoso-arenacea obruti, rufofuscescentes. Seta brevior, 6—10 mm. longa. Capsula pallide carnea, subnitens. Operculum humiliter conicum, apice capsulæ concolore. Cellulæ exothecii marginales et submarginales in seriebus nonnullis rotundato-qvadratæ, parietibus incrassatis.

De cætero cum typo congruens.

Kong Oscars Land: Gaasefjord, i Selskab med *Bryum compactum, arcticum, oeneum* og *teres.*

Bryum opdalense er tidligere kjendt kun fra Norge.

161. *Bryum curvatum* Arnell & Kaurin c. fr.

Ellesmére Land: Glacier Valley, under 78° 45′ nordlig Bredde, paa Excrementer i Selskab med *Tetraplodon mnioides, Haplodon Wormskjoldii* og *Cephalozia verrucosa.*

Tidligere kjendt kun fra Norge.

162. *Bryum subtumidum* Limpr. c. fr.

Ellesmere Land: Framshavn, under 78° 45′ nordlig Bredde, sparsomt blandt *Leptobryum pyriforme* og *Bryum subfoveolatum.*

Ogsaa denne Art er tidligere kjendt kun fra Norge.

163. *Bryum salinum* Hagen c. fr.

N. V. Grønland: Foulkefjord, under 78° 20′ nordlig Bredde, sparsomt forekommende i Selskab med *Bryum oeneum* og *Distichium capillaceum.*

Tidligere kjendt kun fra Skandinaviens og Danmarks Kyststrækninger.

164. *Bryum retusum* HAGEN c. fr.

Ellesmere Land: Framshavn, under 78° 45′ nordlig Bredde, sparsomt blandt *Tetraplodon mnioides* og *Cephalozia verrucosa.*

Tidligere kjendte Nordgrændse ved omtrent 70° 30′ paa Grønlands Østkyst.

165. *Bryum stenodon* HAGEN c. fr.

Kong Oscars Land: Gaasefjord, under 76° 30′ nordlig Bredde, i ringe Mængde sammen med *Bryum cirratum, Ditrichum flexicaule* og *Tortula ruralis.*

Før kjendt kun fra det nordlige Norge.

166. *Bryum lapponicum* KAURIN c. fr.

N. V. Grønland: Foulkefjord, under 78° 20′ nordlig Bredde, sparsomt i Selskab med *Bryum terrestre, teres* og *pendulum* samt *Cephalozia grimsulana.*

Tidligere kjendt kun fra den skandinaviske Halvø.

167. *Bryum subfoveolatum* BRYHN & RYAN sp. nov.

Cæspites densi, arcte cohærentes, 2.5 cm. alti, superne luteo-virides, intus fuscescentes.

Surculus sub apice florifero innovationes binas breves, gemmæformes emittens, tomento fuscescenti, dense humiliterqve papilloso, copiose munitus.

Caulis rubro-fuscescens, circiter 0.22 mm. crassus, rotundato-pentagonus, e fasciculo centrali hyalino tenui et reti flavo laxo leptodermi et strato peripherico cellularum magis incrassatarum duplici compositus.

Folia caulina inferne remota, ad apices innovationum densa, erecto-patentia vel erecta, circum florem setamve in gemmam clausam conniventia, siccitate parum mutata, basi haud decurrentia, concava; caulina infima late ovato-lanceolata, obtusa, margine plano elimbata, costa versus apicem evanida, circiter 0.8 mm. longa et 0.6 mm. lata; comalia media ovato-lanceolata, acuta, margine plano elimbata, costa in apice dissoluta, circiter 0.95 mm. longa 0.6 mm. lata; comalia suprema late lanceolata, in apicem acutum subito angustata, margine e basi ad medium folium anguste reflexo indistincte limbata, costa breviter excurrenti, circiter 1.25 mm. longa et 0.65 mm. lata.

Rete foliorum tenue; cellulæ basilares vinosæ, rectangulæ, 0.04—0.06 mm. longæ et 0.02—0.025 mm. latæ, angularibus subconflatis, ceteræ rhombeæ vel rhombeo-hexagonæ, 0.02—0.04 mm. longæ et 0.02 mm. latæ, in foliis supremis marginem versus sensim angustiores, longiores et paullo crassiores, ut limbus uni-vel biseriatus, haud distinctus, formatur.

Costa foliorum basi 0.065 mm. lata et rubra, convexa, e cellulis ventralibus 2—4 magnis, ducibus 4 multo minoribus, fasciculo stereïdarum valido comites pæne circumcingenti et cellulis dorsalibus 8—12 majoribus composita.

Inflorescentia synoica; folia perichætialia intima minuta, margine plana, costa excurrenti cuspidata; pistillidia 3—4, 0.5 mm. longa; antheridia 2—3, 0 35 mm. longa; paraphyses numerosæ, rubræ, pistillidiis longiores.

Seta circiter 12 mm. longa, flexuosa, basi rubra et 0.15 mm. crassa, apice hamoto pallescens.

Capsula pendula, luteo-fusca, opaca, operculata 3 mm. longa et 1 mm. crassa, sicca dense scrobiculata, obliqve pyriformis, sub orificio haud contracta; collum in setam defluens, curvatulum, sporangio æqvilongum, fuscum, in sicco sulcatum; cellulæ ejus epidermicæ subregulares qvadratæ vel rectangulæ, 0.03—0.04 mm. latæ, parum incrassatæ; stomata numerosa, 0.045 mm. longa, rima elliptica; sporangium crasse ovale; cellulæ exothecii illis colli similes, marginalibus in seriebus duabus latioribus qvam longioribus.

Exostomii dentes remoti, e fundo sangvineo, 0.05 mm. alto, inferne distinctissimo delimitato, lanceolati, supra medium paullo citius angustati, ad basin 0.065 mm. lati, 0.35 mm. longi, acuti, lutei, apice hyalino et papilloso, elimbati. Scutula striolato-papillulosa, basalia anguste rectangula, suturis latis, sed haud conspicuis, mediana pæne recta; lamellæ 14—16, inter se liberæ, margine medio impressæ, non perforatæ.

Endostomium exostomio haud adnatum, fere hyalinum, punctulatum; membrana 0.12 mm. alta; processus anguste lanceolati, dentibus æqvilongi, in carina foraminibus late ovalibus fenestrati; cilia rudimentaria.

Annulus dnplex, 0.1 mm. latus, spiraliter revolubilis.

Operculum 0.25 mm. altum, diametro 0.6 mm. latum, conicum, mamillatum vel apiculatum, sporangio concolor, nitidulum, margine hic illic crenatum,

Spori 0.02 mm. magni, lutescentes, punctulati.

Blandt Brya hæmatostomata sandsynligvis nærmest beslægtet med den fra det nordlige Norge og fra Grønlands Østkyst bekjendte

Bryum foveolatum HAGEN. Fra denne er den imidlertid, som det vil fremgaa af Beskrivelsen, forskjellig ved en hel Række afvigende Karakterer.

Ellesmere Land: Framshavn, under 78° 45′ nordlig Bredde, sammen med *Bryum subtumidum* og *Leptobryum pyriforme* i forholdsvis mere rigelige Exemplarer.

168. *Bryum Graefianum* SCHLIEPH. c. fr.

Meget sjelden og meget sparsomt indsamlet.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde.

Arten er tidligere kjendt kun fra Nord- og Mellem-Europa.

169. *Bryum Limprichtii* KAURIN c. fr.

Ligeledes meget sjelden og indsamlet i sparsomme Exemplarer.

Ellesmere Land: Framshavn, under 78° 45′ nordlig Bredde, i Selskab med *Isopterygium pulchellum* og *Hypnum revolutum*; Kong Oscars Land: Gaasefjord og Vendomkap i Selskab med *Tortula mucronifolia, Ditrichum flexicaule, Orthothecium chryseum* og *Hypnum Vaucheri.*

Artens tidligere kjendte Nordgrændse var ved 73° 30′ paa Grønlands Østkyst.

170. *Bryum Simmonsii* BRYHN & RYAN sp. nov.

Cæspites densi, 4.5 cm. alti, intus variegati, superne virides.

Surculus erectus, ramosus per totam longitudinem innovationes breves floriferas longioresqve steriles emittens, alternatim parvi- et grandifoliatus, tomento copioso fusco papilloso munitus.

Caulis 0.24—0.34 mm. crassus, ruber, sectione transversa pentagonorotundatus vel ovalis, fasciculo centrali 0.05 mm. crasso, reti intermedio rubro laxo, peripherico densiore plus minusve incrassato.

Folia caulina accrescentia, breviter decurrentia, inferiora ovata, obtusa, sqvamæformia, margine plano elimbata, costa sub apice dissoluta, superiora ovato-lanceolata, acuminata, supra basin dilatata, margine subreflexo seriebus 2—3 cellularum elongatarum luteo-limbata, costa excurrenti vel in apice definiente, 1.4 mm. longa et 0.6 mm. lata. Folia apicalia siccitate convoluta, humiditate erecto-patentia, concavo-carinata, circiter 2 mm. longa et 1.12 mm. lata, supra basin angustiorem auriculæ instar dilatata, late ovato-lanceolata, breviter acuminata, apice sæpe dentata, margine late reflexo seriebus 2—4 cellularum elongatarum limbata.

Cellulæ foliorum basilares elongato-rectangulæ, 0.085—0.12 mm, longæ et 0.02 mm. latæ, parietibus rubris et porosis, angulares bistratæ rotundato-qvadratæ, inflatæ, folii medii hexagono-rhombeæ, 0.036—0.054 mm. longæ et 0.015—0.02 mm. latæ.

Costa valida, rubro-fusca, excurrens vel in summo apice dissoluta.

Inflorescentia heteroica, floribus bisexualibus raris et masculis numerosis ut et femineis minus numerosis. Flos masculus gemmæformis, antheridiis numerosis, brevi-pedunculatis, 0.37—0.5 mm. longis; folia perigonialia interna late obovata, apice perbrevi triangulari, margine plano serie una cellularum rhombearum limbata, costa sub apice dissoluta. Pistillidia floris feminei 4—6, 0.57—0.7 mm. longa; paraphyses floris utriusqve longiores, rufescentes.

Seta 11 mm. longa, inferne rubro-fusca, rigidula, mediocriter crassa, apice arcuata.

Capsula pendula, regularis, operculata 2.6 mm. longa et 1 mm. crassa, incano-fuscescens, haud nitens, cylindrico-oblonga. Sporangium in collum sensim defluens, siccitate sub orificio paullulum angustatum. Collum duas qvintas sporogonii longum, in setam attenuatum, siccitate plicatum, rectum vel leniter curvatum.

Cellulæ exothecii marginales in seriebus duabus latiores qvam longiores, dein in seriebus nonnullis subqvadratæ, ceteræ maxime irregulares, vix longiores qvam latiores, parietibus valde sinuosis mediocriter incrassatis. Cellulæ epidermicæ colli qvadratæ, breviter reetangulæ vel ovales; stomata ovalia, 0.055 mm. longa, cellulis viciniis 7—8.

Exostomii dentes e fundo 0.06 mm. alto, profunde aurantio, 0.47 mm. longi, e basi 0.066—0.095 mm. lato in apicem elamellosum aciculæ instar acutum tenuemqve repente angustati, margine sinuoso anguste limbati et papilloso-crenulati, dense papilloso-punctulati, ad tertiam supremam lutescentes, apice fere hyalino; scutula infima rectangula, cetera qvadrata, subtilissime punctulata, suturis conspicuis, mediana recta; lamellæ circiter 12, longe remotæ, altæ, decurrentes, margine arcus duos præbentes, perforationibus nullis, infimæ inter se sepimentis lateralibus binis, in qvæ lamella decurrit, conjunctæ.

Endostomium exostomio haud adhærens, lutescens, suhtilissime et sparsim punctulatum; membrana 0.12 mm. alta; processus anguste lanceolati, papillosi, exostomio breviores, secus carinam inferne foraminibus anguste ovalibus perforati, superne rimoso-pertusi.

Cilia rudimentaria.

Annulus duplex.

Operculum humiliter conicum, apice elongato, aurantium, 0.65 mm. latum.

Spori magnitudine dissimiles (0.026—0.039 mm. magni), virentes.

Denne Art er inden Gruppen Hemisynapsium eiendommelig og forskjellig fra alle andre Arter ved de forholdsvis korte Blade med dobbeltlagede Hjørneceller, ved Tændernes naalfine Spids og de interlamellære Forbindelser.

Exemplarer findes i Samlingen kun fra Gaasefjord i Kong Oscars Land under 76° 30′ nordlig Bredde. Planten er samlet paa sumpig Jord i Selskab med *Bryum calophyllum, Campylium stellatum, Hypnum latifolium, tundræ* og *turgescens.*

171. *Bryum calophyllum* R. Br.

Blandt de mere almindelig forekommende Arter, men meget sjelden med Frugt og i rene Tuer.

Kong Oscars Land: Moskusfjord (c. fr.), Gaasefjord, Renbugten og Landsend; North Devon; North Lincoln: Framfjord; Ellesmere Land: Framshavn, Cape Rutherford, Cape Viole, Skrællingøen og Beitstadfjorden under 79° nordlig Bredde.

Arten er kjendt ogsaa fra Grønland og Spitzbergen.

172. *Bryum campylocarpum* Limpr. var. *arcticum* Bryhn & Ryan var. nov.

Differt e typo notis inseqventibus.

Seta brevior (1 cm.). Capsula brevior et crassior (deoperculata 1.5 mm. longa), obovata, subregularis, collo minus curvato. De cætero cum typo congruens.

Kong Oscars Land: Moskusfjord under 76° 30′ nordlig Bredde. Planten er her samlet paa Excrementer i Selskab med *Voitia hyperborea, Bryum pendulum* og *arcticum, Orthothecium strictum* og *chryseum.*

Bryum campylocarpum er tidligere kjendt kun fra Norge (Dovre).

173. *Bryum oeneum* Blytt.

Denne Art er blandt de mest almindelige Moser og er samlet paa de allerfleste undersøgte Steder, dog sjelden med Frugt. I disse arktiske Egne har den gjennemgaaende kortere Blade og mindre vel udviklet Bladsøm, end i mere sydlige Egne.

Var. *subelimbatum* BRYHN & RYAN var. nov.

Densius congestum, propagulis articulatis raris, rarissimis vel forsan nullis, limbo foliorum e seriebus 1—2 tantum vix bistratis constructo. De cetero typo similis.

Kong Oscars Land: Vendomkap; North Lincoln: Framfjord; Ellesmere Land: Bedford Pim Isl. (c. fr.) samt mellem Ft. Juliane og Mt. Køla-Paulsen (c. fr.) under 79° nordlig Bredde.

Bryum oeneum er forlængst kjendt blandt de mere almindelige Arter paa Spitzbergen og i andre arktiske Egne.

174. *Bryum agattuense* PHILIBERT.

Kun fra et eneste Voxested og i meget ringe Mængde indsprængt i Tuer af *Bryum elegans* og *teres*. Steril.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde.

Forhen kjendt kun fra Alaska.

175. *Bryum cirratum* H. & H. c. fr.

Kong Oscars Land: Gaasefjord og Moskusfjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Eskimopolis og Beitstadfjorden (under 79° n. B.)

Tidligere kjendt ogsaa fra Spitzbergen og Grønland.

176. *Bryum cuspidatum* SCHIMP. c. fr.

Findes i den hele Samling kun fra et eneste Voxested, nemlig Glacier Valley i Ellesmere Land under 78° 45′ nordlig Bredde.

Planten er paa dette Sted sparsomt samlet paa sumpig Jord i Selskab med *Tetraplodon pallidus*, *Bryum arcticum*, *crispulum* og *Fridtzii* samt *Conostomum boreale*.

Artens forhen kjendte Nordgrændse var 70° 15′ i Sibirien.

177. *Bryum nodosum* BRYHN & RYAN sp. nov.

Cæspites densi, 1.5 cm. alti, fusci.

Surculus pluries innovando ramosus, innovationibus superpositis aut fertilibus inferne subnudis apice comantibus aut sterilibus subuniformiter foliatis nodosus, tomento fusco verrucoso vestitus.

Caulis ruber.

Folia comalia infima e basi lato rubro haud decurrenti late ovalia, 0.6 mm. longa et 0.44 mm. lata, apice obtusa, margine plano elimbata, cellulis angularibus et apicalibus hexagono-rotundatis, marginalibus rec-

tangulis, per totum folium ceterum qvadratis vel breviter rectangulis, parietibus illarum mediocriter incrassatis et porosis, costa inferne lata, infra apicem dissoluta.

Folia comalia suprema ovata, concava, sicca humidaqve convoluta, perbreviter acuminata, 1 mm. longa et 0.6 mm. lata, basi rubra, margine reflexa, limbo vix distingvendo, costa in apice dissoluta, cellulis incrassatis, basilaribus elongato-rectangulis ad 0.08 mm. longis et 0.11 mm. latis, angularibus qvadrato-rotundatis, marginalibus rhombeo-rectangulis, medii folii hexagonis 0.044—0.066 mm. longis et 0.011—0.013 mm. latis.

Inflorescentia synoica; archegonia pauca (circiter 4), 0.43 mm. longa; antheridia circiter 6, 0.21 mm. longa, rufescentes; paraphyses archegoniis longiores, inferne rufescentes apice hyalino.

Seta 8 mm. longa, 0.15 mm. crassa, fuscescens.

Capsula nutans, subcurvata vel regularis, operculata 1.75 mm. longa et 0.75 crassa, anguste piriformis, pallide luteo-fusca, ætate pallidula, lævis, siccitate sub orificio nonnihil contracta, sporangio in collum subæqvilongum sensim attenuatum defluenti.

Cellulæ epidermicæ sporangii mediocriter incrassatæ, parietibus mediocriter flexuosis, plurimæ breviter rectangulæ, marginales in seriebus 1—2 transverse rectangulæ, submarginales in seriebus 6 qvadratæ, illæ colli irregulares, plurimæ elongato-rectangulæ, parietibus valde sinuosis, stomatibus paucis, late ovalibus, 0.044 mm. longis, biseriatis.

Exostomii dentes e fundo aurantio, 0.05 mm. alto, fisso et cribroso, 0.33 mm. longi et basi 0.077 mm. lati, luteo-aurantii, apice pallide lutescenti. ad medium lineares, dein subulati, grosse papillosi, apice sæpe fissi vel rimoso-pertusi, anguste limbati, strato colorato secus limbum scalæ instar dentato; scutula rectangula 0.012—0.015 mm. altæ, interdum subqvadratæ, subtile punctulata, suturis distinctis, mediana angulata; lamellæ 16—18, crassæ, rectæ, inter se liberæ inqve eadem distantia remotæ.

Endostomium exostomio æqvilongo haud adhærens; membrana 0.12 mm. alta, lutescens, dense punctulata; processus lanceolati, subito attenuati, secus carinam inferne foraminibus late ovalibus perforati, superne rimoso-pertusi (ut in *Bryo cirrato*); cilia tenuia, singula vel bina, processubus breviora, papillosa, appendiculis brevibus et crassis, sæpe male evolutis, appendiculata.

Annulus triplex, 0.06 mm. latus.

Operculum aurantium, conicum apice distincto (ut in *Bryo pendulo*), 0.6 mm. latum.

Spori luteoli, læves, vario magnitudine, 0.02—0.03 mm. magni, plurimi 0.025.

Denne nye Art maa paa Grund af de taggede Cilier henregnes til Eubryum, den synes dog at danne et Mellemled mellem Cladodium og Eubryum. Blandt Eubrya slutter den sig nærmest til *Bryum nitidulum*, fra hvilken den er forskjellig ved Habitus, Bladform, Endostomets Bygning og de større Sporer.

Exemplarer findes kun fra Havnefjord i Kong Oscars Land under 76° 30′ nordlig Bredde. Planten voxer her paa fugtig Jord blandt *Myurella julacea*, *Cinclidium hymenophyllum* og *Orthothecium strictum*.

178. *Bryum glomeratum* Bryhn & Ryan sp. nov.

Cæspites densissimi, 1 cm. alti, intus fusco-variegati, summo apice tantum virentes.

Surculus valde ramosus, innovationibus gemmæformibus numerosis præsertim versus apicem glomeratis, tomento denso rubro-fusco papilloso vestitus.

Caulis ruber, 0.3—0.5 mm. crassus, sectione pentagonus, fasciculo centrali crasso male definito, reti intermedio e cellulis tenuissimis, periphericis paullo magis incrassatis, formatus.

Folia caulina parva sqvamæformia.

Folia comantia haud decurrentia, subito multo majora, valde concava, gemmæ instar congesta, sicca fere immutata, inferiora late ovalia, obtusa, latiora qvam longiora, 0.7 mm. longa et 0.8 mm. lata, margine plana; suprema late ovato-lanceolata, breviter acuminata, margine late reflexa, limbo nullo circumcincta, 1—1.5 mm. longa et ad 0.6 mm. lata, basi rubentia.

Cellulæ foliorum inferiorum basilares rectangulo-qvadratæ, ceteræ irregulares, plurimæ ovales, valde incrassatæ; illæ foliorum superiorum ad basin rectangulæ, 0.033—0.066 mm. longæ et 0.011—0.022 mm. latæ, angulares rotundato-qvadratæ, ceteræ rhombeo-hexagonæ vel ovales, 0.026—0.044 mm. longæ et 0.013—0.016 mm. latæ, parietibus lutescentibus valde incrassatis, collenchymaticis et porosis.

Costa basi 0.054 mm. crassa et rubra, ceterum luteo-virens, in vel sub apice dissoluta.

Folia perichætialia e basi lato sensim angustata, 0.75 mm. longa et 0.31 mm. lata, breviter acuminata, margine plana, limbo nullo, costa supra medium dissoluta.

Inflorescentia heteroica, floribus bisexualibus numerosis et masculis raris. In flore bisexuali pistillidia et antheridia numero varia, illa 0.57 mm. longa, hæc ad 0.49 mm. longa, paraphyses numerosæ lutescentes, basi rubescenti, longitudine pistillidiorum; flores masculi, circiter 1 mm. crassi, subglobosi, brevi-pedunculati, antheridiis paraphysibusqve numerosissimis.

Seta 10—12 mm. longa, 0.2 mm. crassa, luteo-fusca, apice arcuata.

Capsula pendula, crasse piriformis, sporangio in collum sensim defluente, operculata 2—2.2 mm. longa et 0.9 mm. crassa, luteo-virens, interdum colore fuscescenti tincta, regularis vel, collo siccitate nonnunqvam curvulo, subregularis, sicca sub orificio haud contracta, nitidula; collum contra setam abruptius desinens, duas qvintas sporangio longum, colore distinctius fuscescenti, siccitate plicatum.

Cellulæ epidermicæ sporangii subregulares, rectangulæ vel qvadratæ, marginalibus latioribus qvam longioribus, parietibus illarum mediocriter incrassatis haud flexuosis; rete colli item subrectangulare, cellulis plurimis qvadrato-rectangulis cum ovalibus sparsis mixtis, stomatibus sparsis late ovalibus, subrotundis, 0.045 mm. magnis.

Exostomii dentes e fundo profunde aurantio, 0.055 mm. alto perforato, 0.41 mm. longi, 0.07—0.17 mm. lati, pæne æqvaliter angustati, tenuiter acutiusculi, pallide aurantii, summa parte tertia hyalini et papillosi, margine integro anguste limbati; scutula breviter rectangula vel qvadrata, striolato-punctulata, suturis distinctis, mediana angulata—subrecta; lamellæ 24—26, inter se æqvaliter remotæ et sepimento uno alterove conjunctæ, margine libero recto vel arcus duos indistinctos præbente.

Endostomium exostomio vix adhærens; membrana 0.08—0.12 mm. alta, tenuissima, lutescens, pæne hyalina, subtile punctulata; processus lineari-lanceolati, exostomio breviores, inferne foraminibus anguste oblongis secus carinam pertusi, superne rimoso-perforati; cilia bina vel terna, plus minusve bene evoluta, hic illic appendicibus brevibus munita.

Annulus duplex, 0.088 mm. latus, fragmentarie secedens, operculo adhærens.

Operculum 0.72 mm. latum, 0.3 mm altum, concavo-conicum, luteolum, apice perbrevi crasso concolore.

Spori 0.02—0.023 mm. magni, fuscescentes, lævissimi.

Denne Eubryum slutter sig nærmest til foregaaende Art og maa ligesom denne betragtes som et Mellemled mellem Eubrya og Cladodia. Fra *Bryum nodosum* er denne habituelt meget forskjellig, den har en anden Blomsterstand og en anden Kapselform med meget høiere og forskjellig bygget Peristom.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde, paa sumpig Jord i rigt frugtbærende, ikke sparsomme Exemplarer, sammen med *Bryum hyperboreum* og *Encalypta contorta*.

179. *Bryum nitidulum* Lindb.

Exemplarer findes fra følgende faa Steder. North Devon: Borgøen; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn (c. fr.), Cape Viole og Eskimopolis (c. tr.).

Var. *fenestratum* Bryhn & Ryan var. nov.

Cæspites ampliores, 2.5 cm. alti.

Inflorescentia heteroica, floribus et bisexualibus et masculis.

Capsula paullo major, 2.5—3 mm. longa, ovaliter cylindrica, ore late hiante, luteo-fuscescens.

Processus endostomii late lanceolati, foraminibus ovalibus—rotundis, sæpe confluentibus, pertusi. Ceterum cum typo congruens.

Kong Oscars Land: Havnefjord, under 76° 30′ nordlig Bredde, i Selskab med *Bryum pendulum* og *globosum*, *Funaria polaris* og *Tortula mucronifolia*.

Bryum nitidulum er en rent arktisk Art med Nordgrændse ved 80° 20′ over Spitzbergen.

Varieteten *fenestratum* bør muligens helst opfattes som en selvstændig ny Art.

180. *Bryum subnitidulum* Arnell.

Blandt de mest sjeldne Arter og endnu ikke samlet med Frugt.

North Devon: Borgøen; N. V. Grønland: Foulkefjord under 78° 20′ nordlig Bredde.

Er tidligere kjendt kun fra Jan Mayen (71° n. B.).

181. *Bryum pertenellum* Bryhn & Ryan sp. nov.

Cæspites densi, ad 5 cm. usqve alti, intus fusci, superne incanolutescentes.

Surculus innovationes apicales singulas vel binas foliis inferne remotis apice densioribus instructas emittens parce ramosus, inferne tomento fusco intricato ramoso grosseqve verrucoso vestitus.

Caulis fere capillaris, 0.16—0.2 mm. crassus, sectione ovalis—subrotundus; fasciculus centralis paucicellularis; cellulæ intermediæ laxæ leptodermes, parietibus flexuosis rufescentibus, peripheriсæ in seriebus 1—2 minores, parietibus haud vel parum incrassatis.

Folia caulina parum accrescentia, haud comantia, siccitate irregulariter torta et flexuosa, aliqvantulum oleoso-nitentes, humiditate erecta, mollia, e basi angusto subdecurrenti oblongo-ovata, in apicem elongatum obtusum, lingvæformem fere, sensim angustata, 1.28—1.9 mm. longa et 0.3—0.65 mm. lata, margine plana et integra, apice excepto interdum obtuse denticulato, limbo nullo cincta.

Folia suprema (verosimiliter perichætialia?) cæteris æqvilonga, angustiora (0.5 mm. lata) apice magis tenuiter acuminato.

Rete foliorum cellulare statu juvenili maxime leptodermum, parietibus cellularum flexuosis, ad basim usqve chlorophylliferum, ætate luteolum, parietibus cellularum, præsertim summi folii. paulo minus tenellis, basi nunqvam rubescens.

Cellulæ basilares et suprabasilares ad medium folium rectangulæ vel elongato-hexagonæ, qvoad magnitudimem variæ, 0.026—0.066 mm. longæ et 0.011—0.015 mm. latæ, margines versus paullo angustiores; e medio folio ad apicem versus rhomboideo-hexagonæ longitudine vario, 0.044—0.077 mm. longæ et 0.013—0.018 mm. latæ, margines versus paullulum angustiores, limbum distinctum haud formantes, in apice ipso oblongo-lineares.

Costa basi 0.077 mm. crassa ibiqve flavo-fuscescens, ceterum lutescens, infra apicem dissoluta, dorso valde prominens; duces mediani qvatuor, cellulæ dorsales et ventrales numerosæ parum inerassatæ, ceteræ substereïdeæ.

Cetera ignota.

Denne eiendommelige Art, der i Habitus meget mere ligner en Webera (f. Ex. *W. commutata*), end en Bryum, maa dog paa Grund af Bladenes Cellevæv henføres til Bryum. Hvor dens Plads er blandt denne Slægts forskjellige Afdelinger, kan for Tiden ikke afgjøres. I Bladform kommer den nærmest *Bryum subnitidulum*, der imidlertid har høist afvigende Habitus, rød Bladgrund med rødfarvet Nerve, kortere Bladceller og kortere Bladspids.

Exemplarer findes fra Eskimopolis i Ellesmere Land, under 78° 50′ nordlig Bredde. Planten er her samlet paa sumpig Jord og paa Excrementer i Selskab dels med *Tetraplodon pallidus, Haplodon Wormskjoldii* og *Bryum cyclophylloides*, dels med *Webera cruda* og *commutata* samt *Hypnum uncinatum*.

182. *Bryum teres* Lindb.

Synes at forekomme almindelig. Exemplarer findes fra følgende Steder.

North Devon: Havhestberget (forma elongata) og Borgøen; North Lincoln: Framfjord (synoic., c. fr.); Kong Oscars Land: Havnefjord, Moskusfjord (c. fr.), Gaasefjord (c. fr.), Excrementbugten og Landsend; Ellesmere Land: Framshavn (c, fr.), Cape Viole og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Arten er tidligere kjendt fra de fleste undersøgte arktiske Egne, ogsaa fra Spitzbergen.

183. *Bryum densum* Bryhn & Ryan sp. nov.

Cæspites compacti, densissimi, superficie plani, circiter 1 cm. alti, ad medium terra limosa sepulti, intus flavo-fusci, apice fusco-virentes.

Surculus ramosissimus, ex parte caulis et inferiore et superiore flagella numerosa densissima, filiformia et densifoliata emittens, tomento intricato luteo-fusco corpusculis articulatis oblongo-clavæformibus instructo vestitus.

Caulis 0.16 mm. crassus, rufescens, sectione subrotundus, e cellulis constructus leptodermibus, qvoad magnitudinem variis, periphericis in serie una minoribus magisqve incrassatis, fasciculo centrali distincto nullo.

Folia caulina parva, vix decurrentia, ovalia apice obtuso, margine plano elimbata, costa supra medium dissoluta.

Folia apicalia majora, in comam paucifoliatam congesta, oblonga, in apicem latiusculum obtusum angustata, externa paullo decurrentia, 1 mm. longa et 0.5 mm. lata, margine plano elimbata, interna 1.4 mm. longa et 0.62 mm. lata, margine anguste reflexa et seriebus cellularum 1—2 indistincte limbata.

Rete cellulare ad basin rubrum, ceterum lutescens. Cellulæ basilares elongato-rectangulæ vel elongato-hexagonæ, 0.06—0.1 mm. longæ et 0.012—0.015 mm. latæ, ad angulos vix dilatatos ovales et hexagonæ, folii medii apicalesqve irregulares, breviter rectangulæ, rhombeæ et hexagonæ, 0.036—0.072 mm. longæ et 0.012—0.015 mm. latæ, parietibus vix incrassatis.

Costa sub apice desinens.

Flagella cum foliis 0.35—0.38 mm. crassa.

Caulis flagellorum 0.11—0.13 mm. crassus, pellucidus, e cellulis subqvadratis constructus.

Folia flagellorum et humida et sicca dense imbricata, concava, late ovalia vel obovata, apice rotundato, 0.43 mm. longa et 0.28 mm. lata, margine plano elimbata, costa tenui sub apice dissoluta, cellulis basilaribus rubescentibus qvadratis vel breviter rectangulis, cæteris rhombeis, guttulas oleosas continentibus.

Folia perichætialia apicalibus intimis æqvilonga, e basi lato sensim in apicem brevem angustata, margine indistincte limbata et anguste reflexa, costa basi 0.084 mm. crassa et rubra, ceterum luteo-fuscescens vel flava, in apice ipso dissoluta.

Inflorescentia, ut videtur dioica. Flos femineus unicus tantum observatus, ovato-oblongus, foliis bene occlusus flagellisqve numerosis cinctus; pistillidia numerosa, 0.42 mm. longa; paraphyses pistillidiis æqvilongæ vel breviores, lutescentes basi rubescenti.

Cætera ignota.

Denne Art, hvis Plads inden Slægten Bryums forskjellige Afdelinger endnu er ubekjendt, er karakteristisk ved høist eiendommelig Habitus, de yderst tæt stillede Flageller og de fra Rodfiltet udvoxende leddede kølleformige Groknopper.

Kong Oscars Land: Gaasefjord under 76° 30′ nordlig Bredde og i 350 Meters Høide over Havet.

Planten er samlet paa vaade Berge meget sparsomt, i Selskab med *Anthelia julacea*, *Aplozia polaris* og *atrovirens*, *Scapania Simmonsii*, *Andreæa papillosa* og *Orthothecium binervulum*.

184. *Bryum teretinerve* Bryhn & Ryan sp. nov.

Cæspites densissimi, 1—1.5 cm. alti, rubro-fusci, summo apice luteo-virentes.

Surculus innovationibus creberrimis et fertilibus et sterilibus crassus, tomento rufo-fusco papilloso densissimo obtectus.

Caulis 0.3 mm. crassus, sectione transversa subrotundus, ætate pentagono-rotundatus, fasciculo centrali optime definito, 0.03—0.06 mm. crasso, ætate propter caulem fistulosum evanido, reti intermedio rubro leptodermo, parietibus cellularum flexuosis, reti versus peripheriam incrassato.

Folia caulina infima parva oblongo-ovalia, subito breviter acuminata, margine plano crenulata et elimbata, costa brevi, superiora concava, 0.8 mm. longa et 0.4 mm, lata, obovata, supra medium subito in apicem breviorem, ubi costa desinens, angustata, margine dimidio inferiore reflexa, plus minusve distincte limbata, summa in comam ovato-oblongam congesta, humiditate erecta-patentia, siccitate parum mutata, rigida, carinata, ad 1.4 mm. longa et 0.4—0.43 mm. lata, e basi rotundato ad angulos subauriculariformiter dilatato ovata vel late lanceolata, e medio subito versus apicem mucroniformem angustata, margine reflexo plus minusve distincte limbata.

Rete basilare et suprabasilare rubro-fuscescens vel vinosum, cellulis rectangulis, plurimis 0.02—0.022 mm. longis et 0.013—0.015 mm. latis, angularibus brevioribus, illis folii medii rhombeo-hexagonis, 0.026—0.035 mm. longis et 0.011—0.013 mm. latis, apicalibus et marginalibus longioribus, omnibus incrassatis plus minusve collenchymaticis, sæpe porosis.

Costa validissima, teres, stereïdea, basi ad 0.084 mm. lata et rubra, ceterum luteo-virens (ætate fuscescens), per folium totum fere æqvaliter crassa, excurrens, mucronem rigidum, ad 0.35 mm. longum, dentatum, summa apice decoloratum, formans, sectione transversa subrotunda, ducibus substereïdeis, cellulis ventralibus dorsalibusqve hyalinis.

Folia innovationem sterilium densa, sicca et humida adpressa, infima late ovalia, subito acuminata, superiora lanceolata, in apicem elongatum sensim angustata, plurima margine plana, limbo nullo circumcincta, apice acute dentata, costa percurrenti vel rarius breviter excurrenti.

Folia perichætialia intima anguste lanceolata, margine plano elimbata, costa excurrenti costata.

Inflorescentia autoica, floribus femineis numerosis, masculis raris.

Flores feminei ovato-oblongi, archegoniis plus minusve numerosis, 0.42 mm. longis, paraphysibus lutescentibus longioribus.

Flores masculi gemmæformes, 1.5 mm. longi, aut axillares aut innovationes breves laterales coronantes; folia perigonialia, intimo excepto, late obovata, e medio subito angulo recto in apicem longum et dentatum, a costa excurrenti formatum, attenuata, margine subreflexo serie cellularum singula limbata; folium perigoniale intimum ovatum, subsensim angustatum, margine planum, costa sub apice dissoluta; antheridia subcylindracea, ad 0.46 mm. longa, rosea; paraphyses inferne rufescentes, ceterum lutescenti-hyalini.

Seta circiter 8 mm. longa, tenuis, luteo-fuscescens, apice stramineo arcuata.

Capsula demissa vel suberecta, ætate horizontalis, fuscescens, operculata 2—2.25 mm. longa et 0.7 mm. crassa, oblonga, siccitate sub orificio haud contracta, collo duas qvintas sporangii longo in setam defluenti.

Cellulæ epidermicæ sporangii irregulares, elongato-rectangulæ, ovales, triangulares, parietibus valde incrassatis et flexuosis, marginales in seriebus qvatuor breviores qvam latiores, illæ colli modo simili irregulares, plurimis brevioribus, stomatibus parvulis (0.03 mm.).

Peristomium prope orificium affixum. Dentes e fundo pallide aurantio, 0.042 mm. profundo, 0.35 mm. longi, lutescentes, vix limbati, supra medium paullo citius in apicem obtusulum hyalinum subtilissime punctulatum, angustati, basi 0.07—0.08 mm. lati; scutula infima late rectangula, cetera qvadrata, subtilissime punctulata, suturis subtilibus, transversalibus haud excurrentibus, mediana pæne recta; lamellæ circiter 16, humiles, inter se æqvaliter remotæ, liberæ.

Endostomium pallide lutescens, vix papillosum; membrana basilaris 0.15 mm. alta exostomio adhærens; processus liberi, lineares, foraminibus oblongis pertusi; cilia terna, vix libera, irregularia, appendiculis crassis, apice clavæformibus, introrsum spectantibus, munita.

Annulus 0.09 mm. latus, triplex.

Operculum alte conicum, apice acuto, rufo-fuscum.

Spori magnitudine varii, vix perfecte evoluti.

Blandt alle Brya med autoic Blomsterstand er denne Art eiendommelig ved den usædvanlig kraftige Bladnerve, der løber ud i en trind tandet kraftig Braad samt ved Indreperistomet, hvis Cilier er forsynet med indadrettede i Spidsen kølleformige Cilier. Planten danner Tuer, saa compact sammenvævede, at de enkelte Individer vanskelig lader sig adskille.

Kong Oscars Land: Gaasefjord, under 76° 30′ nordlig Bredde, paa Jord i Selskab med *Arnellia fennica, Encalypta rhabdocarpa* og *Amblystegium Sprucei.*

185. *Bryum pallescens* Schl. c. fr.

Sjelden og samlet kun paa 2 Steder.

Kong Oscars Land: Moskusfjord; Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde. Arten findes paa Spitzbergen under en endnu høiere nordlig Bredde.

186. *Bryum elegans* Nees.

Blandt de mere almindelige Arter, ialfald i den sydlige Del af det undersøgte Landomraade. Exemplarer findes fra følgende Steder.

Vest-Grønland: Egedesminde; North Devon: Havhestberget; Cardigan Strait: Djævleøen; Kong Oscars Land: Isachsens Fjord, Gaasefjord, Renbugten, Excrementbugten, Moskusfjord, Sydkapfjord og Havnefjord; North Lincoln: Framfjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn og Cape Rutherford samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Arten er sjelden samlet i rene Tuer, næsten udelukkende som Bestanddel af Blandingstuer og altid i steril Tilstand.

Gjennemgaaende har Planten i disse Egne et andet Habitus, end Exemplarer fra mere sydlige Egne. Specielt er Bladspidsen meget kortere og Bladnerven forsvinder i eller under Spidsen. Bladene er dels kantede, dels ukantede.

Grændserne mellem Hovedarten og

Var. *carinthiaca* (Br. Eur.) Breidl.

synes i disse Egne at være omtrent udviskede. Exemplarer, der kan henregnes til nævnte Varietet, findes fra følgende Steder.

Kong Oscars Land: Havnefjord, Sydkapfjord og Vendomkap; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, hvor ogsaa Exemplarer af

Var. *elongatum* Arnell

er samlet. Arten kjendes ogsaa fra Spitzbergen.

187. *Bryum Stirtoni* Schimp.

Denne Art er hjembragt i tildels rigelige Exemplarer og i ublandede Tuer fra følgende Steder.

North Devon: Havhestberget og Borgøen; Cardigan Strait: Djævleøen; North Lincoln: Framfjord; Kong Oscars Land: Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Brevort Isl. og Cape Rutherford under 78° 50′ nordlig Bredde.

Synes udelukkende at forekomme paa Berge, medens foregaaende Art i disse Egne som Regel voxer paa sumpig Jord.

Artens tidligere kjendte Nordgrændse var ved 70° 30′ i Øst-Grønland.

188. *Bryum argenteum* L.

Er udelukkende samlet paa Berge og kun i rene Tuer.

North Devon: Borgøen; Kong Oscars Land: Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn og Brevort Isl.

Arten er kjendt ogsaa fra Spitzbergen og andre arktiske Egne.

189. *Bryum cyclophyllum* (Schwgr.) Br. Eur.

Er udelukkende samlet i Sumpe og i tildels rene Tuer.

Kong Oscars Land: Gaasefjord; North Lincoln: Framfjord; Ellesmere Land: Eskimopolis, Skrællingøen, Cocked Hat Isl. og Beitstadfjorden under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 69° 35′ i Sibirien.

190. *Bryum cyclophylloides* BRYHN & RYAN. sp. nov.

Cæspites densi, ad 2 cm. alti, intus fusci, superne incano-lutescentes, Surculus parce ramosus, innovationes subcomales 1—2 flagelliformes rufo-lutescentes haud raro emittens, tomento sublævi luteo-fusco tectus. E foliorum axillis filamenta articulata numerosa, simplicia vel ramosa, omnia chlorophyllifera, egrediuntur.

Caulis 0.3—0.4 mm. crassus, ætate fistulosus, sectione rotundato-pentagonus e cellulis leptodermibus, versus centrum fistulosum majoribus, peripheriam versus minoribus constructus.

Folia caulina parum accrescentia, conferta, siccitate inflexa marginibus undulatis, humiditate erecta, concavo-carinata, e basi angusto vix decurrenti oblongo-ovalia vel subrotunda, apice nullo, margine indistincte limbata et plana vel e basi medium versus subreflexa, 0.9—1.4 mm. longa et 0.7—0.95 mm. lata.

Folia apicalia caulinis vix majora ad comam paucifoliatam floriferam congesta, late ovali-obovata, intima ovato-lanceolata, breviter acuminata.

Costa foliorum et caulinum et comantium tenuis, fuscescens, haud percurrens.

Cellulæ foliares juveniles qvam maxime chlorophylliferæ, basilares elongato-rectangulæ vel hexagonæ, 0.06—0.1 mm. longæ et 0.015—0.022 mm. latæ, ceteræ rhombeo-hexagonæ 0.04—0.055 mm. longæ et 0.02—0.03 mm. latæ, marginales in seriebus 1—2 angustiores, rectangulo-rhomboideæ, limbum indistinctum formantes. Parietes cellularum luteoli, vix incrassati, transversalibus præprimis porosis.

Inflorescentia heteroica, floribus bisexualibus et femineis. Pistillidia 5—7, 0.45 mm. longa; antheridia 10—12, 0.36—0.39 mm. longa, oblonga, colore picis liqvidæ; paraphyses multo longiores, lutescentes.

Cætera desunt.

Denne nye Art synes uden Tvivl at staa *Bryum cyclophyllum* nærmest, fra hvilken den er forskjellig ved Blomsterstand, de ikke nedløbende mere tætstillede og mere ensartede Blade, det meget mindre løse Cellevæv og de næsten glatte Rodhaar.

Exemplarer findes fra Eskimopolis i Ellesmere Land, under 78° 50′ nordlig Bredde, hvor Planten er samlet paa sumpig Jord og paa Excrementer i Selskab med *Bryum pertenellum, Webera commutata, Haplodon Wormskjoldii, Tetraplodon pallidus* og *mnioides, Catascopium nigritum* og *Hypnum uncinatum.*

191. *Bryum neodamense* Itz. Var. *ovatum* (Jur.) Lindb. & Arn.

North Devon: Havhestberget; North Lincoln: Framfjord; Kong Oscars Land: Gaasefjord og Moskusfjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn under 78° 45′ nordlig Bredde.

Den for Arten tidligere angivne Nordgrændse er ved 71° paa Grønlands Østkyst.

192. *Bryum obtusifolium* Lindb.

Denne er en af de mest almindelig forekommende Arter, der uden Tvivl findes paa ethvert af de undersøgte Steder. Efter de indsamlede Exemplarer at dømme, synes den ikke overalt at optræde i rigelig Mængde, om den end som Regel forekommer i ublandede Tuer.

Arten findes paa Spitzbergen helt op til Vegetationens yderste Nordgrændse.

193. *Bryum paganum* Bryhn & Ryan. sp. nov.

Cæspites laxi, ægre cohærentes, ad 4.5 cm. alti, pulchre fusco-rubri.

Surculus innovationes 1—2 floriferas, 5—10 mm. longas, iterum iterumqve superpositas emittens, tomentum rubrum ramosum papillosum, ex axillis foliorum fasciculatim egressum, proferens.

Caulis tenuis, 0.2—0.3 mm. crassus, sectione qvadrato-rotundatus, fasciculo centrali 0.18 mm. crasso vel in centro fistulosus, cellulis intermediis qvoad magnitudinem variis, parietibus illarum rubris, flexuosis, tenuibus, cellulis peripheriam versus minoribus paullo incrassatis.

Folia caulina valde accrescentia, valde concava, vix decurrentia, infima parva remota late lanceolata, apice obtuso, 0.6 mm. longa et 0.25 mm. lata, margine plano elimbata, tenuissime costata vel ecostata, media ovato-lanceolata, apice obtuso, 1 mm. longa et 0.6 mm. lata, margine ad medium anguste reflexa et serie unica cellularum limbata, costa mediocriter valida apicem versus dissoluta. Folia caulina apicalia comam paucifoliatam formantes ad 2 mm. longa, e basi subrectangulo 0.44 mm. lato et 0.5 mm. longo subito ovali-oblonga, medio folio ad 1 mm. lato, apice subcucullato obtusa vel rarius obtuse breviterqve acuminata, margine ad basin subrectangulum plana et elimbata, dein apicem versus plus minusve late reflexa et cellularum seriebus duabus, apicem versus serie una, limbata, costa valida infra apicem dissoluta.

Cellulæ foliares basilares rectangulæ vel elongato-rectangulæ, 0.015—0.02 mm. latæ et duplo—qvintuplex longiores qvam latiores, parietibus rubro-lutescentibus, vix vel parum incrassatis, illæ medii folii et superio-

ris rhombeo-hexagonæ, 0.03 mm. latæ et 0.04—0.05 mm. longæ, paullo magis incrassatæ, apicales angustiores, parietibus fusco-rubris valde incrassatis et porosis, marginales rhombeæ vel rhomboïdeæ, sæpe bistratæ, parietibus fusco-rubris mediocriter incrassatis.

Costa foliorum (infimis exceptis) valida, basi 0.06 mm. lata, fusco-rubra, in dorso valde prominens, in caulem decurrens, nunqvam folium percurrens, ducibus 4 minoribus, cellulis ventralibus hyalinis inanibus, dorsalibus stereïdeis vel substereïdeis.

Folia perichætialia interna laxissime texta, caulinis apicalilibus breviora. oblonga, supra medium perrepente in apicem longum filiformem contracta, margine plana et serie cellularum unica indistincte limbata; per medium folium loco costæ cellulæ nonnullæ elongatæ.

Inflorescentia polyoica. floribus et bisexualibus, masculis et femineis sine ulla regula dispositis.

Flos masculus terminalis; folia perigonialia interna ovata, 0.64 mm. longa, margine plana, limbo nullo cincta, costa indistincta; antheridia pauca rosea clavæformia, ætate cylindracea, 0.3—0.4 mm. longa; paraphyses numerosæ longiores, hyalino-lutescentes. Pistillidia 0.45—0.5 mm. longa, et in floribus femineis et in bisexualibus numero varia.

Cetera ignota.

Denne nye Art, hvis rette Plads inden Slægtens forskjellige Afdelinger endnu ikke kan bestemt angives, har et yderst eiendommeligt Udseende og synes meget karakteristisk, fornemmelig ved de høist eiendommelige Topblade og Perichætialblade. Den blev kaldet *Bryum paganum*, kun fordi den blandt alle de nye Brya sidst fik sit Navn.

Af denne vakre Plante findes rigelige Exemplarer fra North Devon, under omtrent 76° nordlig Bredde, samlede paa sumpig Grund i Selskab med *Bryum calophyllum* og *obtusifolium*, *Hypnum tundræ* og *turgescens*.

194. *Bryum pallens* Sw.

Exemplarer findes i Samlingen fra følgende Steder.

Kong Oscars Land: Gaasefjord (c. fr.), Havnefjord (c. fr.), Renbugten (c. fr.), Landsend og Isachsens Fjord; North Kent (300 M. o. H.); North Devon: Borgøen; Ellesmere Land: Framshavn, Cape Viole og Beitstadfjorden under 79° nordlig Bredde.

Arten er tidligere kjendt fra Spitzbergen, Grønland og Alaska, paa hvilke samtlige Steder den synes at forekomme meget sparsomt.

195. *Bryum langvidum* Hagen.

I karakteristiske Exemplarer samlet i Lastræadalen i Ellesmere Land, under omtrent 78° 45′ nordlig Bredde, i Selskab med *Mnium affine* og *hymenophylloides* samt *Bryum pendulum*.

Tidligere kjendt kun fra Disko ved Grønlands Vestkyst under 70° nordlig Bredde.

196. *Bryum ventricosum* Dicks.

I disse, som i andre arktiske Egne, blandt de mere almindelige Arter, oftest forekommende i Former med korte spredte Blade.

Kong Oscars Land: Moskusfjord, Sydkapfjord, Renbugten og Gaasefjord (c. fr.); North Devon; North Lincoln: Framfjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Cape Rutherford, Eskimopolis, Bedford Pim Isl. og Skrællingøen.

Var. *synoicum* Arnell.

Kong Oscars Land: Havnefjord (c. fr.).

Var. *subteres* Bryhn & Ryan, var. nov.

Habitu *Bryo tereti* persimilis. Surculus floribus masculis gemmæformibus numerosis nodosus. Folia caulina breviora et densiora. Cilia nodosa.

De cetero cum typo congruens.

Denne nye Varietet findes ogsaa fra Havnefjord (c. fr.).

197. *Bryum crispulum* Hampe.

Exemplarer findes fra saavel den sydligste, som den nordligste Del af det undersøgte Landomraade, dog kun sterile.

North Devon; North Lincoln; North Kent; Kong Oscars Land: Isachsens Fjord, Excrementbugten, Gaasefjord og Havnefjord; N. V. Grønland; Ellesmere Land: Lastræadalen, Cape Rutherford, Bedford Pim Isl. og Beitstadfjorden under 79° nordlig Bredde.

Var. *densifolium* Bryhn & Ryan, var. nov,

Differt e typo foliis imbricatim congestis, alternatim majoribus minoribusqve.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Framshavn.

Artens tidligere kjendte Nordgrændse var ved 74° 40′ paa Grønlands Østkyst.

198. *Bryum tomentosum* LIMPR. c. fr.

Kong Oscars Land: Havnefjord, Moskusfjord og Sydkapfjord; Ellesmere Land: Bedford Pim Isl., Glacier Valley og Cape Rutherford under 78° 50′ nordlig Bredde.

Var. *subsphæricum* BRYHN & RYAN, var. nov.

Capsula ovalis—subglobosa. Spori minores, ad 0.027 mm. magni, fuscescentes. Ceterum cum typo congruens.

Kong Oscars Land: Moskusfjord paa sumpig Jord i Selskab med Hovedarten og med *Bryum pendulum, Tortula mucronifolia* og *Hypnum tundræ.*

Artens tidligere kjendte Nordgrændse var ved 70°, nemlig Laxelven i Finmarken og Disko i Vest-Grønland.

199. *Bryum arcticum* R. BR. c. fr.

Denne Art hører blandt de mere almindelige Moser i disse Egne, og den findes i Samlingen oftere i vakre rene og rigt frugtbærende Tuer.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Excrementbugten; North Devon; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole, Glacier Valley, Bedford Pim Isl. og Cape Rutherford.

Var. *latiannulatum* BRYHN & RYAN, var. nov.

Annulus qvintuplex—sextuplex, difficile solubilis. Commissuræ interlamellares rariores.

Ceterum typo persimilis.

Kong Oscars Land: Havnefjord, hvor denne Varietet er samlet forholdsvis rigelig i Selskab med *Timmia norvegica* var. *excurrens* og *Timmia austriaca* samt *Amblystegium Sprucei.*

Denne haardføre Art hører blandt de Brya, der findes længst mod Nord og dog er vel udviklet og rigt frugtbærende. Saaledes forekommer den ogsaa paa Spitzbergen med rigelig Frugt omtrent til Vegetationens yderste Nordgrændse.

200. *Bryum arcuatum* LIMPR. c. fr.

Exemplarer af denne sjeldne Art findes fra kun 2 Steder.

North Devon: Havhestberget, paa Excrementer i Selskab med *Voitia hyperborea, Tortula mucronifolia* og *Amblystegium filicinum*; Kong Oscars Land: Gaasefjord, under 76° 30′ nordlig Bredde, paa

sumpig Grund i Selskab med *Didymodon rubellus, Desmatodon suberectus, Encalypta rhabdocarpa* og *Leptobryum pyriforme.*

Arten er tidligere foruden i Norge, ogsaa samlet paa Grønlands Vest- og Østkyst ved 70—71° nordlig Bredde.

201. *Bryum micans* LIMPR. c. fr.

Kong Oscars Land: Gaasefjord, paa Excrementer sammen med *Haplodon Wormskjoldii, Bryum pendulum, Ceratodon purpureus* og *Orthothecium chryseum*; Ellesmere Land: Bedford Pim Isl., under 78° 40′ nordlig Bredde, paa sumpig Jord i Selskab med *Bryum tomentosum* og *Webera cruda.*

Tidligere kjendte Nordgrændse for denne sjeldne Art var ved 70° 30′ paa Grønlands Østkyst.

202. *Bryum pendulum* (HORNSCH.) SCHIMP. c. fr.

Den mest almindelige Art inden Slægten, der neppe mangler paa noget af de undersøgte Voxesteder.

Planten er i de fleste Tilfælde mere eller mindre afvigende fra Exemplarer, samlede under sydlige Breddegrader, idet specielt det vegetative System ikke opnaar den Størrelse og Frodighed, som hos disse. Oftest forekommer Arten i compacte nogle Millimeter høie Tuer, der kun under gunstige Forholde naar Centimeteren og derover. Bladenes Størrelse staar i Forhold hertil, ligesaa Seta, der sjelden opnaar en Centimeters Høide. Ogsaa Kapselen er som Regel meget mindre, end normalt. Peristomets Høide staar i Forhold til Kapselens Længde, dets Lamellers Bølgeform er ikke altid tydelig udtalt og de interlamellære Forbindelser varierer betydelig i Antal. Sporerne, der ikke altid modnes, er ogsaa som Regel mindre og opnaar sjelden en Størrelse af 0.025—0.026 mm. Blomsterstanden er oftest heteroic, ogsaa autoic, sjeldnere synoic.

I Juni Maaned, paa den Tid da Frugterne i det sydlige Norge er modne, findes i disse høinordiske Egne de nye Frugter saavidt synlige over Perichætierne. Heller ikke i Slutningen af Juli og i Begyndelsen af August er de modne, saa der er al Sandsynlighed for, at Modningen fortsættes det følgende Aar.

Var. *striolatum* BRYHN & RYAN, var. nov.

Differt e typo dentibus exostomii elimbati punctato-striolatis et commissuris interlamellaribus crassioribus.

Kong Oscars Land: Gaasefjord, hvor denne Varietet er samlet i Selskab med Hovedarten, *Mnium affine* og *Amblystegium filicinum* var. *curvicaule.*

Var. *arctobryoides* BRYHN & RYAN, var. nov.

Differt e typo ciliis ternis appendiculatis exothecio adhærentibus.

Kong Oscars Land: Moskusfjord, paa sumpig Jord sammen med *Ceratodon purpureus, Mnium medium* og *Hypnum polycarpon.*

Bryum pendulum er ogsaa i andre arktiske Egne forholdsvis almindelig udbredt. Den er paa Spitzbergen samlet med rigelig og vel udviklet Frugt lige op til 80° 30′ nordlig Bredde.

203. *Bryum compactum* HORNSCH. c. fr.

Meget mindre almindelig, end foregaaende meget nær beslægtede Art.

Sikre Exemplarer er iagttagne kun fra Kong Oscars Land: Havnefjord og Gaasefjord.

204. *Bryum Fridtzii* HAGEN, c. fr.

Vakre og forholdsvis righoldige Exemplarer findes fra følgende 2 Steder.

Kong Oscars Land: Gaasefjord, hvor Planten er samlet paa Excrementer og Cadavere sammen med *Bryum pendulum, Voitia hyperborea* og *Haplodon Wormskjoldii*; Ellesmere Land: Glacier Valley, under 78° 45′ nordlig Bredde, paa sumpig Jord i Selskab med *Bryum arcticum* og *crispulum* var. *densifolium* samt *Tetraplodon pallidus.*

Arten er tidligere kjendt kun fra Norge (Alstahaug).

205. *Bryum penduliforme* BRYHN & RYAN, sp. nov.

Cæspites densissimi, 2 cm. alti, intus ferruginei, summo apice luteovirentes.

Surculus erectus, innovationibus et floriferis inferne subnudis apice comantibus iterum iterumqve superpositis et sterilibus subcomalibus uniformiter foliosis valde ramosus, tomento denso papilloso ferrugineo vestitus.

Caulis ruber, circiter 0.2 mm. crassus, sectione transversa rotundato-multangulus, fasciculo centrali 0.03 mm. crasso, cellulis intermediis leptodermibus, peripheric is in stratis duobus—tribus minoribus et valde incrassatis.

Folia caulina infima et inferiora parva, partim in tomento occulta, erecto-patentia, e basi lato ovata — late ovalia, obtusa vel subito acuminata, haud decurrentia, 0.5—0.9 mm. longa et 0.3—0.4 mm. lata, margine plano elimbata.

Folia caulina apicalia subito majora in comam penicilliformem congesta, siccitate torta, humiditate erecto-patentia, concava, supra basin angustiorem ad angulos plus minusve subito auriculæformiter dilatata, dein ovata vel ovato-lanceolata, in apicem longiorem lævem vel denticulatum sensim angustata, margine plus minusve late reflexa et seriebus 1—3 cellularum limbata, ad 1.7 mm. longa et 0.78 mm. lata.

Rete cellulare supra basin rubrum, cellulis rectangulis; cellulæ angulorum dilatatorum qvadrato-inflatæ, ceteræ hexagono-rhombeæ, 0.033—0.06 mm. longæ et 0.011—0.017 mm. latæ.

Costa basi ad 0.07 mm. lata et rubra, ceterum luteo-virens, in foliis comantibus percurrens, in ceteris sub apice dissoluta.

Folia perichætialia interna parva, margine plana, limbo nullo cincta.

Inflorescentia heteroica, floribus femineis numerosis, bisexualibus masculisqve minus numerosis. Florum bisexualium pistillidia et antheridia pauca, illa 0.5, hæc 0.46 mm. longa; paraphyses rubro-lutescentes longiores. Flores masculi gemmæformes; folia perigonialia interna late obovata subito in apicem contracta, marginibus planis serie unica cellularum rectangularum limbatis, costa tenuissima infra medium definiente.

Seta 6—8 mm. alta, mediocriter crassa, rigidula, inferne rubro-fusca, superne luteo-fusca.

Capsula nutans vel pendula, ovalis—obovata, sicca sub ore haud angustata, operculata 1.5 mm. longa et 0.75 mm. crassa, immatura virescens et nitens, matura luteo-fusca et opaca; collum breve, longitudine dimidium sporangii, et in sporangium et in setam sensim transgressum, siccitate plicatulum.

Cellulæ epidermicæ sporangii mediocriter incrassatæ, marginales in seriebus 1—2 transverse rectangulæ, submarginales in seriebus duabus magnæ qvadratæ collenchymaticæ, ceteræ elongato-rectangulæ cum qvadratis mixtæ, parietibus flexuosis; illæ colli irregulares, multangulæ et rectangulæ cum rotundatis mixtæ, stomatibus late ovalibus, 0.05 mm. longis.

Exostomii dentes e fundo rubro 0.044 mm. alto, vix lacunoso, inferne convexo, 0.3 mm. alti et basi 0.055—0.06 mm. lati, æqvaliter vel supra medium paullo citius angustati, dimidio inferiore lutescenti, superiore hyalino et lævi, subelimbati; scutula qvadrata vel late rectangula, densissime punctulata; linea dorsalis pæne recta; lamellæ circiter 14, undulatæ (ut in *Bryo pendulo*), septis singulis inter se conjunctæ.

Endostomium exostomio adhærens, pallidum; membrana 0.11 mm. alta, lævis; processus lineari-lanceolati, sparse papilloso-punctulati, exo-

stomio breviores, foraminibus inferne anguste oblongis, superne rimæformibus, pertusi; cilia nulla.

Annulus duplex, fragmentarie secedens.

Operculum acute conicum, capsulæ concolor, 0.45 mm. latum.

Spori 0.02—0.022 mm. magni, virides, sublæves.

Denne nye Art staar *Bryum pendulum* meget nær, men ansees tilstrækkelig adskildt og forskjellig fornemmelig derved, at der konstant findes kun en Tverforbindelse mellem Lamellerne, samt ved de smaa grønne Sporer.

Kong Oscars Land: Havnefjord, under 76° 30′ nordlig Bredde, i Selskab med *Amblystegium Sprucei.*

206. *Bryum confluens* Jørgensen.

Denne sjeldne Art er paavist fra kun 2 Steder i Ellesmere Land: Glacier Valley og Cape Rutherford, under 78° 50′ nordlig Bredde.

Paa begge Steder er Planten samlet paa sumpig Jord, paa det førstnævnte Sted i Selskab med *Bryum autumnale* og *Conostomum boreale,* paa det andet Sted sammen med *Bryum pendulum* og *tomentosum* samt *Lophozia Binsteadii, Odontoschisma Macounii* og andre Arter.

Arten er tidligere kjendt kun fra det nordlige Norge.

Mniaceæ.

207. *Mnium orthorrhynchum* Brid.

Findes i Samlingen fra mange Steder; men, ligesom de øvrige Arter inden Slægten, oftest sparsomt indsprængt blandt andre Moser enkeltvis eller i ganske faa Individer.

Kong Oscars Land: Havnefjord, Gaasefjord, Excrementbugten og Vendomkap; Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen, under 79° nordlig Bredde.

Var. *nivale* Pfeff.

North Devon: Havhestberget; North Lincoln: Framfjord; Kong Oscars Land: Renbugten og Vendomkap.

Arten er ogsaa kjendt fra Grønland, Spitzbergen og Sibirien.

208. *Mnium Blyttii* Bryol. Eur.

Kong Oscars Land: Havnefjord og Gaasefjord. Denne Art er tidligere kjendt fra Spitzbergen, derimod ikke fra det arktiske Amerika.

209. *Mnium medium* Bryol. Eur. var, *curvatulum* (Lindb.) Kindb.

Denne Art, hele Samlingens eneste *Mnium*, der er samlet i fertil Tilstand og med Frugtstilke findes fra følgende Steder.

North Devon: Havhestberget; Kong Oscars Land: Havnefjord, Gaasefjord, Moskusfjord og Landsend; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Lastræadalen og Beitstadfjorden under 79° nordlig Bredde.

210. *Mnium affine* Bland. var. *integrifolia* (Lindb.) Limpr.

Kong Oscars Land: Havnefjord, Gaasefjord og Excrementbugten; North Devon: Havhestberget; Cardigan Strait: Djævleøen; North Lincoln: Framfjord; Ellesmere Land: Framshavn, Skrællingøen og Eskimopolis (78° 50′ nordl. Bredde).

Begge disse 2 sidst omtalte Arter er kjendt ogsaa fra Sibirien, Spitzbergen, Grønland og Alaska.

211. *Mnium hymenophylloides* Hüb.

Kong Oscars Land: Havnefjord, Renbugten og Landsend; Ellesmere Land: Framshavn, Lastræadalen og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 71° paa Grønlands Vestkyst.

212. *Mnium subglobosum* Br. Eur.

North Devon: Havhestberget; Ellesmere Land,: Lastræadalen under 78° 45′ nordlig Bredde.

Var. *subelimbatum* Bryhn, var. nov.

Folia e basi versus apicem serie cellularum singula limbata, ipso apice limbo nullo instructo. Ceterum typo similis.

Kong Oscars Land: Gaasefjord; Cardigan Strait: Djævleøen. Paa disse to Steder, der begge ligger under 76° 30′ nordlig Bredde, er denne Varietet sparsomt plukket ud af tætte Mosetuer.

Artens tidligere kjendte Nordgrændse var ved 72° 25′ paa Grønlands Vestkyst.

213. *Mnium punctatum* (L.) Hedw.

Kong Oscars Land: Havnefjord, i Selskab med *Amblystegium Sprucei*, og ved Isachsens Fjord, under 78° nordlig Bredde, i Selskab med *Cinclidium polare*.

Artens tidligere kjendte Nordgrændse var ved 71° 25′ i Finmarken.

214. *Cinclidium subrotundum* LINDB.

Synes at være almindelig forekommende over hele det undersøgte Landomraade, men næsten udelukkende som sparsom Bestanddel af Blandingstuer. Den er den eneste Art inden Slægten, der i Samlingen findes i frugtbærende Tilstand, men med Frugt findes den kun fra et eneste Voxested, og Kapslerne er elendig smaa i Sammenligning med skandinaviske Exemplarers Kapsler.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Renbugten, Gaasefjord og Landsend; North Kent (300 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Viole, Cape Rutherford, Skrællingøen (c. fr.), Beitstadfjorden og mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 71° paa Grønlands Østkyst.

215. *Cinclidium arcticum* (BR. EUR.) C. M.

Exemplarer af denne sjeldne Art findes i Samlingen kun fra Kong Oscars Land: Havnefjord, Gaasefjord og Renbugten, under 76° 40′ nordlig Bredde.

Saavidt mig bekjendt er denne Art før samlet kun paa meget faa Steder i Norge og paa Beeren Eiland, der er beliggende under 74° nordlig Bredde.

216. *Cinclidium polare* (KINDB.) BRYHN, sp. nov.

(*C. arcticum* BERGGR. p. p. & *C. arcticum* subsp. *polare* KINDB.)

Cinclidio arctico, qvocum adhuc commutatum fuit, proximum. Species istæ propinqvæ hocce modo facillime distingvuntur.

Cinclidium arcticum.	*Cinclidium polare.*
Cæspites laxi, virentes, apice rufescentes.	Cæspites densi, rubro-fuscescentes.
Folia caulina majora (3—5 mm. longa et 2—3 mm. lata), obovata summo apice breviter acuminata.	Folia caulina minora (2—2.25 mm. longa et 1.5 mm. lata), e medio sensim acuminata, dimidio inferiore late ovato, superiore late triangulari.
Cellulæ folii basilares elongato-rectangulæ (ter—qvatter longiores qvam latiores), porosæ, nec collenchymaticæ, ceteræ irregulares, pentagonæ et hexagonæ, magnitudine variæ, juxta costam multo majores, haud collenchymaticæ.	Cellulæ folii basilares breviter rectangulæ (dimidium longiores qvam latiores), collenchymaticæ, nec porosæ, ceteræ subregulares, rotundato-qvadratæ, subæqvimagnæ, optime collenchymaticæ.

Cinclidium polare er i disse Egne meget mere almindelig, end *Cinclidium arcticum*. Den voxer enten i tætte ublandede Tuer eller ogsaa spredt blandt andre Sumpmoser. Dens mest trofaste Ledsager er *Cinclidium subrotundum*.

Exemplarer findes fra følgende talrige Steder. Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Excrementbugten, Isachsens Fjord; North Kent (300 M. o. H.); North Lincoln: Framfjord; Ellesmere Land: Framshavn, Lastræadalen, Bedford Pim. Isl. og Cape Rutherford.

Arten er tidligere kjendt kun fra Spitzbergen med Nordgrændse ved 80°.

217. *Cinclidium hymenophyllum* (Br. Eur.) Lindb.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Excrementbugten og Landsend; North Lincoln: Framfjord; Ellesmere Land: Lastræadalen, Cape Rutherford, Glacier Valley og Bedford Pim Isl.

Planten er kjendt ogsaa fra Spitzbergen og andre arktiske Egne.

Meeseaceæ.

218. *Catascopium nigritum* (Hedw.) Brid.

Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Renbugten, Excrementbugten, Landsend; North Kent (300 M. o. H.); North Lincoln: Framfjord; Ellesmere Land: Framshavn, Cape Rutherford, Eskimopolis, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Forekommer som Regel i en kortbladet tæt tuet steril Form.

219. *Meesea triqvetra* (L.) Ångstr.

Blandt de mest almindelige Sumpmoser, der neppe mangler paa noget af de undersøgte Voxesteder og her kan opnaa stor Frodighed. Den er saaledes iagttaget i lige til 15—20 cm. dybe ublandede Tuer, dog altid steril.

220. *Meesea trichodes* (L.) Spruce, c. fr.

Kong Oscars Land: Havnefjord, Gaasefjord, Moskusfjord og Landsend; North Lincoln: Framfjord; Ellesmere Land: Lastræadalen og Skrællingøen samt mellem Ft. Juliane og Mt. Køla-Paulsen (79° n. B.).

Saavel disse 2 Arter *Meesea*, som *Catascopium*, er ogsaa kjendt fra Spitzbergen og andre arktiske Egne.

Aulacomniaceæ.

221. *Aulacomnium palustre* (L.) SCHWGR.

Vest-Grønland: Egedesminde; N. V. Grønland: Foulkefjord; Kong Oscars Land: Havnefjord; Ellesmere Land: Framshavn, Glacier Valley, Lastræadalen, Cape Viole og Skrællingøen.

Overalt steril.

222. *Aulacomnium turgidum* (WAHLENB.) SCHWGR.

Overalt en af de allermest almindelige Moser. Med vel udviklede Frugter fra Glacier Valley og Lastræadalen i Ellesmere Land.

Begge disse Arter Aulacomnium er almindelige i alle undersøgte arktiske Egne og gaar paa Spitzbergen omtrent til Vegetationens yderste Nordgrændse.

223. *Aulacomnium acuminatum* (ARN. & LINDB.) PAR.

Denne sjeldne og særdeles let iøinefaldende Art synes at være betydelig mere sjelden, end de to foregaaende Arter. Forholdsvis rigelige, omend sterile, Exemplarer findes i næsten ublandede Tuer fra følgende Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord under 76° 30′ nordlig Bredde.

Denne Art er tidligere kjendt kun fra Jenisejdalen i Sibirien, og dens tidligere kjendte Nordgrændse var 68° 30′.

Bartramiaceæ.

224. *Bartramia ityphylla* BRID. var. *strigosa* WAHLENB.

Kong Oscars Land: Gaasefjord (c. fr.); N. V. Grønland: Foulkefjord.

225. *Plagiopus Oederi* (GUNN.) LIMPR.

Kong Oscars Land: Havnefjord (c. fr.) og Gaasefjord; North Kent (300 M. o. H.).

226. *Conostomum boreale* SW.

Kong Oscars Land: Isachsens Fjord; Ellesmere Land: Glacier Valley (c. fr.), Cape Viole og Lastræadalen (c. fr.).

Alle disse 3 sidst nævnte Arter synes overalt at forekomme meget sparsomt i disse Egne, hvilket angives at være Tilfældet ogsaa paa Spitzbergen og Grønland.

227. *Philonotis alpicola* Jur.

Blandt de allermest almindelige Sumpmoser, der ikke mangler paa noget af de undersøgte Steder. Planten forekommer ofte i tætte, ublandede og indtil 20 Centimeter dybe Tuer, dog oftest som Bestanddel af mere eller mindre brogede Blandingstuer. Den er ikke samlet med Frugt, findes med Hunblomster (♀) fra Gaasefjord i Kong Oscars Land og fra Beitstadfjorden i Ellesmere Land, med Hanblomster (♂) kun fra Gaasefjord.

Arten er rimeligvis almindelig i alle arktiske Lande.

228. *Philonotis cæspitosa* Wils.

Meget sjelden og samlet kun paa to Steder.

Kong Oscars Land: Havnefjord og Gaasefjord uader 76° 30′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 70° 30′ paa Grønlands Østkyst.

Timmiaceæ.

229. *Timmia austriaca* Hedw.

I steril Tilstand overalt meget almindelig paa sumpige Steder. Forekommer næsten udelukkende som *forma arctica* (Kindb.) Arnell.

230. *Timmia norvegica* Zett.

Ligeledes i steril Tilstand en af de mest almindelig forekommende Sumpmoser.

Var. *excurrens* Bryhn, var. nov.

Folia breviora, costa longius breviusve excurrenti mucronata. Ceterum typo similis.

Kong Oscars Land: Havnefjord og Gaasefjord.

Planten er ogsaa forøvrigt noget varierende. Saaledes findes fra Djævleøen i Cardigan Strait rigelige Exemplarer af en *forma brevifolia* med stumpe Blade, der kun er halvt saa lange, som almindelig.

Begge disse 2 Arter *Timmia* kjendes ogsaa fra Grønland og Spitzbergen.

231. *Timmia bavarica* Hessl.

North Devon: Borgøen; North Lincoln: Framfjord; Kong Oscars Land: Havnefjord (c. fr.) og Gaasefjord (c. fr.).

Artens tidligere kjendte Nordgrændse var ved omtrent 71° 25′ paa Grønland.

Polytrichaceæ.

232. *Psilopilum lævigatum* (WAHLENB.) LINDB.

Overraskende sjelden. Den findes nemlig kun i nogle faa sterile Individer indsprængt i Mosetuer fra Gaasefjord i Kong Oscars Land samt i rigelige frugtbærende Exemplarer fra Glacier Valley i Ellesmere Land.

Denne er en rent arktisk Art, tidligere vel kjendt fra de fleste undersøgte arktiske Egne, med Nordgrændse over Spitzbergen.

233. *Polytrichum alpinum* L.

Overalt blandt de mest almindelige Arter under forskjellige Former, blandt hvilke Var. *simplex* SCHIMP. forekommer hyppigt.

Exemplarer med Frugt findes kun fra følgende faa Voxesteder. Kong Oscars Land: Gaasefjord og Landsend; Ellesmere Land: Glacier Valley og Eskimopolis (78° 50′ n. B.).

Arten har en stor Udbredelse over alle arktiske Lande.

234. *Polytrichum fragile* BRYHN, sp. nov. (Tab. I, fig. 3).

Inter alios muscos solitarium vel cæspites laxos ad 6 cm. altos, intus luteo-fuscescentes, apice pallide luteo-virentes, formans.

Surculus erectus, simplex, vel ramum unum alterumve emittens, inferne subnudus, supra medium mediocriter dense et uniformiter foliatus, inferne tomento albescenti sublævi plus minusve copiose obsitus, habitu ob partes foliorum vaginantes albido- vel luteo-splendentes persistentes, laminis foliorum abruptis, peculiari insignis.

Caulis luteo-fuscescens, pentagono-rotundatus, 0.4 mm. crassus, fasciculo centrali 0.09 mm. crasso male definito, reti intermedio ad fasciculum centralem tenui, peripheriam versus magis magisqve incrassato, strato corticali duplici, cellulis minutis stereïdeis luteo-fuscescentibus, superficie cellulis prominulis scabridus.

Folia caulina rigida, fere coriacea, sicca haud mutata, e basi appresso-vaginanti erecto-patentia. Pars vaginans nitida rectangula, 2 mm. longa et 1 mm. lata; lamina opaca e basi subovato sensim lanceolata, 3.5 mm. longa et 0.5—0.6 mm. lata.

In limitibus inter partem folii vaginantem laminamqve margo folii uterqve sinu 0.06 mm. profundo obtuse emarginatus, ubi lamina contactu lenissimo decidua.

Margines laminares erecti vel superne levissime incurvi, integri, apice excepto, dentibus nonnullis obtusiusculis et remotis serrato.

Basis folii e cellulis inanibus composita, pellucidis, rectangularibus, 0.075 mm. langis et 0.0095 mm. latis, parum incrassatis, marginalibus leptodermibus, angustioribus, elongato-rhomboïdeis, limbum distinctum formantibus.

Lamina maxima parte bistrata, ad marginem in seriebus cellularum 4—6 unistrata; cellulæ partis unistratæ transverse rectangulæ, 0.016 mm. latæ et 0.012 mm. longæ, collenchymaticæ.

Costa inferne 0.12, superne 0.18 mm. lata, in mucronem 0.25 mm. longum serratum excurrens, dorso prominulo lævis, e duabus seriebus indicum numerosorum, cellulis centralibus majoribus et fasciculis stereïdarum duabus validis constructa.

Lamellæ ad 30, e costa laminaqve bistrata egressæ, haud undulatæ, densæ, e cellulis superpositis circiter 10 conformatæ, ad 0.15 mm. altæ; cellulæ chlorophylliferæ regulares, rotundato-rectangulares, circiter 0.0125 mm. longæ et paullo breviores, cellulæ marginales duplo majores, ovales, apice valde incrassato grosse papillosæ (ut in *Polytricho alpino*).

Cætera ignota.

Denne nye Art maa paa Grund af Lamellernes Bygning ansees for at staa *Polytrichum alpinum* nærmest. Fra denne er den forskjellig ved de yderst let affaldende Blade med den eiendommelige Indskjæring paa Overgangen mellem Bladplade og Bladskede, ved de kun i den yderste Spids svagt tandede Blade, de smale Bladkanter, den paa Ryggen utandede Nerve, færre Lameller o. s. v.

Planten er ikke almindelig, den voxer i Sumpe og er samlet kun i den nordlige Del af det undersøgte Landomraade og dels i rene Tuer, dels som sparsom Bestanddel af Blandingstuer.

N. V. Grønland: Foulkefjord under 78° 20′ nordlig Bredde; Ellesmere Land: Cape Viole, Lastræadalen, Bedford Pim Isl. og Cocked Hat Isl. under 78° 50′ nordlig Bredde.

235. *Polytrichum juniperinum* Wild.

Ikke almindelig og ligesom de følgende Arter inden Slægten ikke samlet med Frugt.

Vest-Grønland: Egedesminde; Kong Oscars Land: Gaasefjord; Ellesmere Land: Cape Viole, Lastræadalen, Cape Rutherford og Eskimopolis (78° 50′ n. B.).

Var. *alpinum* Schimp.

N. V. Grønland: Foulkefjord.

236. *Polytrichum strictum* BANKS.

Vest-Grønland: Egedesminde; Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: Cape Viole, Lastræadalen, Eskimopolis og Beitstadfjorden (79° n. B.).

237. *Polytrichum hyperboreum* R. BR.

Overraskende sjelden.

Kong Oscars Land: Isachsens Fjord (yderst sparsomt samlet); Ellesmere Land: Glacier Valley, hvorfra Planten er hjembragt i rigelige og næsten ublandede Tuer.

Alle disse 3 sidst nævnte Arter *Polytrichum* har deres Nordgrændse over Spitzbergen.

238. *Polytrichum piliferum* SCHREB.

Nogle faa sterile Individer er iagttagne fra Havnefjord i Kong Oscars Land, under 76° 30′ nordlig Bredde, sammen med *Polytrichum alpinum* og *Timmia austriaca forma arctica.*

Artens tidligere kjendte Nordgrændse var ved 74° paa Grønlands Østkyst.

Leskeaceæ.

239. *Myurella julacea* (VILL.) BRYOL. EUR.

Denne Plante er en meget almindelig Bestanddel af Blandingstuer og mangler neppe paa noget af de undersøgte Voxesteder. I rene Tuer er den meget sjelden samlet. Den mangler Frugt, ligesom ogsaa alle de øvrige følgende Moser med sidestillet Frugt, paa 2 Undtagelser nær.

240. *Myurella apiculata* (HÜB.) BRYOL. EUR.

Forekommer paa samme Maade, som foregaaende og er ligesom denne hjembragt fra samtlige undersøgte Steder. Begge Arter har den hidtil kjendte Nordgrændse over Spitzbergen.

241. *Leskea nervosa* (BRID.) MYRIN.

Sparsomme Exemplarer findes fra Vendomkap i Kong Oscars Land, under 76° 25′ nordlig Bredde, samlede i Selskab med *Orthothecium chryseum* og *strictum, Hypnum Vaucheri* og *revolutum.*

Artens tidligere kjendte Nordgrændse var ved 70° 25′ i Finmarken.

242. *Heterocladium Macounii* Best.

Ellesmere Land: Beitstadfjorden, under 79° nordlig Bredde, meget sparsomt blandt *Ditrichum flexicaule, Schistidium gracile* og *apocarpum* var. *ovatum.*

Ny for de arktiske Egne.

243. *Thuidium abietinum* (L.) Bryol. Eur.

Rigelige Exemplare i rene Tuer findes fra Havnefjord i Kong Oscars Land.

Denne Art, den eneste inden Slægten, der forekommer i arktiske Egne, er ogsaa i Grønland og paa Spitzbergen en sjelden Plante.

244. *Pterygynandrum filiforme* (Timm.) Hedw.

Kong Oscars Land: Vendomkap. Planten er samlet yderst sparsomt blandt *Orthothecium chryseum* og *Bryum elegans.*

Nordgrændse over Spitzbergen ved 80° 30′.

Hypnaceæ.

245. *Orthothecium rufescens* (Dicks.) Br. Eur.

Sjelden, sparsomt indsprængt blandt andre Moser og samlet kun i den sydligste Del af det undersøgte Landomraade.

Kong Oscars Land: Havnefjord og Moskusfjord, ved 76° 30′ nordlig Bredde, i Selskab med *Orthothecium chryseum, Cinclidium hymenophyllum* og *Aulacomnium acuminatum.*

Artens tidligere kjendte Nordgrændse var ved 70° i Finmarken.

246. *Orthothecium intricatum* (Hartm.) Br. Eur.

Ligeledes sjelden og sparsomt blandt andre Moser.

Kong Oscars Land: Havnefjord og Gaasefjord; Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordl. Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 70° i Finmarken og paa Alaska.

247. *Orthothecium chryseum* (Schwgr.) Br. Eur.

Ved Siden af *Brachythecium salebrosum* og *Distichium capillaceum* muligens den mest almindelige Moseart i disse Egne og overalt tilstedeværende, enten indsprængt i Mosetuer eller ogsaa i rene, indtil 15 Centimeter dybe Tuer.

Paa meget sumpige Steder, eller i Vand, optræder den som *var. cochlearifolia* Lindb. eller som *var. patula* Kindb.

248. *Orthothecium strictum* LOR.

Denne er ligeledes meget almindelig og mangler neppe paa noget Voxested.

Begge disse to sidst omtalte Arter er almindelig forekommende i alle arktiske Egne, og de har begge Nordgrændse over Spitzbergen.

249. *Orthothecium binervulum* MOL.

Sparsomme Exemplarer findes fra følgende faa Steder.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Framshavn og mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 70° paa Grønlands Vestkyst.

250. *Orthothecium acuminatum* BRYHN, sp. nov. (Tab. I. fig. 4).

Inter alios muscos singularis, vel cæspites parvos laxos, ad 3 cm. altos, haud cohærentes, luteo-vel aureo-nitentes formans.

Surculus erectus, indivisus vel ramis paucis acutis fasciculato-ramosus.

Caulis 0.2 mm. crassus, flavus, sectione transversa pentagono-rotundatus, fasciculo centrali 0.025 mm. crasso, male delimitato, reti intermedio laxo, luteo, collenchymatico, corticali in stratis cellularum tribus stereïdeo, flavo.

Folia caulina haud decurrentia, lævissima, sulcis vel striis nullis, ecostata, ovata-triangularia, subito in apicem contracta acutum, 0.1—0.12 mm. longum, inferne e seriebus cellularum tribus, superne e cellula singula elongata formatum. Margines foliorum ubiqve plani et ob cellulas prominulas, præsertim apicem versus, minute sed acutissime serrata.

Cellulæ folii basilares rectangulæ 0.009 mm. latæ et vulgo duplo—triplo longiores qvam latiores, flavescentes, valde incrassatæ et porosæ, superiores hexagono-rhomboideæ, flexuosæ, 0.006—0.007 mm. latæ et sexies—octies longiores qvam latiores, minus incrassatæ, parce porosæ, apicales, summa (terminali) excepta, rhombeæ, triplo—qvatter longiores, qvam latiores.

Cetera desunt.

Denne nye Art, der habituelt mest ligner *Orthothecium strictum* er forskjellig fra denne og alle de øvrige Arter ved den eiendommelige Bladform og de skarpt sagede Bladkanter.

Sparsomme Exemplarer findes fra følgende faa Steder.

Kong Oscars Land: Gaasefjord og Renbugten (76° 30′ nordl. Bredde); Ellesmere Land: Bedford Pim Isl. under 78° 45′ nordlig Bredde.

251. *Brachythecium salebrosum* (Hoffm.) Br. Eur.

Meget almindelig overalt paa alleslags Lokaliteter, helst i Sumpe. Forekommer dels i rene ublandede Tuer, dels i Blanding sammen med andre Moser. Den typiske Form er meget sjelden; Arten optræder her oftest som en af de nedenfor nævnte Varieteter eller ogsaa som Overgangsform til en eller anden Varietet.

Var. arcticum Berggren.

Den mest almindelige Form, der findes omtrent overalt.

Var. binervulum Bryhn, var. nov. (Tab. II, fig. 1).

Folia breviora, supra medium subito angustata, esulcata. Cellulæ angulares bene delimitatæ parietibus valde incrassatis et porosis; costa tenuis bifurca, crure longiore infra medium dissoluto.

Characteribus ceteris cum typo congruens.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Beitstadfjorden og mellem Ft. Juliane og Mt. Køla-Paulsen (79° nordl. Bredde).

Var. turgidum Hartm.

Kong Oscars Land: Havnefjord, Gaasefjord og Excrementbugten; North Devon: Havhestberget; Ellesmere Land: Eskimopolis, Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

252. *Camptothecium nitens* (Schreb.) Schimp.

Synes at være almindelig overalt. Exemplarer findes fra alle undersøgte Steder, og altid uden filthaaret Stilk, altsaa som Varieteten *insignis* Milde.

Arten er ligesom *Brachythecium salebrosum* almindelig i alle arktiske Egne.

253. *Eurhynchium strigosum* (Hoffm.) Bryol. Eur.

Sparsomme Exemplarer er plukkede ud af tætte Mosetuer fra følgende faa Steder.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord; Ellesmere Land: Bedford Pim Isl. under 78° 40′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 74° 40′ paa den mindre Pendulum Ø ved Grønlands Østkyst.

254. *Eurhynchium diversifolium* (SCHLEICHN.) BR. EUR.

Meget sjelden og sparsomt samlet kun et eneste Sted, nemlig ved Gaasefjord i Kong Oscars Land, hvor Planten fandtes mellem *Bryum pendulum* og *Hypnum revolutum*.

255. *Eurhynchium cirrosum* (SCHWGR.) JØRG.

Ligeledes hjembragt kun fra et eneste Sted.

Kong Oscars Land: Gaasefjord, hvor Planten er paavist sparsomt blandt andre Moser.

Begge disse to sidstnævnte Arter forekommer ogsaa paa Spitzbergen.

256. *Isopterygium pulchellum* (DICKS.) LINDB.

I jordfyldte Bergsprækker og i Sumpe temmelig almindelig mellem andre Moser. Den er som Regel steril og har ofte et fremmed Udseende paa Grund af Bladene, der oftest er meget kortere end almindelig. Findes fra et enkelt Sted med Frugt.

North Devon: Borgøen; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Renbugten; North Kent (350 M. o. H.); N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Rutherford (c. fr.), Lastræadalen, Glacier Valley, Cape Viole, Bedford Pim Isl., Beitstadfjorden og mellem Ft. Juliane og Mt. Køla-Paulsen (79° nordl. B.).

Findes ogsaa paa Spitzbergen (Nordgrændse).

257. *Amblystegium Sprucei* (BRUCH.) BRYOL. EUR.

Ikke sjelden i Sumpe og Bergsprækker.

North Devon: Havhestberget og Borgøen; Cardigan Strait: Djævleøen; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Excrementbugten og Vendomkap; Ellesmere Land: Framshavn, Cape Rutherfjord og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

Arten har sin Nordgrændse ved 80° 30′ over Spitzbergen.

258. *Amblystegium filicinum* (L.) LINDB.

Synes at være ganske almindelig i Sumpe. Exemplarer findes fra alle de undersøgte Steder.

Planten forekommer under flere Former; den typiske Art er sjelden, de fleste Former maa henregnes til Varieteten *curvicaule* (JUR.) eller Varieteten *filiforme* BERGGR., enten de typiske Varieteter, eller en eller anden Overgangsform. Fra flere Steder findes en næsten haarfin tæt

tuet Form, der har meget smaa Blade med meget kort Nerve og utydeligt udviklede Angularceller, mangler Paraphyllier og har Habitus som *Amblystegium varium* eller *rigescens*. Denne Form (Varieteten *tenue* BERGGR.) gaar ogsaa jevnt og uden skarpe Grændser over i de mere grove Former med udviklede Angularceller og Artens øvrige Karakterer.

Arten optræder med de samme Varieteter ogsaa paa Spitzbergen.

259. *Campylium protensum* (BRID.) KINDB.

Sjelden og sparsomt indsprængt i tætte Mosetuer.

Kong Oscars Land: Gaasefjord; Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen, under 79° nordlig Bredde.

Findes tidligere ikke anført for høiarktiske Egne.

260. *Campylium stellatum* (SCHREB.) BRYHN.

Denne er blandt de mest almindelige Arter og samlet paa alle undersøgte Steder.

261. *Campylium polygamum* (BR. EUR.) BRYHN.

Kong Oscars Land: Havnefjord, Moskusford, Gaasefjord og Renbugten; Ellesmere Land: Beitstadfjorden.

Denne optræder, ligesom foregaaende Art, af og til i en, af de korte Blade betinget, noksaa ukjendelig Dragt. Begge Arter har Nordgrændse over Spitzbergen.

262. *Hypnum (Hygrohypnum) polare* LINDB.

Synes kun at forekomme paa Stene i Bække og er ikke synderlig almindelig.

Kong Oscars Land: Gaasefjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Glacier Valley, Bedford Pim Isl., Stahlknechts Isl. og Beitstadfjorden (79° nordl. Bredde).

Var. falcatum BRYHN.

N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Bedford Pim Isl. og Cape Rutherford.

Var. leptodictyon BRYHN, var. nov.

Cellulæ totius folii leptodemres, nunqvam porosæ, angulares qvadratæ numerosæ. Ceterum cum typo congruens.

Rigelige Exemplarer findes i rene Tuer fra Gaasefjord i Kong Oscars Land.

Hypnum polare er forøvrigt kjendt fra Sibirien, Nord-Europa, Pyrenæerne, Beeren Eiland og Spitzbergen, hvor ligeledes Nordgrændsen er ved omtrent 79°.

263. *Hypnum palustre* HUDS.

Sjelden paa Stene i Bække.

Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord, under 76° 30′ nordlig Bredde.

Arten er ny for de høiarktiske Egne og hverken i Europa eller i Asien tidligere samlet nordenfor 70° 10′.

264. *Hypnum (Calliergon) giganteum* SCHIMP.

Denne synes at forekomme forholdsvis almindelig saavel i den sydlige, som i den nordlige Del af det undersøgte Landomraade.

Vest-Grønland: Godhavn; N. V. Grønland: Foulkefjord; North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Renbugten og Landsend; Ellesmere Land: Framshavn, Cape Viole, Bedford Pim Isl. og Cape Rutherford.

265. *Hypnum stramineum* DICKS.

Meget sjelden og samlet kun ved Egedesminde i Vest-Grønland.

266. *Hypnum sarmentosum* WAHLENB.

Blandt de mest almindelige Sumpmoser, der oftest er samlet som Bestanddel af Blandingstuer, men ogsaa i rene, dybe, Tuer.

Vest-Grønland: Egedesminde; N. V. Grønland: Foulkefjord; Kong Oscars Land: Gaasefjord og Renbugten; Ellesmere Land: Framshavn. Glacier Valley, Cape Viole, Lastræadalen. Cape Rutherford, Eskimopolis, Skrællingøen og Beitstadfjorden (79° n. B.).

Var. acuminatum BRYHN, var. nov.

Folia patentia versus apicem in acuminem brevem acutum, sæpe incurvum, subito contracta; auriculæ angulares vix excavatæ cellulis haud distincte delimitatis. De cetero typo persimilis.

North Lincoln: Framfjord; Ellesmere Land: Cape Rutherford.

267. *Hypnum trifarium* W. M.

Synes at være sjelden. Exemplarer findes kun fra 2 Steder.

North Lincoln: Framfjord; Ellesmere Land: Lastræadalen.

268. *Hypnum turgescens* JENS.

Blandt de mest almindelige Sump- og Vandmoser. Exemplarer mangler neppe fra noget Sted, hvor der under Expeditionen er samlet Moser.

269. *Hypnum badium* Hartm.

Ikke almindelig og samlet kun paa nogle Steder i Ellesmere Land: Lastræadalen, Glacier Valley, Cape Viole (forma virens) og Skrællingøen. Kun fra det sidstnævnte Sted nogenlunde rigelige Exemplarer i forholdsvis ublandede Tuer.

Samtlige her omtalte Arter af Underslægten Calliergon har deres Nordgrændse over Spitzbergen.

270. *Hypnum (Drepanocladus) revolvens* Sw.

Synes at være almindelig i Sumpe over hele det undersøgte Landomraade.

271. *Hypnum intermedium* Lindb.

Udbredelse i disse Egne for denne Art, som for den foregaaende. Begge har deres Nordgrændse over Spitzbergen.

272. *Hypnum Cossoni* Schimp.

Sjelden. Exemplarer findes fra kun 2 Voxesteder, nemlig Moskusfjord og Gaasefjord i Kong Oscars Land, under 76° 30′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved omtrent 70° paa Grønlands Østkyst.

273. *Hypnum latinerve* Arnell.

Vakre Exemplarer i rene Tuer eller blandet med *Hypnum giganteum* og *sarmentosum* findes fra et eneste Voxested: Framshavn i Ellesmere Land under 78° 45′ nordlig Bredde.

Denne meget sjeldne Plante er tidligere kjendt kun fra Jenissejdalen i Sibirien, under 70° 20′ nordlig Bredde.

274. *Hypnum brevifolium* Lindb.

Denne er en udpræget arktisk Art, der i disse Egne synes almindelig udbredt overalt. Den er oftest blandet med andre Moser, er ogsaa hist og her samlet i ublandede, lige til 15—20 Centimeter dybe Tuer.

North Devon: Havhestberget; North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Sydkapfjord, Renbugten og Isachsens Fjord; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Rutherford, Glacier Valley, Bedford Pim Isl., Stahlknechts Isl. og Beitstadfjorden.

Arten er tidligere kjendt kun fra Beeren Eiland, Øst-Grønland og fra Spitzbergen.

275. *Hypnum latifolium* ARNELL & LINDB.

Ligeledes en ægte arktisk Art, der i disse Egne synes endnu mere almindelig, end foregaaende. Exemplarer, tildels i rigelig Mængde, findes fra følgende Steder.

North Devon: Havhestberget; North Lincoln: Framfjord; North Kent; N. V. Grønland: Foulkefjord; Kong Oscars Land: Havnefjord, Renbugten, Excrementbugten, Landsend og Isachsens Fjord; Ellesmere Land: Framshavn, Cape Rutherford, Lastræadalen og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen.

I det arktiske Sibirien danner den paa sumpige Steder ofte Massevegetation. Den har, ligesom sidst omtalte Art, Nordgrændse over Spitzbergen.

Denne Art viser adskillig Tilbøielighed til at variere med Hensyn til Størrelse. Den forekommer snart i Former, der minder om *Hypnum polycarpon*, snart i meget mere grove Former. De groveste Former er ifølge WARNSTORF = *Hypnum lycopodioides* varietas *brevifolium* BERGGREN.

276. *Hypnum uncinatum* HEDW.

Denne er i disse Egne, ligesom ogsaa i alle andre hidtil undersøgte arktiske Egne, en af de mest almindelige Mosearter.

Var. subjulaceum BR. EUR. (*Hypn. orthothecioides* LINDB.)

I hele Samlingen er denne Varietet ved Siden af *Isopterygium pulchellum* den eneste pleurocarpe Mose med Frugt, dog ikke med rigelig Frugt, idet den findes med en eneste Frugt, der i enhver Henseende ligner Frugten hos Hovedarten. Denne Varietet, der i enkelte andre arktiske Egne næsten er dominerende ved Siden af Hovedarten, synes i disse Egne at være sjelden. Exemplarer findes ialfald kun fra følgende 3 Steder.

Vest Grønland: Egedesminde; Kong Oscars Land: Havnefjord (c. fr.) og Excrementbugten.

277. *Hypnum polycarpon* BLAND.

Denne findes ikke sjelden i Sumpe, af og til ogsaa i næsten ublandede tætte Tuer.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord, Vendomkap, Excrementbugten og Landsend; North Devon; Cardigan Strait: Djævleøen; N. V. Grønland: Foulkefjord; Ellesmere Land: Framshavn, Cape Rutherford og Beit-

stadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen, under 79° nordlig Bredde.

Arten er ogsaa samlet paa Spitzbergen (*Hypnum Kneiffii* BERGGR.).

278. *Hypnum exannulatum* GÜMB. *forma submersa.*

Vest-Grønland: Godhavn, i Selskab med *Hypnum giganteum*; Ellesmere Land: Skrællingøen i Alexandrafjord under 78° 50′ nordl. Bredde. Paa det sidstnævnte Sted er den samlet rigelig i rene dybe Tuer. Paa begge Steder i Damme. Nordgrændse over Spitzbergen.

279. *Hypnum tundræ* (ARNELL) JØRG. (Tab. II, fig. 2).

Ikke sjelden i Sumpe.

North Devon; North Lincoln; North Kent; Kong Oscars Land: Havnefjord, Gaasefjord, Moskusfjord og Vendomkap; Ellesmere Land: Framshavn, samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Denne med *Hypnum exannulatum* og *Hypnum purpurascens* nær beslægtede Art er karakteristisk ved de korte bredt æg-lancetformede, øverst pludselig til en smal sylformet Spids sammendragne Blade, ved de korte Bladceller og ved Bladhjørnernes Bygning. Bladhjørncellerne danner en vel begrændset trekantet Gruppe, langs Bladkanterne 5—6 Celler høi; samtlige Celler store, i ældre Tilstand fortykkede og brunfarvede; Gruppens nederste Rad bestaar af forlængede, rundagtig-rectangulære oppustede Celler, som naar helt til den kraftige Nerve.

Arten ligner i Habitus, Bladform og Cellevæv enkelte Former (Var. *filiforme* og *curvicaule*) af *Amblystegium filicinum* i den Grad, at disse Planter ofte vanskelig kan adskilles uden ved den forskjellige Bygning af Bladbasis.

At Planten er den ægte *Hypnum tundræ*, har jeg overbevist mig om ved at sammenligne den med de i Riksmuseum i Stockholm opbevarede Originalexemplarer, samlede i Sibirien, i hvis nordlige Dele den hist og her danner Massevegetation.

Forøvrigt er Arten med Sikkerhed paavist kun i det nordlige Norge og i Piemont (2400 M. over Havet).

280. *Hypnum pseudorufescens* WARNST.

Vest-Grønland: Egedesminde, under omtrent 69° nordlig Bredde, flydende i en Dam sammen med *Hypnum revolvens* og *sarmentosum* samt *Scorpidium scorpioides.*

Denne efter min Opfatning udmærkede, *Hypnum purpurascens* nærstaaende, Art er tidligere kjendt kun fra Böhmen og fra Norge (Fulsen i Valders). Paa sidstnævnte Sted, hvor Artens tidligere kjendte Nordgrændse ved 61° 15′, er den samlet i aldeles det samme Selskab, som paa Grønland.

281. *Hypnum hyperboreum* BRYHN, sp. nov. (Tab. II, fig. 3).

Planta fluctuans vel submersa, habitu inter *Hypnum Kneiffii* et *Acrocladium cuspidatum* ludens, utroqve autem minor.

Surculus rigidulus, 4—6 cm. longus, ramis rectis, patenti-patulis brevibus parce et irregulariter pinnato-ramosus, junior æqvaliter foliatus, ætate apice solummodo foliis ornatus, inferne perfecte denudatus vel costis persistentibus hispidus, perfecte eradicellosus.

Caulis tenuis, 0.15—0.18 mm. crassus, sectione transversa rotundato-trigonus, fasciculo centrali indistincto, strato cellularum stereïdarum duplici, cellulis intermediis leptodermibus uniformibus, extus strato corticali e foliis decurrentibus formato particulatim vestitus.

Folia caulina et ramulina æqvalia, conferta, et humiditate et siccitate patentia, apicalia in gemmam subuliformem pungentem vulgo arcte convoluta, concava, 2.2—2.5 mm. longa, e basi angustiore breviter decurrenti 0.3—0.4 mm. lato, lanceolata, medio folio latissimo, a margine uno ad alterum 0.5—0.6 mm. lato, in apicem subrecurvum subito angustata, ad angulos haud dilatata, nec excavata.

Costa simplex tenuis, ad basin 0.05—0.06 mm. lata, fuscescens, versus apicem dissoluta.

Cellulæ angulares a cæteris bene definitæ, infimæ in serie una costam attingentes rotundato-rectangulares, subconflatæ, 0.01—0.02 mm. latæ et duplo—triplo longiores, ætate fuscæ et uniformiter incrassatæ. angulares cæteræ costam haud attingentes in seriebus tribus—qvattuor rotundato-rectangulis, paullo longiores qvam breviores, ætate haud fuscescentes.

Cellulæ suprabasilares elongato-rectangulæ, circiter 0.01 mm. latæ et qvatter—sexies longiores, membranis intermediis porosis. Cellulæ foliares cæteræ longiores et angustiores, plurimæ, cellulis apicalibus paullo laxioribus exceptis, circiter 0.1 mm. longæ, angustissime lineares, subflexuosæ, parum uniformiterqve incrassatæ.

Cætera ignota. —

Denne nye Arts Bladhjørner minder om saavel *Hypnum exannulatum*, som *purpurascens* og *tundræ*. Paa Grund heraf og paa Grund af Stilkens accessoriske („blatteigener") Yderbark har jeg anvist den

Plads inden Exannulatumgruppen, hvor den er eiendommelig ved Habitus, Bladform og Bladhjørners Bygning, og herved forskjellig fra alle øvrige Arter.

Exemplarer findes kun fra et eneste Sted.

Ellesmere Land: Stahlknechts Isl., under 78° 40′ nordlig Bredde, i en Dam sammen med *Hypnum brevifolium, turgescens* og *polare*, samlet i ringe Mængde af Ivar Fosheim.

282. *Hypnum fluitans* L. *Var. submersum* Schimp.

Meget sjelden. Exemplarer findes kun fra et eneste Sted, nemlig Egedesminde i Vest-Grønland, hvor Planten er samlet rigelig i en Sump sammen med *Hypnum sarmentosum*.

Arten er kjendt ogsaa fra andre polare Egne, saaledes Beeren Eiland og Spitzbergen.

283. *Hypnum Berggreni* (C. Jens.) Par.

Meget sjelden og kun sparsomt samlet paa 2 Steder i Kong Oscars Land: Gaasefjord og Renbugten, under 76° 40′ nordlig Bredde. Paa begge Steder forekommer den indsprængt blandt andre Sumpmoser.

Planten er sammenlignet med Originalexemplarer i Kjøbenhavns bot. Museum.

Arten er tidligere kjendt fra Øst-Grønland og fra det nordlige Norge under omtrent 70° nordlig Bredde.

284. *Hypnum (Stereodon) Bambergeri* Schimp.

Blandt de mest almindelige Sumpmoser, saavel i den nordligste, som i den sydligste Del af det undersøgte Landomraade.

Denne Art findes ogsaa paa Beeren Eiland, Spitzbergen og Novaja Semblja.

285. *Hypnum Vaucheri* Lesq.

North Devon: Havhestberget; Kong Oscars Land: Moskusfjord, Gaasefjord, Sydkapfjord og Vendomkap; North Kent (350 M. o. H.); Ellesmere Land: mellem Ft. Juliane og Mt. Køla-Paulsen, under 79° nordlig Bredde.

Arten er tidligere kjendt fra Grønland, Alaska, Sibirien og Beeren Eiland, hvor dens tidligere kjendte Nordgrændse (74°).

286. *Hypnum revolutum* (Mitt.) Lindb.

Denne Art synes meget almindelig og mangler neppe paa noget af de undersøgte Voxesteder.

Var. subjulaceum BRYHN, var nov.

Folia arcte imbricata, versus apicem caulis ramorumve tantum falcato-secunda, valde concava, late ovata, in apicem piliformem subito angustata, marginibus ad tertiam partem infimam vel ad dimidium folium revolutis. Cellulæ foliares latiores et dimidio breviores, qvam in forma typica.

North Devon: Havhestberget; North Lincoln; Kong Oscars Land: Havnefjord, Gaasefjord, Sydkapfjord og Vendomkap; Ellesmere Land: Cape Viole, Lastræadalen, Cape Rutherford og Skrællingoen.

Arten har Nordgrændse over Spitzbergen.

287. *Hypnum hamulosum* BR. EUR.

Her kun i Sumpe mellem andre Moser.

Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord; Ellesmere Land: Lastræadalen, Cocked Hat Isl. og Skrællingøen.

Arten er tidligere kjendt fra Alaska, Grønland og Spitzbergen.

288. *Ctenidium procerrimum* MOL.

North Devon: Havhestberget; Kong Oscars Land: Havnefjord, Moskusfjord og Gaasefjord under 76° 30′ nordlig Bredde.

Artens tidligere kjendte Nordgrændse var ved 68° 50′ i Norge.

289. *Scorpidium scorpioides* (L.) LIMPR.

Vest-Grønland: Egedesminde; Ellesmere Land: Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen under 79° nordlig Bredde.

Tidligere kjendte Nordgrændse ved 74° over Beeren Eiland.

290. *Hylocomium proliferum* (L.) LINDB.

North Lincoln: Framfjord; Kong Oscars Land: Havnefjord, Moskusfjord, Gaasefjord og Landsend; N. V. Grønland: Foulkefjord; Ellesmere Land: Glacier Valley, Eskimopolis og Beitstadfjorden samt mellem Ft. Juliane og Mt. Køla-Paulsen (79° n. B.).

Arten er tidligere kjendt fra alle hidtil undersøgte arktiske Egne.

III.

Fortegnelse over samtlige under hvert af Samlingens Nummere paaviste Arter.

Vest-Grønland, Egedesminde, 28/7 1898.

Nr. 145. *Tetraplodon mnioides.*

— 146. *Hypnum uncinatum.*

— 147. *Hypnum uncinatum var. subjulaceum.*

— 148. *Blepharostoma setiforme. Ptilidium ciliare. Lophozia Bauerianа. Lophozia Kunzeana. Dicranum congestum. Webera nutans. Aulacomnium palustre. Aulacomnium turgidum. Hypnum uncinatum.*

— 149. *Hypnum revolvens. Hypnum pseudorufescens. Hypnum sarmentosum. Scorpidium scorpioides.*

— 150. *Hypnum uncinatum. Hypnum stramineum.*

— 151. *Hupnum fluitans — submersum. Hypnum sarmentosum.*

— 152. *Blepharostoma setiforme. Cynodontium strumiferum. Dicranum congestum. Webera nutans. Rhacomitrium lanuginosum. Aulacomnium turgidum. Polytrichum strictum. Hypnum uncinatum.*

— 153. *Blepharostoma setiforme. Ptilidium ciliare. Lophozia Bauerianа. Dicranum congestum. Ceratodon purpureus f. brevifolia. Distichium capillaceum. Ditrichum flexicaule. Didymodon rufus. Tortula ruralis. Bryum elegans. Polytrichum alpinum. Myurella julacea. Hypnum uncinatum. Hypnum revolutum. Hypnum sarmentosum. Hypnum turgescens.*

— 154. *Polytrichum juniperinum.*

— 155. *Ceratodon purpureus. Tortula ruralis. Webera cruda. Bryum Stirtoni. Bryum cirratum. Aulacomnium turgidum. Hypnum uncinatum.*

— 156. *Ptilidium ciliare. Lophozia qvinqvedentata. Lophozia Kunzeana. Dicranum spadiceym. Dicranum congestum. Webera*

nutans. Aulacomnium turgidum. Polytrichum strictum. Polytrichum alpinum. Hypnum uncinatum.

Nr. 157. *Ceratodon purpureus. Tortula ruralis, Hypnum uncinatum.*

— 158. *Aulacomnium palustre. Hypnum stramineum.*

— 159. *Aulacomnium palustre. Hypnum uncinatum. Hypnum stramineum.*

Vest-Grønland, Godhavn, 30/7 1898.

— 160. *Hypnum exannulatum f. fluitans. Hypnum giganteum.*

Ellesmere Land, Framshavns Sydside, 19/8 1898.

— 333. *Ceratodon purpureus. Hypnum revolutum.*

— 334. *Bryum oeneum var. subelimbatum. Meesea triqvetra. Hypnum revolvens. Hypnum latifolium. Hypnum sarmentosum.*

— 335. *Bryum teres. Bryum calophyllum. Orlhothecium strictum f. patens. Hypnum brevifolium. Hypnum latifolium. Hypnum sarmentosum.*

— 336. *Meesea triqvetra. Hypnum revolvens. Hypnum latifolium. Hypnum giganteum f. rufescens.*

— 337. *Distichium capillaceum. Cinclidium subrotundum. Myurella julacea.*

— 338. *Dicranoweisia crispula. Ceratodon purpureus f. brevifolia. Scorpidium scorpioides.*

— 339. *Timmia norvegica f. brevifolia. Webera commutata. Bryum obtusifolium. Bryum teres. Bryum pallens. Orthothecium chryceum. Hypnum latifolium. Hypnum giganteum.*

— 340. *Didymodon alpigena. Bryum obtusifolium. Bryum elegans v. carinthiacum. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Campylium stellatum. Hypnum giganteum.*

— 341. *Gymnostomum læve. Distichium capillaceum. Ceratodon purpureus. Encalypta commutata. Webera cruda. Timmia austriaca. Hypnum revolutum.*

— 342. *Lophozia qvinqvedentata. Dicranoweisia crispula. Dicranum spadiceum. Ditrichum flexicaule. Tortula ruralis. Rhacomitrium canescens — ericoides. Rhacomitrium lanuginosum. Hypnum revolutum.*

— 343. *Aplozia polaris. Cepholozia verrucosa. Distichium capillaceum. Bryum calophyllum. Cinclidium subrotundum. Meesea triqvetra. Hypnum brevifolium. Hypnum latifolium. Hypnum polare. Hypnum sarmentosum.*

Nr. 344. *Lophozia Baueriana. Dicranum spadiceum. Webera cruda. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum latifolium. Hypnum brevifolium. Hypnum uncinatum.*

— 345. *Bryum calophyllum. Polytrichum alpinum. Campylium stellatum. Hypnum. polycarpon. Hypnum latifolium. Hypnum brevifolium. Hypnum turgescens.*

— 346. *Bryum calophyllum. Timmia norvegica. Orthothecium chryseum. Hypnum giganteum.*

— 347. *Bryum pendulum. Meesea triqvetra. Orthothecium chryseum. Hypnum revolvens.*

— 348. *Tortula ruralis. Timmia austriaca.*

— 349. *Bryum calophyllum. Hypnum brevifolium. Hypnum giganteum.*

Sammesteds 22/8 1898.

— 352. *Hypnum latifolium. Hypnum giganteum.*

— 353. *Bryum calophyllum. Meesea triqvetra. Hypnum intermedium. Hypnum latifolium f. gracilescens. Hypnum giganteum.*

— 354. *Aplozia polaris. Aplozia pumila. Diplophyllum incurvum. Distichium capillaceum. Ceratodon purpureus. Tortella fragilis. Bryum lacustre. Orthothecium strictum.*

— 355. *Lophozia qvinqvedentata. Lophozia Wenzelii. Lophozia Binsteadii. Cephalozia verrucosa. Dicranoweisia crispula. Dicranum spadiceum. Rhacomitrium lanuginosum. Timmia austriaca. Hypnum revolutum.*

— 356. *Orthothecium chryseum.*

— 357. *Lophozia badensis. Lophozia harpanthoides. Blepharostoma trichophyllum. Cephalozia verrucosa. Cephalozia pleniceps. Dicranum sphagni. Didymodon rubellus. Webera nutans. Bryum teres. Timmia austriaca. Myurella julacea.*

— 358. *Lophozia alpestris. Lophozia harpanthoides. Cephalozia verrucosa. Distichium Hagenii. Didymodon alpigena. Encalypta commutata. Bryum oeneum. Bryum arcticum. Bryum gemmaceum. Bryum pendulum. Myurella julacea. Hypnum brevifolium, Hypnum Bambergeri. Hypnum turgescens.*

— 359. *Cephalozia verrucosa. Cephalozia pleniceps. Dicranum sphagni. Webera nutans.*

— 360. *Distichium inclinatum.*

— 361. *Cephalozia verrucosa. Diplophyllum incurvum. Distichium capillaceum. Encalypta commutata. Timmia austriaca.*

Nr. 362. *Lophozia Wenzelii. Distichium capillaceum. Didymodon alpigena. Bryum nitidulum. Timmia austriaca.*

— 363. *Bryum cyclophyllum. Cinclidium subrotundum. Meesea triqvetra. Philonotis alpicola. Orthothecium chryseum f. patula. Hypnum intermedium. Hypnum sarmentosum. Hypnum giganteum.*

— 364. *Lophozia qvinqvedentata v. turgida. Dicranoweisia crispula. Dicranum spadiceum. Ditrichum flexicaule. Tortula ruralis. Rhacomitrium canescens. Webera cruda. Hypnum revolutum.*

Ellesmere Land, Bedford Pim Isl. (Cape Sabine), 17/8 1898.

— 370. *Rhacomitrium lanuginosum.*

— 371. *Hypnum polare v. falcatum.*

— 372. *Tortula ruralis. Webera cruda. Timmia austriaca. Brachythecium salebrosum. Eurhynchium strigosum. Hypnum revolutum.*

— 373. *Distichium capillaceum. Bryum obstusifolium.*

— 374. *Blepharostoma trichophyllum. Cephalozia divaricata. Distichium capillaceum. Distichium Hagenii. Didymodon rubellus. Webera cruda. Bryum tomentosum. Cinclidium polare. Cinclidium hymenophyllum. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Brachythecium salebrosum. Hypnum brevifolium. Hypnum turgescens. Hypnum revolutum.*

— 375. *Arnellia fennica. Plagiochila arctica. Distichium capillaceum. Didymodon rubellus. Bryum tomentosum. Cinclidium hymenophyllum. Polytrichum alpinum. Orthothecium chryseum. Isopterygium pulchellum. Brachythecium salebrosum. Hypnum revolutum.*

— 376. *Lophozia harpanthoides. Cephalozia verrucosa. Cephalozia pleniceps. Blepharostoma trichophyllum. Diplophyllum incurvum. Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum tomentosum. Bryum oeneum v. subelimbatum. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Myurella apiculata. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum. Isopterygium pulchellum.*

— 377. *Lophozia qvadriloba c. var heterophylla. Anthelia Juratzkana. Cephalozia verrucosa. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum. Hypnum intermedium.*

— 378. *Blepharostoma trichophyllum. Distichium capillaceum. Webera cruda. Cinclidium polare. Orthothecium chryseum. Isopterygium pulchellum. Hypnum intermedium.*

Nr. 379. *Lophozia qvinqvedentata. Cephalozia verrucosa. Scapania rosacea. Bryum minus. Polytrichum fragile. Polytrichum alpinum.*

— 380. *Lophozia Wenzelii. Distichium capillaceum. Ditrichum flexicaule. Webera cruda. Cinclidium hymenophyllum. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum. Campylium stellatum. Hypnum Bambergeri.*

— 381. *Lophozia Wenzelii. Cephalozia verrucosa. Distichium capillaceum. Philonotis alpicola. Orthothecium chryseum. Hypnum intermedium.*

— 382. *Orthothecium chryseum. Hypnum giganteum. Hypnum turgescens.*

Ellesmere Land, Cape Rutherford, 21/8 1898.

— 383. *Lophozia murmanica. Aulacomnium turgidum.*

— 384. *Seligeria polaris. Blindia acuta.*

— 385. *Lophozia murmanica. Distichium capillaceum. Distichium Hagenii. Webera cruda. Bryum arcticum, Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum v. arcticum.*

— 386. *Odontoschisma Macounii.*

— 387. *Orthothecium chryseum. Hypnum revolvens. Hypnum brevifolium. Hypnum giganteum.*

— 388. *Lophozia alpestris. Sphenolobus minutus. Blepharostoma trichophyllum. Cephalozia verrucosa. Cephalozia pleniceps. Dicranoweisia crispula. Dicranum sphagni. Distichium Hagenii. Webera cruda.*

— 389. *Bryum calophyllum. Hypnum revolvens. Hypnum intermedium. Hypnum latifolium. Hypnum brevifolium. Hypnum sarmentosum. Hypnum turgescens.*

— 390. *Distichium capillaceum. Webera cruda. Bryum Stirtoni. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum. Hypnum uncinatum.*

— 391. *Dicranoweisia crispula.*

— 392. *Hypnum polare v. uncinatum.*

— 393. *Lophozia ventricosa. Sphenolobus minutus. Blepharostoma trichophyllum v. brevirete. Cephalozia verrucosa. Cephalozia pleniceps. Dicranum elongatum. Timmia austriaca. Polytrichum alpinum.*

— 394. *Cinclidium polare. Hypnum giganteum.*

— 395. *Aplozia sphærocarpa. Lophozia alpestris, Caphalozia verrucosa. Bryum elegans. Timmia austriaca.*

Nr. 396. *Dicranoweisia crispula.*
— 397. *Blindia acuta. Tortula ruralis. Bryum elegans.*
— 398. *Lophozia ventricosa. Cephalozia verrucosa. Dicranum elongatum. Webera nutans. Webera cruda. Timmia austriaca.*
— 399. *Tortula ruralis.*
— 400. *Bryum obtusifolium. Bryum crispulum. Philonotis alpicola.*
— 401. *Bryum calophyllum. Cinclidium subrotundum. Orthothecium chryseum. Hypnum revolvens. Hypnum polycarpon. Hypnum brevifolium. Hypnum giganteum.*
— 402. *Blindia acuta.*
— 403. *Distichium capillaceum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum.*
— 404. *Hypnum revolvens. Hypnum latifolium. Hypnum sarmentosum. Hypnum turgescens.*
— 405. *Bryum ventricosum. Timmia austriaca. Brachythecium salebrosum.*

N. V. Grønland, Foulkefjord, 16/8 1898.

— 406. *Bryum obtusifolium.*
— 407. *Hypnum giganteum.*
— 408. *Ceratodon purpureus. Bryum teres. Bryum subnitudulum. Aulacomnium turgidum. Hypnum uncinatum. Hypnum turgescens.*
— 409. *Leptobryum pyriforme.*
— 410. *Rhacomitrium lanuginosum.*
— 411. *Schistidium apocarpum.*
— 412. *Tortella tortuosa. Hypnum revolutum.*
— 413. *Bryum subnitidulum. Campylium stellatum. Hypnum uncinatum. Hypnum latifolium. Hypnum turgescens.*
— 414. *Oncophorus Wahlenbergii.*
— 415. *Webera cruda. Bryum obtusifolium. Bryum Stirtoni. Philonotis alpicola. Hypnum uncinatum. Hypnum sarmentosum.*
— 416. *Leptobryum pyriforme.*
— 417. *Bryum nitidulum.*
— 418. *Distichium capillaceum. Ceratodon purpureus. Tortula ruralis, Bryum terrestre. Bryum elegans. Polytrichum fragile. Hypnum uncinatum.*
— 419. *Lophozia alpestris. Lophozia ventricosa. Webera nutans. Bryum crispulum. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum revolvens. Hypnum sarmentosum.*

Nr. 420. *Lophozia ventricosa. Lophozia Mülleri v. bantriensis. Lophozia Binsteadii. Lophozia qvinqvedentata. Sphenolobus minutus, Blepharostoma trichophyllum. Cephalozia verrucosa. Ditrichum flexicaule. Distichium Hagenii. Dicranum elongatum. Ceratodon purpureus. Didymodon rubellus. Tortella tortuosa. Webera nutans. Webera cruda. Bryum elegans. Timmia austriaca. Polytrichum alpinum. Orthothecium strictum. Isopterygium pulchellum. Hypnum uncinatum.*

— 421. *Lophozia ventricosa. Webera nutans. Aulacomnium palustre. Aulacomnium turgidum. Polytrichum alpinum.*

— 422. *Polytrichum fragile. Hypnum uncinatum.*

— 423. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia verrucosa. Cephalozia pleniceps. Hypnum uncinatum.*

— 424. *Tortula ruralis.*

— 425. *Lophozia ventricosa. Lophozia qvinqvedentata. Cephalozia verrucosa. Ceratodon purpureus. Didymodon rubellus. Webera commutata. Bryum teres. Bryum obstusifolium. Aulacomnium palustre. Philonotis alpicola. Polytrichum alpinum. Polytrichum fragile. Orthothecium strictum. Myurella julacea, Isopterygium pulchellum. Campylium stellatum. Hypnum uncinatum. Hypnum sarmentosum. Hypnum revolutum.*

— 426. *Dicranoweisia crispula.*

— 427. *Hypnum latifolium. Hypnum revolvens. Hypnum sarmentosum. Hypnum turgescens.*

— 428. *Orthothecium chryseum. Hypnum revolvens. Hypnum intermedium. Hypnum polycarpon. Hypnum brevifolium. Hypnum giganteum.*

— 429. *Distichium Hagenii. Webera cruda. Bryum crispulum. Timmia austriaca.*

— 430. *Lophozia ventricosa. Aulacomnium turgidum. Polytrichum alpinum.*

— 431. *Hypnum revolvens. Hypnum latifolium. Hypnum sarmentosum. Hypnum turgescens.*

— 432. *Hypnum polare v. falcatum.*

— 433. *Ceratodon purpureus. Bryum obtusifolium. Campylium stellatum. Hypnum uncinatum. Hypnum latifolium. Hypnum turgescens.*

— 434. *Distichium capillaceum.*

Ellesmere Land, Framshavns Nordside, 5/9 1898.

Nr. 455. *Bryum calophyllum. Bryum elegans. Orthothecium strictum. Hypnum polycarpon. Hypnum turgescens.*

— 456. *Lophozia badensis. Cephalozia verrucosa. Haplodon Wormskjoldii.*

— 457. *Anthelia Juratzkana. Cephalozia pleniceps. Cephalozia verrucosa. Ditrichum flexicaule. Bryum elegans.*

— 464. *Lophozia harpanthoides. Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Oncophorus Wahlenbergii. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Dicranum spadiceum. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum intermedium. Hypnum brevifolium. Hypnum turgescens.*

— 466. *Ditrichum flexicaule. Didymodon rubellus. Bryum elegans. Bryum calophyllum. Cinclidium subrotundum. Philonotis alpicola. Myurella julacea. Myurella apiculata. Orthothecium chryseum.*

Ellesmere Land, Bedford Pim Isl., 3/9 1898.

— 468. *Diplophyllum incurvum. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Bryum tomentosum. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Isopterygium pulchellum.*

— 469. *Schistidium apocarpum.*

— 470. *Dicranum elongatum. Webera cruda.*

— 471. *Dicranoweisia crispula.*

— 472. *Ditrichum flexicaule. Schistidium apocarpum. Hypnum revolutum.*

— 473. *Cephalozia verrucosa. Webera cruda. Bryum arcticum.*

Ellesmere Land, Stahlknechts Isl., 5/6 1899.

— 487. *Hypnum polare. Hypnum brevifolium. Hypnum hyperboreum. Hypnum turgescens (legit* Fosheim).

Ellesmere Land, Brevort Isl., 5/6 1899.

— 488. *Bryum argenteum (legit* Fosheim).

Ellesmere Land, Ft. Juliane — Mt. Køla-Paulsen, 6/6 1899.

— 516. *Bryum obtusifolium. Aulacomnium turgidum. Philonotis alpicola. Camptothecium nitens. Brachythecium salebrosum v.*

arcticum. Campylium stellatum. Hypnum intermedium. Hypnum revolutum. Hylocomnium proliferum.

Nr. 517. *Orthothecium chryseum.*

— 518. *Lophozia ventricosa. Sphenolobus minutus. Cephalozia verrucosa. Dicranum brevifolium. Dicranum sphagni. Timmia austriaca. Hypnum uncinatum. Hypnum revolutum.*

— 519. *Lophozia Mülleri. Distichium capillaceum, Didymodon alpigena. Leptobryum pyriforme. Bryum pendulum. Orthothecium strictum. Amblystegium filicinum var. curvicaule.*

— 520. *Tortella tortuosa. Tortula ruralis. Schistidium gracile. Rhacomitrium lanuginosum. Orthotrichum Killiasii. Hylocomnium proliferum.*

— 521. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Timmia austriaca. Myurella julacea. Orthothecium strictum. Hypnum revolutum.*

— 525. *Distichium capillaceum. Distichium Hagenii.*

— 526. *Tortula ruralis. Orthotrichum Killiasii. Webera cruda.*

Ellesmere Land, Framhavns Nordside, 24/6 1899.

— 528. *Cephalozia grimsulana. Aulacomnium palustre.*

— 532. *Didymodon rufus. Cinclidium subrotundum. Catascopium nigritum. Meesea triqvetra. Bryum teres. Orthothecium chryseum. Campthothecium nitens. Brachythecium salebrosum var. binervulum. Hypnum tundræ. Hypnum Bambergeri.*

— 533. *Lophozia Mülleri. Arnellia fennica. Blepharostoma trichophyllum. Cephalozia verrucosa. Cephalozia bicuspidata. Diplophyllum incurvum. Hymenostylium curvirostre. Ceratodon purpureus. Tortula ruralis. Encalypta procera. Encalypta commutata. Encalypta rhabdocarpa. Rhacomitrium canescens. Bryum teres. Bryum elegans. Cinclidium subrotundum. Meesea triqvetra. Catascopium nigritum. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Orthothecium strictum. Orthothecium binervulum. Amblystegium Sprucei. Campylium stellatum. Hypnum latifolium. Hypnum Bambergeri. Hypnum Vaucheri. Scorpidium scorpioides.*

— 534. *Arnellia fennica. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Bryum elegans. Mnium hymenophylloides. Timmia austriaca. Orthothecium binervulum. Myurella*

apiculata. Amblysteyium Sprucei. Campylium protensum. Hypnum Bambergeri. Hypnum revolutum. Hypnum Vaucheri.

Nr. 535. *Arnellia fennica. Hymenostylium curvirostre v. scabrum. Gymnostomum læve. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Tortella fragilis. Encalypta procera. Encalypta rhabdocarpa. Bryum pendulum. Bryum teres. Bryum pallescens. Catascopium nigritum. Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum Bambergeri.*

— 536. *Ditrichum flexicaule f. longifolia. Ceratodon purpureus. Tetraplodon mniodes. Bryum pendulum. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum var. turgidum. Amblystegium Sprucei. Hypnum Bambergeri.*

— 537. *Distichium capillaceum. Didymodon rubellus. Ceratodon purpureus. Encalypta commutata. Webera nutans. Orthothecium strictum. Amblystegium Sprucei.*

— 538. *Cephalozia verrucosa. Diplophyllum incurvum. Gymnostomum læve. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta rhabdocarpa. Bryum teres. Timmia norvegica. Timmia austriaca. Myurella julacea. Myurella apiculata. Orthothecium strictum. Isopterygium pulchellum.*

— 539. *Lophozia ventricosa. Blepharostoma trichophyllum. Diplophyllum incurvum. Hymenostylium curvirostre. Distichium capillaceum. Distichium Hagenii. Tetraplodon mnioides. Tortula mucronifolia. Didymodon rubellus. Encalypta rhabdocarpa. Encalypta contorta. Bryum pendulum. Bryum compactum. Bryum teres. Meesea trichodes. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Amblystegium filicinum v. curvicaule. Hypnum Bambergeri.*

— 540. *Arnellia fennica. Lophozia alpestris. Lophozia harpanthoides. Cephalozia verrucosa. Ditrichum flexicaule. Ceratodon purpureus. Tortula ruralis. Didymodon rufus. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Hypnum Bambergeri.*

— 541. *Schistidium apocarpum var. ovatum.*

— 542. *Arnellia fennica. Cephalozia verrucosa. Hymenostylium curvirostre. Distichium capillaceum. Ditrichum flexicaule. Didymodon rufus. Tortula ruralis. Schistidium apocarpum v.*

ovatum. Encalypta contorta. Bryum nitidulum. Catascopium nigritum. Meesea triqvetra. Timmia norvegica. Myurella apiculata. Orthothecium chryseum. Orthothecium binervulum. Brachythecium salebrosum v. turgidum. Hypnum polycarpon. Hypnum latifolium. Hypnum revolutum. Scorpidium scorpioides.

Nr. 543. *Hymenostylium curvirostre. Didymodon rubellus. Didymodon alpigena. Tortula ruralis. Encalypta commutata. Voitia hyperborea. Bryum pendulum. Mnium hymenophylloides. Orthothecium binervulum. Hypnum Bambergeri.*

— 544. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Desmatodon Laureri. Encalypta rhabdocarpa. Encalypta commutata. Encalypta procera. Voitia byperborea. Tetraplodon pallidus. Bryum pendulum. Meesea trichodes. Timmia norvegica. Myurella julacea. Myurella apiculata. Brachythecium salebrosum v. turgidum. Hypnum Bambergeri.*

— 545. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Tortella fragilis. Schistidium apocarpum v. ovatum. Bryum elegans. Cinclidium subrotundum. Mnium hymenophylloides. Catascopium nigritum. Meesea triqvetra. Timmia norvegica. Myurella julacea. Myurella apiculata. Orthothecium binervulum. Orthothecium chryseum. Brachythecium salebrosum v. binervulum. Amblystegium filicinum v. curvicaule. Hypnum latifolium. Hypnum turgescens. Hypnum Bambergeri. Scorpidium scorpioides.*

— 546. *Arnellia fennica. Blepharostoma trichophyllum. Cephalozia verrucosa. Diplophyllum incurvum. Gymnostomum læve. Hymenostylium curvirostre. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rufus. Didymodon rubellus. Tortula ruralis. Tortella fragilis. Encalypta procera. Bryum oeneum. Bryum pendulum. Philonotis alpicola. Myurella julacea. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum v. arcticum. Brachythecium salebrosum v. binervulum. Amblystegium filicinum v. curvicaule. Hypnum Bambergeri. Hypnum Vaucheri.*

— 547. *Philonotis alpicola. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum tundræ.*

— 548. *Hypnum tundræ.*

Nr. 549. *Didymodon alpigena. Encalypta rhabdocarpa. Voitia hyperborea. Bryum pendulum. Orthothecium strictum.*

— 550. *Distichium capillaceum. Encalypta commutata.*

— 551. *Arnellia fennica. Ditrichum flexicaule. Distichium capillaceum. Didymodon rufus. Didymodon rubellus. Tortula ruralis. Schistidium apocarpum v. ovatum. Bryum elegans Mnium orthorrhynchum. Cinclidium subrotundum. Meesea triqvetra. Catascopium nigritum. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum. v. arcticum. Brachythecium salebrosum v. binervulum. Hypnum uncinatum. Hypnum polycarpon. Hypnum latifolium. Hypnum Bambergeri. Scorpidium scorpoides v. julaceum.*

— 552. *Blepharostoma trichophyllum. Webera cruda. Philonotis alpicola.*

— 553. *Aplozia atrovirens v. gracilis. Didymodon rubellus. Encalypta commutata. Voitia hyperborea. Tetraplodon mnioides. Timmia norvegica. Myurella apiculata.*

— 554. *Didymodon rufus. Encalypta rhabdocarpa. Bryum elegans. Orthothecium intricatum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum. Hypnum polycarpon. Hypnum latifolium. Hypnum Bambergeri.*

— 555. *Tetraplodon mnioides.*

— 556. *Orthothecium strictum. Brachythecium salebrosum v. turgidum. Brachythecium salebrosum v. binervulum. Amblystegium filicinum v. curvicaule. Hypnum Bambergeri.*

— 557. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum elegans. Bryum pendulum. Myurella julacea. Orthothecium strictum. Amblystegium Sprucei. Hypnum Bambergeri.*

— 558. *Gymnostomnm læve. Blindia acuta. Tortula ruralis. Schistidium apocarpum. Bryum oeneum.*

— 559. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon alpigena. Encalypta procera. Encalypta rhabdocarpa v. pilifera. Bryum teres. Mnium hymenophylloides. Philonotis alpicola. Timmia norvegica. Brachythecium salebrosum v. binervulum. Amblystegium filicinum. Hypnum intermedium. Hypnum latifolium. Hypnum Bambergeri. Hypnum revolutum.*

— 560. *Philonotis alpicola. Orthothecium chryseum. Hypnum tundræ.*

Nr. 561. *Lophozia heterocolpa. Blepharostoma trichophyllum. Mnium hymenophylloides.*

— 562. *Ceratodon purpureus. Encalypta rhabdocarpa. Bryum pendulum. Orthothecium strictum. Brachythecium salebrosum v. binervulum.*

— 563. *Andreæa papillosa.*

— 564. *Clevea hyalina. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Desmatodon Laureri. Encalypta commutata. Encalypta rhabdocarpa. Bryum teres. Timmia norvegica.*

Ellesmere Land, Beitstadfjorden, 10/6 1899.

— 570. *Lophozia qvinqvedentata. Cephalozia verrucosa. Schistidium gracile. Rhacomitrium lanuginosum. Hypnum revolutum. Hylocomnium proliferum.*

— 571. *Rhacomitrium lanuginosum.*

— 572. *Schistidium gracile. Rhacomitrium brevisetum, Rhacomitrium lanuginosum. Hypnum revolutum. Hylocomium proliferum.*

— 575. *Aplozia polaris. Lophozia qvinqvedentata. Sphenolobus minutus. Cephalozia biscuspidata v. arctica. Cephalozia verrucosa. Dicranum sphagni. Leptobryum pyriforme. Bryum cyclophyllum. Bryum pallens. Didymodon rubellus. Webera nutans. Mnium medium. Cinclidium subrotundum. Aulacomnium turgidum. Philonotis alpicola. Polytrichum strictum. Distichium capillaceum. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Campthotecium nitens. Campylium stellatum. Hypnum revolvens.*

— 576 a. *Didymodon alpigena. Catascopium nigritum. Orthothecium strictum. Hypnum intermedium. Hypnum revolvens. Hypnum Bambergeri.*

— 576 b. *Lophozia marchica. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta commutata. Meesea triqvetra. Philonotis alpicola. Polytrichum strictum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum revolvens. Hypnum intermedium. Hypnum brevifolium. Hypnum revolutum.*

— 577. *Sphenolobus minutus. Gymnostomnm læve. Dicranum sphagni. Distichium capillaceum. Rhacomitrium lanuginosum. Aulacom-*

nium turgidum. Orthothecium strictum. Hypnum latifolium f. gracilis.

Nr. 578. *Lophozia heterocolpa. Leptobryum pyriforme. Bryum pendulum.*

— 579. *Tortella tortuosa.*

— 580. *Bryum obtusifolium. Cinclidium subrotundum. Meesea triqvetra. Aulacomnium turgidum. Campylium stellatum. Hypnum intermedium. Hypnum sarmentosum.*

— 581. *Bryum obtusifolium. Aulacomnium turgidum. Philonotis alpicola. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Brachythecium salebrosum v. turgidum. Campylium stellatum. Hypnum intermedium.*

— 582. *Webera nutans. Bryum pendulum. Mnium medium. Cinclidium subrotundum. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Polytrichum strictum. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum revolvens. Hypnum brevifolium.*

— 583. *Hypnum polare f. laxa.*

— 584. *Ceratodon purpureus. Didymodon rubellus. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. turgidum. Hypnum intermedium. Hypnum tundræ.*

— 585. *Lophozia marchica. Dichodontium pellucidum. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula mucronifolia. Tortella tortuosa. Bryum calophyllum. Bryum pendulum. Mnium medium. Cinclidium subrotundum. Philonotis alpicola. Polytrichum strictum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Campylium stellatum. Hypnum brevifolium.*

— 586. *Scapania rosacea. Didymodon rubellus. Voitia hyperborea. Bryum pendulum. Amblystegium filicinum. Hypnum Vaucheri.*

—587. *Schistidium confertnm.*

Ellesmere Land, Ft. Juliane — Mt. Køla-Paulsen, 6/6 1899.

— 610. *Ditrichum flexicaule. Bryum crispulum. Hypnum Bambergeri. Hypnum revolutum.*

— 611. *Didymodon rufus. Tortula ruralis. Bryum crispulum. Scorpidium scorpioides v. julaceum.*

— 612. *Cinclidium subrotundum. Meesea triqvetra. Catascopium nigritum. Orthothecium chrysenm. Scorpidium scorpioides.*

— 613. *Amblystegium filicinum.*

Ellesmere Land, Beitstadfjorden, 10/6 1899.

Nr. 614. *Rhacomitrium lanuginosum.*

— 415. *Aplozia atrovirens v. gracilis. Lophozia marchica. Fissidens arcticus. Didymodon rubellus. Webera cruda. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Isopterygium pulchellum. Campylium stellatum.*

— 616. *Tayloria acuminata. Bryum cirratum.*

— 617. *Diplophyllum incurvum. Distichium inclinatum. Distichium Hagenii. Didymodon alpigena. Campylium protensum.*

— 618. *Pottia latifolia v. pilifera. Schistidium apocarpum. Grimmia elongata.*

— 620. *Bryum crispulum. Philonotis alpicola. Timmia norvegica. Brachythecium salebrosum v. turgidum.*

— 621. *Haplodon Wormskjoldii. Bryum obtusifolium. Aulacomnium turgidum. Orthothecium chryseum. Campylium stellatum. Hypnum revolvens. Hypnum sarmentosum.*

— 644. *Lophozia Mülleri. Cephalozia verrucosa. Dicranum sphagni. Fissidens impar. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum teres. Philonotis alpicola. Polytrichum strictum. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Camptothecium nitens. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Hypnum revolutum. Hypnum latifolium.*

— 645. *Orthothecium chryseum f. patula.*

— 646. *Meesea triqvetra. Aulacomnium turgidum. Camptothecium nitens. Campylium stellatum. Hypnum intermedium.*

— 647. *Webera commutata v. filum. Orthothecium chryseum. Hypnum polare.*

— 648. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Amphidium lapponicum. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum.*

Ellesmere Land, Ft. Juliane — Mt. Køla-Paulsen, 6/6 1899.

— 652. *Tortula ruralis.*

— 653. *Lophozia Mülleri. Blepharostoma trichophyllum. Diplophyllum incurvum. Distichium Hagenii. Distichium capillaceum. Tetraplodon mnioides. Didymodon rubellus. Desmatodon Laureri.*

Encalypta commutata. Encalypta rhabdocarpa. Bryum pendulum. Bryum crispulum. Orthothecium strictum. Campylium protensum. Hypnum Bambergeri.

Nr. 654. *Plagiochila arctica. Ceratodon purpureus. Ditrichum flexicaule. Didymodon rubellus. Didymodon rufus. Tortella fragilis. Tortula mucronifolia. Tortula ruralis. Encalypta rhabdocarpa. Bryum crispulum. Mnium hymenophylloides. Timmia norvegica. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum polycarpon. Hypnum brevifolium. Hypnum Bambergeri.*

— 655. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rufus. Desmatodon Laureri. Tortula ruralis. Bryum crispulum. Timmia norvegica. Myurella julacea. Brachythecium salebrosum v. arcticum. Brachythecium salebrosum v. binervulum.*

Ellesmere Land, Cape Rutherford, 27/6 1899.

— 660. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Plagiochila arctica. Oncophorus Wahlenbergii. Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum elegans. Cinclidium subrotundum. Cinclidium hymenophyllum. Aulacomnium turgidum. Timmia austriaca. Myurella julacea. Amblystegium Sprucei. Isopterygium pulchellum. Hypnum revolutum v. subjulaceum.*

Ellesmere Land, Beitstadfjorden, 10/6 1899.

— 668. *Philonotis alpicola. Orthothecium chryseum. Orthothecium strictum.*

— 669. *Plagiochila arctica. Bryum teres. Orthothecium chryseum. Orthothecium strictum. Hypnum tundræ.*

— 670. *Lophozia marchica. Diplophyllum incurvum. Bryum pendulum. Timmia austriaca. Orthothecium chryseum. Campylium stellatum. Hypnum intermedium. Hypnum revolutum.*

— 671. *Ditrichum flexicaule. Ceratodon purpureus. Schistidium apocarpum v. ovatum. Schistidium gracile. Heterocladium Macounii.*

Ellesmere Land, Bedford Pim Isl., 2/7 1899.

— 694. *Hypnum uncinatum.*

— 695. *Lophozia heterocolpa. Distichium capillaceum. Webera nutans.*

Webera cruda. Bryum minus. Bryum crispulum. Polytrichum alpinum.

Kong Oscars Lands Vestside, Isachsens Fjord, 16/6 1899 (leg. Isachsen).

Nr. 718. *Mnium punctatum. Cinclidium polare. Hypnum brevifolium.*
— 719. *Ditrichum flexicaule. Hypnum latifolium.*
— 720. *Ditrichum flexicaule. Distichium capillaceum. Polytrichum alpinum. Orthothecium chryseum. Orthothecium strictum. Hypnum latifolium.*
— 721. *Ditrichum flexicaule. Tortula ruralis. Rhacomitrium lanuginosum. Bryum elegans. Timmia austriaca. Myurella julacea. Camptothecium nitens. Hypnum revolutum.*
— 722. *Anthelia julacea. Cephalozia grimsulana. Ceratodon purpureus. Bryum pallens. Bryum crispulum. Conostomum boreale. Polytrichum alpinum. Hypnum revolvens.*
— 723. *Distichium capillaceum.*
— 724. *Distichium capillaceum. Timmia austriaca.*
— 725. *Aplozia polaris. Cephalozia verrucosa. Diplophyllum gymnostomophilum. Ditrichum flexicaule. Distichium capillaceum. Amphidium lapponicum. Tortula ruralis. Didymodon rubellus. Rhacomitrium canescens. Encalypta commutata. Fissidens arcticus. Webera cruda. Bryum crispulum. Timmia austriaca. Polytrichum alpinum. Polytrichum hyperboreum. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum. Hypnum revolutum.*

Ellesmere Land, Framshavns Nordside, 24/6 1899.

— 726. *Meesea triqvetra. Hypnum intermedium.*
— 727. *Schistidium apocarpum v. ovatum. Bryum obtusifolium. Hypnum brevifolium. Hypnum turgescens.*
— 728. *Schistidium apocarpum v. ovatum. Hypnum polycarpon. Hypnum brevifolium. Hypnum turgescens.*
— 729. *Hypnum turgescens.*
— 730. *Sphenolobus minutus. Cephalozia grimsulana. Dicranum elongatum. Aulacomnium palustre.*
— 731. *Schistidium apocarpum v. ovatum.*
— 732. *Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum elongatum.*
— 733. *Cephalozia grimsulana.*

Nr. 734. *Desmatodon systylius. Tortula mucronifolia. Encalypta rhabdocarpa. Leptobryum pyriforme. Bryum argenteum. Bryum nitidulum. Bryum arcticum.*

— 735. *Lophozia harpanthoides. Lophozia ventricosa. Cephalozia grimsulana. Webera nutans. Mnium medium. Aulacomnium palustre. Timmia austriaca. Polytrichum commune. Brachythecium salebrosum. Hypnum uncinatum.*

— 736. *Lophozia ventricosa. Cephalozia grimsulana. Dicranum elongatum. Dicranum congestum. Mnium affine. Aulacomnium palustre. Timmia austriaca.*

— 737. *Dicranoweisia crispula. Tortula ruralis. Schistidium apocarpum. Isopterygium pulchellum. Hypnum revolutum.*

— 738. *Grimmia ovata.*

— 739. *Lophozia qvinqvedentata. Dicranum spadiceum. Polytrichum alpinum. Hypnum revolutum.*

— 740. *Lophozia qvinqvedentata. Dicranoweisia crispula. Ditrichum flexicaule. Hypnum uncinatum. Hypnum revolutum.*

— 741. *Andreæa papillosa.*

— 742. *Bryum obtusifolium.*

— 743. *Orthothecium chryseum.*

— 744. *Orthotrichum Killiasii. Hypnum revolutum v. subjulaceum.*

— 745. *Dicranoweisia crispula. Tortula ruralis. Rhacomitrium lanuginosum. Orthotrichum Killiasii.*

— 746. *Webera nutans. Bryum arcticum. Amblystegium filicinum v. tenue. Hypnum revolutum v. subjulaceum.*

— 747. *Bryum argenteum.*

— 748. *Lophozia ventricosa. Cephalozia verrucosa. Dicranum congestum. Webera cruda. Bryum nitidulum. Mnium medium. Aulacomnium palustre. Timmia austriaca. Brachythecium salebrosum. Isopterygium pulchellum. Hypnum uncinatum. Hypnum revolutum.*

— 749. *Rhacomitrium canescens v. ericoides. Hypnum revolutum.*

— 750. *Haplodon Wormskjoldii.*

— 751. *Bryum teres.*

— 752. *Lophozia Floerkei. Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum congestum. Orthotrichum Killiasii. Tortula ruralis. Webera cruda. Timmia austriaca. Hypnum revolutum.*

— 753. *Lophozia qvinqvedentata. Dicranum spadiceum. Tortula ruralis. Timmia austriaca. Hypnum revolutum.*

Nr. 754. *Lophozia harpanthoides. Lophozia Wenzelii. Lophozia qvinqvedentata. Cephalozia pleniceps. Cephalozia verrucosa. Dicranoweisia crispula. Dicranum spadiceum. Tortula ruralis. Mnium affine. Timmia austriaca. Brachythecium salebrosum. Hypnum uncinatum. Hypnum revolutum.*

— 755. *Dicranoweisia crispula. Hypnum revolutum.*

— 756. *Cephalozia verrucosa. Tortula mucronifolia. Encalypta rhabdocarpa. Brachythecium salebrosum.*

Ellesmere Land, Cape Rutherfjord, 27/6 1899.

— 764. *Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum crispulum. Cinclidium subrotundum. Cinclidium hymenophyllum. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum brevifolium.*

— 765. *Schistidium apocarpum. Hypnum revolutum.*

— 766. *Marsupella arctica. Lophozia qvinqvedentata. Scapania undulata. Orthothecium chryseum. Hypnum revolvens. Hypnum sarmentosum.*

— 767. *Aplozia polaris. Lophozia Binsteadii. Sphenolobus minutus. Plagiochila arctica. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia pleniceps. Oncophorus Wahlenbergii. Distichium capillaceum. Bryum confluens. Aulacomnium turgidum. Timmia austriaca. Lophozia qvinqvedentata.*

— 768. *Ditrichum flexicaule. Didymodon rubellus. Tetraplodon pallidus. Tetraplodon mnioides.*

— 769. *Lophozia Wenzelii. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia pleniceps. Cephalozia verrucosa. Dicranum spadiceum.*

— 770. *Hypnum intermedium.*

— 771. *Distichium capillaceum. Tortella fragilis. Rhacomitrium lanuginosum. Cinclidium subrotundum. Hypnum brevifolium. Hypnum turgescens.*

— 772. *Webera cruda. Bryum arcticum. Bryum oeneum. Philonotis alpicola. Orthothecium chryseum.*

— 773. *Dicranoweisia crispula. Dicranum spadiceum. Schistidium gracile. Timmia austriaca.*

— 774. *Dicranoweisia crispula. Tortula ruralis. Rhacomitrium lanuginosum. Orthotrichum Killiasii.*

— 775. *Cephalozia grimsulana. Blindia acuta. Hypnum revolvens. Hypnum sarmentosum.*

Nr. 776. *Lophozia alpestris. Blepharostoma trichophyllum. Cephalozia verrucosa. Cephalozia Bryhnii. Didymodon rubellus. Tortella fragilis. Anomobryum concinnatum. Webera cruda. Bryum confluens. Bryum tomentosum. Myurella julacea. Myurella apiculata. Isopterygium pulchellum. Campylium stellatum.*

— 777. *Orthotrichum speciosum.*

— 778. *Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Bryum oeneum. Bryum arcticum. Cinclidium subrotundum. Aulacomnium turgidum. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Hypnum brevifolium. Hypnum turgescens.*

— 779. *Marsupella arctica. Anthelia Juratzkana. Cephalozia grimsulana. Cephalozia Bryhnii. Blindia acuta.*

— 780. *Hypnum sarmentosum.*

— 781. *Plagiochila arctica. Odontoschisma Macounii. Distichium capillaceum. Webera cruda. Timmia austriaca. Isopterygium pulchellum.*

— 782. *Webera cruda. Bryum arcticum. Campylium stellatum.*

— 783. *Sphenolobus minutus. Cephalozia verrucosa. Diplophyllum incurvum. Oncophorus Wahlenbergii. Webera cruda. Aulacomnium turgidum. Polytrichum juniperinum v. alpinum.*

— 811. *Timmia austriaca.*

— 812. *Aplozia polaris. Lophozia qvinqvedentata. Anthelia julacea. Cephalozia pleniceps. Cephalozia verrucosa.*

— 813. *Marsupella arctica. Cephalozia grimsulana. Distichium capillaceum. Tortella fragilis. Rhacomitrium lanuginosum. Bryum calophyllum. Cinclidium subrotundum. Meesea triqvetra. Catascopium nigritum. Myurella julacea. Myurella apiculata. Hypnum revolvens. Hypnum brevifolium. Hypnum turgescens.*

— 814. *Cinclidium hymenophyllum. Aulacomnium turgidum. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Hypnum giganteum.*

— 815. *Aulacomnium turgidum. Timmia austriaca.*

— 816. *Distichium capillaceum. Ditrichum flexicaule. Webera cruda. Timmia austriaca. Orthothecium chryseum.*

— 817. *Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Distichium Hagenii. Ditrichum flexicaute. Orthothecium chryseum.*

Nr. 818. *Lophozia qvinqvedentata. Ditrichum flexicaulę. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum Bambergeri.*

— 819. *Blepharostoma trichophyllum. Odontoschisma Macounii. Oncophorus Wahlenbergii. Aulacomnium turgidum. Myurella julacea. Myurella apiculata.*

— 820. *Brachythecium salebrosum. Hypnum revolutum.*

— 821. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia Binsteadii. Lophozia qvinqvedentata. Sphenolobus minutus. Blepharostoma trichophyllum. Cephalozia verrucosa. Diplophyllum incurvum. Scapania rosacea. Oncophorus Wahlenbergii. Dicranoweisia crispula. Ditrichum flexicaule. Bryum confluens. Bryum pendulum. Polytrichum juniperinum. Myurella julacea.*

— 822. *Lophozia harpanthoides. Sphenolobus minutus. Plagiochila arctica. Blepharostoma trichophyllum. Anthelia Juratzkana. Odontoschisma Macounii. Hymenostylium curvirostre. Distichium capillaceum. Didymodon rubellus. Encalypta contorta. Tortula ruralis. Polytrichum juniperinum v. alpinum.*

— 823. *Hypnum sarmentosum v. acuminatum.*

— 824. *Meesea triqvetra. Hypnum revolvens. Hypnum sarmentosum v. acuminatum.*

Ellesmere Land, Framshavns Nordside, 24/6 1899.

— 825. *Dicranoweisia crispula. Ditrichum flexicaule. Schistidium apocarpum. Grimmia ovata. Isopterygium pulchellum. Hypnum revolutum.*

— 826. *Schistidium apocarpum.*

— 827. *Lophozia qvinqvedentata. Rhacomitrium lanuginosum. Timmia austriaca.*

— 828. *Dicranum elongatum. Bryum confluens.*

— 829. *Lophozia ventricosa. Cephalozia pleniceps. Cephalozia verrucosa. Dicranum elongatum. Webera nutans.*

— 831. *Hypnum uncinatum.*

Ellesmere Land, Lastræadalen, 8/7 1899.

— 834. *Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Cephalozia pleniceps. Cephalozia verrucosa. Dicranum spadiceum. Webera nutans. Aulacomnium turgidum.*

Polytrichum alpinum. Polytrichum strictum. Hypnum hamulosum.

Ellesmere Land, Cape Viole, 8/7 1899.

Nr. 891. *Hypnum revolvens. Hypnum sarmentosum.*
— 892. *Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum sphagni.*
— 893. *Marsupella arctica.*
— 894. *Blindia acuta.*
— 895. *Ceratodon purpureus.*
— 896. *Schistidium apocarpum v. filiforme. Grimmia torqvata. Conostomum boreale.*
— 897. *Dicranoweisia crispula.*
— 898. *Hypnum uncinatum.*
— 899. *Lophozia harpanthoides. Lophozia heterocolpa. Lophozia ventricosa. Cephalozia bicuspidata. Cephalozia verrucosa. Haplodon Wormskjoldii. Webera nutans. Aulacomnium palustre. Polytrichum fragile.*
— 900. *Tortula ruralis. Schistidium apocarpum. Hypnum revolutum v. subjulaceum.*
— 901. *Cephalozia verrucosa. Webera nutans. Aulacomnium palustre. Aulacomnium turgidum. Hypnum uncinatum.*
— 902. *Grimmia torqvata.*
— 903. *Hypnum turgescens. Hypnum badium f. virens.*

Ellesmere Land, Lastræadalen, 8/7 1899.

— 912. *Lophozia obtusa. Lophozia ventricosa. Dicranum spadiceum. Webera nutans. Mnium subglobosum. Aulacomnium palustre. Camptothecium nitens.*
— 913. *Lophozia harpanthoides. Lophozia heterocolpa. Lophozia Floerkei. Dicranum spadiceum. Distichium capillaceum. Mnium subglobosum. Cinclidium hymenophyllum. Cinclidium polare. Aulacomnium palustre. Orthothecium chryseum. Camptothecium nitens. Hypnum Bambergeri.*
— 914. *Marsupella arctica. Blindia acuta.*
— 915. *Lophozia obtusa. Lophozia polita. Lophozia qvinqvedentata. Odontoschisma Macounii. Cephalozia media. Oncophorus Wahlenbergii. Dicranum spadiceum. Webera nutans. Cinclidium hymenophyllum. Philonotis alpicola. Aulacomnium tur-*

gidum. Polytrichum alpinum. Orthothecium chryseum. Isopterygium pulchellum. Hypnum uncinatum.

Nr. 916. *Marsupella arctica. Bryum crispulum. Hypnum revolvens. Hypnum trifarium.*

— 917. *Riccardia pingvis. Marsupella arctica. Blepharostoma trichophyllum. Orthothecium chryseum. Hypnum revolvens. Hypnum trifarium.*

— 918. *Schistidium apocarpum. Grimmia torqvata. Isopterygium pulchellum.*

— 919. *Ditrichum flexicaule. Fissidens arcticus. Tortella fragilis. Fissidens osmundioides. Encalypta commutata. Cinclidium hymenophyllum. Cinclidium polare. Aulacomnium turgidum. Catascopium nigritum. Meesea triqvetra. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Campylium stellatum. Hypnum intermedium.*

— 920. *Aplozia sphærocarpa. Lophozia qvinqvedentata. Blepharostoma trichophyllum. Cephalozia pleniceps. Sphagnum Girgensohnii. Mnium subglobosum. Aulacomnium turgidum. Aulacomnium palustre. Polytrichum juniperinum. Camptothecium nitens. Hypnum badium.*

— 921. *Lophozia qvinqvedentata. Sphenolobus minutus. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia pleniceps. Sphagnum Girgensohnii, Oncophorus Wahlenbergii. Dicranum spadiceum. Aulacomnium palustre. Polytrichum alpinum.*

— 922. *Hypnum trifarium.*

— 923. *Blepharostoma trichophyllum. Odontoschisma Macounii. Webera nutans. Aulacomnium turgidum. Polytrichum strictum. Isopterygium pulchellum. Campylium stellatum.*

— 924. *Hypnum latifolium.*

— 925. *Rhacomitrium lanuginosum.*

— 926. *Sphenolobus minutus. Odontoschisma Macounii. Dicranum spadiceum. Aulacomnium turgidum. Hypnum badium.*

— 927. *Sphenolobus minutus. Dicranum elongatum.*

— 928. *Sphenolobus minutus. Scapania Bartlingii. Ditrichum flexicaule. Didymodon rubellus. Tetraplodon mnioides. Webera nutans. Plagiobryum demissum. Bryum pendulum. Cinclidium polare. Conostomum boreale. Timmia norvegica. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Isopterygium pulchellum.*

Nr. 929. *Lophozia qvinqvedentata. Anthelia julacea. Cephalozia pleniceps. Cephalozia verrucosa. Ditrichum flexicaule. Aulacomnium turgidum.*

— 930. *Sphenolobus minutus. Dicranum elongatum.*

— 931. *Odontoschisma Macounii. Cephalozia verrucosa. Hymenostylium curvirostre. Distichium capillaceum. Fissidens arcticus.*

— 932. *Odontoschisma Macounii. Cephalozia pleniceps. Hymenostylium curvirostre. Distichium capillaceum. Fissidens arcticus. Mnium hymenophylloides. Meesea trichodes. Polytrichum fragile. Myurella julacea. Myurella apiculata. Hypnum turgescens.*

— 933. *Cynodontium gracilescens. Tortella fragilis. Desmatodon suberectus. Distichium capillaceum. Distichium Hagenii. Plagiobryum demissum. Webera cruda. Bryum pendulum. Bryum langvidum. Mnium affine. Mnium hymenophylloides. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Isopterygium pulchellum.*

— 934. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia pleniceps. Sphagnum Girgensohnii.*

— 935. *Diplophyllum incurvum. Cynodontium schisti. Tortella tortuosa v. fragilifolia.*

— 936. *Distichium capillaceum. Myurella julacea.*

Ellesmere Land, Glacier Valley, 6/7 1899.

— 941. *Hypnum polare.*

— 942. *Lophozia qvadriloba. Diplophyllum incurvum. Ditrichum flexicaule. Orthothecium chryseum.*

— 943. *Lophozia ventricosa. Lophozia Floerkei. Sphenolobus minutus. Cephalozia verrucosa. Aulacomnium turgidum. Polytrichum hyperboreum. Polytrichum alpinum.*

— 944. *Andreæa papillosa.*

— 945. *Webera cruda. Psilopilum lævigatum. Polytrichum alpinum.*

— 946. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Cephalozia pleniceps. Cephalozia verrucosa. Webera nutans. Aulacomnium turgidum. Camptothecium nitens.*

— 947. *Lophozia Baueriana. Rhacomitrium lanuginosum. Orthotrichum speciosum. Hypnum uncinatum. Hypnum revolutum. Hylocomium proliferum.*

— 948. *Ptilidium ciliare. Oncophorus Wahlenbergii. Bryum autumnale. Bryum pendulum. Polytrichum alpinum. Orthothecium*

chryseum. Hypnum revolvens. Hypnum brevifolium. Hypnum Bambergeri. Hypnum badium.

Nr. 949. *Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum sphagni.*

— 950. *Bryum pendulum.*

— 951. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia Floerkei. Sphenolobus minutus. Ptilidium ciliare. Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia bicuspidata. Cephalozia verrucosa. Oncophorus virens. Distichium capillaceum. Distichium inclinatum. Ditrichum flexicaule. Fissidens osmundioides. Tortella fragilis. Orthotrichum Killiasii. Webera cruda. Webera nutans. Bryum arcticum. Bryum crispulum v. densifolium. Bryum cuspidatum. Bryum Fridtzii. Tetraplodon pallidus. Aulacomnium palustre. Aulacomnium turgidum. Conostomum boreale. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Isopterygium pulchellum. Campylium stellatum. Hypnum revolvens.*

— 952. *Blindia acuta.*

— 953. *Cesia corallioides. Sphenolobus minutus.*

— 954. *Lophozia qvinqvedentata. Ditrichum flexicaule. Didymodon rubellus. Desmatodon suberectus. Orthotrichum Killiasii. Bryum pendulum. Bryum tomentosum. Conostomum boreale. Myurella apiculata.*

— 960. *Odontoschisma Macounii.*

— 961. *Oncophorus Wahlenbergii. Bryum opdalense. Campylium stellatum. Orthothecium chryseum. Hypnum revolvens. Hypnum sarmentosum. Hypnum badium.*

— 962. *Aplozia polaris. Lophozia Mülleri. Lophozia heterocolpa. Sphenolobus minutus. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia verrucosa. Oncophorus Wahlenbergii.*

Ellesmere Land, Cape Viole, 4/7 1899.

— 985. *Lophozia Mülleri. Lophozia heterocolpa. Odontoschisma Macounii. Cephalozia pleniceps. Cephalozia verrucosa. Cephalozia grimsulana. Scapania rosacea. Bryum calophyllum. Polytrichum fragile. Orthothecium chryseum. Hypnum uncinatum. Hypnum turgescens.*

— 986. *Haplodon Wormskjoldii. Aulacomnium palustre. Hypnum uncinatum. Hypnum turgescens.*

Nr. 987. *Cephalozia verrucosa. Ditrichum flexicaule. Bryum curvatum. Tetraplodon mnioides. Haplodon Wormskjoldii. Aulacomnium palustre. Orthothecium strictum. Hypnum uncinatnm. Hypnum turgescens.*

— 988. *Lophozia harpanthoides. Lophozia heterocolpa. Sphenolobus minutus. Cephalozia verrucosa. Scapania Bartlingii. Haplodon Wormskjoldii. Webera nutans. Bryum arcticum. Aulacomnium palustre. Polytrichum fragile. Hypnum turgescens.*

— 989. *Cephalozia verrucosa. Haplodon Wormskjoldii. Webera nutans. Aulacomnium palustre. Hypnum sarmentosum. Hypnum turgescens.*

— 990. *Sphenolobus minutus. Cephalozia pleniceps. Cephalozia bicuspidata. Cephalozia verrucosa. Dicranum sphagni. Distichium capillaceum. Aulacomnium turgidum. Philonotis alpicola. Polytrichum strictum.*

— 991. *Cephalozia grimsulana. Haplodon Wormskjoldii. Hypnum uncinatum.*

— 992. *Lophozia harpanthoides. Lophozia ventricosa. Blepharostoma trichophyllum. Cephalozia bicuspidata. Cephalozia verrucosa. Dicranum sphagni. Webera nutans. Aulacomnium palustre. Polytrichum fragile. Polytrichum strictum.*

— 993. *Dicranoweisia crispula. Tortula ruralis.*

— 994. *Oncophorus Wahlenbergii. Meesea triqvetra. Hypnum revolvens. Hypnum sarmentosum.*

— 995. *Bryum teres. Bryum pendulum. Orthothecium strictum. Hypnum sarmentosum.*

— 996. *Sphenolobus minutus. Blepharostoma trichophyllum. Cephalozia verrucosa. Dicranum congestum. Webera nutans. Aulacomnium palustre. Polytrichum juniperinum. Polytrichum fragile.*

— 997. *Odontoschisma Macounii. Distichium capillaceum. Ditrichum flexicaule. Oncophorus Wahlenbergii. Tortella fragilis. Fissidens osmundioides. Aulacomnium turgidum. Orthothecium chryseum. Campylium stellatum. Hypnum revolvens.*

— 998. *Webera nutans. Timmia austriaca. Polytrichum alpinum. Polytrichum juniperinum. Isopterygium pulchellum.*

— 1003. *Lophozia qvinqvedentata. Sphenolobus minutus. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia bicuspidata. Oncophorus Wahlenbergii. Dicranum spadiceum. Webera nutans. Webera cruda. Polytrichum strictum.*

Nr. 1004. *Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum spadiceum.*

— 1005. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia bicuspidata. Bryum calophyllum. Timmia austriaca. Bryum nitidulum. Isopterygium pulchellum.*

— 1006. *Cinclidium subrotundum. Hypnum revolvens. Hypnum giganteum.*

— 1007. *Marsupella arctica. Grimmia torqvata.*

— 1008. *Bryum pallens.*

— 1009. *Ditrichum flexicaule.*

Ellesmere Land, Eskimopolis, 7/7 1899.

— 1012. *Haplodon Wormskjoldii.*

— 1013. *Webera cruda.*

— 1014. *Tortula ruralis. Tetraplodon mnioides. Tetraplodon pallidus. Haplodon Wormskjoldii. Bryum cyclophylloides. Bryum pertenellum. Aulacomnium turgidum. Brachythecium salebrosum.*

— 1015. *Tortula ruralis. Brachythecium salebrosum v. turgidum.*

— 1016. *Tortula ruralis. Tetraplodon mnioides. Haplodon Wormskjoldii. Bryum cirratum. Catascopium nigritum.*

— 1017. *Webera cruda. Polytrichum alpinum.*

— 1018. *Bryum cyclophyllum.*

— 1019. *Mnium affinę. Aulacomnium palustre. Aulacomnium turgidum. Hypnum uncinatum.*

— 1020. *Lophozia qvinqvedentata. Dicranum spadiceum. Ceratodon purpureus. Tortula ruralis. Webera cruda.*

— 1021. *Lophozia ventricosa. Lophozia alpestris. Lophozia qvinqvedentata. Dicranum spadiceum. Webera nutans. Mnium affine. Aulacomnium palustre. Timmia norvegica. Timmia austriaca. Polytrichum strictum. Camptothecium nitens. Hypnum uncinatum.*

— 1022. *Lophozia ventricosa. Sphenolobus minutus. Cephalozia grimsulana. Dicranum elongatum. Webera nutans. Catascopium nigritum. Hypnum revolutum.*

— 1023. *Tortula ruralis. Rhacomitrium canescens v. prolixum. Orthotrichum Killiasii. Hypnum revolutum.*

— 1024. *Bryum cyclophyllum. Timmia austriaca.*

Nr. 1025. *Tetraplodon mnioides. Webera cruda. Webera nutans. Bryum cirratum. Bryum inclinatum. Aulacomnium turgidum. Timmia austriaca. Brachythecium salebrosum.*

— 1026. *Tortula ruralis. Webera cruda. Bryum cirratum. Aulacomnium palustre. Catascopium nigritum. Timmia austriaca.*

— 1027. *Hypnum sarmentosum.*

— 1028. *Tortula ruralis. Webera cruda. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum v. turgidum. Hypnum uncinatum. Hylocomium proliferum.*

— 1029. *Mielichhoferia Porsildii.*

— 1030. *Bryum ventricosum. Polytrichum alpinum. Brachythecium salebrosum v. arcticum.*

— 1031. *Haplodon Wormskjoldii. Bryum obtusifolium. Bryum cyclophyllum.*

— 1032. *Lophozia ventricosa. Lophozia Wenzelii. Lophozia porphyroleuca. Blepharostoma trichophyllum v. brevirete. Cephalozia grimsulana. Dicranum spadiceum. Haplodon Wormskjoldii. Tortula ruralis. Webera nutans. Mnium affine. Aulacomnium palustre. Polytrichum strictum. Polytrichum alpinum. Brachythecium salebrosum. Hypnum uncinatum. Hypnum revolutum.*

— 1033. *Lophozia ventricosa. Dicranum spadiceum. Schistidium apocarpum v. filiforme. Rhacomitrium lanuginosum. Polytrichum alpinum. Hypnum revolutum.*

— 1034. *Catascopium nigritum. Polytrichum alpinum. Hypnum uncinatum.*

— 1035. *Haplodon Wormskjoldii. Webera commutata. Bryum cyclophylloides. Aulacomnium turgidum. Hypnum uncinatum.*

— 1036. *Mnium affine. Aulacomnium turgidum. Brachythecium salebrosum. Hypnum uncinatum. Hypnum sarmentosum.*

— 1037. *Lophozia Wenzelii. Haplodon Wormskjoldii. Webera cruda. Webera commutata. Bryum pertenellum. Mnium affine. Hypnum uncinatum. Hylocomnium proliferum.*

— 1038. *Catascopium nigritum. Polytrichum alpinum. Hypnum uncinatum.*

— 1039. *Tortula ruralis. Tetraplodon mnioides. Bryum cyclophyllum. Webera commutata. Timmia austriaca. Hypnum uncinatum.*

Nr. 1040. *Hypnum uncinatum.*
— 1041. *Bryum cyclophylloides. Catascopium nigritum. Hypnum uncinatum.*
— 1042. *Tetraplodon mnioides. Webera nutans. Bryum niltiduum. Aulacomnium palustre. Polytrichum alpinum.*
— 1043. *Dicranum congestum. Tortula ruralis. Rhacomitrium lanuginosum. Polytrichum alpinum. Hypnum revolvens.*
— 1044. *Oncophorus Wahlenberyii.*
— 1045. *Bryum crispulum.*
— 1052. *Tortula ruralis. Haplodon Wormskjoldii. Tetraplodon mnioides. Webera cruda. Bryum cyclophyllum. Bryum nitidulum. Timmia austriaca. Polytrichum alpinum.*
— 1053. *Dicranum spadiceum. Aulacomnium turgidum. Hypnum uncinatum.*
— 1054. *Webera nutans. Aulacomnium turgidum. Hypnum uncinatum.*
— 1055. *Hypnum revolvens.*

Ellesmere Land, Framhavns Sydside, 22/7 1899.

— 1114. *Splachnum vasculosum. Hypnum polycarpon.*
— 1115. *Splachnum vasculosum. Amblystegium filicinum v. tenue.*
— 1116. *Brachythecium salebrosum v. arcticum.*
— 1117. *Bryum Limprichtii. Isopterygium pulchellum. Hypnum revolutum.*
— 1118. *Blepharostoma trichophyllum v. brevirete. Hypnum uncinatum.*
— 1119. *Distichium capillaceum.*
— 1120. *Dicranum spadiceum. Tortula ruralis. Timmia austriaca. Hypnum revolutum.*
— 1121. *Dicranum spadiceum. Webera nutans. Timmia austriaca. Brachythecium salebrosum. Hypnum revolutum.*
— 1122. *Bryum subfoveolatum. Bryum subtumidum. Leptobryum pyriforme.*
— 1137. *Hypnum intermedium.*
— 1138. *Haplodon Wormskjoldii.*
— 1139. *Blepharostoma trichophyllum. Cephalozia pleniceps. Diplophyllum incurvum. Webera nutans. Timmia austriaca. Brachythecium salebrosum. Hypnum uncinatum.*

Nr. 1140. *Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia pleniceps. Cephalozia verrucosa. Orthothecium strictum. Amblystegium filicinum v. tenue.*

— 1141. *Lophozia alpestris. Mnium medium. Amblystegium filicinum v. tenue.*

— 1142. *Lophozia harpanthoides. Lophozia qvadriloba. Blepharostoma trichophyllum. Cephalozia pleniceps. Cephalozia verrucosa. Scapania æqviloba. Distichium capillaceum. Ditrichum flexicaule. Tortella fragilis. Timmia austriaca. Brachythecium salebrosum. Isopterygium pulchellum.*

Ellesmere Land, Cape Rutherford, 26/7 1899.

— 1146. *Ditrichum flexicaule. Timmia austriaca. Polytrichum alpinum.*

— 1147. *Haplodon Wormskjoldii.*

— 1148. *Webera cruda. Bryum arcticum.*

— 1162. *Bryum crispulum.*

Ellesmere Land, Bedford Pim Isl.- 24/7 1899.

— 1168. *Distichium capillaceum. Webera cruda. Bryum tomentosum. Bryum micans. Myurella julacea.*

— 1169. *Schistidium apocarpum.*

— 1170. *Lophozia Wenzelii. Scapania rosacea. Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum minus. Timmia austriaca. Polytrichum alpinum.*

— 1171. *Aulacomnium turgidum. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum.*

— 1172. *Rhacomitrium canescens v. epilosum.*

— 1173. *Hypnum uncinatum.*

— 1174. *Distichium capillaceum. Webera cruda· Bryum minus. Timmia austriaca.*

— 1175. *Andreæa papillosa. Ditrichum flexicaule.*

— 1176. *Encalypta commutata. Encalypta contorta. Myurella julacea.*

— 1177. *Andreæa papillosa. Ditrichum flexicaule. Orthotrichum Killiasii.*

— 1179. *Andreæa papillosa. Dicranoweisia crispula.*

— 1180. *Clevea hyalina. Webera cruda. Isopterygium pulchellum. Hypnum revolutum.*

— 1181. *Hypnum polare.*

Nr. 1182. *Lophozia alpestris. Ditrichum flexicaule. Webera cruda. Bryum ventricosum. Timmia austriaca. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Hypnum revolutum.*

— 1183. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium acuminatum. Isopterygium pulchellum.*

— 1184. *Webera nutans. Polytrichum alpinum. Isopterygium pulchellum.*

Ellesmere Land, Brevort Isl., 24/7 1899.

— 1222. *Bryum Stirtoni.*

— 1223. *Tortula ruralis.*

— 1224. *Brachythecium salebrosum.*

Ellesmere Land, Framshavns Sydside, 22/7 1899.

— 1226. *Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum intermedium.*

— 1227. *Distichium capillaceum. Didymodon rubellus. Tortella fragilis. Ceratodon purpureus. Bryum elegans. Cinclidium subrotundum. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum polycarpon. Hypnum intermedium. Hypnum revolvens. Hypnum turgescens.*

— 1228. *Bryum calophyllum. Hypnum brevifolium.*

— 1234. *Bryum calophyllum. Campylium stellatum. Hypnum revolvens. Hypnum giganteum.*

— 1235. *Hypnum latinerve. Hypnum giganteum. Hypnum sarmentosum.*

— 1236. *Clevea hyalina. Ceratodon purpureus. Isopterygium pulchellum.*

Ellesmere Land, Cocked Hat Isl. 30/7 1899.

— 1294. *Bryum obtusifolium. Bryum calophyllum. Philonotis alpicola. Campylium stellatum.*

Nr. 1295. *Schistidium gracile. Hypnum revolutum. Hypnum hamulosum.*
— 1296. *Hypnum uncinatum f. aqvatica.*
— 1297. *Dicranum sphagni.*
— 1298. *Cephalozia grimsulana. Oncophorus Wahlenbergii. Hypnum intermedium.*
— 1299. *Polytrichum fragile.*
— 1300. *Distichium capillaceum.*
— 1301. *Bryum groenlandicum.*
— 1302. *Ditrichum flexicaule. Distichium capillaceum. Schistidium apocarpum. Hypnum turgescens.*
— 1303. *Lophozia qvinqvedentata. Cephalozia verrucosa. Ditrichum flexicaule. Bryum crispulum v. densifolium. Polytrichum alpinum. Campylium stellatum. Hypnum revolutum. Hypnum Bambergeri. Hypnum turgescens.*
— 1304. *Distichium capillaceum. Hypnum revolutum. Hypnum Bambergeri. Hypnum turgescens.*
— 1305. *Dicranoweisia crispula. Dicranum spadiceum. Tortula ruralis. Orthotrichum Killiasii. Hypnum revolutum v. subjulaceum.*
— 1306. *Brachythecium salebrosum. Campylium stellatum.*
— 1307. *Bryum ventricosum.*
— 1308. *Hypnum revolutum. Hypnum turgescens.*
— 1309. *Rhacomitrium lanuginosum.*

Ellesmere Land, Bedford Pim Isl., 31/7 1899.

— 1315. *Hypnum revolutum.*
— 1316. *Lophozia harpanthoides. Lophozia alpestris. Lophozia violascens. Lophozia qvadriloba v. heterophylla. Arnellia fennica. Blepharostoma trichophyllum. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Webera cruda. Webera nutans. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum.*
— 1317. *Blepharostoma trichophyllum. Dicranum sphagni. Timmia austriaca.*
— 1318. *Lophozia harpanthoides. Lophozia ventricosa. Distichium capillaceum. Webera cruda. Webera commutata. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Po-*

lytrichum alpinum. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum v. arcticum.

Nr. 1319. *Clevea hyalina. Lophozia harpanthoides. Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia verrucosa. Diplophyllum incurvum. Ditrichum flexicaule. Distichium Hagenii. Tortella fragilis. Encalypta commutata. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Myurella apiculata. Myurella julacea. Orthothecium chryseum.*

— 1320. *Lophozia ventricosa. Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Blepharostoma trichophyllum. Cephalozia verrucosa. Dicranum elongatum. Distichium capillaceum. Distichium Hagenii. Encalypta contorta. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Hypnum Bambergeri.*

— 1321. *Hypum revolutum v. subjulaceum.*

— 1322. *Grimmia ovata.*

— 1323. *Dicranoweisia crispula.*

— 1324. *Diplophyllum incurvum. Distichium capillaceum. Amphidium lapponicum. Orthothecium acuminatum.*

— 1325. *Lophozia alpestris. Lophozia qvinqvedentata. Lophozia Binsteadii. Ptilidium ciliare. Blepharostoma setiforme. Cephalozia verrucosa. Dicranum spadiceum. Distichium capillaceum. Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum.*

— 1326. *Bryum crispulum.*

— 1327. *Cinclidium hymenophyllum.*

— 1328. *Rhacomitrium canescens v. epilosum.*

— 1329. *Lophozia ventricosa. Lophozia alpestris. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Webera cruda. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens.*

— 1330. *Bryum ventricosum. Cinclidium hymenophyllum. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens.*

— 1331. *Lophozia ventricosa. Sphenolobus minutus. Dicranum spadiceum. Webera nutans. Timmia austriaca. Polytrichum alpinum. Hypnum revolutum.*

Nr. 1332. *Tortula ruralis. Hypnum revolutum.*

— 1333. *Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum sphagni. Amphidium lapponicum. Webera cruda. Bryum oeneum v. subelimbatum. Bryum pendulum. Timmia austriaca. Orthothecium acuminatum.*

— 1334. *Bryum oeneum v. subelimbatum. Hypnum uncinatum.*

— 1351. *Hypnum intermedium. Hypnum revolvens.*

— 1352. *Lophozia Binsteadii. Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum spadiceum.*

— 1353. *Cephalozia verrucosa. Dicranum spadiceum.*

— 1354. *Ditrichum flexicaule. Webera cruda. Bryum crispulum. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum v. arcticum. Hypnum turgescens.*

— 1355. *Schistidium apocarpum. Orthotrichum Killiasii. Hypnum revolutum.*

— 1356. *Schistidium apocarpum.*

— 1357. *Lophozia harpanthoides. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Odontoschisma Macounii. Blepharostoma trichophyllum. Ditrichum glaucescens. Hypnum uncinatum.*

— 1358. *Tetraplodon mnioides.*

— 1359. *Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia verrucosa. Diplophyllum incurvum. Didymodon rubellus. Bryum oeneum. Bryum pendulum. Amphidium lapponicum. Encalypta commutata. Cinclidium hymenophyllum. Polytrichum alpinum. Timmia austriaca. Orthothecium acuminatum. Orthothecium chryseum.*

Ellesmere Land, Skrællingøen, 3/8 1899.

— 1388. *Tetraplodon mnioides. Bryum inclinatum. Catascopium nigritum.*

— 1389. *Bryum ventricosum. Brachythecium salebrosum. Campylium stellatum. Hypnum sarmentosum.*

— 1390. *Oncophorus Wahlenbergii.*

— 1391. *Lophozia harpanthoides. Lophozia ventricosa. Cephalozia verrucosa. Distichium capillaceum. Mnium affine v. integrifolium. Meesea trichodes. Myurella apiculata. Hypnum revolvens. Hypnum latifolium.*

Nr. 1392. *Ditrichum flexicaule. Meesea trichodes. Timmia austriaca. Orthothecium chryseum. Myurella apiculata. Camptothecium nitens. Campylium stellatum. Hypnum revolvens.*

— 1393. *Lophozia harpanthoides. Dicranum spadiceum. Distichium capillaceum. Ditrichum flexicaule. Mnium affine v. integrifolium. Timmia austriaca. Myurella apiculata. Camptothecium nitens.*

— 1394. *Dicranum spadiceum. Aulacomnium palustre. Polytrichum alpinum. Campylium stellatum. Hypnum uncinatum.*

— 1395. *Aulacomnium palustre.*

— 1396. *Cephalozia verrucosa. Dicranum spadiceum. Distichium capillaceum. Tetraplodon mnioides. Bryum inclinatum. Mnium affine v. integrifolium. Aulacomnium palustre. Brachythecium salebrosum. Hypnum revolutum v. subjulaceum. Hypnum hamulosum.*

— 1397. *Tortula ruralis. Timmia austriaca. Polytrichum alpinum.*

Ellesmere Land, Framshavns Nordside, 4/8 1899.

— 1421. *Splachnum vasculosum.*

— 1422. *Ditrichum flexicaule. Bryum elegans v. carinthiacum. Philonotis fontana. Brachythecium salebrosum. Isopterygium pulchellum. Hypnum turgescens.*

— 1423. *Bryum neodamense v. ovatum.*

— 1424. *Bryum calophyllum. Brachythecium salebrosum v. arcticum. Hypnum uncinatum. Hypnum polycarpon.*

— 1425. *Cephalozia verrucosa. Tetraplodon mnioides. Bryum retusum.*

— 1428. *Bryum obtusifolium.*

— 1429. *Hymenostylium curvirostre. Distichium capillaceum. Distichium Hagenii. Bryum elegans v. carinthiacum. Cinclidium subrotundum. Orthothecium chryseum. Orthothecium binervulum. Hypnum polycarpon. Hypnum intermedium. Hypnum latifolium.*

Ellesmere Land, Cape Viole, 2/8 1899.

— 1432. *Dicranum spadiceum. Ditrichum flexicaule. Timmia austriaca. Polytrichum alpinum. Hypnum revolutum v. subjulaceum.*

— 1433. *Timmia austriaca. Polytrichum alpinum.*

— 1434. *Lophozia qvinqvedentata. Cephalozia verrucosa. Ditrichum flexicaule.*

Ellesmere Land, Skrællingøen, 3/8 1899.

Nr. 1435. *Bryum cyclophyllum. Campylium stellatum. Hypnum exannulatum. Hypnum sarmentosum.*

— 1436. *Lophozia ventricosa. Lophozia porphyroleuca. Cephalozia bicuspidata. Cephalozia verrucosa. Dicranum elongatum.*

— 1437. *Hypnum badium.*

— 1438. *Cephalozia verrucosa. Dicranum spadiceum. Brynm calophyllum. Cinclidium subrotundum. Meesea trichodes. Polytrichum alpinum. Orthothecium chryseum. Campylium stellatum. Hypnum revolvens. Hypnum sarmentosum.*

— 1439. *Hypnum exannulatum.*

— 1440. *Lophozia alpestris. Cephalozia verrucosa. Scapania rosacea. Dicranum spadiceum. Aulacomnium palustre. Polytrichum alpinum. Hypnum hamulosum.*

— 1441. *Aulacomnium palustre.*

— 1442. *Distichium capillaceum.*

— 1443. *Cinclidium subrotundum. Polytrichum alpinum.*

— 1444. *Tortula ruralis. Schistidium apocarpum v. filiforme. Orthothricum speciosum.*

— 1445. *Lophozia ventricosa. Sphenolobus minutus. Blepharostoma trichophyllum. Cephalozia pleniceps. Cephalozia bicuspidata. Cephalozia verrucosa. Dicranum elongatum. Ditrichum flexicaule.*

— 1446. *Bryum calophyllum. Campylium stellatum. Hypnum revolvens.*

— 1447. *Blepharostoma trichophyllum. Cephalozia pleniceps. Cephalozia verrucosa. Dicranum spadiceum. Aulacomnium palustre. Polytrichum alpinum. Hypnum uncinatum.*

— 1448. *Mnium affine v. integrifolium. Aulacomnium palustre. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum.*

— 1449. *Timmia austriaca. Polytrichum alpinum.*

— 1450. *Encalypta rhabdocarpa.*

— 1451. *Lophozia ventricosa. Blepharostoma trichophyllum v. brevirete. Cephalozia pleniceps.*

Ellesmere Land, Framshavns Nordside, 4/8 1899.

— 1456. *Bryum elegans v. elongatum. Amblystegium Sprucei. Campylium stellatum.*

Nr. 1457. *Blepharostoma trichophyllum. Distichium capillaceum. Mnium hymenophylloides. Myurella apiculata. Orthothecium binervulum. Hypnum revolutum.*

— 1458. *Lophozia polita. Lophozia Binsteadii. Odontoschisma Macounii. Cephalozia verrucosa. Ditrichum flexicaule. Distichium Hagenii. Bryum elegans. Bryum calophyllum. Philonotis alpicola. Orthothecium chryseum. Hypnum intermedium. Hypnum polycarpon. Hypnum tundræ. Hypnum turgescens.*

— 1459. *Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Anthelia Juratzkana. Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus. Bryum cyclophyllum. Bryum teres. Mnium medium. Orthothecium strictum.*

N. V. Grønland, Foulkefjord, 11–12/8 1899.

— 1531. *Cephalozia verrucosa. Oncophorus Wahlenbergii. Didymodon rubellus. Ditrichum flexicaule. Distichium capillaceum. Bryum crispulum. Cinclidium subrotundum. Meesea triqvetra. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum. Orthothecium strictum. Hypnum revolvens. Hypnum brevifolium. Hypnum turgescens.*

— 1532. *Oncophorus virens. Ditrichum flexicaule. Distichium capillaceum. Cinclidium subrotundum. Meesea triqvetra. Polytrichum alpinum. Orthothecium chryseum. Hypnum revolvens. Hypnum brevifolium.*

— 1533. *Cephalozia grimsulana. Oncophorus virens.*

— 1536. *Lophozia ventricosa. Lophozia qvinqvedentata. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum. Hylocomium proliferum.*

— 1537. *Desmatodon systylius. Bryum argenteum.*

— 1538. *Cephalozia grimsulana. Bryum lapponicum. Bryum teres. Bryum pendulum. Bryum terrestre. Hypnum uncinatum.*

— 1539. *Schistidium apocarpum v. filiforme. Orthotrichum Blyttii v. polare.*

— 1540. *Tortella tortuosa.*

— 1541. *Webera commutata v. filum. Bryum crispulum. Philonotis alpicola. Hypnum uncinatum. Hypnum polare.*

— 1542. *Hypnum uncinatum.*

Nr. 1543. *Bryum elegans v. carinthiacum. Hypnum uncinatum.*

— 1544. *Distichium capillaceum. Webera commutata, Webera cruda. Bryum crispulum. Bryum Stirtoni. Hypnum uncinatum.*

— 1545. *Bryum teres. Brachythecium salebrosum. Hypnum turgescens.*

— 1546. *Lophozia qvinqvedentata. Anthelia julacea. Ditrichum flexicaule. Rhacomitrium lanuginosum. Bartramia ityphylla. Aulacomnium turgidum. Polytrichum alpinum. Isopterygium pulchellum.*

— 1547. *Distichium capillaceum. Didymodon rubellus. Bryum oeneum. Polytrichum alpinum. Myurella julacea. Campylium stellatum.*

— 1548. *Webera cruda. Bryum ventricosum. Bryum crispulum. Mnium medium. Timmia norvegica. Polytrichum alpinum. Brachythecium salebrosum. Hypnum uncinatum.*

— 1549. *Webera cruda. Bryum elegans v. carinthiacum. Polytrichum juniperinum v. alpinum. Hypnum uncinatum. Hypnum turgescens.*

— 1550. *Lophozia ventricosa. Webera nutans. Aulacomnium palustre. Polytrichum alpinum v. arcticum. Hypnum uncinatum.*

— 1551. *Bryum elegans v. carinthiacum. Polytrichum alpinum. Hypnum uncinatum.*

— 1552. *Distichium capillaceum. Webera cruda. Bryum teres. Polytrichum fragile. Brachythecium salebrosum. Campylium stellatum. Hypnum uncinatum.*

— 1553. *Lophozia qvinqvedentata. Celaphozia verrucosa. Ditrichum flexicaule. Anlacomnium turgidum. Polytrichum alpinum. Brachythecium salebrosum. Isopterygium pulchellum. Hypnum revolvens.*

— 1554. *Rhacomitrium lanuginosum.*

— 1555. *Lophozia qvinqvedentata. Webera cruda. Aulacomnium turgidum. Philonotis alpicola. Polytrichum alpinum. Hypnum uncinatum.*

— 1556. *Webera cruda. Hypnum uncinatum. Hypnum turgescens.*

— 1557. *Tortula ruralis.*

— 1658. *Webera cruda. Bryum elegans v. carinthiacum. Polytrichum alpinum. Hypnum uncinatum. Hypnum turgescens.*

— 1562. *Bryum obtusifolium. Philonotis alpicola.*

— 1563. *Brachythecium salebrosum v. arcticum. Hypnum polare.*

— 1564. *Bryum obtusifolium. Philonotis alpicola.*

Nr. 1565. *Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Oncophorus virens. Ditrichum flexicaule. Distichium capillaceum. Meesea triqvetra. Polytrichum alpinum. Campylium stellatum. Hypnum revolvens. Hypnum brevifolium. Hypnum turgescens.*

— 1566. *Tortella tortuosa.*

— 1567. *Hypnum latifolium.*

— 1568. *Plagiochila arctica. Cephalozia verrucosa. Tortula ruralis. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Brachythecium salebrosum. Isopterygium pulchellum. Campylium stellatum. Hypnum uncinatum.*

— 1569. *Bryum neodamense. Hypnum revolvens. Hypnum brevifolium. Hypnum sarmentosum.*

— 1570. *Oncophorus virens. Distichium capillaceum. Aulacomnium turgidum. Philonotis alpicola. Myurella apiculata. Camptothecium nitens.*

— 1571. *Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus. Webera cruda. Polytrichum alpinum. Myurella apiculata. Camptothecium nitens. Brachythecium salebrosum. Isopterygium pulchellum. Campylium stellatum. Hypnum brevifolium.*

— 1572. *Distichium capillaceum. Didymodon rubellus. Fissidens arcticus. Myurella apiculata. Isopterygium pulchellum. Amblystegium filicinum v. tenue.*

— 1573. *Cephalozia verrucosa. Oncophorus virens. Distichium capillaceum. Aulacomnium turgidum. Philonotis alpicola. Polytrichum alpinum. Myurella apiculata. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Campylium stellatum.*

— 1574. *Distichium capillaceum. Schistidium apocarpum. Bryum oeneum. Bryum salinum. Myurella julacea.*

— 1575. *Ditrichum flexicaule. Distichium Hagenii. Cinclidium subrotundum. Orthothecium chryseum. Hypnum revolvens. Hypnum brevifolium. Hypnum giganteum. Hypnum sarmentosum.*

— 1576. *Webera cruda. Bryum neodamense. Polytrichum alpinum. Myurella apiculata. Amblystegium filicinum v. tenue. Campylium stellatum. Hypnum uncinatum. Hypnum brevifolium. Hypnum polycarpon.*

— 1577. *Brachythecium salebrosum v. arcticum.*

Nr. 1578. *Hymenostylium curvirostre. Didymodon rubellus. Encalypta rhabdocarpa. Myurella julacea.*

— 1579. *Cephalozia verrucosa. Oncophorus virens. Cinclidium subrotundum. Meesea triqvetra. Hypnum brevifolium. Hypnum turgescens.*

— 1580. *Clevea hyalina. Lophozia ventricosa. Ditrichum flexicaule. Tortella tortuosa. Plagiobryum demissum. Webera cruda. Myurella julacea. Brachythecium salebrosum. Isopterygium pulchellum.*

North Lincoln, Framfjord, 26—28/8 1899.

— 1674. *Hypnum giganteum.*

— 1675. *Hypnum turgescens.*

— 1676. *Lophozia Baueriana. Distichium capillaceum. Tortula ruralis. Bryum ventricosum. Polytrichum alpinum. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum intermedium. Hypnum giganteum.*

— 1677. *Tortella tortuosa.*

— 1678. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rufus. Tortella tortuosa. Bryum crispulum. Polytrichum alpinum. Amblystegium filicinum v. tenue. Hypnum intermedium. Hypnum latifolium.*

— 1679. *Schistidium apocarpum f. atrata. Schistidium apocarpum v. ovatum. Campylium stellatum.*

— 1680. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Distichium capillaceum. Aulacomnium turgidum. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum. Hypnum revolutum. Hylocomium proliferum.*

— 1681. *Ditrichum flexicaule. Webera cruda. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Hypnum revolvens. Hypnum intermedium. Hypnum tundræ.*

— 1682. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Encalypta commutata. Encalypta rhabdocarpa. Timmia austriaca. Myurella julacea. Eurhynchium strigosum.*

— 1683. *Lophozia qvinqvedentata. Cephalozia verrucosa. Ditrichum flexicaule. Tortella tortuosa. Schistidium apocarpum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Or-*

thothecium chryseum. Bryum ventricosum. Brachythecium salebrosum. Hypnum intermedium.

Nr. 1684. *Bryum cyclophyllum. Cinclidium subrotundum. Campylium stellatum. Hypnum intermedium. Hypnum latifolium. Hypnum brevifolium. Hypnum polycarpon. Hypnum giganteum.*

— 1685. *Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Mnium affine v. integrifolium. Timmia austriaca. Brachythecium salebrosum. Hypnum intermedium.*

— 1686. *Tortula ruralis. Timmia austriaca. Hypnum revolutum.*

— 1687. *Rhacomitrium lanuginosum.*

— 1688. *Lophozia ventricosa. Ditrichum flexicaule. Webera cruda. Bryum oeneum. Aulacomnium turgidum. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 1689. *Schistidium apocarpum f. epilosa.*

— 1690. *Arnellia fennica. Lophozia ventricosa. Lophozia qvinqvedentata. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Oncophorus virens. Dicranum spadiceum. Distichium capillaceum. Ditrichum flexicaule. Fissidens adianthoides. Webera nutans. Webera cruda. Bryum ventricosum. Mnium orthorrhynchum. Cinclidium subrotundum. Cinclidum hymenophyllum. Aulacomnium turgidum. Meesea triqvetra. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum brevifolium.*

— 1691. *Tortula ruralis. Timmia austriaca. Hypnum revolutum.*

— 1692. *Orthothecium chryseum. Campylium stellatum. Hypnum intermedium. Hypnum brevifolium. Hypnum revolutum. Hylocomium proliferum.*

— 1693. *Ditrichum flexicaule. Tortula ruralis. Rhacomitrium lanuginosum. Eurhynchium strigosum. Orthothecium chryseum. Hypnum revolutum.*

— 1694. *Arnellia fennica. Lophozia qvinqvedentata. Lophozia qvadriloba. Cephalozia verrucosa. Oncophorus virens v. serratus. Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Encalypta commutata. Cinclidium hymenophyllum. Aulacomnium acuminatum. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Ortho-*

thecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum uncinatum.

Nr. 1695. *Distichium capillaceum.*

— 1696. *Orthotrichum Killiasii.*

— 1697. *Tortella tortuosa.*

— 1698. *Lophozia harpanthoides. Plagiochila arctica. Ditrichum flexicaule. Bryum elegans. Timmia austriaca. Orthothecium chryseum. Myurella julacea. Campylium stellatum. Hypnum uncinatum. Hypnum brevifolium.*

— 1699. *Tortula ruralis. Tetraplodon mnioides. Hypnum revolutum v. subjulaceum.*

— 1700. *Sphenolobus minutus. Dicranum groenlandicum. Rhacomitrium lanuginosum.*

— 1701. *Lophozia qvinqvedentata. Oncophorus Wahlenbergii. Ditrichum flexicaule. Distichium capillaceum. Cinclidium subrotundum. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum.*

— 1702. *Bryum obtusifolium.*

— 1703. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum ventricosum. Myurella julacea. Orthothecium chryseum. Hypnum uncinatum.*

— 1704. *Plagiochila arctica. Distichium capillaceum. Ditrichum flexicaule. Cinclidium polare. Cinclidium hymenophyllum. Aulacomnium turgidum. Aulacomnium acuminatum. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum.*

— 1705. *Bryum neodamense v. ovatum. Myurella apiculata. Campylium stellatum. Hypnum brevifolium. Hypnum latifolium.*

— 1706. *Oncophorus Wahlenbergii. Ditrichum flexicaule. Didymodon rubellus. Mnium affine v. integrifolium. Cinclidium subrotundum. Cinclidium hymenophyllum. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Hypnum intermedium. Hypnum polycarpon. Hypnum giganteum.*

— 1707. *Tortula ruralis. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum. Hypnum brevifolium. Hypnum revolutum. Hylocomium proliferum.*

— 1608. *Orthotrichum Killiasii.*

— 1709. *Clevea hyalina. Arnellia fennica. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Cephalozia verrucosa. Ditrichum flexicaule. Didymodon rubellus. Enca-*

lypta rhabdocarpa. Encalypta commutata. Bryum oeneum. Aulacomnium turgidum. Amblystegium filicinum v. curvicaule. Hypnum latifolium.

Nr. 1710. *Ceratodon purpureus. Encalypta commutata. Bryum neodamense v. ovatum. Cinclidium subrotundum. Hypnum brevifolium. Hypnum giganteum.*

— 1711. *Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Diplophyllum incurvum. Didymodon rubellus. Tortella tortuosa. Encalypta commutata. Bryum oeneum. Timmia austriaca. Orthothecium chryseum.*

— 1712. *Lophozia qvinqvedentata. Aulacomnium turgidum. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum.*

— 1713. *Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Encalypta commutata. Bryum crispulum. Bryum Stirtoni. Bryum calophyllum. Mnium affine v. integrifolium. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum v. arcticum. Eurhynchium strigosum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum uncinatum. Hypnum revolutum. Hypnum latifolium. Hypnum giganteum.*

— 1714. *Distichium capillaceum. Didymodon rubellus. Bryum crispulum. Amblystegium filicinum v. tenue. Campylium stellatum. Hypnum latifolium.*

— 1728. *Hypnum revolvens. Hypnum brevifolium. Hypnum giganteum. Hypnum trifarium.*

— 1729. *Hypnum revolvens. Hypnum brevifolium. Hypnum sarmentosum, Hypnum trifarium.*

— 1730. *Oncophorus Wahlenbergii. Orthothecium chryseum.*

— 1731. *Campylium stellatum. Hypnum intermedium. Hypnum brevifolium. Hypnum latifolium. Hypnum turgescens.*

— 1732. *Hypnum revolvens. Hypnum brevifolium. Hypnum latifolium. Hypnum sarmentosum v. acuminatum.*

— 1733. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Encalypta contorta. Encalypta commutata. Cinclidium subrotundum. Timmia norvegica. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum.*

— 1734. *Sphenolobus minutus.*

Nr. 1735. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Cinclidium subrotundum. Timmia austriaca. Orthothecium chryseum. Hypnum uncinatum. Hypnum brevifolium.*

— 1736. *Cephalozia grimsulana. Ceratodon purpureus. Amblystegium filicinum v. tenue. Hypnum brevifolium.*

— 1737. *Arnellia fennica. Distichium capillaceum. Encalypta commutata. Mnium orthorrhynchum. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Hypnum uncinatum.*

— 1738. *Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum oeneum. Mnium affine v. integrifolium. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Brachythecium salebrosum v. arcticum.*

— 1739. *Lophozia Wenzelii. Distichium capillaceum. Didymodon rubellus. Timmia austriaca.*

— 1740. *Didymodon rubellus. Encalypta commutata. Bryum crispulum. Amblystegium filicinum v. curvicaule. Hypnum latifolium.*

— 1741. *Brym teres.*

— 1742. *Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Tortella tortuosa. Bryum neodamense. Mnium affine v. integrifolium. Timmia austriaca. Polytrichum alpinum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum brevifolium.*

— 1743. *Distichium capillaceum. Ditrichum flexicaule. Mnium orthorrhynchum. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum uncinatum. Hypnum intermedium.*

— 1745. *Hypnum latifolium.*

— 1746. *Distichium capillaceum.*

— 1747. *Bryum obtusifolium, Hypnum giganteum.*

— 1748. *Distichium Hagenii. Ceratodon purpureus. Didymodon rubellus. Amblystegium filicinum v. curvicaule. Hypnum brevifolium. Hypnum latifolium. Hypnum turgescens.*

— 1749. *Encalypta commutata. Cinclidium polare. Catascopium nigritum. Timmia anstriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum intermedium. Hypnum brevifolium.*

Nr. 1750. *Lophozia harpanthoides. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Bryum oeneum. Bryum ventricosum. Bryum obtusifolium. Cinclidium subrotundum. Catascopium nigritum. Meesea triqvetra. Philonotis alpicola. Timmia norvegica. Myurella julacea. Orthothecium chryseum. Hypnum brevifolium. Hypnum giganteum.*

— 1751. *Oncophorus Wahlenbergii. Ditrichum flexicaule. Didymodon rubellus. Cinclidium polare. Aulacomnium acuminatum. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum intermedium.*

— 1752. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Bryum ventricosum. Cinclidium subrotundum. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Philonotis alpicola. Hypnum intermedium. Hypnum brevifolium. Hypnum giganteum.*

— 1753. *Lophozia Mülleri. Distichium capillaceum. Ditrichum flexicaule. Bryum elegans. Cinclidium subrotundum. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum intermedium. Hypnum brevifolium.*

— 1754. *Ditrichum flexicaule. Didymodon rubellus. Tortella tortuosa. Cinclidium subrotundum. Meesea trichodes. Orthothecium chryseum. Hypnum latifolium. Hypnum turgescens.*

— 1755. *Ditrichum flexicaule. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens.*

— 1756. *Ditrichum flexicaule. Distichium capillaceum. Cinclidium subrotundum. Philonotis alpicola. Timmia austriaca. Timmia norvegica. Polytrichum alpinum. Orthothecium chryseum. Hypnum intermedium. Hypnum giganteum.*

— 1757. *Distichium capillaceum. Ceratodon purpureus. Mnium orthorrhynchum v. nivale. Timmia bavarica. Timmia austriaca.*

— 1758. *Ceratodon purpureus. Didymodon rubellus. Cinclidium polare. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum intermedium. Hypnum latifolium. Hypnum brevifolium.*

— 1759. *Distichium capillaceum.*

Nr. 1760. *Ditrichum flexicaule. Distichium capillaceum. Tortella tortuosa. Schistidium apocarpum f. epilosa. Bryum crispulum. Hypnum latifolium.*

— 1761. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Encalypta commutata. Cinclidium subrotundum. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Orthothecium strictum. Amblystegium filicinum v. curvicaule. Hypnum latifolium.*

— 1762. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Cinclidium subrotundum. Philonotis alpicola. Timmia norvegica. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum. Campylium stellatum.*

Kong Oscars Land, Havnefjord (syd for Havnen) 3/9 1899.

— 1764. *Ditrichum flexicaule. Hypnum Bambergeri.*

— 1765. *Lophozia excisa. Ditrichum flexicaule. Tortula ruralis. Polytrichum alpinum. Hypnum revolutum.*

— 1766. *Lophozia heterocolpa. Ditrichum flexicaule. Mnium orthorrhynchum. Plagiopus Oederi. Philonotis alpicola. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum Bambergeri.*

— 1767. *Ditrichum flexicaule. Encalypta contorta. Orthothecium rufescens f. minor. Hypnum revolutum. Ctenidium procerrimum.*

— 1768. *Lophozia ventricosa. Cinclidium subrotundum. Timmia norvegica. Orthothecium chryseum.*

— 1769. *Campylium polygamum.*

— 1770. *Ditrichum flexicaule. Schistidium apocarpum f. nigrescens. Hypnum Bambergeri.*

— 1771. *Schistidium apocarpum v. abrupticostatum.*

— 1772. *Ditrichum flexicaule. Cinclidium subrotundum. Catascopium nigritum. Hypnum latifolium. Hypnum intermedium.*

— 1773. *Ditrichum flexicaule. Tortula ruralis. Ctenidium procerrimum.*

— 1774. *Tortula ruralis. Hypnum revolutum.*

— 1775. *Diplophyllum incurvum. Tetraplodon mnioides. Orthothecium chryseum. Hypnum Bambergeri.*

— 1776. *Rhacomitrium lanuginosum. Camptothecium nitens. Hylocomium proliferum.*

Nr. 1777. *Distichium capillaceum. Cinclidium subrotundum. Philonotis alpicola. Meesea triqvetra. Polytrichum strictum. Orthothecium chryseum. Hypnum brevifolium. Hypnum latifolium.*

— 1778. *Ditrichum flexicaule.*

— 1779. *Dicranoweisia crispula. Ditrichum flexicaule. Hypnum intermedium.*

— 1781. *Bryum ventricosum. Cinclidium subrotundum. Philonotis alpicola. Orthothecium chryseum. Hypnum intermedium. Hypnum revolvens. Hypnum giganteum.*

— 1782. *Ditrichum flexicaule. Distichium capillaceum. Blepharostoma trichophyllum.*

— 1783. *Diplophyllum incurvum. Camptothecium nitens. Amblystegium Sprucei. Hypnum Bambergeri.*

— 1784. *Schistidium apocarpum.*

— 1785. *Ditrichum flexicaule. Hypnum Bambergeri.*

— 1786. *Schistidum apocarpum v. abrubticostatum.*

— 1787. *Chomocarpon commutatus. Bryum pallens. Orthothecium chryseum. Hypnum brevifolium.*

— 1788. *Orthothecium strictum.*

— 1789. *Ditrichum flexicaule. Distichium capillaceum. Encalypta apophysata.*

— 1790. *Ditrichum flexicaule. Encalypta contorta. Orthothecium chryseum. Hypnum brevifolium.*

— 1791. *Ditrichum flexicaule. Orthothecium chryseum. Camptothecium nitens. Hypnum Bambergeri.*

Kong Oscars Land, Havnefjord, 7/9 1899.

— 1802. *Cephalozia verrucusa. Aulacomnium palustre.*

— 1803. *Lophozia ventricosa. Cephalozia verrucosa. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Thuidium abietinum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum uncinatum.*

— 1804. *Lophozia Mülleri v. bantryensis. Lophozia harpanthoides. Blepharostoma trichophyllum. Ditrichum flexicaule. Tortula ruralis. Didymodon rubellus. Encalypta rhabdocarpa. Encalypta commutala. Encalypta contorta. Tyloria acuminata. Bryum arcticum. Bryum oeneum. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Myurella apiculata. Orthothecium chryseum. Brachythecium salebrosum v.*

arcticum. Amblystegium filicinum v. tenue. Camptothecium nitens. Campylium stellatum. Hypnum uncinatum.

Nr. 1805. *Didymodon rubellus. Desmatodon suberectus. Tortula ruralis. Encalypta apophysata. Tayloria acuminata. Webera cruda. Bryum pallens. Leptobryum pyriforme. Philonotis alpicola. Timmia austriaca. Thuidium abietinum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. turgidum. Amblystegium Sprucei. Hypnum polycarpon. Hypnum uncinatum.*

— 1806. *Distichium capillaceum. Ceratodon purpureus. Timmia bavarica. Amblystegium Sprucei. Amblystegium filicinum v. tenue. Bryum compactum.*

— 1807. *Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Brachythecium salebrosum v. arcticum.*

— 1808. *Distichiuu capillaceum. Bryum penduliforme. Timmia austriaca. Amblystegium Sprucei.*

— 1809. *Tortula ruralis. Thuidium abietinum. Camptothecium nitens. Brachythecium salebrosum.*

— 1810. *Schistidium apocarpum v. filiforme.*

— 1811. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Mnium medium. Timmia austriaca. Camptothecium nitens. Isopterygium pulchellum. Campylium stellatum. Bryum ventricosum v. hyperboreum.*

— 1812. *Orthotrichum speciosum.*

— 1813. *Tortula ruralis. Schistidium apocarpum.*

— 1814. *Lophozia ventricosa. Distichium capillaceum. Meesea trichodes. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens.*

— 1815. *Tetraplodon mnioides. Hypnum revolutum.*

— 1816. *Tetraplodon mnioides. Hypnum revolutum.*

— 1817. *Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta apophysata. Encalypta rhabdocarpa. Timmia austriaca. Myurella apiculata. Myurella julacea. Orthothecium strictum. Amblystegium Sprucei.*

— 1818. *Lophozia ventricosa. Distichium capillaceum. Tortula ruralis. Cinclidium hymenophyllum. Timmia austriaca. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum. Hypnum revolutum.*

Nr. 1819. *Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Encalypta rhabdocarpa. Encalypta apophysata. Thuidium abietinum. Myurella apiculata. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Campylium stellatum.*

— 1820. *Diplophyllum incurvum. Ditrichum flexicaule. Encalypta apophysata. Timmia austriaca. Myurella julacea. Orthothecium strictum. Brachythecium salebrosum. Amblystegium Sprucei.*

— 1821. *Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum. Hypnum uncinatum.*

— 1822. *Oncophorus virens. Distichium capillaceum. Tortula ruralis. Bryum pallens. Philonotis alpicola. Timmia norvegica. Brachythecium salebrosum v. arcticum. Amblystegium filicinum.*

— 1823. *Webera cruda. Timmia austriaca. Brachythecium salebrosum.*

— 1824. *Ditrichum flexicaule. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 1825. *Thuidium abietinum.*

— 1826. *Webera cruda. Bryum pallens. Bryum oeneum. Encalypta commutata. Timmia bavarica. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum v. articum. Camptothecium nitens. Aublystegium Sprucei. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 1827. *Didymodon rufus. Hypnum revolutum.*

— 1828. *Brachythecium salebrosum. Amblystegium Sprucei.*

— 1829. *Diplophyllum incurvum. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 1830. *Schistidium gracile. Hypnum revolutum.*

Kong Oscars Land, Havnefjord, 11/9 1899.

— 1840. *Lophozia excisa. Cephalozia verrucosa. Bryum ventricosum. Philonotis alpicola. Thuidium abietinum. Camptothecium nitens. Brachythecium salebrosum. Hypnum polycarpon. Hypnum uncinatum v. orthothecioides.*

— 1841. *Distichium capillaceum. Didymodon rubellus. Desmatodon rubellus. Desmatodon suberectus. Encalypta commutata. Encalypta rhabdocarpa. Amblystegium filicinum.*

Nr. 1842. *Tortula ruralis. Orthotrichum speciosum. Orthotrichum alpestre.*

— 1843. *Lophozia badensis. Schistidium apocarpum. Grimmia ovata.*

— 1844. *Encalypta rhabdocarpa.*

— 1845. *Tortula ruralis. Schistidium apocarpum v. filiforme. Orthotrichum Killiasii.*

— 1846. *Thuidium abietinum.*

— 1847. *Didymodon rufus.*

— 1848. *Distichium capillaceum. Didymodon rubellus. Encalypta rhabdocarpa. Bryum compactum. Bryum pendulum. Bryum autumnale. Timmia norvegica. Amblystegium Sprucei. Amblystegium filicinum.*

— 1849. *Gymnostomum rupestre. Amblystegium filicinum.*

— 1850. *Didymodon rubellus. Encalypta rhabdocarpa. Bryum pendulum. Bryum laxirete. Amblystegium filicinum.*

— 1851. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Webera cruda. Thuidium abietinum. Amblystegium Sprucei. Hypnum uncinatum.*

— 1852. *Ceratodon purpureus. Encalypta rhabdocarpa. Bryum compactum. Amblystegium filicinum.*

— 1853. *Lophozia Wenzelii. Tortula ruralis. Orthotrichum speciosum. Thuidium abietinum. Camptothecium nitens. Hypnum uncinatum. Hypnum revolutum.*

— 1854. *Tortula ruralis. Brachythecium salebrosum. Hypnum uncinatum.*

— 1855. *Mnium affine v. integrifolium.*

— 1856. *Lophozia badensis. Distichium capillaceum. Tortula ruralis. Schistidium apocarpum v. filiforme.*

— 1857. *Distichium capillaceum. Ditrichum flexicaule. Webera cruda.*

— 1858. *Distichium capillaceum. Ditrichum flexicaule. Philonotis alpicola. Myurella apiculata. Thuidium abietinum. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum.*

— 1859. *Orthotrichum Killiasii.*

— 1860. *Lophozia harpanthoides. Sphenolobus minutus. Cephalozia verrucosa. Dicranum Bergeri. Timmia austriaca. Campylium stellatum.*

— 1864. *Ditrichum flexicaule. Tortula ruralis. Webera cruda. Amblystegium Sprucei. Hypnum uncinatum.*

— 1865. *Diplophyllum incurvum. Ditrichum flexicaule. Orthothecium strictum. Camptothecium nitens. Isopterygium pulchellum.*

Nr. 1866. *Tetraplodon mnioides.*

— 1867. *Philonotis alpicola. Orthothecium chryseum.*

— 1868. *Distichium capillaceum. Tortella fragilis. Encalypta rhabdocarpa. Schistidium apocarpum. Bryum arcticum. Bryum liliputanum. Bryum parvum. Myurella julacea. Orthothecium chryseum.*

— 1869. *Distichium capillaceum. Tortella fragilis. Bryum nodosum. Cinclidium hymenophyllum. Myurella julacea. Orthothecium strictum.*

— 1905. *Dicranum congestum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Timmia austriaca. Polytrichum alpinum. Polytrichum piliferum.*

Kong Oscars Land, Graham Isl., 5/5 1900 (leg. Schei).

— 1913. *Rhacomitrium lanuginosum.*

Kong Oscars Land, Sydkap, 8/6 1900.

— 1930. *Encalypta rhabdocarpa. Timmia austriaca. Brachythecium salebrosum. Hypnum revolutum.*

— 1931. *Tortula ruralis. Hypnum revolutum.*

— 1932. *Schistidium apocarpum v. filiforme. Orthotrichum Killiasii.*

— 1933. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum v. filiforme. Encalypta rhabdocarpa. Tetraplodon mnioides. Timmia austriaca. Hypnum revolutum.*

— 1934. *Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Campylium stellatum. Hypnum Vaucheri.*

— 1935. *Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Hypnum Vaucheri.*

Kong Oscars Land, Havnefjord, 11/6 1900.

— 1936. *Bryum teres. Timmia norvegica v. excurrens. Timmia austriaca. Amblystegium Sprucei.*

— 1937. *Bryum arcticum v. latiannulatum. Mnium punctatum. Timmia norvegica v. excurrens. Timmia austriaca. Myurella julacea. Amblystegium Sprucei.*

— 1938. *Camptothecium nitens.*

— 1940. *Aulacomnium palustre. Camptothecium nitens.*

— 1941. *Tortula ruralis. Orthotrichum Killiasii. Hypnum uncinatum. Hypnum revolutum. Hypnum revolutum v. subjulaceum.*

Nr. 1942. *Gymnostomum rupestre. Ceratodon purpureus. Bryum pendulum. Thuidium abietinum. Amblystegium filicinum v. curvicaule.*

— 1943. *Distichium capillaceum. Ditrichum flexicaule. Webera nutans. Timmia austriaca. Timmia bavarica. Brachythecium salebrosum.*

— 1944. *Schistidium apocarpum v. filiforme. Orthotrichum Killiasii. Hypnum revolutum.*

— 1945. *Thuidium abietinum. Camptothecium nitens.*

— 1946. *Tortula ruralis. Thuidium abietinum. Camptothecium nitens.*

— 1950. *Tortula ruralis. Distichium capillaceum. Thuidium abietinum. Hypnum revolutum.*

— 1951. *Webera cruda.*

— 1952. *Lophozia Wenzelii. Ditrichum flexicaule. Tortula ruralis. Timmia austriaca. Timmia bavarica. Hypnum uncinatum.*

— 1953. *Ceratodon purpureus. Bryum teres.*

— 1954. *Lophozia ventricosa. Distichium capillaceum. Distichium inclinatum. Mnium hymenophylloides. Philonotis alpicola. Orthothecium rufescens. Orthothecium strictum. Myurella apiculata. Camptothecium nitens. Amblystegium Sprucei.*

— 1955. *Ditrichum flexicaule. Hypnum Bambergeri.*

— 1956. *Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Oncophorus Wahlenbergii. Cinclidium hymenophyllum. Orthothecium rufescens. Hypnum Bambergeri.*

— 1978. *Lophozia ventricosa. Distichium capillaceum. Tortula ruralis. Webera cruda. Timmia bavarica. Timmia norvegica. Brachythecium salebrosum.*

— 1979. *Mnium hymenophylloides. Philonotis alpicola. Myurella apiculata. Orthothecium rufescens. Orthothecium chryseum.*

— 1980. *Webera cruda. Tortula ruralis. Mnium orthorrhynchum. Aulacomnium acuminatum Orthothecium rufescens. Camptothecium nitens. Hypnum uncinatum.*

— 1981. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum v. filiforme. Orthotrichum Killiasii. Hypnum revolutum.*

— 1982. *Schistidium apocarpum. Grimmia ovata.*

— 1983. *Tortula ruralis. Schistidium apocarpum v. filiforme.*

— 1984. *Distichium capillaceum. Didymodon rubellus. Encalypta rhabdocarpa.*

— 1985. *Ditrichum flexicaule. Orthothecium chryseum.*

Nr. 1987. *Gymnostomum læve. Bryum teres. Bryum pendulum. Amblystegium filicinum v. tenue.*

— 1989. *Distichium capillaceum. Timmia norvegica v. excurrens. Timmia austriaca. Myurella julacea. Amblystegium Sprucei.*

— 1990. *Distichium capillaceum. Ditrichum flexicaule. Catascopium nigritum. Orthothecium strictum. Hypnum Bambergeri.*

— 1991. *Ceratodon purpureus. Bryum pendulum. Bryum crispulum.*

— 1992. *Gymnostomum læve.*

Kong Oscars Land, Havnefjord, 18/6 1900.

— 2016. *Dicranoweisia crispula. Distichium capillaceum. Encalypta commutata. Myurella julacea. Myurella apiculata. Orthothecium intricatum. Hypnum Bambergeri.*

— 2017. *Schistidium apocarpum. Schistidium apocarpum v. filiforme. Orthothecium speciosum. Hypnum revolutum.*

— 2018. *Schistidium apocarpum v. filiforme.*

— 2019. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Cephalozia verrucosa. Webera cruda v. minor. Timmia austriaca. Camptothecium nitens. Amblystegium Sprucei. Hypnum revolutum.*

— 2020. *Tortula ruralis. Schistidium apocarpum. Schistidium gracile. Orthotrichum Killiasii.*

— 2021. *Orthotrichum Killiasii.*

— 2027. *Amblystegium filicinum.*

— 2028. *Lophozia ventricosa. Ditrichum flexicaule. Timmia austriaca. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum revolutum.*

— 2029. *Distichium capillaceum. Leptobryum pyriforme. Myurella julacea.*

— 2035. *Ditrichum flexicaule. Pottia latifolia. Encalypta rhabdocarpa.*

— 2043. *Distichium capillaceum. Ditrichum flexicaule. Bryum teres.*

— 2048. *Tortula ruralis.*

— 2049. *Orthotrichum speciosum. Hypnum revolutum.*

— 2058. *Ditrichum flexicaule. Rhacomitrium lanuginosum. Timmia austriaca. Hypnum uncinatum. Hypnum Bambergeri.*

— 2059. *Philonotis alpicola. Orthothecium chryseum.*

— 2060. *Diplophyllum incurvum. Diplophyllum gymnostomophilum. Encalypta rhabdocarpa v. pilifera. Tortula ruralis. Webera*

cruda v. minor. Leptobryum pyriforme. Bryum arcticum. Hypnum uncinatum.

Nr. 2061. *Distichium capillaceum. Distichium inclinatum. Ditrichum flexicaule. Tortella fragilis. Tortella tortuosa. Myurella julacea. Orthothecium strictum. Isopterygium pulchellum. Campylium stellatum.*

Kong Oscars Land, Havnefjord (øst for Havnen), 19/6 1900.

— 2063. *Brachythecium salebrosum v. arcticum. Hypnum Bambergeri.*

— 2064. *Meesea triqvetra. Catascopium nigritum.*

— 2066. *Oncophorus Wahlenbergii. Ditrichum flexicaule. Ctenidium procerrimum.*

— 2067. *Ditrichum flexicaule. Tortula ruralis. Orthotrichum speciosum. Timmia austriaca.*

— 2068. *Ditrichum flexicaule. Tortula ruralis. Encalypta rhabdocarpa. Bryum inclinatum.*

— 2069. *Schistidium apocarpum. Orthotrichum speciosum.*

— 2070. *Diplophyllum incurvum. Distichium capillaceum. Didymodon rubellus. Cinclidium hymenophyllum. Orthothecium chryseum. Orthothecium strictum. Campylium stellatum.*

— 2071. *Tortula ruralis. Orthotrichum speciosum.*

— 2072. *Distichium capillaceum. Tortella fragilis. Myurella apiculata. Campylium stellatum.*

— 2073. *Distichium capillaceum. Leptobryum pyriforme. Campylium stellatum.*

— 2074. *Schistidium gracile v. scabrius.*

Kong Oscars Land, Havnefjord, Stordalen 20/6 1900.

— 2077. *Ditrichum flexicaule. Aulacomnium acuminatum. Philonotis alpicola. Myurella apiculata. Orthothecium chryseum. Isopterygium pulchellum. Amblystegium Sprucei. Campylium stellatum. Hypnum Bambergeri.*

— 2078. *Diplophyllum incurvum. Distichium capillaceum. Mnium orthorrhyncum. Cinclidium hymenophyllum. Timmia austriaca.*

— 2079. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Ceratodon purpureus. Tortula ruralis. Hypnum revolutum. Hypnum polycarpon. Hypnum Bambergeri.*

— 2080. *Hypnum latifolium.*

Nr. 2081. *Ditrichum flexicaule. Orthotrichum Killiasii. Mnium orthorrhynchum. Camptothecium nitens. Hypnum revolutum. Hypnum Bambergeri.*

— 2082. *Webera nutans. Cinclidium polare. Meesea triqvetra. Catascopium nigritum. Orthothecium chryseum. Orthothecium strictum.*

— 2083. *Distichium capillaceum. Tortella tortuosa. Fissidens adianthoides. Ceratodon purpureus. Encalypta commutata. Bryum ventricosum v. synoicum. Orthothecium chryseum. Orthothecium strictum. Campylium stellatum. Hypnum latifolium.*

— 2084. *Plagiochila arctica. Diplophyllum incurvum. Distichium capillaceum. Mnium orthorrhynchum v. nivale. Cinclidium hymenophyllum. Timmia austriaca. Myurella julacea.*

— 2085. *Cinclidium polare. Philonotis alpicola.*

— 2086. *Aplozia atrovirens. Cephalozia verrucosa. Ditrichum flexicaule. Tetraplodon mnioides. Encalypta commutata. Bryum ventricosum v. synoicum. Cinclidium hymenophyllum. Orthothecium strictum.*

— 2087. *Cephalozia verrucosa. Philonotis alpicola. Campylium stellatum.*

Kong Oscars Land, Indre Sydkapfjord, 23/6 1900.

— 2089. *Bryum globosum.*

— 2090. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Tortella fragilis. Tortula ruralis. Bryum tomentosum. Bryum elegans v. carinthiacum. Encalypta rhabdocarpa. Hypnum revolutum v. subjulaceum.*

— 2092. *Ditrichum flexicaule. Didymodon rubellus. Bryum ventricosum. Myurella julacea. Orthothecium strictum. Hypnum Bambergeri.*

— 2093. *Encalypta rhabdocarpa v. pilifera.*

— 2094. *Aplozia atrovirens. Lophozia harpanthoides. Cephalozia pleniceps. Distichium capillaceum. Ditrichum flexicaule. Encalypta rhabdocarpa v. pilifera. Tortella fragilis. Tortula ruralis. Bryum minus. Bryum elegans. Myurella julacea. Orthothecium strictum.*

— 2095. *Blepharostoma trichophyllum. Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Hypnum Bambergeri.*

— 2096. *Tetraplodon mnioides.*

Nr. 2097. *Diplophyllum incurvum. Ditrichum flexicaule. Tortula ruralis. Orthothecium chryseum. Orthothecium strictum. Hypnum Vaucheri. Hypnum Bambergeri.*

— 2098. *Orthothecium chryseum. Hypnum brevifolium.*

Kong Oscars Land, Gaasefjordens Indereid, 17/6 1900.

— 2105. *Bryum obtusifolium. Mnium subglobosum.*

— 2106. *Distichium capillaceum. Didymodon rubellus. Ceratodon purpureus. Bryum elegans. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum Vaucheri.*

— 2108. *Distichium capillaceum. Ditrichum flexicaule. Bryum elegans. Philonotis alpicola. Polytrichum alpinum. Myurella julacea.*

— 2109. *Aplozia polaris. Cephalozia verrucosa. Distichium capillaceum. Ditrichum flexicaule. Tortella tortuosa. Timmia norvegica. Myurella julacea. Orthothecium chryseum.*

Kong Oscars Land, Store Sandør, 29/6 1900.

— 2126. *Didymodon rubellus. Tortula mucronifolia. Myurella julacea.*

Kong Oscars Land, Havnefjord (Sir Ingles Peak), 21/7 1900.

— 2183. *Lophozia ventricosa. Diplophyllum gymnostomophilum. Tetraplodon mnioides. Webera cruda. Webera nutans. Mnium affine. Polytrichum strictum. Myurella apiculata. Isopterygium pulchellum. Hypnum uncinatum. Hylocomium proliferum.*

— 2184. *Lophozia alpestris. Lophozia qvinqvedentata, Dicranum spadiceum. Ditrichum flexicaule. Mnium affine v. integrifolium. Aulacomnium palustre. Aulacomnium turgidum. Timmia austriaca. Polytrichum strictum.*

Kong Oscars Land, Ydre Moskusfjord, 1/7 1900.

— 2217. *Tortula aciphylla. Encalypta rhabdocarpa. Bryum teres. Amblysteginm filicinum v. curvicaule.*

— 2218. *Ceratodon purpureus. Tortula aciphylla. Schistidium gracile.*

Kong Oscars Land, Havnefjord, 24/7 1900.

— 2219. *Lophozia Mülleri v. bantryensis. Lophozia harpanthoides. Lophozia ventricosa. Plagiochila arctica. Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum.*

Cinclidium hymenophyllum. Aulacomnium acuminatum. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum. Orthothecium rufescens. Camptothecium nitens. Isopterygium pulchellum. Campylium stellatum. Hypnum uncinatum. Hypnum Bambergeri. Hylocomium proliferum.

Nr. 2220. *Distichium capillaceum. Distichium inclinatum. Bryum pendulum. Meesea trichodes.*

— 2221. *Grimaldia pilosa. Dichodontium pellucidum. Distichium capillaceum.*

— 2222. *Bryum pendulum.*

Kong Oscars Land, Indre Moskusfjord, 3–5/7 1900.

— 2223. *Ceratodon purpureus. Bryum pendulum v. arctobryoides. Mnium medium. Hypnum polycarpon.*

— 2249. *Orthothecium chryseum. Campylium polygamum. Hypnum intermedium. Hypnum revolvens. Hypnum latifolium. Hypnum brevifolium. Hypnum tundræ. Hypnum giganteum.*

— 2250. *Ctenidium procerrimum.*

— 2251. *Bryum neodamense v. ovatum. Catascopium nigritum. Meesea triqvetra. Orthothecium strictum. Orthothecium chryseum. Campylium stellatum. Hypnum polycarpon. Hypnum latifolium. Hypnum brevifolium. Hypnum giganteum.*

— 2252. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Timmia norvegica. Polytrichum alpinum. Orthothecium chryseum.*

— 2253. *Ditrichum flexicaule. Tortula ruralis. Philonotis alpicola. Hypnum uncinatum. Ctenidium procerrimum.*

— 2254. *Tortella fragilis. Philonotis alpicola. Campylium stellatum.*

— 2255. *Bryum calophyllum. Meesea triqvetra. Amblystegium filicinum v. curvicaule. Hypnum brevifolium.*

— 2256. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Tetraplodon mnioides. Bryum elegans. Cinclidium polare. Philonotis alpicola. Catascopium nigritum. Timmia norvegica. Polytrichum alpinum. Orthothecium strictum. Orthothecium chryseum. Campylium stellatum. Hypnum polycarpon. Hypnum latifolium. Hypnum Vaucheri. Hypnum turgescens.*

— 2257. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Philonotis alpicola. Cata-*

scopium nigritum. Cinclidium subrotundum. Timmia norvegica. Orthothecium chryseum. Hypnum polycarpon.

Nr. 2258. *Distichium capillaceum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

— 2259. *Philonotis alpicola. Timmia austriaca. Orthothecium chryseum.*

— 2260. *Camptothecium nitens. Ctenidium procerrimum.*

— 2261. *Schistidium apocarpum f. epilosa.*

— 2262. *Ditrichum flexicaule. Tortula ruralis. Amblystegium filicinum v. tenue. Hypnum brevifolium. Hypnum revolutum.*

— 2263. *Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Amblysteyium filicinum v. tenue. Hypnum brevifolium. Hypnum latifolium. Hypnum revolutum.*

— 2264. *Voitia hyperborea. Tetraplodon mnioides. Bryum neodamense v. ovatum. Bryum pendulum. Cinclidium subrotundum. Orthothecium chryseum. Orthothecium strictum. Hypnum brevifolium. Hypnum latifolium. Hypnum giganteum.*

— 2265. *Voitia hyperborea. Ditrichum flexicaule. Ceratodon purpureus. Bryum campylocarpum v. arcticum. Bryum arcticum. Bryum pendulum. Orthothecium strictum. Orthothecium chryseum. Amblystegium filicinum. Hypnum brevifolium.*

— 2266. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Tortula aciphylla. Encalypta commutata. Bryum articum. Bryum terrestre. Bryum tomentosum. Bryum elegans. Cinclidium subrotundum. Cinclidium polare. Catascopium nigritum. Myurella julacea. Orthothecium chryseum. Amblystegium filicinum v. curvicaule Hypnum brevifolium. Hypnum revolutum.*

— 2267. *Voitia hyperborea. Ceratodon purpureus. Didymodon rubellus. Encalypta contorta. Encalypta rhabdocarpa. Tetraplodon mniodes. Bryum peudulum. Bryum elegans. Bryum arcticum. Orthothecium chryseum. Hypnum intermedium.*

— 2269. *Didymodon rubellus. Encalypta commutata. Voitia hyperborea. Bryum arcticum. Bryum cirratum. Myurella julacea. Orthothecium strictum. Amblystegium filicinum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum intermedium. Hypnum latifolium.*

Nr. 2270. *Distichium capillaceum. Ceratodon purpureus. Desmatodon suberectus. Tortula mucronifolia. Tetraplodon mnioides. Bryum pendulum. Bryum tomentosum. Bryum tomentosum v. subsphæricum. Hypnum tundræ.*

— 2271. *Bryum teres. Cinclidium subrotundum. Cinclidium polare. Philonotis alpicola. Timmia norvegica.*

— 2272. *Distichium capillaceum. Ceratodon purpureus. Voitia hyperborea. Bryum arcticum. Amblystegium filicinum v. tenue.*

— 2273. *Ditrichum flexicaule. Didymodon rufus. Hypnum revolutum.*

— 2274. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Bryum calophyllum. Bryum tomentosum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum brevifolium. Hypnum latifolium. Hypnum revolutum.*

— 2275. *Voitia hyperborea. Amblystegium filicinum v. curvicaule. Hypnum latifolium. Hypnum brevifolium.*

— 2276. *Distichium copillaceum. Schistidium apocarpum f. epilosa. Bryum pendulum. Hypnum latifolium.*

— 2277. *Arnellia fennica. Lophozia alpestris. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum brevifolium.*

— 2278. *Tortula mucronifolia. Encalypta commutata.*

— 2279. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta commutata. Bryum pendulum. Bryum neodamense. Amblystegium filicinum. Amblystegium filicinum v. tenue. Campylium stellatum. Hypnum brevifolium. Hypnum latifolium. Hypnum revolutum.*

— 2280. *Distichium capillaceum. Ditrichum flexicaule. Hypnum brevifolium. Hypnum Vaucheri.*

— 2281. *Arnellia fennica. Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Tortella fragilis. Myurella julacea. Hypnum intermedium. Hypnum polycarpon. Hypnum Vaucheri.*

Nr. 2282. *Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta rhabdocarpa. Bryum calophyllum. Camptothecium nitens. Amblystegium filicinum v. curvicaule.*

— 2283. *Distichium capillaceum. Didymodon rubellus. Cinclidium polare. Philonodis alpicola. Timmia norvegica. Myurella julacea. Campylium stellatum. Hypnum latifolium. Hypnum brevifolium.*

— 2284. *Bryum calophyllum. Amblystegium filicinum v. curvicaule.*

— 2285. *Catascopium nigritum. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum latifolium. Hypnum brevifolium.*

— 2286. *Camptothecium nitens. Hypnum polycarpon. Hypnum brevifolium.*

— 2287. *Ditrichum flexicaule. Catascopium nigritum.*

— 2288. *Distichium capillaceum. Encalypta commutata. Voitia hyperborea. Tetraplodon mniodes. Bryum calophyllum. Bryum tomentosum. 'Bryum arcticum. Bryum globosum. Bryum pendulum.*

— 2289. *Ditrichum flexicaule. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Hypnum brevifolium.*

— 2290. *Distichium capillaceum. Cinclidium subrotundum. Cinclidium polare. Cinclidium arcticum. Catascopium nigritum. Hypnum latifolium.*

— 2291. *Distichium capillaceum. Ditrichum flexicaule. Hypnum revolutum.*

— 2292. *Distichium capillaceum. Distichium Hagenii. Pottia Heimii. Ceratodon purpureus. Didymodon rubellus. Tortula mucronifolia. Voitia hyperborea. Bryum pendulum. Bryum calophyllum. Bryum teres. Bryum tomentosum. Myurella julacea. Orthotheceum strictum. Amblystegium filicinum. Campylium stellatum. Hypnum brevifolium.*

— 2293. *Bryum teres. Bryum tomentosum. Bryum arcticum. Bryum corioideum.*

— 2296. *Ditrichum flexicaule. Tortula ruralis. Encalypta contorta. Voitia hyperborea. Bryum pendulum. Cinclidium subrotundum. Myurella julacea. Camptothecium nitens. Amblystegium filicinum v. curvicaule. Hypnum latifolium. Hypnum tundræ. Hypnum Bambergeri. Hypnum revolutum.*

— 2297. *Lophozia heterocolpa. Lophozia ventricosa. Ditrichum flexicaule. Orthothecium chryseum. Orthothecium strictum. Hypnum Vaucheri.*

Nr. 2298. *Ditrichum flexicaule. Ceratodon purpureus. Didymodon rufus. Hypnum Bambergeri.*

— 2299. *Bryum obtusifolium.*

— 2300. *Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Didymodon rufus. Didymodon rubellus. Bryum ventricosum. Cinclidium subrotundum. Philonotis alpicola. Orthothecium chryseum. Orthothecium strictum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Myurella apiculata. Campylium stellatum. Hypnum latifolium. Hypnum revolvens. Hypnum turgescens. Hypnum Bambergeri. Hypnum giganteum. Hypnum hamulosum.*

— 2301. *Bryum calophyllum. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum Cossoni. Hypnum tundræ. Hypnum palustre.*

— 2302. *Schistidium gracile f. epilosa.*

— 2303. *Ceratodon purpureus.*

— 2304. *Didymodon rubellus. Bryum ventricosum. Orthothecium chryseum. Amblystegium filicinum v. tenue. Hypnum latifolium. Hypnum Bambergeri.*

— 2305. *Distichium inclinatum. Didymodon rubellus. Tortula ruralis. Encalypta contorta. Hypnum Bambergeri.*

— 2306. *Ditrichum flexicaule. Didymodon rufus. Philonotis alpicola.*

— 2307. *Arnellia fennica. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Voitia hyperborea. Tortella fragilis. Tortula ruralis. Didymodon rubellus. Tortula mucronifolia. Aloina rigida. Tetraplodon mniodes. Encalypta rhabdocarpa. Bryum oeneum. Bryum arcticum. Bryum pendulum. Bryum hyperboreum. Bryum pallescens. Myurella julacea. Orthothecium chryseum. Orthothecium strictum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum polycarpon. Hypnum uncinatum. Hypnum Bambergeri.*

Kong Oscars Land; Havnefjord (Sir Ingles Peak) 21/7 1900.

— 2309. *Tortella tortuosa.*

— 2310. *Lophozia ventricosa. Lophozia qvinqvedentata. Dicranum spadiceum. Ditrichum flexicaule. Webera nutans.*

— 2311. *Sphenolobus minutus. Dicranum congestum.*

— 2312. *Cinclidium arcticum. Hypnum Bambergeri.*

— 2313. *Sphenolobus minutus. Dicranum sphagni.*

Nr. 2316. *Lophozia qvinqvedentata. Dicranum congestum. Dicranum sphagni. Rhacomitrium lanuginosum. Aulacomnium turgidum.*

— 2317. *Orthothecium chryseum.*

— 2318. *Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Mnium affine v. integrifolium. Cinclidium hymenophyllum. Aulacomnium turgidum. Aulacomnium palustre. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum. Hylocomium proliferum.*

— 2319. *Diplophyllum gymnostomophilum. Schistidium apocarpum. Hypnum Bambergeri.*

— 2320. *Lophozia qvinqvedentata. Ditrichum flexicaule. Cinclidium arcticum. Aulacomnium turgidum. Orthothecium chryseum.*

— 2321. *Tetraplodon mniodes. Webera nutans. Aulacomnium turgidum. Polytrichum alpinum.*

— 2322. *Tortula ruralis. Mnium affine v. integrifolium. Polytrichum alpinum. Brachythecium salebrosum. Eurhynchium strigosum. Hypnum uncinatum. Hypnum revolutum.*

— 2323. *Distichium capillaceum.*

Kong Oscars Land; Havnefjord (Stordalen) 26/7 1900.

— 2352. *Bryum ventricosum. Camptothecium nitens.*

— 2353. *Amblystegium filicinum v. tenue.*

— 2354. *Tortella tortuosa.*

— 2355. *Riccardia pinqvis. Ditrichum flexicaule. Distichium capillaceum. Tortella tortuosa. Cinclidium arcticum. Meesea triqvetra. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Campylium stellatum. Hypnum intermedium. Hypnum giganteum.*

— 2356. *Meesea triqvetra. Hypnum intermedium. Hypnum giganteum.*

— 2357. *Cinclidium subrotundum. Hypnum polycarpon. Hypnum latifolium. Hypnum brevifolium.*

— 2358. *Riccardia pinqvis. Didymodon rubellus. Bryum laxirete. Cinclidium arcticum. Catascopium nigritum. Aulacomnium acuminatum. Philonotis alpicola. Timmia norvegica. Myurella apiculata. Hypnum intermedium.*

— 2359. *Aplozia polaris. Fissidens adianthoides. Distichium capillaceum. Didymodon rubellus. Tortella tortuosa. Meesea triqvetra. Myurella julacea. Myurella apiculata.*

Nr. 2360. *Cinclidium subrotundum. Meesea triqvetra. Hypnum intermedium. Hypnum giganteum.*

— 2361. *Tortella fragilis Tortella tortuosa. Cinclidium subrotundum. Catascopium nigritum. Meesea triqvetra. Hypnum revolvens. Hypnum intermedium. Hypnum latifolium. Hypnum brevifolium.*

— 2362. *Riccardia pingvis. Ditrichum flexicaule. Cinclidium polare. Aulacomnium acuminatum. Meesea triqvetra. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Campylium stellatum. Hypnum revolvens. Hypnum intermedium.*

— 2363. *Riccardia pingvis. Encalypta commutata. Bryum ventricosum. Cinclidium subrotundum. Aulacomnium acuminatum. Myurella apiculata. Orthothecium chryseum. Amblystegium Sprucei. Hypnum intermedium. Hypnum giganteum.*

Kong Oscars Land; Havnefjord (Ødedalene) 28/7 1900.

— 2403. *Ceratodon purpureus. Tortula mucronifolia. Tortula ruralis. Tetraplodon mnioides. Bryum pallens. Bryum globosum.*

— 2404. *Funaria polaris.*

— 2405. *Funaria polaris. Leptobryum pyriforme. Bryum ventricosum. Brachythecium salebrosum v. turgidum.*

— 2406. *Haplodon Wormskjoldii. Bryum globosum.*

— 2407. *Lophozia qvinqvedentata. Tetraplodon mnioides. Bryum ventricosum. Bryum globosum. Bryum pendulum. Orthothecium rufescens. Brachythecium salebrosum v. turgidum. Campylium stellatum. Hypnum Bambergeri.*

— 2408. *Catascopium nigritum.*

— 2409. *Seligeria polaris.*

— 2411. *Tortula mucronifolia. Schistidium gracile. Encalypta procera. Orthothecium chryseum. Campylium stellatum. Hypnum Bambergeri.*

— 2412. *Tortula mucronifolia. Funaria polaris. Bryum nitidulum v. fenestratum. Bryum pendulum. Bryum globosum.*

— 2413. *Ditrichum flexicaule. Encalypta rhabdocarpa. Brachythetecium salebrosum v. turgidum.*

— 2414. *Bryum ventricosum. Brachythecium salebrosum v. turgidum.*

— 2415. *Ditrichum flexicaule. Voitia hyperborea. Cinclidium subrotundum. Orthothecium chryseum. Hypnum Bambergeri.*

— 2417. *Hypnum Bambergeri.*

Kong Oscars Land; Havnefjord (Sir Ingles Peak) 1/8 1900.

Nr. 2451. *Arnellia fennica. Blepharostoma trichophyllum. Ditrichum flexicaule, Distichium capillaceum. Tortula ruralis. Encalypta rhabdocarpa. Webera nutans. Bryum pallens. Mnium Blyttii. Mnium affine. Cinclidium hymenophyllum. Cinclidium polare. Cinclidium subrotundum. Meesea trichodes. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Eurhynchium strigosum. Amblystegium Sprucei.*

— 2452. *Arnellia fennica. Blepharostoma trichophyllum. Ditrichum flexicaule. Tortula ruralis. Tortella fragilis. Mnium Blyttii. Mnium affine. Cinclidium polare. Cinclidium subrotundum. Cinclidium hymenophyllum. Meesea trichodes. Catascopium nigritum. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum polycarpon. Hypnum Bambergeri.*

Kong Oscars Land; Havnefjord (Sjødalen) 3/8 1900.

— 2465. *Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum. Hylocomium proliferum.*

— 2466. *Ditrichum flexicaule. Distichium Hagenii. Ceratodon purpureus, Didymodon rubellus. Desmatodon suberectus. Encalypta rhabdocarpa. Webera cruda. Bryum pendulum. Bryum arcticum. Myurella apiculata. Isopterygium pulchellum. Hypnum Bambergeri.*

— 2467. *Bryum crispulum. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum.*

— 2468. *Bryum crispulum. Hypnum Bambergeri.*

— 2469. *Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Hypnum revolvens. Hypnum brevifolium. Hypnum latifolium. Hypnum giganteum.*

— 2470. *Sphenolobus minutus. Dicranum spadiceum.*

— 2471. *Campylium stellatum.*

— 2472. *Rhacomitrium canescens.*

— 2473. *Ditrichum flexicaule f. longifolia.*

— 2474. *Orthothecium chryseum. Campylium stellatum. Hypnum tundræ.*

— 2475. *Schistidium apocarpum. Grimmia ovata. Webera cruda.*

Nr. 2476. *Sphenolobus minutus. Dicranum fuscescens. Dicranum elongatum. Webera cruda. Isopterygium pulchellum.*

— 2480. *Schistidium apocarpum f. epilosa. Schistidium apocarpum v. ovatum.*

— 2481. *Hypnum palustre.*

— 2482. *Lophozia qvadriloba v. heterophylla. Diplophyllum gymnostomophilum. Schistidium apocarpum. Rhacomitrium lanuginosum. Hypnum Bambergeri. Hypnum revolutum. Hypnum hamulosum.*

— 2483. *Ditrichum flexicaule f. longifolia.*

— 2484. *Schistidium apocarpum. Grimmia ovata.*

— 2490. *Schistidium apocarpum v. ovatum.*

— 2491. *Gymnostomum læve.*

— 2492. *Hypnum uncinatum.*

— 2493. *Sphenolobus minutus. Dicranum sphagni.*

— 2494. *Tortella tortuosa.*

— 2495. *Ditrichum flexicaule. Hypnum revolutum.*

— 2496. *Tetraplodon mnioides. Cinclidium polare. Orthothecium chryseum. Camptothecium nitens,*

— 2497. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Encalypta commutata. Timmia austriaca. Polytrichum alpinum. Campylium stellatum. Hypnum uncinatum.*

— 2498. *Orthotrichum speciosum.*

— 2499. *Lophozia badensis. Lophozia ventricosa. Ptilidium ciliare. Odontoschisma Macounii. Scapania Simmonsii. Oncophorus Wahlenbergii. Ditrichum flexicaule. Rhacomitrium lanuginosum. Cinclidium hymenophyllum. Aulacomninm acuminatum. Orthothecium chryseum. Camptothecium nitens. Hypnum Bambergeri.*

— 2500. *Lophozia ventricosa. Lophozia violascens. Arnellia fennica. Blepharostoma trichophyllum. Cephalozia verrucosa. Bazzania triangularis. Ditrichum flexicaule. Cinclidium polare. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum Bambergeri. Hypnum revolutum.*

— 2501. *Blepharostoma trichophyllum. Anthelia Juratzkana. Odontoschisma Macounii. Ditrichum flexicaule. Distichium capillaceum. Rhacomitrium lanuginosum. Timmia austriaca. Orthothecium chryseum.*

Nr. 2502. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Ptilidium ciliare. Blepharostoma trichophyllum. Odontoschisma Macounii. Ditrichum glaucescens. Ditrichum flexicaule. Distichium capillaceum. Schistidium apocarpum v. ovatum. Rhacomitrium lanuginosum. Encalypta commutata. Webera cruda. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum uncinatum. Hypnum revolutum. Hylocomium proliferum.*

— 2503. *Sphenolobus minutus. Plagiochila arctica. Ptilidium ciliare. Blepharostoma trichophyllum. Odontoschisma Macounii. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Schistidium apocarpum. Grimmia ovata. Encalypta commutata. Encalypta contorta. Webera nutans. Cinclidium polare. Cinclidium hymenophyllum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum Bambergeri.*

— 2532. *Sphenolobus minutus. Dicranum brevifolium. Timmia austriaca.*

— 2533. *Distichium capillaceum.*

— 2534. *Dicranum groenlandicum.*

— 2547. *Tortula mucronifolia.*

— 2548. *Plagiochila arctica. Oncophorus Wahlenbergii. Ditrichum flexicaule. Distichium inclinatum. Bryum tomentosum. Orthothecium chryseum.*

— 2549. *Rhacomitrium lanuginosum.*

— 2550. *Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Hypnum Bambergeri.*

— 2551. *Clevea hyalina. Chomocarpon commutatus. Distichium capillaceum. Didymodon rubellus. Orthothecium chryseum. Hypnum latifolium.*

Kong Oscars Land; Havnefjord 6/8 1900.

— 2559. *Cephalozia biloba. Aulacomnium palustre. Brachythecium salebrosum v. arcticum.*

— 2560. *Oncophorus Wahlenbergii. Aulacomnium palustre.*

— 2561. *Lophozia heterocolpa. Blepharostoma trichophyllum. Didymodon rufus. Cinclidium subrotundum. Plagiopus Oederi.*

Myurella julacea. Orthothecium chryceum. Camptothecium nitens. Campylium stellatum. Hypnum Bambergeri.

Nr. 2562. *Distichium capillaceum. Tortula ruralis. Timmia austriaca. Camptothecium nitens.*

— 2564. *Gymnostomum rupestre. Ceratodon purpureus. Encalypta procera. Myurella julacea. Myurella apiculata. Amblystegium filicinum v. tenue.*

— 2567. *Lophozia ventricosa. Lophozia qvinqvedentata. Dicranum spadiceum. Webera cruda. Webera nutans. Mnium affine v. integrifolium. Aulacomnium turgidum. Timmia austriaca. Hypnum uncinatum. Hylocomium proliferum.*

— 2568. *Lophozia qvinqvedentata. Aulacomnium turgidum. Timmia austriaca. Hypnum uncinatum. Hylocomium proliferum.*

— 2570. *Schistidium apocarpum.*

Kong Oscars Land; Havnefjord (Maageberget) 8/8 1900.

— 2592. *Ceratodon purpureus. Bryum ventricosum. Mnium affine v. integrifolium. Philonotis cœspitosa. Brachythecium salebrosum.*

— 2593. *Ceratodon purpureus. Amblystegium filicinum v. tenue.*

— 2594. *Mnium affine v. integrifolium.*

Kong Oscars Land; Havnefjord (Spadnæs) 8/8 1900.

— 2607. *Sphenolobus minutus. Dicranum elongatum.*

— 2608. *Lophozia qvinqvedentata. Dicranum spadiceum. Timmia austriaca. Hypnum uncinatum.*

— 2609. *Lophozia qvinqvedentata. Timmia austriaca. Polytrichum alpinum.*

— 2610. *Chomocarpon commutatus. Encalypta commutata. Polytrichum alpinum. Orthothecium chryseum.*

— 2614. *Lophozia qvinqvedentata. Dicranum sphagni. Webera cruda.*

— 2615. *Lophozia qvadriloba v. heterophylla. Odontoshisma Macounii. Mnium hymenophylloides. Myurella apiculata.*

— 2616. *Lophozia qvinqvedentata. Ptilidium ciliare. Distichium capillaceum. Tortella tortuosa. Mnium orthorrhynchum. Plagiopus Oederi. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

Kong Oscars Land; Havnefjord (Maageberget 8/8 1900.

Nr. 2617. *Ditrichum flexicaule. Orthothecium chryseum. Ctenidium procerrimum.*

— 2618. *Bryum ventricosum. Mnium affine v. integrifolium. Philonotis cœspitosa. Brachythecium salebrosum. Hypnum revolutum.*

— 2619. *Distichium capillaceum. Mnium affine v. integrifolium. Camptothecium nitens. Brachythecium salebrosum. Amblystegium filicinum v. tenue.*

— 9620. *Ceratodon purpureus. Tortula ruralis. Bryum elegans. Mielichhoferia Porsildii. Mnium affine v. integrifolium. Timmia bavarica. Hypnum revolutum.*

— 2621. *Brachythecium salebrosum v. arcticum. Hypnum uncinatum.*

— 2622. *Distichium capillaceum. Timmia bavarica.*

North Devon 11/8 1900.

— 2633. *Schistidium gracile f. epilosa.*

— 2634. *Ditrichum flexicaule. Tortula ruralis. Didymodon rubellus. Bryum teres. Bryum crispulum. Timmia norvegica. Amblystegium filicinum v. curvicaule. Hypnum polycarpon. Hypnum turgescens.*

— 2635. *Bryum calophyllum. Bryum obtusifolium. Bryum paganum. Hypnum tundræ. Hypnum turgescens.*

— 2636. *Aplozia atrovirens v. gracilis. Ditrichum flexicaule. Didymodon rubellus. Bryum cyclophyllum. Bryum neodamense v. ovatum. Bryum elegans. Encalypta commutata. Timmia norvegica. Campylium stellatum. Hypnum uncinatum. Hypnum turgescens.*

— 2642. *Hypnum tundræ.*

— 2643. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta rhabdocarpa. Bryum arcticum. Timmia norvegica. Myurella julacea. Myurella apiculata. Orthothecium chryseum.*

— 2644. *Desmatodon suberectus.*

— 2645. *Didymodon rubellus. Desmatodon suberectus. Bryum elegans. Timmia norvegica. Myurella julacea. Orthothecium strictum. Brachythecium salebrosum. Amblystegium Sprucei. Amblystegium filicinum v. tenue. Hypnum Bambergeri.*

Nr. 2646. *Distichium capillaceum. Orthothecium strictum. Hypnum Bambergeri.*

Kong Oscars Land; Hyperitodden 7/6 1901.

— 2757. *Lophozia qvinqvedentata. Webera nutans.*

— 2758. *Webera nutans. Bartramia ityphylla v. strigosa.*

— 2759. *Tetraplodon mnioides. Bartramia ityphylla v. strigosa.*

— 2760. *Sphenolobus minutus. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Aulacomnium turgidum. Polytrichum alpinum.*

— 2761. *Lophozia qvinqvedentata. Arnellia fennica. Sphenolobus minutus. Dicranum spadiceum.*

Kong Oscars Land; Gaasefjord (Galgeodden) 24/6 1901.

— 2767. *Ditrichum flexicaule. Didymodon rufus. Bryum elegans Hypnum revolutum.*

— 2768. *Rhacomitrium lanuginosum.*

— 2769. *Ditrichum flexicaule. Ceratodon purpureus. Didymodon alpigena. Bryum ventricosum. Myurella julacea. Orthothecium chryseum. Campylium stellatum. Hypnum latifolium. Hypnum tundræ. Hypnum turgescens.*

— 2770. *Ditrichum flexicaule. Rhacomitrium lanuginosum. Webera nutans. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum.*

— 2771. *Ditrichum flexicaule. Didymodon rubellus. Didymodon rufus. Bryum ventricosum. Myurella julacea. Orthothecium chryseum. Hypnum polycarpon. Hypnum latifolium. Hypnum brevifolium.*

— 2772. *Ditrichum flexicaule. Desmatodon systylius. Tortula ruralis. Schistidium gracile. Rhacomitrium lanuginosum. Rhacomitrium canescens. Eurhynchium cirrosum. Amblystegium filicinum v. curvicaule. Hypnum revolutum v. subjulaceum. Ctenidum procerrimum.*

— 2773. *Dicranoweisia crispula.*

— 2774. *Ditrichum flexicaule. Distichium Hagenii. Ceratodon purpureus. Encalypta procera. Bryum ventricosum. Timmia norvegica. Myurella julacea. Hypnum latifolium. Hypnum brevifolium. Hypnum tundræ.*

— 2777. *Hypnum brevifolium. Hypnum turgescens.*

Kong Oscars Land; Indre Gaasefjord 23/6 1900.

Nr. 2778. *Distichium capillaceum. Didymodon rubellus. Bryum ventricosum. Amblystegium filicinum v. curvicaule. Brachythecium salebrosum v. arcticum. Hypnum revolutum. Hypnum Vaucheri.*

— 2779. *Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Distichium Hagenii. Didymodon rubellus. Tortula ruralis. Webera cruda. Aulacomnium turgidum. Timmia austriaca. Isopterygium pulchellum. Hypnum uncinatum. Hypnum revolutum.*

— 2780. *Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Aulacomnium turgidum. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum hamulosum. Hylocomium proliferum.*

— 2781. *Lophozia Wenzelii. Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Webera cruda. Aulacomnium turgidum. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium Sprucei.*

— 2782. *Lophozia heterocolpa. Lophozia harpanthoides. Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Dicranum spadiceum. Rhacomitrium lanuginosum. Aulacomnium turgidum. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum revolvens. Hypnum uncinatum. Hypnum hamulosum.*

— 2783. *Oncophorus virens. Ditrichum flexicaule. Webera nutans. Cinclidium arcticum. Cinclidium subrotundum. Meesea triqvetra. Timmia norvegica. Orthothecium intricatum. Orthothecium chryseum. Hypnum brevifolium. Hypnum latifolium. Hypnum intermedium. Hypnum giganteum. Hypnum sarmentosum.*

— 2784. *Aplozia atrovirens v. gracilis. Lophozia ventricosa. Arnellia fennica. Blepharostoma trichophyllum. Cephalozia verrucosa. Scapania Simmonsii. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Tortella tortuosa. Encalypta commutata. Philonotis alpicola. Timmia austriaca.*

Myurella apiculata. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Isopterygium pulchellum.

Nr. 2785. *Aplozia polaris. Cephalozia verrucosa. Diplophyllum incurvum. Fissidens impar. Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Seligeria polaris. Didymodon rubellus. Tortula mucronifolia. Encalypta commutata. Voitia hyperborea. Bryum oeneum. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum.*

— 2786. *Aplozia atrovirens v. gracilis. Blepharostoma trichophyllum. Diplophyllum incurvum. Gymnostomum rupestre. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Tortula ruralis. Schistidium apocarpum. Encalypta contorta. Webera cruda. Bryum oeneum. Philonotis alpicola. Aulacomnium turgidum. Timmia austriaca. Timmia norvegica. Myurella apiculata. Myurella julacea. Orthothecium acuminatum. Orthothecium chryseum. Hypnum Cossoni. Hypnum latifolium. Hypnum tundræ. Hypnum turgescens. Hypnum revolutum.*

— 2787. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Cephozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta contorta. Webera nutans. Bryum arcticum. Bryum elegans. Cinclidium subrotundum. Cinclidium hymenophyllum. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Hypnum revolvens. Hypnum uncinatum. Hypnum hamulosum. Hylocomium proliferum.*

— 2788. *Cephalozia verrucosa. Dicranum congestum. Ditrichum flexicaule. Schistidium apocarpum. Rhacomitrium lanuginosum. Hypnum uncinatum. Hypnum hamulosum. Hylocomium proliferum.*

— 2789. *Schistidium apocarpum.*

— 2790. *Arnellia fennica. Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Myurella*

apiculata. Orthothecium chryseum. Hypnum uncinatum. Hylocomium proliferum.

Nr. 2791. *Dichodontium pellucidum. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta commutata. Bryum ventricosum. Campylium stellatum. Hypnum revolvens. Hypnum Cossoni. Hypnum turgescens.*

— 2792. *Hypnum revolutum.*

— 2793. *Aplozia atrovirens v. gracilis. Didymodon rubellus.*

— 2794. *Hypnum Cossoni.*

— 2795. *Ceratodon purpureus. Didymodon rubellus. Encalypta commutata. Hypnum turgescens.*

— 2796. *Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum ventricosum. Catascopium nigritum. Timmia norvegica. Campylium stellatum. Hypnum Cossoni. Hypnum latifolium. Hypnum turgescens.*

— 2797. *Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Camptothecium nitens. Brachythecium salebrosum. Aulacomnium turgidum. Hypnum hamulosum. Hylocomium proliferum.*

— 2798. *Blepharostoma trichophyllum. Ceratodon purpureus. Distichium capillaceum.*

— 2799. *Ditrichum flexicaule. Distichium capilleceum. Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Webera nutans. Timmia austriaca. Polytrichum alpinum. Hypnum revolutum.*

— 2800. *Gymnostomum læve.*

— 2801. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Cephalozai verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Didymodon rubellus. Aulacomnium turgidum. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Hypnum revolvens. Hypnum uncinatum. Hypnum brevifolium. Hypnum Bambergeri. Hypnum hamulosum. Hylocomium proliferum.*

— 2807. *Marchantia polymorpha. Mnium affine v. integrifolium.*

Kong Oscars Land; Midtre Gaasefjord 21/7 1901.

— 2944. *Hypnum brevifolium. Hypnum giganteum.*

Nr. 2945. *Ditrichum flexicaule. Tortula ruralis. Bryum cirratum. Bryum stenodon. Mnium affine. Timmia austriaca.*

— 2946. *Bryum ventricosum. Mnium affine. Polytrichum alpinum. Orthothecium chryseum. Hypnum brevifolium. Hypnum giganteum.*

— 2947. *Tortella tortuosa.*

— 2948. *Ditrichum flexicaule. Distichium capillaceum. Cinclidium subrotundum. Hypnum latifolium.*

— 2949. *Tortula ruralis. Campylium stellatum. Hypnum brevifolium. Hypnum latifolium.*

— 2950. *Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum latifolium.*

— 2951. *Lophozia qvadriloba v. heterophylla. Distichium capillaceum. Encalypta rhabdocarpa. Mnium affine. Mnium orthorrhynchum. Timmia austriaca. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 2952. *Lophozia harpanthoides. Lophozia murmanica. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Desmatodon suberectus. Tortula ruralis. Encalypta procera. Bryum cirratum. Mnium orthorrhynchum. Mnium affine. Timmia austriaca. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 2953. *Distichium capillaceum. Didymodon rubellus. Mnium affine. Timmia norvegica. Timmia austriaca. Campylium stellatum. Hypnum latifolium.*

— 2954. *Hypnum brevifolium f. fluitans.*

— 2955. *Bryum calophyllum. Bryum neodamense v. ovatum. Cinclidium subrotundum. Meesea triqvetra. Hypnum brevifolium. Hypnum giganteum.*

— 2956. *Blepharostoma trichophyllum. Cephalozia grimsulana. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Campylium stellatum. Hypnum polycarpon. Hypnum latifolium.*

— 2957. *Bryum calophyllum. Mnium subglobosum. Campylium stellatum. Hypnum brevifolium.*

— 2958. *Distichium capillaceum. Ceratodon purpureus. Haplodon Wormskjoldii. Bryum micans. Bryum pendulum. Cinclidium arcticum. Orthothecium chryseum. Brachythecium salebrosum v. turgidum. Hypnum intermedium.*

Nr. 2959. *Schistidium apocarpum.*

Kong Oscars Land, Excrementodden 15/7 1901.

— 2962. *Schistidium apocarpum v. ovatum.*

— 2963. *Encalypta contorta. Encalypta rhabdocarpa. Orthothecium chryseum. Hypnum Bambergeri.*

Kong Oscars Land, Ydre Gaasefjord (Maageberget) 17/7 1901.

— 2964. *Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 2965. *Ditrichum flexicaule. Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum uncinatum.*

— 2966. *Tortula ruralis. Schistidium apocarpum. Orthotrichum speciosum. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum. Hypnum revolutum.*

— 2967. *Schistidium apocarpum.*

— 2968. *Ditrichum flexicaule. Tortula ruralis. Encalypta rhabdocarpa. Mnium orthorrhynchum. Camptothecium nitens. Hypnum uncinatum. Hypnum revolutum. Ctenidium procerrimum. Hylocomium proliferum.*

— 2969. *Arnellia fennica. Encalypta rhabdocarpa. Bryum teretinerve. Amblystegium filicinum v. curvicaule.*

— 2970. *Arnellia fennica. Ditrichum flexicaule. Schistidium gracile. Hypnum revolutum.*

— 2971. *Ctenidium procerrimum.*

— 2972. *Hypnum Bambergeri.*

— 2973. *Tortula ruralis. Hypnum uncinatum.*

— 2974. *Hypnum uncinatum.*

— 2975. *Tortula ruralis. Bryum minus.*

— 3003. *Tortula ruralis. Camptothecium nitens.*

— 3004. *Ditrichum flexicaule. Tortula ruralis. Hypnum revolutum.*

— 3005. *Tortula ruralis. Brachythecium salebrosum v. arcticum.*

— 3006. *Tortula ruralis. Encalypta rhabdocarpa. Mnium affine. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 3007. *Diplophyllum incurvum. Ditrichum flexicaule. Tortula ruralis. Tortella fragilis. Encalypta rhabdocarpa. Mnium affine. Amblystegium filicinum v. curvicaule. Hypnum revolutum.*

Nr. 3008. *Lophozia qvinqvedentata. Ditrichum flexicaule. Timmia austriaca. Orthothecium chryseum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 3009. *Ditrichum flexicaule. Schistidium apocarpum. Hypnum Bambergeri. Hypnum revolutum.*

— 3010. *Tortula ruralis. Orthotrichum speciosum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum revolutum.*

— 3011. *Tortula ruralis. Hypnum revolutum.*

— 3012. *Plagiochila arctica. Ditrichum flexicaule. Tortula ruralis. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum. Hypnum Bambergeri. Hypnum revolutum.*

— 3013. *Plagiochila arctica. Tortula ruralis. Mnium affine. Camptothecium nitens. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 3014. *Distichium capillaceum.*

— 3015. *Tortula ruralis. Meesea trichodes. Brachythecium salebrosum. Hypnum revolutum.*

— 3016. *Ditrichum flexicaule. Tortula ruralis. Encalypta rhabdocarpa. Orthotrichum speciosum. Mnium medium f. arctica. Hypnum revolutum.*

— 3017. *Ditrichum flexicaule f. brevifolia. Distichium capillaceum. Didymodon rubellus. Desmatodon suberectus. Mielichhoferia Porsildii. Amblystegium filicinum v. curvicaule.*

North Kent, Juli 1901.

— 3026. *Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum.*

— 3027. *Ditrichum flexicaule. Timmia austriaca. Orthothecium chryseum. Hypnum uncinatum.*

— 3028. *Lophozia ventricosa. Gymnostomum læve. Distichium capillaceum. Hypnum latifolium.*

— 3029. *Gymnostomum læve. Distichium capillaceum. Ditrichum flexicaule. Cinclidium polare. Timmia austriaca. Timmia norvegica. Orthothecium chryseum.*

— 3030. *Lophozia ventricosa. Distichium capillaceum. Bryum crispulum. Cinclidium subrotundum. Polytrichum alpinum. Hypnum uncinatum.*

Nr. 3031. *Rhacomitrium canescens.*

— 3032. *Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Bryum crispulum. Catascopium nigritum. Philonotis alpicola. Tortella tortuosa. Hypnum intermedium. Hypnum latifolium.*

— 3033. *Lophozia harpanthoides. Distichium capillaceum. Tortula ruralis. Bryum crispulum. Timmia austriaca. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum.*

— 3034. *Diplophyllum incurvum. Gymnostomum læve. Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Encalypta procera. Bryum crispulum. Timmia austriaca. Timmia norvegica. Orthothecium chryseum. Hypnum intermedium.*

— 3035. *Cinclidium subrotundum. Catascopium nigritum. Hypnum latifolium.*

— 3036. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta procera. Encalypta commutata. Hypnum tundræ.*

— 3037. *Plagiochila arctica. Ditrichum flexicaule. Distichium capillaceum. Timmia austriaca. Comptothecium nitens. Hypnum uncinatum.*

— 3038. *Timmia austriaca. Orthothecium chryseum. Hypnum uncinatum.*

— 3039. *Schistidium gracile v. scabrius.*

— 3040. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Orthothecium chryseum. Hypnum revolutum.*

— 3041. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta commutata. Webera nutans. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Isopterygium pulchellum. Hypnum uncinatum. Hypnum revolutum.*

— 3042. *Bryum pallens. Bryum obtusifolium. Hypnum tundræ.*

— 3043. *Ditrichum flexicaule. Distichium capillaceum. Orthothecium chryseum.*

— 3044. *Bryum obtusifolium.*

— 3045. *Ditrichum flexicaule. Distichium capillaceum. Schistidium apocarpum. Rhacomitrium conescens. Polytrichum alpinum. Orthothecium chryseum. Brachythecium salebrosum. Hypnum intermedium. Hypnum latifolium.*

Nr. 3046. *Meesea triqvetra. Orthothecium chryseum. Hypnum latifolium.*

— 3047. *Plagiochila arctica. Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta procera. Encalypta commutata. Cinclidium subrotundum. Timmia austriaca. Timmia norvegica. Myurella julacea. Orthothecium chryseum. Isopterygium pulchellum. Hypnum intermedium. Hypnum latifolium. Hypnum Vaucheri.*

— 3048. *Schistidium gracile. Rhacomitrium canescens.*

— 3049. *Hypnum latifolium.*

— 3050. *Dicranoweisia crispula.*

— 3051. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Rhacomitrium canescens. Encalypta commutata. Plagiopus Oederi. Orthothecium chryseum. Camptothecium nitens. Hypnum intermedium.*

— 3052. *Dicranoweisia crispula.*

— 3053. *Ditrichum flexicaule. Tortula ruralis. Rhacomitrium canescens. Webera cruda. Timmia austriaca. Hypnum uncinatum. Hypnum revolutum.*

— 3054. *Sphenolobus minutus. Cephalozia verrucosa. Dicranum sphagni.*

— 3055. *Sphenolobus minutus. Ditrichum flexicaule. Schistidium gracile. Rhacomitrium lanuginosum. Polytrichum alpinum.*

— 3056. *Ditrichum flexicaule. Tortula ruralis. Meesea triqvetra. Timmia austriaca. Myurella apiculata. Hypnum latifolium.*

— 3057. *Lophozia ventricosa. Distichium Hagenii. Ditrichum flexicaule. Tortula ruralis. Webera cruda. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Isopterygium pulchellum. Hypnum uncinatum.*

— 3058. *Lophozia alpestris. Cephalozia verrucosa. Diplophyllum incurvum. Ditrichum flexicaule. Didymodon rufus. Tortula ruralis. Webera cruda. Cinclidium subrotundum. Meesea triqvetra. Catascopium nigritum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Hypnum revolvens. Hypnum uncinatum. Hypnum latifolium. Hypnum revolutum.*

— 3059. *Lophozia qvadriloba v. heterophylla. Dicranoweisia crispula. Dicranum congestum. Rhacomitrium lanuginosum. Orthothecium chryseum. Hypnum uncinatum.*

Kong Oscars Land, Landsend 12/7 1901.

Nr. 3076. *Distichium capillaceum. Timmia austriaca. Orthothecium chryseum.*

— 3077. *Ditrichum flexicaule. Distichium capillaceum. Tortula mucronifolia. Voitia hyperborea.*

— 3078. *Aplozia atrovirens v. gracilis. Lophozia harpanthoides. Lophozia ventricosa. Cephalozia verrucosa. Odontoschisma Macounii. Ditrichum flexicaule. Tortella tortuosa. Encalypta commutata. Mnium hymenophylloides. Myurella apiculata. Myurella julacea. Hypnum revolvens. Hypnum latifolium.*

— 3079. *Schistidium apocarpum.*

— 3080. *Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Distichium inclinatum. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum.*

— 3081. *Oncophorus Wahlenbergii. Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Bryum oeneum. Cinclidium subrotundum. Meesea triqvetra. Encalypta commutata. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum revolvens. Hypnum polycarpon. Hypnum intermedium. Hypnum giganteum.*

— 3082. *Distichium capillaceum. Ditrichum flexicaule. Tortella tortuosa. Bryum teres. Cinclidium subrotundum. Meesea trichodes. Meesea triqvetra. Hypnum latifolium. Hypnum Bambergeri. Hypnum giganteum.*

— 3083. *Blepharostoma trichophyllum. Distichium capillaceum. Ditrichum flexicaule. Oncophorus Wahlenbergii. Didymodon rubellus. Tortella tortuosa. Encalypta commutata. Cinclidium subrotundum. Catascopium nigritum. Timmia austriaca. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Hypnum Bambergeri.*

— 3084. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Ditrichum flexicaule. Mnium medium. Aulacomnium turgidum. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum. Hylocomium proliferum.*

— 3085. *Arnellia fennica. Lophozia Wenzelii. Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Distichium capillaceum. Cinclidium hymenophyllum. Orthothecium chryseum.*

Nr. 3086. *Cephalozia verrucosa. Fissidens arcticus. Ditrichum flexicaule. Tortula mucronifolia. Bryum semiovatum. Timmia austriaca. Myurella julacea. Orthothecium chryseum.*

— 3087. *Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum. Hypnum revolutum.*

— 3088. *Lophozia harpanthoides. Lophozia heterocolpa. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum. Timmia norvegica. Orthothecium chryseum. Hypnum turgescens. Hypnum Bambergeri.*

— 3089. *Lophozia ventricosa. Dicranum sphagni.*

— 3090. *Arnellia fennica. Lophozia ventricosa. Blepharostoma trichophyllum. Ditrichum flexicaule. Bryum calophyllum. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Hypnum uncinatum.*

— 3091. *Cephalozia verrucosa. Ditrichum flexicaule. Distichium inclinatum. Didymodon rubellus. Bryum pallens. Timmia austriaca. Polytrichum alpinum v. simplex. Myurella julacea. Orthothecium chryseum.*

— 3092. *Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Webera cruda. Bryum pallens. Timmia austriaca. Myurella apiculata. Hypnum uncinatum. Hypnum revolutum.*

— 3093. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum. Rhacomitrium lanuginosum. Hypnum revolutum f. gracilior.*

Kong Oscars Land, Yttre Gaasefjord (Falkberget), 20/7 1901.

— 3099. *Marchantia polymorpha. Bryum elegans v. carinthiacum. Mnium affine.*

— 3100. *Philonotis alpicola. Brachythecium salebrosum v. arcticum.*

— 3101. *Lophozia marchica. Ditrichum flexicaule. Webera nutans. Bryum ventricosum. Cinclidium hymenophyllum. Philonotis alpicola. Orthothecium chryseum. Comptothecium nitens. Hypnum intermedium.*

— 3102. *Lophozia marchica. Ditrichum flexicaule. Webera nutans. Mnium affine v. integrifolium. Cinclidium hymenophyllum. Cinclidium arcticum. Philonotis alpicola. Timmia norvegica.*

Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum intermedium.

Nr. 3103. *Distichium capillaceum. Didymodon rubellus. Bryum laxifolium. Bryum pendulum. Amblystegium filicinum v. curvicaule.*

— 3104. *Haplodon Wormskjoldii. Mnium affine. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum polycarpon.*

— 3105. *Ditrichum flexicaule. Tortella tortuosa. Bryum elegans. Hypnum revolutum.*

— 3106. *Distichium capillaceum. Didymodon rubellus. Timmia austriaca. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 3107. *Tortula ruralis. Mnium affine. Timmia bavarica. Amblystegium Sprucei. Hypnum revolutum.*

— 3108. *Amblystegium filicinum v. curvicaule.*

— 3109. *Ceratodon purpureus. Tortula ruralis. Bryum ventricosum. Mnium affine. Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Brachythecium salebrosum v. turgidum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum. Hypnum revolutum.*

— 3110. *Distichium capillaceum. Bryum autumnale. Hypnum brevifolium.*

— 3111. *Tortula ruralis.*

— 3112. *Tortula ruralis. Schistidium apocarpum. Orthotrichum speciosum. Hypnum revolutum.*

— 3113. *Marchantia polymorpha. Bryum pendulum. Mnium affine v. integrifolium.*

— 3114. *Ditrichum flexicaule. Philonotis alpicola. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei.*

— 3115. *Distichium capillaceum. Ceratodon purpureus. Orthothecium strictum.*

— 3116. *Gymnostomum læve. Distichium capillaceum. Ceratodon purpureus. Bryum teres. Timmia norvegica. Myurella apiculata.*

— 3117. *Timmia norvegica v. excurrens.*

— 3118. *Hypnum revolutum v. subjulaceum.*

— 3119. *Tortula ruralis. Mnium affine. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Brachythecium*

salebrosum. Hypnum intermedium. Hypnum polycarpon. Hypnum revolutum.

Nr. 3120. *Amblystegium filicinum v. curvicaule.*

— 3121. *Distichium capillaceum. Didymodon rubellus. Desmatodon suberectus. Tortula ruralis. Encalypta rhabdocarpa. Leptobryum pyriforme. Bryum autumnale. Bryum pendulum. Bryum arcticum. Mnium medium f. arctica. Timmia norvegica. Brachythecicm salebrosum v. arcticum. Amblystegium Sprucei. Amblystegium filicinum. Amblystegium filicinum v. curvicaule.*

— 3122. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Encalypta procera. Timmia norvegica. Amblystegium filicinum v. curvicaule. Hypnum revolutum.*

— 3123. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Bryum pendulum. Bryum autumnale. Bryum ventricosum. Encalypta rhabdocarpa. Mnium affine. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum turgescens.*

— 3124. *Distichium capillaceum. Encalypta rhabdocarpa. Leptobryum pyriforme. Bryum arcticum. Bryum pendulum. Amblystegium filicinum. Campylium stellatum.*

— 3125. *Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Encalypta rhabdocarpa. Leptobryum pyriforme. Bryum teres. Bryum arcticum. Bryum pendulum. Mnium affine v. integrifolium. Amblystegium filicinum v. curvicaule.*

— 3126. *Marchantia polymorpha. Bryum pendulum. Mnium affine.*

— 3127. *Ceratodon purpureus. Haplodon Wormskjoldii. Timmia norvegica. Timmia austriaca. Camptothecium nitens. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule. Hypnum brevifolium.*

— 3128. *Tortula ruralis. Encalypta commutata. Haplodon Wormskjoldii. Mnium affine. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Brachythecium salebrosum v. turgidum. Hypnum uncinatum. Hypnum intermedium. Hypnum polycarpon.*

— 3129. *Distichium capillaceum. Ceratodon purpureus. Timmia norvegica v. excurrens. Orthothecium strictum.*

— 3130. *Amblystegium filicinum v. curvicaule.*

Nr. 3131. *Mnium affine. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum brevifolium.*

— 3132. *Marchantia polymorpha. Tetraplodon mnioides. Mnium affine.*

— 3133. *Bryum pendulum. Mnium affine v. integrifolium. Amblystegium filicinum v. curvicaule.*

— 3134. *Tortula ruralis. Orthotrichum speciosum. Hypnum revolutum.*

— 3135. *Ceratodon purpureus. Tortula ruralis. Schistidium apocarpum v. filiforme. Grimmia anodon. Orthotrichum alpestre. Bryum argenteum. Hypnum revolutum.*

— 3136. *Ceratodon purpureus. Mnium affine. Timmia norvegica. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum revolutum. Hypnum brevifolium.*

— 3144. *Mnium affine. Brachythecium salebrosum f. patens. Amblystegium filicinum v. curvicaule.*

— 3145. *Amblystegium filicinum v. curvicaule. Hypnum brevifolium. Hypnum turgescens.*

Kong Oscars Land; Vendomkap 15/7 1901.

— 3146. *Schistidium gracile.*

— 3147. *Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 3148. *Tortula ruralis. Orthothecium chryseum. Brachythecium salebrosum. Hypnum uncinatum.*

— 3149. *Ditrichum flexicaule. Tortula ruralis. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum. Hypnum Bambergeri. Hypnum revolutum.*

— 3150. *Bryum oeneum. Myurella apiculata. Orthothecium strictum. Orthothecium chryseum. Hypnum Bambergeri.*

— 3151. *Tortula ruralis. Schistidium gracile. Mnium orthorhynchum. v. nivale, Hypnum tundræ. Hypnum Bambergeri. Hypnum revolutum v. subjulaceum.*

— 3152. *Ditrichum flexicaule. Tortula ruralis. Timmia austriaca. Orthothecium chryseum. Hypnum revolutum v. subjulaceum.*

— 3153. *Hypnum Vaucheri. Hypnum revolutum.*

— 3154. *Bryum elegans. Hypnum polycarpon. Hypnum turgescens.*

— 3155. *Distichium capillaceum.*

Nr. 3156. *Ditrichum flexicaule. Timmia austriaca. Hypnum revolutum v. subjulaceum.*

— 3157. *Ditrichum flexicaule. Bryum oeneum. Orthothecium chryseum.*

— 3158. *Ditrichum flexicaule. Tortula ruralis. Schistidium gracile. Webera cruda. Bryum oeneum. Bryum elegans v. carinthiacum. Myurella julacea. Orthothecium chryseum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Hypnum Vaucheri. Hypnum revolutum v. subjulaceum.*

— 3159. *Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Bryum obtusifolium. Bryum elegans v. carinthiacum. Leskea nervosa. Orthothecium strictum. Brachythecium salebrosum. Hypnum tundræ. Hypnum Bambergeri.*

— 3160. *Ditrichum flexicaule. Tortula mucronifolia, Tortula ruralis. Bryum Limprichtii. Leskea nervosa. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum Vaucheri. Hypnum Bambergeri. Hypnum revolutum v. subjulaceum. Hypnum turgescens.*

— 3161. *Distichium capillaceum. Orthothecium chryseum.*

— 3162. *Ditrichum flexicaule. Tortula ruralis. Bryum obtusifolium. Bryum elegans v. carinthiaceum. Pterygynandrum filiforme. Orthothecium chryseum. Hypnum polycarpon. Hypnum turgescens.*

— 3163. *Ditrichum flexicaule. Tortula ruralis. Orthothecium chryseum. Hypnum revolutum.*

— 3164. *Ditrichum flexicaule. Distichium capillaceum. Bryum oeneum. Philonotis alpicola; Timmia austriaca. Myurella apiculata. Orthothecium chryseum. Hypnum Bambergeri.*

Kong Oscars Land; Exkrementbugten 6/7 1900.

— 3189. *Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Encalypta rhabdocarpa. Tortula ruralis. Bryum elegans. Myurella julacea. Orthothecium chryseum. Hypnum Bambergeri.*

— 3190. *Tortella tortuosa v. rigida. Hypnum Bambergeri.*

— 3191. *Bryum obtusifolium.*

— 3192. *Distichium capillaceum. Ditrichum flexicaule. Cinclidium polare. Timmia austriaca. Orthothecium chryseum.*

— 3193. *Mnium affine v. integrifolium. Cinclidium polare. Orthothecium chryseum.*

Nr. 3194. *Arnellia fennica. Ceratodon purpureus. Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Encalypta rhabdocarpa. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Brachythecium salebrosum v. turgidum. Hypnum uncinatum.*

— 3195. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Tetraplodon mnioides. Mnium orthorrhynchum. Timmia austriaca. Hypnum revolutum.*

— 3196. *Lophozia harpanthoides. Blepharostoma trichophyllum v. brevrete. Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Tortula ruralis. Encalypta commutata. Bryum elegans. Timmia austriaca. Orthothecium strictum. Orthothecium chryseum. Brachythecium salebrosum. Hypnum Bambergeri.*

— 3197. *Distichium capillaceum. Didymodon rubellus. Tortula ruralis. Mnium affine v. integrifolium. Cinclidium polare. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum intermedium. Hypnum polycarpon.*

— 3198. *Cephalozia grimsulana. Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Tetraplodon mnioides. Bryum oeneum. Bryum arcticum. Myurella julacea. Orthothecium chryseum. Orthothecium strictum.*

— 3199. *Arnellia fennica. Blepharostoma trichophyllum v. brevirete. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Didymodon rubellus. Encalypta rhabdocarpa. Bryum crispulum. Mnium orthorrhynchum. Timmia austriaca. Myurella julacea. Myurella apiculata Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum uncinatum v. orthothecioides. Hypnum Bambergeri.*

— 3200. *Cinclidium polare, Philonotis alpicola. Catascopium nigritum. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum polycarpon.*

— 3201. *Arnellia fennica. Ditrichum flexicaule. Distichium capillaceum. Timmia austriaca. Orthothecium chryseum. Myurella julacea. Hypnum Bambergeri.*

Nr. 3202. *Tortula ruralis. Tetraplodon mniodes. Bryum elegans. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum v. orthothecioides.*

— 3203. *Arnellia fennica. Lophozia harpanthoides. Plagiochila arctica. Cephalozia verrucosa. Diplophyllum incurvum. Gymnostomum læve. Ceratodon purpureus. Ditrichum flexicaule. Didymodon rubellus. Tortella tortuosa. Orthothecium chryseum. Camptothecium nitens. Hypnum revolutum. Hypnum Bambergeri.*

— 3204. *Arnellia fennica. Lophozia harpanthoides. Lophozia ventricosa. Cephalozia verrucosa. Diplophyllum incurvum. Gymnostomum læve. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Encalypta rhabdocarpa. Bryum crispulum. Bryum teres. Cinclidium hymenophyllum. Timmia austriaca. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Campthotecium nitens. Brachythecium salebrosum. Hypnum uncinatum. Hypnum Bambergeri. Amblystegium Sprucei.*

— 3205. *Lophozia harpanthoides. Blepharostoma trichophyllum v. brevirete. Cephalozia bicuspidata. Cephalozia verrucosa. Ceratodon purpureus. Distichium copillaceum. Arnellia fennica. Ditrichum flexicaule. Didymodon rubellus. Encalypta commutata. Timmia austriaca. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum polycarpon. Hypnum latifolium.*

— 3206. *Schistidium apocarpum. Rhacomitrium lanuginosum. Encalypta rhabdocarpa. Brachythecium salebrosum.*

— 3207. *Distichium capil'aceum. Ditrichum flexicaule. Cinclidium polare. Orthothecium chryseum. Hypnum Bambergeri.*

Kong Oscars Land; Renbugten 8/7 1901.

— 3212. *Ditrichum flexicaule. Distichium capillaceum. Tortella tortuosa. Didymodon rubellus. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Orthothecium strictum. Hypnum Bambergeri.*

— 3213. *Ditrichum flexicaule. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

Nr. 3214. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Webera commutata. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum v. arcticum.*

— 3215. *Lophozia harpanthoides. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Oncophorus Wahlenbergii. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Bryum elegans. Mnium hymenophylloides. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Hypnum latifolium.*

— 3216. *Lophozia alpestris. Lophozia qvinqvedentata. Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Cinclidium subrotundum. Aulacomnium turgidum. Catascopium nigritum. Meesea triqvetra. Bryum ventricosum. Polytrichum alpinum. Hypnum revolvens. Orthothecium chryseum. Hypnum latifolium. Hypnum brevifolium. Hypnum intermedium. Hypnum Berggreni. Hypnum giganteum.*

— 3217. *Ditrichum flexicaule. Bryum calophyllum. Bryum elegans. Orthothecium chryseum. Isopterygium pulchellum. Campylium polygamum. Hypnum brevifolium. Hypnum latifolium. Hypnum sarmentosum. Hypnum turgescens.*

— 3218. *Plagiochila arctica. Cephalozia verrucosa. Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta apophysata. Encalypta commutata. Webera nutans f. filiformis. Mnium orthorrhynchum. Timmia austriaca. Polytricum alpinum. Myurella julacea. Orthothecium strictum.*

— 3219. *Ditrichum flexicaule. Distichium capillaceum. Tortella tortuosa. Bryum calophyllum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Hypnum intermedium. Hypnum brevifolium.*

— 3220. *Seligeria polaris.*

— 3222. *Lophozia qvadriloba v. heterophylla. Scapania rosacea. Ditrichum flexicaule. Distichium capillaceum. Tortella tortuosa. Bryum elegans. Philonotis alpicola. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Hypnum latifolium.*

— 3223. *Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum spadiceum. Webera nutans. Aulacomnium turgidum. Orthothecium chryseum. Campthothecium nitens.*

Nr. 3224. *Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Cephalozia verrucosa. Oncophorus Wahlenbergii. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Webera nutans. Aulacomnium turgidum. Orthothecium chryseum. Myurella julacea. Myurella apiculata. Camptothecium nitens.*

— 3225. *Lophozia qvinqvedentata. Cephalozia verrucosa. Dicranum spadiceum. Webera nutans. Aulacomnium turgidum.*

— 3226. *Lophozia qvinqvedentata. Mesoptychia Sahlbergii. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Webera nutans. Aulacomnium turgidum. Polytrichum alpinum. Camptothecium nitens.*

— 3227. *Ditrichum flexicaule. Distichium capillaceum. Bryum calophyllum. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Hypnum revolvens. Hypnum latifolium. Hypnum Bambergeri.*

— 3228. *Ditrichum flexicaule. Tortella tortuosa. Myurella julacea. Orthothecium chryseum. Orthothecium acuminatum. Hypnum revolvens. Hypnum latifolium. Hypnum turgescens.*

— 3229. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Bryum pallens. Cinclidium articum. Philonotis alpicola. Aulacomnium turgidum. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Hypnum intermedium. Hypnum brevifolium.*

— 3230. *Lophozia harpanthoides. Lophozia ventricosa. Lophozia alpestris. Cephalozia verrucosa. Diplophyllum incurvum. Plagiochila arctica. Blepharostoma trichophyllum. Oncophorus Wahlenbergii. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta commutata. Webera commutata. Mnium hymenophylloides. Didymodon rubellus. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Campylium stellatum. Hypnum hamulosum.*

— 3231. *Lophozia ventricosa. Oncophorus virens. Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Haplodon Wormskjoldii. Bryum ventricosum. Bryum pallens. Bryum autumnale. Philonotis alpicola. Myurella apiculata. Hypnum Bambergeri.*

— 3232. *Sphenolobus minutus. Dicranum elongatum.*

Nr. 3233. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Bryum pallens. Orthothecium chryseum.*

— 3234. *Lophozia Mülleri. Ditrichum flexicaule. Haplodon Wormskjoldii. Tetraplodon mnioides. Bryum autumnale. Myurella julacea. Orthothecium chryseum.*

— 3235. *Lophozia harpanthoides. Cephalozia verrucosa. Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Polytrichum alpinum. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum Bambergeri.*

Kong Oscars Land, Indre Gaasefjord (Galgeodden), 3/8 1901.

— 3250. *Schistidium apocarpum.*

— 3251. *Ditrichum flexicaule. Distichium Hagenii. Ceratodon purpureus. Didymodon rubellus. Encalypta contorta. Bryum hyperboreum. Bryum glomeratum. Orthothecium chryseum. Amblystegium filicinum v. curvicaule.*

— 3252. *Voitia hyperborea. Bryum pallens. Orthothecium chryseum.*

— 3253. *Distichium capillaceum. Distichium Hagenii. Ceratodon purpureus. Didymodon rubellus. Encalypta commutata.*

— 3254. *Tortula mucronifolia.*

— 3256. *Distichium Hagenii. Pottia Heimii v. obtusifolia. Desmatodon suberectus. Voitia hyperborea. Bryum lacustre. Orthothecium chryseum. Campylium stellatum.*

Kong Oscars Land, Indre Gaasefjord 5–9/8 1901.

— 3276. *Lophozia Wenzelii. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Plagiochila arctica. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Tortula aciphylla. Rhacomitrium lanuginosum. Bartramia ityphylla. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hylocomium proliferum.*

— 3277. *Aplozia polaris. Cephalozia verrucosa. Ditrichum flexicaule. Cinclidium polare. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Orthothecium chryseum. Myurella apiculata. Camptothecium nitens. Campylium stellatum. Hypnum intermedium.*

— 3278. *Aplozia sphærocarpa. Plagiochila arctica. Cephalozia verrucosa. Ditrichum flexicaule. Rhacomitrium canescens. Enca-*

lypta commutata. Aulacomnium turgidum. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Campylium stellatum.

Nr. 3279. *Ditrichum flexicaule. Tortula ruralis. Myurella julacea. Hypnum revolutum.*

— 3280. *Distichium Hagenii. Distichium capillaceum. Orthothecium strictum. Orthothecium chryseum. Campylium stellatum.*

— 3281. *Aplozia atrovirens v. gracilis. Cephalozia verrucosa. Tetraplodon mnioides. Orthothecium chryseum.*

— 3282. *Lophozia Mülleri. Lophozia qvinqvedentata. Distichium capillaceum. Ditrichum flexicaule. Aulacomnium turgidum. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum uncinatum.*

— 3283. *Orthothecium chryseum.*

— 3284. *Arnellia fennica. Lophozia qvadriloba. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum intermedium.*

— 3285. *Aplozia atrovirens v. gracilis. Ceratodon purpureus. Didymodon rubellus. Voitia hyperborea. Tetraplodon pallidus. Bryum pallens. Bryum opdalense. Bryum lacustre. Philonotis alpicola. Myurella julacea. Orthothecium chryseum. Hypnum intermedium.*

— 3286. *Polytrichum alpinum. Orthothecium chryseum.*

— 3287. *Ditrichum flexicaule. Tortula ruralis. Encalypta rhabdocarpa v. pilifera. Myurella julacea. Orthothecium strictum. Hypnum revolutum.*

— 3288. *Ditrichum flexicaule. Bryum pallens. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 3293. *Tetraplodon mnioides. Haplodon Wormskjoldii.*

— 3310. *Lophozia qvinqvedentata. Sphenolobus minutus. Scapania Simmonsii. Oncophorus virens. Ditrichum flexicaule. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum brevifolium. Hypnum hamulosum. Hypnum Bambergeri.*

— 3311. *Tortula ruralis. Hypnum revolutum.*

Nr. 3312. *Lophozia ventricosa. Dicranum brevifolium. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Webera cruda. Philonotis alpicola. Timmia austriaca. Hypnum uncinatum. Hylocomium proliferum.*

— 3313. *Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Aulacomnium turgidum. Timmia austriaca. Polytrichum juniperinum. Camptothecium nitens. Hypnum hamulosum. Hylocomium proliferum.*

— 3314. *Seligeria polaris.*

— 3315. *Desmatodon suberectus. Bryum arcticum.*

— 3316. *Plagiochila arctica. Ditrichum flexicaule. Distichium capillaceum. Tetraplodon pallidus. Voitia hyperborea. Bryum pallens. Timmia austriaca. Orthothecium chryseum.*

— 3317. *Ceratodon purpureus. Distichium capillaceum. Didymodon rubellus. Desmatodon suberectus. Bryum articum. Timmia austriaca.*

— 3318. *Lophozia harpanthoides. Lophozia qvadriloba. Lophozia qvinqvedentata. Sphenolobus minutus. Plagiochila arctica. Odontoschisma Macounii. Cephalozia verrucosa. Distichium capillaceum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Hypnum latifolium. Hypnum Bambergeri.*

— 3319. *Lophozia ventricosa. Lophozia qvadriloba. Lophozia qvinqvedentata. Plagiochila arctica. Cephalozia grimsulana. Fissidens impar. Ditrichum flexicaule. Distichium Hagenii. Tortula tortuosa. Rhacomitrium canescens. Encalypta commutata. Webera nutans. Bryum Gräfianum. Mnium orthorrhynchum. Aulacomnium turgidum. Timmia austriaca. Myurella julacea. Myurella apiculata. Isopterygium pulchellum. Campylium stellatum. Hypnum intermedium. Hypnum Bambergeri. Hylocomium proliferum.*

— 3320. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta commutata. Webera nutans. Philonotis alpicola. Aulacomnium turgidum. Timmia norvegica. Myurella julacea. Camptothecium nitens. Hypnum uncinatum.*

— 3336. *Tortella tortuosa. Hypnum intermedium.*

— 3337. *Aplozia polaris. Cephalozia verrucosa. Distichium capillaceum. Desmatodon suberectus. Tortula mucronifolia. Voitia hyperborea. Tetraplodon mnioides. Tetraplodon pallidus.*

Bryum brachythecium. Bryum arcticum. Timmia norvegica. Myurella julacea. Orthothecium chryseum. Hypnum tundræ. Hypnum uncinatum. Hypnum Bambergeri.

Nr. 3338. *Grimaldia pilosa. Aplozia polaris. Distichium capillaceum. Tortula mucronifolia. Didymodon rubellus. Desmatodon systylius. Desmatodon suberectus. Encalypta rhabdocarpa. Voitia hyperborea. Bryum pallens. Bryum arcticum. Bryum minus. Myurella julacea. Orthothecium chryseum. Hypnum tundræ. Hypnum Bambergeri.*

— 3339. *Lophozia ventricosa. Cephalozia verrucosa. Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Mnium orthorrhynchum v. nivale. Timmia austriaca. Polytrichum alpinum. Hypnum tundræ. Hypnum revolutum. Ctenidium procerrimum.*

— 3340. *Cephalozia verrucosa. Diplophyllum incurvum. Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Tortula mucronifolia. Rhacomitrium lanuginosum. Encalypta rhabdocarpa. Voitia hyperborea. Webera cruda. Bryum teres. Bryum terrestre. Bryum arcticum. Mnium orthorrhynchum v. nivale. Timmia austrica. Polytrichum alpinum. Campylium stellatum. Amblystegium filicinum v. tenue. Hypnum brevifolium. Hypnum tundræ. Hypnum revolutum.*

— 3341. *Tetraplodon mnioides. Orthothecium chryseum.*

— 3342. *Bryum ventricosum. Amblystegium filicinum v. tenue.*

— 3343. *Ditrichum flexicaule. Tortula ruralis. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum intermedium. Hypnum revolutum. Ctenidium procerrimum.*

— 3344. *Distichium capillaceum. Orthothecium binervulum. Amblystegium filicinum v. tenue. Hypnum tundræ.*

— 3364. *Lophozia ventricosa. Lophozia alpestris. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Webera nutans. Mnium orthorrhynchum. Aulacomnium turgidum. Philonotis cæspitosa. Timmia austriaca. Myurella julacea. Orthothecium chryseum.*

— 3365. *Plagiochila arctica. Dicranaweisia crispula. Distichium capillaceum. Tortula ruralis. Rhacomitrium lanuginosum. Timmia austriaca. Orthothecium chryseum.*

Nr. 3366. *Distichium Hagenii. Tortula ruralis. Tortula mucronifolia. Desmatodon suberectus. Bryum teres. Timmia austriaca. Hypnum uncinatum. Hypnum revolutum.*

— 3367. *Distichium Hagenii. Distichium capillaceum. Ceratodon purpureus. Voitia hyperborea. Bryum teres. Timmia austriaca.*

— 3368. *Plagiochila arctica. Cephalozia verrucosa. Distichium Hagenii. Distichium capillaceum. Ditrichum flexicaule. Oncophorus virens. Tortula ruralis. Tortula mucronifolia. Rhacomitrium lanuginosum. Webera cruda. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 3369. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Odontoschisma Macounii. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Aulacomnium turgidum. Polytrichum alpinum. Orthothecium chryseum.*

— 3370. *Rhacomitrium canescens v. prolixum. Polytrichum alpinum v. simplex.*

— 3371. *Rhacomitrium canescens v. prolixum. Hypnum uncinatum.*

— 3372. *Lophozia qvinqvedentata. Sphenolobus minutus. Dicranum spadiceum. Dicranum elongatum. Ditrichum flexicaule. Rhacomitrium lanuginosum.*

— 3373. *Lophozia qvinqvedentata. Dicranum spadiceum. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens.*

— 3374. *Encalypta rhabdocarpa.*

— 3375. *Tortula ruralis. Schistidium apocarpum. Rhacomitrium lanuginosum. Orthotrichum speciosum. Orthotrichum Killiasii. Hypnum revolutum.*

— 3376. *Bryum cancelliforme. Hypnum tundræ.*

— 3377. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Tortula mucronifolia. Didymodon rubellus. Amblystegium filicinum v. curvicaule. Amblystegium filicinum v. tenue. Hypnum tundræ.*

— 3378. *Dichodontium pellucidum. Distichium inclinatum. Didymodon rubellus. Tortella tortuosa. Fissidens arcticus. Encalypta commutata. Bryum calophyllum v. procerum. Meesea triqvetra. Polytrichum alpinum. Myurella julacea. Hypnum revolvens. Hypnum latifolium. Hypnum brevifolium. Hypnum Berggreni. Hypnum turgescens.*

— 3379. *Hymenostylium curvirostre. Distichium inclinatum. Tortella*

tortuosa. Encalypta commutata. Bryum neodamense. Polytrichum alpinum. Myurella julacea. Campylium stellatum. Hypnum latifolium. Hypnum brevifolium. Hypnum turgescens.

Nr. 3380. *Ditrichum flexicaule. Hypnum tundræ.*

— 3381. *Bryum hyperboreum. Bryum glomeratum.*

— 3382. *Schistidium apocarpum.*

— 3383. *Tortula mucronifolia. Bryum ventricosum. Amblystegium filicinum v. curvicaule.*

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— 3395. *Dicranoweisia crispula.*

— 3396. *Distichium capillaceum. Ceratodon purpureus. Tortula mucronifolia. Hypnum tundræ.*

— 3397. *Distichium capillaceum. Encalypta vulgaris v. pilifera. Timmia austriaca.*

— 3398. *Voitia hyperborea. Tortula mucronifolia.*

— 3399. *Bryum obtusifolium. Orthothecium chryseum f. patens. Hypnum Cossoni.*

— 3400. *Lophozia qvinqvedentata. Distichium capillaceum. Webera cruda. Timmia austriaca. Polytrichum alpinum.*

— 3401. *Seligeria polaris. Blindia acuta.*

— 3402. *Lophozia qvinqvedentata. Dicranum sphagni. Ditrichum flexicaule. Rhacomitrium lanuginosum. Timmia austriaca. Polytrichum alpinum. Hylocomium proliferum.*

— 3403. *Lophozia qvinqvedentata. Sphenolobus minutus. Dicranum sphagni.*

— 3404. *Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Tortella tortuosa. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Hypnum brevifolium.*

— 3405. *Lophozia qvinqvedentata. Sphenolobus minutus. Dicranum spadiceum. Ditrichum flexicaule. Rhacomitrium canescens. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Hylocomium proliferum.*

— 3406. *Lophozia qvinqvedentata. Ditrichum flexicaule. Distichium capillaceum. Webera cruda. Bryum pallens. Timmia austriaca. Polytrichum alpinum. Myurella apiculata. Orthothecium chryseum.*

— 3407. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla.*

Lophozia qvinqvedentata. Cephalozia verrucosa. Distichium capillaceum. Ditrichum flexicaule. Bryum obtusifolium. Bryum oeneum v. subelimbatum. Cinclidium subrotundum. Cinclidium hymenophyllum. Philonotis alpicola. Timmia austriaca. Timmia norvegica. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Hypnum revolutum. Hypnum latifolium.

Nr. 3408. *Lophozia qvinqvedentata. Sphenolobus minutus. Cephalozia verrucosa. Dicranum spadiceum. Dicranum sphagni. Didymodon rubellus. Rhacomitrium lanuginosum. Webera cruda. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum.*

— 3409. *Lophozia qvadriloba v. heterophylla. Dicranum congestum. Distichium capillaceum. Ditrichum flexicaule. Tortella tortuosa. Encalypta commutata. Bryum cyclophyllum. Cinclidium subrotundum. Timmia norvegica. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum revolvens. Hypnum intermedium. Hypnum latifolium.*

— 3410. *Marsupella arctica. Aplozia polaris. Anthelia julacea. Scapania Simmonsii. Andreæa papillosa. Blindia acuta. Didymodon rubellus. Desmatodon latifolius v. muticus. Bryum pallens. Bryum condensatum. Orthothecium binervulum.*

— 3411. *Aplozia polaris. Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Blindia acuta. Ditrichum flexicaule. Tortula mucronifolia.*

— 3412. *Dicranoweisia crispula. Ditrichum flexicaule. Didymodon rubellus. Tortula ruralis. Rhacomitrium lanuginosum. Webera cruda. Encalypta contorta. Encalypta rhabdocarpa v. pilifera. Polytrichum alpinum v. simplex. Orthothecium intricatum. Hypnum uncinatum. Hypnum revolutum.*

— 3413. *Andreæa papillosa. Dicranoweisia crispula. Seligeria polaris. Hypnum intermedium.*

— 3414. *Schistidium gracile v. scabrius. Schistidium apocarpum.*

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— 3440. *Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Orthotrichum speciosum. Encalypta contorta. Encalypta commutata. Webera cruda. Philonotis alpicola. Aulacomnium turgidum. Mnium orthorrhynchum v. nivale.*

Cinclidium subrotundum. Didymodon rubellus. Tortula ruralis. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Myurella apiculata. Orthothecium strictum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Isopterygium pulchellum. Hypnum brevifolium. Hypnum intermedium. Hypnum revolvens. Hypnum uncinatum. Hylocomium proliferum.

Nr. 3441. *Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Distichium capillaceum. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Orthothecium strictum. Hypnum tundræ. Hypnum Bambergeri.*

— 3442. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum latifolium. Hypnum brevifolium. Hypnum revolvens.*

— 3443. *Distichium capillaceum. Distichium Hagenii. Bryum teres.*

— 3444. *Lophozia qvinqvedentata. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Orthothecium chryseum.*

— 3445. *Aulacomnium turgidum. Polytrichum alpinum. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Hypnum Cossoni. Hypnum brevifolium. Hypnum latifolium.*

— 3446. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Schistidium apocarpum. Myurella julacea. Orthothecium chryseum. Campylium stellatum. Hypnum revolutum.*

— 3447. *Lophozia ventricosa. Lophozia qvinqvedentata. Plagiochila arctica. Cephalozia verrucosa. Dicranum spadiceum. Distichium capillaceum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum. Hylocomium proliferum.*

— 3448. *Lophozia excisa. Distichium capillaceum. Tortula ruralis. Orthotrichum speciosum. Webera cruda. Bartramia ityphylla. Hypnum revolutum.*

— 3449. *Ceratodon purpureus. Tortula mucronifolia.*

— 3463. *Cinclidium arcticum. Meesea triqvetra. Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. articum. Campylium stellatum. Hypnum latifolium. Hypnum brevifolium. Hypnum revolvens. Hypnum intermedium. Hypnum giganteum.*

Nr. 3464. *Aplozia atrovirens. Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Lophozia qvinqvedentata. Plagiochila arctica. Scapania irrigua. Ditrichum flexicaule. Rhacomitrium lanuginosum. Webera cruda. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Hylocomium proliferum.*

— 3465. *Webera commutata. Aulacomnium turgidum. Philonotis alpicola. Hypnum uncinatum.*

— 3466. *Lophozia qvinqvedentata. Aulacomnium turgidum. Polytrichum strictum. Polytrichum alpinum.*

— 3467. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum.*

— 3468. *Ceratodon purpureus. Tortula mucronifolia. Encalypta vulgaris.*

— 3469. *Aplozia atrovirens. Lophozia qvadriloba v. heterophylla. Distichium inclinatum. Ditrichum flexicaule. Bryum oeneum. Bryum arcticum. Bryum condensatum. Haplodon Wormskjoldii. Polytrichum alpinum. Orthothecium chryseum.*

— 3470. *Seligeria polaris.*

— 3471. *Distichium capillaceum. Didymodon rubellus. Haplodon Wormskjoldii. Philonotis alpicola. Aulacomnium turgidum. Meesea triqvetra. Cinclidium arcticum. Timmia austriaca. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Hypnum brevifolium. Hypnum intermedium.*

— 3472. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Ptilidium ciliare. Scapania irrigua. Dicranum spadiceum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Aulacomnium turgidum. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum. Hylocomium proliferum.*

— 3473. *Lophozia qvinqvedentata. Ditrichum flexicaule. Mnium affine. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hylocomium proliferum.*

— 3474. *Lophozia alpestris. Tortella tortuosa.*

— 3475. *Distichium capillaceum. Ditrichum flexicaule. Encalypta rhabdocarpa. Timmia austriaca. Campylium stellatum. Hypnum intermedium.*

— 3476. *Lophozia alpestris. Lophozia qvadriloba v. heterophylla.*

Lophozia qvinqvedentata. Plagiochila arctica. Cephalozia verrucosa. Scapania irrigua. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Rhacomitrium lanuginosum. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum. Hylocomnium proliferum.

Nr. 3477. *Distichium capillaceum. Campylium stellatum.*

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— 3515. *Distichium Hagenii. Bryum arcticum.*

— 3516. *Distichium capillaceum. Ditrichum flexicaule. Rhacomitrium lanuginosum. Hypnum revolutum.*

— 3517. *Orthotrichum speciosum. Hypnum revolutum.*

— 3518. *Lophozia qvinqvedentata. Aulacomnium turgidum. Camptothecium nitens. Brachythecium salebrosum. Hypnum uncinatum.*

— 3519. *Lophozia qvinqvedentata. Mnium affine v. integrifolium. Timmia austriaca. Hypnum hamulosum.*

— 3520. *Lophozia qvinqvedeutata. Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum pallens. Bryum ventricosum. Cinclidium subrotundum. Philonotis alpicola. Timmia austriaca. Timmia norvegica. Myurella julacea. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Campylium stellatum. Hypnum revolvens. Hypnum intermedium. Hypnum polycarpon. Hypnum brevifolium. Hypnum sarmentosum. Hypnum turgescens.*

— 3521. *Lophozia harpanthoides. Lophozia alpestris. Lophozia qvinqvedentata. Blepharostoma trichophyllum. Cephalozia verrucosa. Distichium Hagenii. Distichium capillaceum. Ditrichum flexicaule. Didymodon rubellus. Encalypta commutata. Webera cruda. Bryum pallens. Bryum elegans. Cinclidium subrotundum. Philonotis alpicola. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Isopterygium pulchellum. Hypnum revolvens. Hypnum brevifolium. Hypnum latifolium. Hypnum intermedium. Hypnum turgescens.*

— 3522. *Encalypta commutata.*

— 3523. *Lophozia harpanthoides. Lophozia qvinqvedentata. Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus. Webera cruda. Bryum pallens. Philonotis alpicola. Cin-*

clidium subrotundum. Myurella julacea. Myurella apiculata. Isopterygium pulchellum. Hypnum revolvens. Hypnum brevifolium. Hypnum hamulosum.

Nr. 3524. *Arnellia fennica. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Blepharostoma trichophyllum. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Myurella julacea. Orthothecium chryseum.*

— 3525. *Lophozia ventricosa. Plagiochila arctica. Distichium capillaceum. Distichium Hagenii. Ditrichum flexicaule. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Bryum elegans. Mnium affine v. integrifolium. Mnium orthorrhynchum. Timmia norvegica. Timmia austriaca. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum uncinatum.*

— 3526. *Lophozia ventricosa. Lophozia qvinqvedentata. Cephalozia grimsulana. Dichodontium pellucidum. Ditrichum flexicaule. Didymodon rubellus. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Hypnum uncinatum.*

— 3527. *Lophozia qvinqvedentata. Cephalozia verrucosa. Didymodon rubellus.*

— 3528. *Arnellia fennica. Lophozia qvinqvedentata. Cephalozia verrucosa. Distichium capillaceum. Didymodon rubellus.*

— 3529. *Oncophorus virens.*

— 3530. *Distichium capillaceum. Schistidium apocarpum. Orthotrichum Killiasii. Encalypta commutata. Hypnum revolutum.*

— 3531. *Ditrichum flexicaule. Distichium capillaceum. Encalypta vulgaris. Bryum pallens. Hypnum intermedium. Hypnum tundræ. Hypnum revolutum.*

— 3532. *Ceratodon purpureus. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Bryum elegans. Bryum agattuense. Bryum teres. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum. Amblystegium curvicaule. Hypnum intermedium. Hypnum tundræ. Hypnum revolutum.*

— 3533. *Cephalozia verrucosa. Oncophorus Wahlenbergii. Distichium capillaceum. Tortella tortuosa. Mnium affine v. integrifolium. Cinclidium arcticum. Orthothecium chryseum. Hypnum revolvens. Hypnum brevifolium. Hypnum turgescens.*

Nr. 3534. *Lophozia qvadriloba v. heterophylla. Ditrichum flexicaule. Distichium capillaceum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Isopterygium pulchellum.*

— 3535. *Arnellia fennica. Lophozia ventricosa. Distichium capillaceum. Mnium Blyttii. Mnium orthorrhynchum. Aulacomnium acuminatum. Philonotis alpicola. Timmia austriaca. Camptothecium nitens.*

— 3536. *Tortula ruralis. Rhacomitrium lanuginosum. Webera cruda. Hypnum revolutum. Hylocomium proliferum.*

— 3537. *Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum.*

— 3538. *Tortula ruralis. Hypnum revolutum.*

— 3539. *Oncophorus Wahlenbergii. Ditrichum flexicaule. Didymodon rubellus. Distichium capillaceum. Aulacomnium turgidum. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum. Hypnum revolvens.*

— 3540. *Orthothecium strictum. Hypnum brevifolium.*

— 3541. *Cinclidium arcticum.*

— 3442. *Distichium capillaceum. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum. Hypnum intermedium.*

— 3543. *Oncophorus virens.*

— 3544. *Distichium capillaceum. Mnium affine v. integrifolium. Timmia norvegica. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Brachythecium salebrosum. Campylium stellatum.*

— 3545. *Lophozia qvinqvedentata. Cephalozia grimsulana. Oncophorus Wahlenbergii. Ditrichum glaucescens. Distichium capillaceum. Didymodon rubellus. Mnium affine v. integrifolium. Aulacomnium turgidum. Timmia austriaca. Orthothecium chryseum. Hypnum revolvens. Hypnum polycarpon. Hypnum brevifolium.*

Kong Oscars Land; Midtre Gaasefjord, Middagskollen, 22/6 og 26/6 1901.

— 3608. *Campylium polygamum. Hypnum revolvens. Hypnum brevifolium.*

— 3609. *Tortula ruralis.*

Nr. 3610. *Chomocarpon commutatus. Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Tortella tortuosa. Encalypta rhabdocarpa. Webera cruda. Mnium orthorrhynchum v. nivale. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Hypnum uncinatum. Hypnum revolutum.*

— 3611. *Arnellia fennica. Lophozia ventricosa. Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum. Bryum pallens. Encalypta commutata. Catascopium nigritum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Camptothecium nitens. Campylium polygamum. Hypnum brevifolium.*

— 3612. *Ditrichum flexicaule. Rhacomitrium lanuginosum. Orthotrichum speciosum. Aulacomnium turgidum. Hypnum revolutum. Hylocomium proliferum.*

— 3613. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Schistidium apocarpum. Orthotrichum speciosum. Mnium orthorrhynchum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Hypnum revolutum.*

— 3614. *Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Cinclidium polare. Orthothecium chryseum. Hypnum revolvens.*

— 3615. *Distichium capillaceum. Amblystegium filicinum v. filiforme.*

— 3617. *Arnellia fennica. Lophozia Wenzelii. Lophozia qvinqvedentata. Sphenolobus minutus. Cephalozia verrucosa. Dicranum sphagni. Distichium capillaceum. Didymodon rubellus. Rhacomitrium lanuginosum. Webera cruda. Aulacomnium acuminatum. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Hypnum hamulosum. Hylocomium proliferum.*

— 3618. *Ditrichum flexicaule. Distichium capillaceum. Cinclidium polare. Orthothecium chryseum. Hypnum revolvens.*

— 3619. *Lophozia qvinqvedentata. Ditrichum flexicaule. Rhacomitrium lanuginosum. Aulacomnium turgidum. Hypnum uncinatum. Hylocomium proliferum.*

— 3620. *Tortula ruralis. Hypnum revolutum. Hylocomium proliferum.*

Nr. 3621. *Ditrichum flexicaule. Distichium capillaceum. Polytrichum alpinum. Hypnum brevifolium.*

— 3622. *Tortula ruralis. Orthotrichum speciosum. Timmia austriaca. Polytrichum alpinum. Hypnum revolutum.*

— 3623. *Ditrichum flexicaule. Tortula ruralis. Rhacomitrium lanuginosum. Orthotrichum speciosum. Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum. Hypnum revolutum. Hylocomium proliferum.*

— 3624. *Lophozia qvinqvedentata. Gymnostomum rupestre. Ditrichum flexicaule. Ceratodon purpureus. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum.*

— 3625. *Lophozia harpanthoides. Lophozia ventricosa. Diplophyllum incurvum. Ditrichum flexicaule. Distichium capillaceum. Rhacomitrium lanuginosum. Encalypta procera. Mnium orthorrhynchum. Aulacomnium acuminatum. Timmia austriaca. Polytrichum alpinum.*

— 3626. *Mnium orthorrhynchum. Amblystegium Sprucei.*

— 3627. *Arnellia fennica. Lophozia ventricosa. Mesoptychia Sahlbergii. Blepharostoma trichophyllum. Cephalozia verrucosa. Distichium capillaceum. Tortula ruralis. Rhacomitrium lanuginosum. Encalypta commutata. Webera cruda. Mnium orthorrhynchum. Mnium Blyttii. Aulacomnium acuminatum. Philonotis alpicola. Timmia austriaca. Camptothecium nitens. Campylium stellatum.*

— 3628. *Arnellia fennica. Distichium capillaceum. Encalypta commutata. Mnium orthorrhynchum.*

— 3629. *Lophozia Wenzelii. Lophozia qvinqvedentata. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Gymnostomum rupestre. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta apophysata. Encalypta commutata. Webera cruda. Bryum pallens. Mnium orthorrhynchum. Aulacomnium turgidum. Philonotis alpicola. Timmia norvegica. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Camptothecium nitens. Hypnum intermedium. Hylocomium proliferum.*

— 3630. *Cephalozia verrucosa. Hymenostylium curvirostre. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Encalypta contorta. Polytrichum alpinum.*

— 3631. *Arnellia fennica. Lophozia harpanthoides. Lophozia alpestris. Blepharostoma trichophyllum. Ditrichum flexicaule. Disti-*

chium Hagenii. Distichium capillaceum. Encalypta commutata. Encalypta contorta. Mnium Blyttii. Aulacomnium acuminatum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Myurella apiculata. Orthothecium chryseum. Camptothecium nitens. Campylium stellatum.

Nr. 3632. *Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Encalypta rhabdocarpa. Webera cruda. Bryum arcticum. Mnium orthorrhynchum v. nivale. Aulacomnium turgidum. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Campylium stellatum. Hypnum revolutum.*

— 3633. *Diplophyllum incurvum. Ditrichum flexicaule. Tortula ruralis. Encalypta procera. Polytrichum alpinum. Myurella apiculata. Isopterygium pulchellum. Hypnum tundræ. Hypnum revolutum.*

— 3634. *Timmia austriaca. Hypnum revolutum.*

— 3635. *Ditrichum flexicaule. Tortula ruralis. Orthotrichum speciosum. Timmia austriaca. Hypnum revolutum. Hylocomium proliferum.*

— 3636. *Lophozia ventricosa. Lophozia qvinqvedentata. Sphenolobus minutus. Dicranum sphagni. Ditrichum flexicaule. Rhacomitrium lanuginosum. Mnium orthorrhynchum. Timmia austriaca. Polytrichum alpinum. Hypnum uncinatum. Hypnum hamulosum. Hypnum revolutum. Hylocomium proliferum.*

— 3651. *Pottia Heimii v. obtusifolia. Desmatodon suberectus.*

— 3652. *Arnellia fennica. Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Blepharostoma trichophyllum. Ditrichum flexicaule. Camptothecium nitens. Amblystegium Sprucei. Ctenidium procerrimum.*

— 3653. *Tortula mucronifolia. Tortula ruralis. Amblystegium filicinum.*

— 3654. *Bryum arcticum. Hypnum revolutum.*

— 3655. *Brachythecium salebrosum.*

— 3656. *Distichium capillaceum. Hypnum revolutum.*

— 3657. *Pottia Heimii v. obtusifolia. Desmatodon suberectus. Funaria hygrometrica v. arctica.*

— 3658. *Distichium capillaceum. Didymodon alpigena. Webera nutans. Aulacomnium acuminatum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum.*

Camptothecium nitens. Brachythecium salebrosum. Hylocomium proliferum.

Kong Oscars Land; Midtre Gaasefjord, 22–23/8 1901.

Nr. 3666. *Lophozia ventricosa. Lophozia qvinqvedentata. Cephalozia verrucosa. Aulacomnium turgidum. Polytrichum strictum. Hypnum tundræ.*

— 3667. *Voitia hyperborea. Ditrichum flexicaule. Distichium inclinatum. Didymodon alpigena. Rhacomitrium canescens. Webera nutans. Bryum pallens. Philonotis cæspitosa. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Campylium stellatum. Hypnum uncinatum. Hypnum tundræ. Hypnum revolutum.*

— 3668. *Distichium inclinatum. Bryum oeneum.*

— 3670. *Lophozia qvinqvedentata. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Cephalozia pleniceps. Cephalozia grimsulana. Hymenostylium curvirostre.*

— 3671. *Lophozia Wenzelii. Lophozia qvinqvedentata. Dicranum spadiceum. Dicranum sphagni. Ditrichum flexicaule. Rhacomitrium lanuginosum. Webera nutans. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum. Hypnum hamulosum. Hylocomium proliferum.*

— 3672. *Aplozia atrovirens v. gracilis. Lophozia harpanthoides. Lophozia qvadriloba v. heterophylla. Anthelia Juratskana. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Fissidens arcticus. Bryum pallens. Aulacomnium turgidum. Psilopilum lævigatum. Polytrichum alpinum. Myurella julacea. Camptothecium nitens. Hypnum uncinatum. Hypnum revolutum. Hypnum polare.*

— 3673. *Ceratodon purpureus. Tortula mucronifolia. Brachythecium salebrosum v. arcticum. Hypnum revolutum.*

— 3674. *Timmia austriaca. Psilopilum lævigatum. Polytrichum alpinum.*

— 3675. *Schistidium apocarpum.*

— 3676. *Distichium capillaceum. Timmia austriaca.*

— 3677. *Philonotis alpicola.*

— 3678. *Ceratodon purpureus. Didymodon alpigena. Amblystegium filicinum v. filiforme. Hypnum latifolium.*

Nr. 3679. *Lophozia qvinqvedentata. Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum spadiceum. Dicranum sphagni. Webera nutans. Bryum cyclophyllum. Bryum nitidulum. Bryum teres. Aulacomnium turgidum. Polytrichum alpinum. Camptothecium nitens. Hypnum uncinatum. Hypnum hamulosum.*

— 3680. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Camptothecium nitens.*

— 3681. *Ceratodon purpureus. Encalypta contorta. Philonotis alpicola. Timmia austriaca. Brachythecium salebrosum v. arcticum. Hypnum tundræ.*

— 3682. *Eurhynchium diversifolium. Hypnum revolutum.*

— 3683. *Ditrichum flexicaule. Distichium Hagenii. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Bryum pallens. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Campylium stellatum. Hypnum uncinatum. Hypnum intermedium. Hypnum tundræ.*

— 3684. *Lophozia qvinqvedentata. Lophozia Binsteadii. Dicranum brevifolium. Aulacomnium turgidum.*

— 3685. *Lophozia ventricosa. Ditrichum flexicaule. Webera nutans. Aulacomnium turgidum. Philonotis alpicola. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum. Hylocomium proliferum.*

— 3686. *Hypnum uncinatum.*

— 3687. *Cesia corallioides. Cephalozia verrucosa. Scapania rosacea. Andreæa papillosa.*

— 3688. *Ditrichum flexicaule. Aulacomnium turgidum. Timmia austriaca. Orthothecium chryseum. Hypnum uncinatum. Hypnum revolutum. Hylocomium proliferum.*

— 3689. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Tortula ruralis. Timmia austriaca. Timmia norvegica. Polytrichum alpinum. Myurella julacea. Orthothecium strictum. Orthothecium chryseum. Brachythecium salebrosum. Campylium stellatum. Hypnum uncinatum.*

— 3690. *Lophozia qvadriloba. Plagiochila arctica. Diplophyllum incurvum. Distichium Hagenii. Rhacomitrium canescens. Ditrichum flexicaule. Mnium Blyttii. Didymodon rubellus. Timmia austriaca. Philonotis alpicola. Polytrichum alpinum.*

Myurella julacea. Orthothecium strictum. Campylium stellatum. Hypnum uncinatum. Hypnum revolutum. Ctenidium procerrimum.

Nr. 3693. *Bryum teres. Bryum calophyllum. Campylium stellatum. Hypnum intermedium. Hypnum brevifolium. Hypnum turgescens.*

— 3694. *Schistidium apocarpum.*

— 3695. *Lophozia qvinqvedentata. Oncophorus virens. Orthothecium chryseum. Campylium stellatum. Hypnum intermedium.*

— 3696. *Distichium capillaceum. Tortula mucronifolia.*

— 3697. *Distichium capillaceum. Ceratodon purpureus. Bryum calophyllum. Bryum cyclophyllum. Bryum teres. Bryum neodamense v. ovatum.*

— 3698. *Distichium Hagenii. Didymodon rubellus.*

— 3699. *Ditrichum flexicaule. Distichium capillaceum. Bryum calophyllum. Bryum teres. Campylium stellatum.*

— 3700. *Tetraplodon mnioides. Haplodon Wormskjoldii.*

— 3701. *Lophozia badensis. Ditrichum flexicaule. Distichium Hagenii. Distichium capillaceum. Didymodon rubellus. Desmatodon suberectus. Fissidens exiguus. Haplodon Wormskjoldii. Bryum opdalense v. carneum. Bryum arcticum. Bryum oeneum. Bryum compactum. Bryum teres.*

— 3702. *Lophozia harpanthoides. Lophozia badensis. Cephalozia verrucosa. Cephalozia grimsulana. Encalypta commutata. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum.*

— 3703. *Ditrichum flexicaule. Bryum elegans. Myurella julacea. Campylium stellatum. Hypnum latifolium. Hypnum tundræ. Hypnum turgescens.*

— 3704. *Lophozia qvinqvedentata. Lophozia qvadriloba v. heterophylla. Plagiochila arctica. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Encalypta commutata. Cinclidium subrotundum. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Hypnum uncinatum. Hypnum latifolium. Hypnum giganteum.*

— 3705. *Schistidium apocarpum f. epilosa.*

— 3706. *Distichium capillaceum. Didymodon rubellus. Cinclidium subrotundum. Catascopium nigritum. Orthothecium chryseum. Campylium stellatum. Hypnum brevifolium. Hypnum latifolium.*

Nr. 3707. *Tortella tortuosa. Campylium stellatum. Hypnum intermedium.*

— 3708. *Ceratodon purpureus. Bryum calophyllum v. elongatum. Bryum Simmonsii. Campylium stellatum. Hypnum latifolium. Hypnum tundræ. Hypnum turgescens.*

— 3709. *Bryum Stirtoni. Campylium stellatum. Hypnum brevifolium.*

— 3710. *Distichium capillaceum. Cinclidium subrotundum. Catascopium nigritum. Orthothecium chryseum. Hypnum intermedium. Hypnum turgescens. Hypnum giganteum.*

— 3711. *Distichium Hagenii. Desmatodon Laureri. Tetraplodon mnioides. Bryum Limprichtii. Orthothecium strictum. Brachythecium salebrosum. Campylium stellatum.*

— 3712. *Ceratodon purpureus. Amblystegium filicinum v. filiforme.*

— 3713. *Ditrichum flexicaule. Distichium inclinatum. Gymnostomum rupestre. Tortella tortuosa. Encalypta commutata. Webera cruda. Polytrichum alpinum. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum intermedium.*

— 3714. *Ditrichum flexicaule. Cinclidium polare. Orthothecium strictum. Hypnum turgescens.*

— 3715. *Campylium stellatum. Hypnum brevifolium. Hypnum turgescens.*

— 3716. *Haplodon Wormskjoldii. Philonotis alpicola. Polytrichum alpinum. Orthothecium chryseum.*

— 3717. *Bryum calophyllum. Campylium stellatum. Hypnum revolvens. Hypnum brevifolium. Hypnum latifolium. Hypnum turgescens.*

— 3718. *Campylium stellatum.*

Kong Oscars Land, Midtre Gaasefjord 27/8 1901.

— 3725. *Hypnum brevifolium. Hypnum turgescens.*

— 3726. *Bryum Fridtzii.*

— 3727. *Oncophorus Wahlenbergii. Dicranella heteromalla. Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula mucronifolia. Encalypta rhabdocarpa. Encalypta commutata. Voitia hyperborea. Tetraplodon mnioides. Bryum oeneum. Bryum pendulum. Campylium stellatum. Hypnum uncinatum. Hypnum tundræ.*

— 3728. *Distichium capillaceum. Distichium inclinatum.*

— 3729. *Cinclidium subrotundum. Philonotis alpicola. Timmia nor-*

vegica. Orthothecium chryseum. Hypnum intermedium. Hypnum tundræ. Hypnum giganteum.

Nr. 3730. *Lophozia harpanthoides. Lophozia alpestris. Lophozia qvadriloba v. heterophylla. Blepharostoma trichophyllum. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Encalypta commutata. Mnium Blyttii. Timmia austriaca. Polytrichum alpinum. Myurella julacea. Hypnum uncinatum.*

— 3731 a. *Aplozia polaris. Cephalozia verrucosa. Ditrichum flexicaule. Distichium Hagenii. Ceratodon purpureus. Didymodon rubellus. Encalypta rhabdocarpa. Encalypta commutata. Encalypta procera. Voitia hyperborea. Bryum pallens. Bryum cirratum. Philonotis alpicola. Timmia austriaca. Myurella julacea. Myurella apiculata. Hypnum intermedium. Hypnum turgescens.*

— 3731 b. *Aplozia polaris. Cephalozia verrucosa. Voitia hyperborea. Orthothecium strictum. Campylium stellatum. Hypnum tundræ.*

— 3732. *Ditrichum flexicaule. Didymodon rubellus. Bryum angustidens. Bryum teres. Polytrichum alpinum. Camptothecium nitens. Campylium stellatum.*

— 3733. *Clevea hyalina. Distichium capillaceum. Tortula ruralis. Timmia austriaca. Hypnum uncinatum. Hypnum latifolium.*

— 3734. *Lophozia harpanthoides. Cephalozia grimsulana. Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Timmia austriaca.*

— 3735. *Brachythecium salebrosum v. turgidum. Campylium stellatum. Hypnum intermedium. Hypnum polycarpon.*

— 3736. *Ditrichum flexicaule. Hypnum uncinatum.*

— 3737. *Lophozia ventricosa. Lophozia qvadriloba v. heterophylla. Cephalozia grimsulana. Distichium capillaceum. Ditrichum flexicaule. Tortula ruralis. Mnium Blyttii. Timmia austriaca. Timmia norvegica. Polytrichum alpinum. Myurella julacea. Orthothecium strictum. Camptothecium nitens. Hypnum uncinatum.*

— 3738. *Orthothecium chryseum. Campylium stellatum. Hypnum polycarpon. Hypnum intermedium. Hypnum brevifolium. Hypnum giganteum.*

— 3739. *Oncophorus virens. Distichium capillaceum. Polytrichum alpinum. Orthothecium chryseum. Hypnum intermedium.*

Nr. 3740. *Distichium capillaceum. Timmia austriaca. Camptothecium nitens. Hypnum uncinatum.*

— 3741. *Hypnum brevifolium.*

— 3742. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rufus. Polytrichum alpinum. Hypnum uncinatum.*

— 3743. *Ditrichum flexicaule. Distichium capillaceum. Schistidium apocarpum. Rhacomitrium lanuginosum. Myurella julacea. Orthothecium chryseum. Amblystegium filicinum v. filiforme. Campylium stellatum. Hypnum revolutum.*

— 3744. *Clevea hyalina. Lophozia alpestris. Ditrichum flexicaule. Encalypta commutata. Philonotis alpicola. Timmia norvegica. Orthothecium chryseum. Eurhynchium cirrosum. Ctenidum procerrimum.*

— 3745. *Lophozia ventricosa. Ditrichum flexicaule. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium filicinum. Campylium stellatum. Hypnum intermedium.*

— 3746. *Lophozia ventricosa. Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Mnium Blyttii. Timmia austriaca. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Hypnum uncinatum.*

— 3747. *Bryum calophyllum. Philonotis alpicola. Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum latifolium.*

— 3750. *Amblystegium filicinum v. curvicaule. Campylium stellatum. Hypnum revolvens. Hypnum latifolium. Hypnum brevifolium. Hypnum turgescens.*

Kong Oscars Land, Midtre Gaasefjord (Gulberget) 4/9 1901.

— 3808. *Hymenostylium curvirostre. Gymnostomum læve.*

— 3809. *Schistidium apocarpum.*

— 3810. *Encalypta commutata. Voitia hyperborea. Bryum pallens. Bryum pendulum. Amblystegium filicinum v. curvicaule.*

— 3811. *Ditrichum flexicaule. Didymodon rufus. Brachythecium salebrosum. Eurhynchium cirrosum. Amblystegium filicinum v. filiforme. Hypnum revolutum.*

— 3812. *Distichium capillaceum. Ditrichum flexicaule. Pottia latifolia. Tortella fragilis. Bryum neodamense. Polytrichum alpinum. Myurella julacea.*

Kong Oscars Land, Midtre Gaasefjord (Borgdalen) 7/9 1901.

Nr. 3814. *Distichium capillaceum. Ceratodon purpureus. Pottia Heimii v. obtusifolia. Desmatodon suberectus. Didymodon rubellus. Encalypta contorta. Encalypta commutata. Webera nutans. Bryum pallens. Philonotis cæspitosa. Timmia norvegica. Orthothecium chryseum.*

— 3815. *Distichium capillaceum. Didymodon alpigena. Encalypta procera. Catascopium nigritum. Cinclidium subrotundum. Orthothecium chryseum. Orthothecium strictum. Campylium stellatum. Hypnum intermedium. Hypnum brevifolium. Hypnum latifolium.*

— 3816. *Distichium capillaceum. Didymodon rubellus. Ceratodon purpureus. Voitia hyperborea. Haplodon Wormskjoldii. Leptobryum pyriforme. Bryum pendulum. Cinclidium subrotundum. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum v. turgidum Isopterygium pulchellum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Campylium stellatum. Campylium protensum. Hypnum intermedium. Hypnum giganteum.*

— 3817. *Voitia hyperborea. Haplodon Wormskjoldii. Bryum Fridtzii. Eurhynchium cirrosum. Amblystegium filicinum v. curvicaule.*

North Devon; Havhestberget 22/7 1901 (leg. Schei).

— 3832. *Bryum ventricosum.*

— 3833. *Ceratodon purpureus. Tortula ruralis. Amblystegium filicinum v. curvicaule. Hypnum Vaucheri f. subjulacea.*

— 3834. *Distichium capillaceum. Tortula ruralis. Encalypta commutata. Hypnum revolutum.*

— 3842. *Camptothecium nitens. Brachythecium salebrosum.*

— 3847. *Bryum teres. Bryum pendulum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

— 3848. *Marchantia polymorpha. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Bryum oeneum. Bryum elegans. Bryum obtusifolium. Bryum pendulum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

Kong Oscars Land, Stenkulsfjorden 31/5 1902.

— 3853. *Funaria hygrometrica v. arctica.*

Kong Oscars Land; Ydre Gaasefjord (Falkberget) 13/6 1902.

Nr. 3881. *Gymnostomum læve. Grimmia anodon.*

— 3882. *Gymnostomum læve. Ceratodon purpureus. Didymodon rubellus. Bryum argentum. Timmia norvegica. Amblystegium filicinum. Amblystegium filicinum v. curvicaule. Hypnum Vaucheri. Hypnum palustre.*

— 3883. *Marchantia polymorpha. Mnium affine v. integrifolium.*

— 3884. *Gymnostomum læve.*

— 3885. *Marchantia polymorpha. Didymodon rubellus. Tortula ruralis. Encalypta contorta. Tetraplodon mnioides. Bryum pendulum. Mnium medium. Brachythecium salebrosum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule.*

— 3886. *Hymenostylium curvirostre. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Tortula mucronifolia. Encalypta contorta. Encalypta vulgaris. Bryum argenteum. Amblystegium filicinum v. curvicaule. Hypnum Vaucheri.*

— 3887. *Didymodon rubellus. Desmatodon suberectus. Encalypta rhabdocarpa. Leptobryum pyriforme. Bryum arcuatum. Mnium medium. Timmia norvegica. Brachythecium salebrosum.*

— 3888. *Didymodon rubellus. Ceratodon purpureus. Tortula mucronifolia. Amblystegium fillcinum v. curvicaule. Hypnum Vaucheri.*

— 3889. *Gymnostomum læve.*

— 3890. *Bryum pendulum. Bryum pendulum v. striolatum. Mnium affine v. integrifolium. Amblystegium filicinum v. curvicaule.*

— 3891. *Gymnostomum rupestre. Tortula mucronifolia. Encalypta vulgaris. Amblystegium filicinum.*

— 3892. *Marchantia polymorpha. Bryum pendulum. Mnium affine v. integrifolium. Brachythecium salebrosum. Hypnum polycarpon.*

— 3893. *Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Amblystegium filicinum v. curvicaule. Hypnum Vaucheri.*

— 3894. *Ditrichum flexicaule. Distichium capillaceum. Bryum oeneum. Bryum pendulum. Timmia norvegica.*

— 3395. *Tetraplodon mnioides. Mnium medium.*

3896. *Bryum pendulum. Amblystegium filicinum.*

— 3897. *Clevea hyalina. Gymnostomum rupestre. Hymenostylium*

curvirostre. Didymodon rubellus. Leptobryum pyriforme. Bryum argenteum. Mnium medium. Timmia norvegica. Amblystegium filicinum.

Nr. 3898. *Gymnostomum rupestre. Didymodon rubellus. Desmatodon suberectus. Encalypta rhabdocarpa. Mnium medium. Brachythecium salebrosum. Amblystegium filicinum.*

— 3899. *Ceratodon purpureus. Didymodon rubellus. Amblystegium filicinum.*

— 3900. *Mielichhoferia Porsildii.*

Kong Oscars Land; Gaasefjord (4de Vinterkvarter) 26/6 1902.

— 3903. *Schistidium apocarpum f. epilosa.*

— 3904. *Riccardia pingvis. Arnellia fennica. Lophozia harpanthoides. Lophozia qvinqvedentata. Sphenolobus minutus. Plagiochila arctica. Blepharostoma trichophyllum. Cephalozia verrucosa. Dicranum elongatum. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Rhacomitrium lanuginosum. Encalypta commutata. Mnium orthorrhynchum. Plagiopus Oederi. Timmia austriaca. Polytrichum alpinum. Myurella apiculata. Orthothecium chryseum. Hypnum revolutum.*

— 3905. *Lophozia Binsteadii. Lophozia qvinqvedentata. Sphenolobus minutus. Blepharostoma trichophyllum. Dicranum elongatum. Dicranum spadiceum. Tortula ruralis. Rhacomitrium canescens. Mnium orthorrhynchum. Timmia austriaca. Polytrichum alpinum. Hypnum revolutum.*

— 3906. *Distichium capillaceum. Amphidium lapponicum.*

— 3907. *Arnellia fennica. Cephalozia verrucosa. Ditrichum flexicaule. Distichium capillaceum. Plagiopus Oederi.*

— 3908. *Desmatodon suberectus. Tortula mucronifolia. Voitia hyperborea. Bryum oeneum. Bryum pendulum. Philonotis alpicola.*

— 3909. *Lophozia qvinqvedentata. Blepharostoma trichophyllum. Odontoschisma Macounii. Cephalozia pleniceps. Cephalozia verrucosa. Dicranum spadiceum. Ditrichum flexicaule. Distichium capillaceum. Webera nutans. Mnium orthorrhynchum. Cinclidium hymenophyllum. Aulacomnium turgidum. Timmia austriaca. Myurella julacea. Orthothecium chryseum. Orthothecium strictum.*

— 3910. *Seligeria polaris.*

Nr. 3911. *Arnellia fennica. Lophozia qvinqvedentata. Lophozia Binsteadii. Sphenolobus minutus. Plagiochila arctica. Dicranum elongatum. Bryum pendulum. Mnium orthorrhynchum v. nivale. Timmia austriaca. Polytrichum alpinum.*

— 3912. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Bryum crispulum v. densifolium. Cinclidium subrotundum. Myurella julacea. Orthothecium strictum. Hypnum brevifolium. Hypnum latifolium.*

Kong Oscars Land; Midtre Gaasefjord (Borgdalen) 23/6 1902.

— 3914. *Voitia hyperborea. Tortula mucronifolia. Cinclidium subrotundum.*

— 3915. *Pottia Heimii v. obtusifolia.*

— 3916. *Tortula mucronifolia. Voitia hyperborea. Bryum arcuatum. Amblystegium filicinum.*

Kong Oscars Land; Midtre Gaasefjord (Gulberget) 24/6 1902.

— 3918. *Distichium capillaceum. Webera nutans. Timmia norvegica. Campylium stellatum. Hypnum latifolium. Hypnum turgescens.*

— 3919. *Ditrichum flexicaule. Distichium capillaceum. Encalypta commutata. Webera cruda. Bryum oeneum. Bryum pallens. Timmia norvegica. Orthothecium chryseum. Campylium stellatum. Hypnum intermedium. Hypnum latifolium. Hypnum turgescens.*

— 3920. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Campylium stellatum.*

— 3921. *Distichium capillaceum. Hypnum Vaucheri.*

— 3922. *Schistidium apocarpum.*

— 3923. *Ditrichum flexicaule. Tortula ruralis. Webera cruda. Amblystegium filicinum v. curvicaule.*

— 3924. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Tortula ruralis. Myurella julacea. Hypnum revolutum.*

— 3925. *Oncophorus Wahlenbergii. Distichium capillaceum. Encalypta commutata. Bryum arcticum. Cinclidium subrotundum. Philonotis alpicola. Polytrichum alpinum. Myurella julacea. Orthothecium chryseum. Hypnum intermedium.*

Kong Oscars Land; Gaasefjord, 4de Vinterkvarter 30/6 1902.

Nr. 3938. *Lophozia alpestris. Lophozia qvadriloba. Lophozia qvinqvedentata. Anthelia julacea. Cephalozia verrucosa. Ditrichum flexicaule f. longifolia. Distichium capillaceum. Timmia austriaca. Myurella julacea. Hylocomium proliferum.*

— 3939. *Schistidium apocarpum.*

— 3940. *Hypnum polare v. leptodictyon.*

— 3941. *Schistidium apocarpum f. epilosa.*

Kong Oscars Land; Gaasefjord, Borgen 1/7 1902.

— 3943. *Timmia norvegica. Hypnum tundræ. Hypnum palustre.*

Kong Oscars Land; Gaasefjord, Gulberget 4/7 1902.

— 3944. *Bryum pendulum. Eurhynchium diversifolium.*

— 3945. *Lophozia qvinqvedentata. Aulacomnium turgidum.*

Kong Oscars Land; Gaasefjord, Borgdalen 4/7 1902.

— 3946. *Hypnum brevifolium. Hypnum giganteum.*

— 3947. *Sphenolobus minutus. Dicranum elongatum. Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Voitia hyperborea. Bryum arcticum. Bryum neodamense v. ovatum. Cinclidium subrotundum. Meesea triqvetra. Timmia austriaca. Polytrichum alpinum. Orthothecium chryseum. Campylium stellatum. Hypnum polycarpon. Hypnum intermedium. Hypnum latifolium. Hypnum brevifolium. Hypnum giganteum. Hypnum turgescens.*

— 3948. *Distichium capillaceum.*

North Devon; Havhestberget 15/7 1902.

— 4019. *Bryum obtusifolium.*

— 4020. *Ceratodon purpureus. Amblystegium filicinum v. curvicaule.*

— 4021. *Amblystegium filicinum v. curvicaule. Hypnum turgescens.*

— 4022. *Schistidium apocarpum f. epilosa.*

— 4023. *Tortula ruralis. Orthotrichum Killiasii. Timmia austriaca. Hypnum uncinatum. Hypnum revolutum.*

— 4024. *Tortula ruralis. Bryum Stirtoni. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

— 4025. *Tortula ruralis.*

Nr. 4026. *Schistidium apocarpum v. filiforme. Schistidium apocarpum f. epilosa.*

— 4027. *Mnium affine. Timmia norvegica. Amblystegium filicinum.*

— 4028. *Tortula ruralis. Timmia austriaca. Brachythecium salebrosum. Hypnum uncinatum. Hypnum revolutum.*

— 4029. *Arnellia fennica. Distichium capillaceum. Ditrichum flexicaule. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Mnium medium. Timmia austriaca. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Hypnum uncinatum.*

— 4030. *Encalypta rhabdocarpa. Bryum arcticum. Timmia norvegica.*

— 4031. *Distichium capillaceum. Tortula ruralis. Schistidium apocarpum f. epilosa. Schistidium apocarpum v. filiforme. Orthotrichum Killiasii. Brachythecium salebrosum v. arcticum. Hypnum revolutum.*

— 4032. *Didymodon rubellus. Haplodon Wormskjoldii. Bryum pendulum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

— 4033. *Haplodon Wormskjoldii.*

— 4034. *Haplodon Wormskjoldii.*

— 4035. *Ditrichum flexicaule. Distichium capillaceum. Didymodon rubellus. Tortula ruralis. Bryum ventricosum. Mnium affine v. integrifolium. Mnium subglobosum. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei. Campylium stellatum. Hypnum uncinatum. Hypnum Bambergeri.*

— 4036. *Schistidium apocarpum v. filiforme. Schistidium apocarpum f. epilosa.*

— 4037. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Mnium orthorrhynchum v. nivale. Timmia austriaca. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum. Amblystegium filicinum. Hypnum uncinatum. Hypnum tundræ. Hypnum polycarpon. Hypnum latifolium. Ctenidium procerrimum.*

— 4038. *Brachythecium salebrosum. Amblystegium Sprucei.*

— 4039. *Brachythecium salebrosum v. arcticum. Hypnum uncinatum.*

— 4040. *Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 4041. *Mnium subglobosum. Brachythecium salebrosum v. arcticum.*

Nr. 4042. *Bryum crispulum. Mnium subglobosum. Mnium affine v. integrifolium. Philonotis alpicola. Orthothecium chryseum. Camptothecium nitens. Hypnum uncinatum.*

— 4043. *Hypnum revolutum v. subjulaceum.*

— 4044. *Timmia austriaca. Orthothecium chryseum.*

— 4045. *Bryum crispulum. Bryum pendulum. Mnium subglobosum. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum brevifolium. Hypnum latifolium.*

— 4046. *Bryum obtusifolium. Mnium medium. Orthothecium chryseum. Amblystegium filicinum.*

— 4047. *Mnium affine. Orthothecium chryseum. Hypnum uncinatum. Hypnum polycarpon.*

— 4048. *Mielichhoferia Porsildii.*

— 4049. *Ditrichum flexicaule. Distichium capillaceum. Tortula ruralis. Myurella julacea. Myurella apiculata. Orthothecium strictum. Orthothecium chryseum. Brachythecium salebrosum v. arcticum.*

— 4050. *Ditrichum flexicaule. Didymodon rubellus. Tortula ruralis. Encalypta contorta. Mnium medium. Timmia norvegica. Orthothecium chryseum. Orthothecium strictum. Camptothecium nitens. Brachythecium salebrosum. Brachythecium salebrosum v. turgidum. Amblystegium Sprucei. Hypnum uncinatum. Hypnum revolutum.*

— 4051. *Tortula ruralis. Amblystegium filicinum.*

— 4052. *Tortula aciphylla. Bryum neodamense. Mnium affine. Amblystegium filicinum v. curvicaule.*

Cardigan Strait; Djævleøen 19/7 1902.

— 4081. *Orthothecium chryseum.*

— 4082. *Schistidium apocarpum f. epilosa.*

— 4083. *Marchantia polymorpha. Didymodon rubellus. Tortula mucronifolia. Tortula ruralis. Schistidium apocarpum. Haplodon Wormskjoldii. Bryum pallens. Mnium affine v. integrifolium. Brachythecium salebrosum.*

— 4084. *Tortula ruralis. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 4085. *Tortula ruralis. Hypnum revolutum v. subjulaceum.*

— 4086. *Distichium capillaceum. Ditrichum flexicaule. Ceratodon*

purpureus. Didymodon rubellus. Tortula ruralis. Schistidium apocarpum. Bryum oeneum. Timmia norvegica f. brevifolia. Orthothecium strictum. Orthothecium chryseum. Hypnum Bambergeri. Hypnum turgescens.

Nr. 4087. *Ditrichum flexicaule. Distichium capillaceum. Ceratodon purpureus. Didymodon rubellus. Tortula ruralis. Myurella julacea. Orthothecium chryseum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Hypnum Bambergeri.*

— 4088. *Marchantia polymorpha. Pottia Heimii v. obtusifolia. Didymodon rubellus. Tortula ruralis. Haplodon Wormskjoldii. Bryum Stirtoni. Mnium affine v. integrifolium. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4089. *Bryum oeneum. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4090. *Ditrichum flexicaule. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 4091. *Tortula ruralis. Mnium affine. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4092. *Tortula ruralis. Mnium affine v. integrifolium. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 4093. *Ditrichum flexicaule.*

— 4094. *Schistidium apocarpum f. epilosa. Timmia norvegica f. brevifolia.*

— 4095. *Orthothecium chryseum. Camptothecium nitens.*

— 4096. *Tortula rura'is. Bryum Stirtoni. Brachythecium salebrosum.*

— 4097. *Ditrichum flexicaule. Tortula ruralis. Orthothecium chryseum. Hypnum revolutum.*

— 4098. *Ditrichum flexicaule. Tortula ruralis. Encalypta contorta. Bryum elegans. Orthothecium chryseum. Brachythecium salebrosum v. arcticum. Hypnum Bambergeri. Hypnum revolutum.*

— 4099. *Tortula ruralis. Haplodon Wormskjoldii. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Hypnum uncinatum.*

— 4100. *Mnium affine v. integrifolium. Timmia norvegica. Orthothecium chryseum. Brachythecium salebrosum.*

— 4101. *Tortula ruralis. Hypnum uncinatum.*

— 4102. *Tortula ruralis. Timmia norvegica f. brevifolia. Amblystegium filicinum v. curvicaule.*

Nr. 4103. *Distichium capillaceum. Haplodon Wormskjoldii. Bryum oeneum.*

— 4104. *Marchantia polymorpha. Desmatodon suberectus. Didymodon rubellus. Tortula ruralis. Encalypta commutata. Haplodon Wormskjoldii. Bryum Stirtoni. Bryum pendulum. Mnium affine v. integrifolium. Mnium subglobosum. Brachythecium salebrosum. Amblystegium filicinum.*

— 4105. *Schistidium apocarpum v. filiforme.*

— 4106. *Marchantia polymorpha. Distichium capillaceum. Tortula ruralis. Bryum oeneum. Mnium affine v. integrifolium. Orthothecium chryseum. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4107. *Didymodon rubellus. Tortula mucronifolia. Tortula ruralis. Encalypta contorta. Schistidium apocarpum f. epilosa. Amblystegium Sprucei.*

— 4108. *Ditrichum flexicaule. Tortula ruralis. Schistidium gracile Hypnum revolutum.*

— 4109. *Haplodon Wormskjoldii. Mnium affine v. integrifolium. Brachythecium salebrosum v. arcticum.*

— 4110. *Ditrichum flexicaule. Timmia norvegica f. brevifolia. Orthothecium chryseum.*

— 4111. *Bryum Stirtoni. Brachythecium salebrosum v. arcticum.*

— 4112. *Bryum oeneum. Orthothecium chryseum. Hypnum polycarpon.*

— 4113. *Tortula ruralis. Bryum pendulum. Mnium affine v. integrifolium.*

— 4114. *Bryum elegans. Timmia norvegica f. brevifolia. Orthothecium chryseum. Amblystegium filicinum v. curvicaule.*

— 4115. *Hypnum Bambergeri.*

— 4116. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum f. epilosa. Bryum elegans. Orthothecium chryseum. Hypnum turgescens.*

— 4117. *Haplodon Wormskjoldii.*

— 4118. *Ceratodon purpureus. Didymodon rubellus. Desmatodon suberectus. Mnium medium.*

— 4119. *Hypnum Bambergeri.*

— 4120. *Didymodon rubellus. Mnium affine v. integrifolium. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4123. *Schistidium apocarpum.*

North Devon, Borgøen 11/7 1902.

Nr. 4127. *Desmatodon latifolius v. muticus.*

— 4128. *Tortula ruralis. Bryum argenteum. Bryum pendulum. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4129. *Schistidium apocarpum.*

— 4130. *Orthotrichum Killiasii.*

— 4131. *Bryum Stirtoni.*

— 4132. *Tortula ruralis. Schistidium apocarpum. Timmia bavarica. Orthothecium chryseum. Brachythecium salebrosum. Brachythecium salebrosum v. arcticum. Hypnum revolutum v. subjulaceum.*

— 4133. *Tortula ruralis. Schistidium apocarpum. Orthotrichum Killiasii. Bryum Stirtoni. Amblystegium filicinum v. curvicaule. Hypnum revolutum v. subjulaceum.*

— 4134. *Distichium capillaceum. Schistidium apocarpum v. filiforme. Encalypta contorta. Bryum Stirtoni. Amblystegium filicinum v. curvicaule. Hypnum revolutum v. subjulaceum.*

— 4135. *Tortula ruralis. Brachythecium salebrosum. Hypnum revolutum.*

— 4136. *Tortula ruralis. Brachythecium salebrosum. Hypnum uncinatum.*

— 4137. *Schistidium apocarpum f. epilosa.*

— 4138. *Distichium capillaceum. Bryum Stirtoni. Timmia bavarica.*

— 4139. *Tortula ruralis. Bryum teres. Orthothecium chryseum. Amblystegium filicinum v. curvicaule. Brachythecium salebrosum v. arcticum.*

— 4140. *Tortula ruralis. Amblystegium Sprucei. Isopterygium pulchellum. Hypnum revolutum.*

— 4141. *Brachythecium salebrosum v. arcticum.*

— 4142. *Bryum Stirtoni. Timmia bavarica. Brachythecium salebrosum v. arcticum. Amblystegium Sprucei.*

— 4143. *Bryum Stirtoni. Brachythecium salebrosum v. arcticum.*

— 4144. *Brachythecium salebrosum v. arcticum.*

— 4145. *Ditrichum flexicaule. Webera cruda. Timmia bavarica. Brachythecium salebrosum. Amblystegium Sprucei.*

— 4146. *Haplodon Wormskjoldii. Bryum Stirtoni. Brachythecium salebrosum.*

Nr. 4147. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum f. epilosa. Hypnum revolutum.*

— 4148. *Tortula ruralis. Encalypta contorta. Mnium affine. Orthothecium strictum. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4149. *Ditrichum flexicaule. Tortula ruralis. Orthothecium chryseum. Hypnum uncinatum.*

— 4150. *Marchantia polymorpha Tortula ruralis. Bryum Stirtoni. Brachythecium salebrosum. Amblystegium filicinum v. filiforme.*

— 4151. *Orthothecium chryseum.*

— 4152. *Brachythecium salebrosum v. arcticum.*

— 4153. *Brachythecium salebrosum v. arcticum. Amblystegium filicinum v. curvicaule.*

— 4154. *Brachythecium salebrosum.*

— 4155. *Bryum pallens. Bryum teres. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule.*

— 4156. *Tortula ruralis. Encalypta contorta. Orthothecium chryseum. Orthothecium strictum. Brachythecium salebrosum. Amblystegium Sprucei. Amblystegium filicinum v. curvicaule. Hypnum revolutum v. subjulaceum.*

— 4157. *Orthothecium chryseum.*

— 4158. *Ditrichum flexicaule. Tortula ruralis. Schistidium apocarpum f. epilosa. Orthothecium chryseum. Brachythecium salebrosum. Hypnum turgescens. Hypnum revolutum.*

— 4159. *Distichium inclinatum. Distichium capillaceum. Pottia Heimii v. obtusifolia. Didymodon rubellus. Tortula ruralis. Encalypta rhabdocarpa. Bryum argenteum. Bryum subnitidulum. Amblystegium filicinum v. filiforme.*

— 4160. *Tortula ruralis. Brachythecium salebrosum. Amblystegium filicinum v. curvicaule. Hypnum turgescens. Hypnum revolutum.*

— 4161. *Tortula ruralis. Amblystegium filicinum v. curvicaule.*

Hønefoss, 20. August 1906.

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til den systematiske Fortegnelse.

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— 50,	—	17,	— :	„*capiltacum*“	— :	*capillaceum.*
— 54,	—	24,	— :	„*subcrectus*“	— :	*suberectus.*
— —,	—	29,	— :	„*pellueidum*“	— :	*pellucidum.*
— 64,	—	2,	— :	„rocurvatis“	— :	recurvatis.
— 67,	—	24,	— :	„Plantan“	— :	Planten.
— 70,	—	27,	udelades Komma (,) efter parce.			
— 75,	—	13,	staar:	„som“	for:	samt.
— 76,	—	4,	— :	cellnlis“	— :	cellulis.
— —,	—	11,	— :	„seriebns“	— :	seriebus.
— —,	—	14,	— :	„angustate“	— :	angustata.
— 78,	—	2,	— :	„tantnm“	— :	tantum.
— —,	—	12,	— :	„Cellnlæ“	— :	Cellulæ.
— 85,	—	15,	— :	„Peristominm“	— :	Peristomium.
— —,	—	35,	— :	„Bladhjorunerne“	— :	Badhjørnerne.
— 89,	—	24,	— :	„numenerosas“	— :	numerosas.
— 98,	—	28,	— :	„altæ“	— :	alta.
— —,	—	29,	— :	„subqvadratæ“	— :	subqvadrata.
— 129,	—	31,	— :	„leptodemres“	— :	leptodermes.

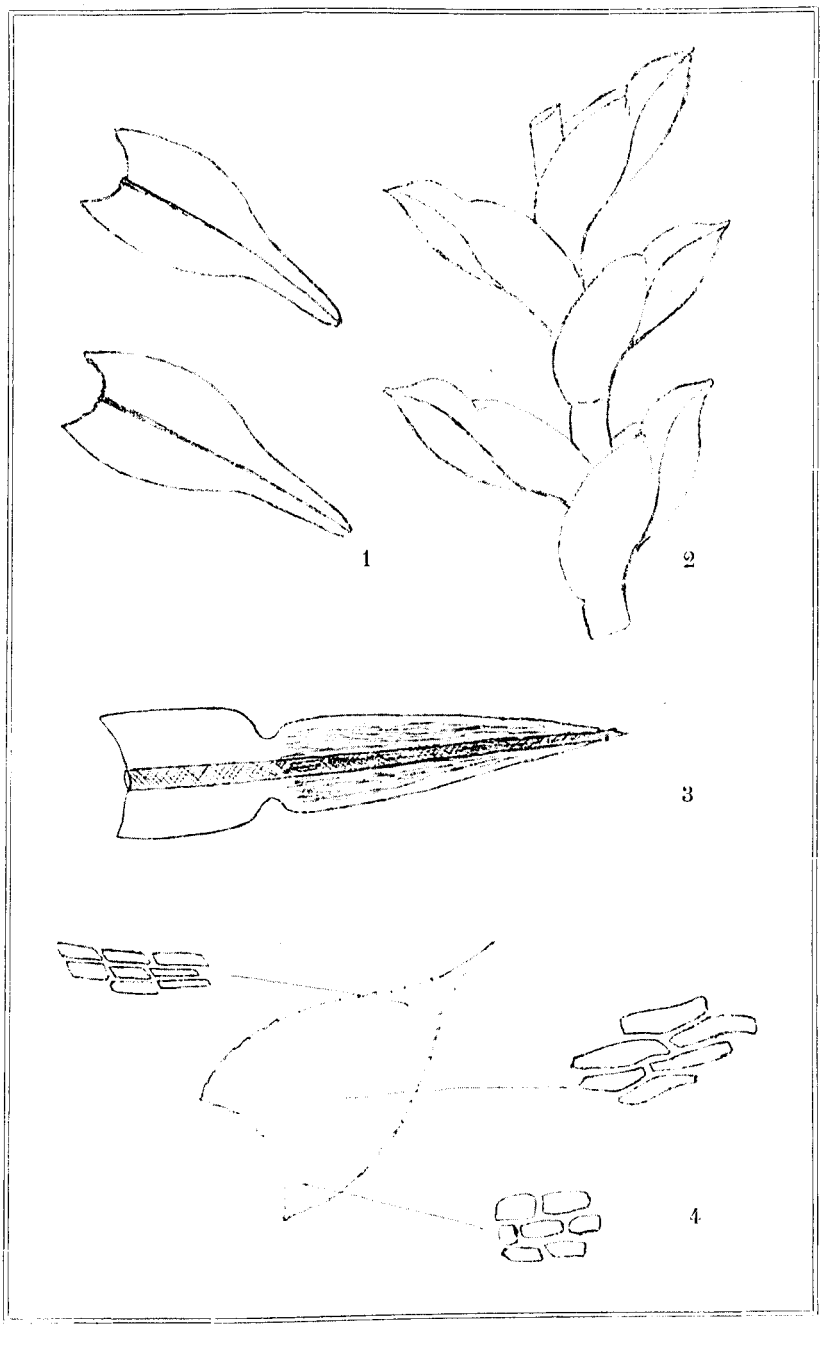
Explicatio tabularum.

Tab. I.

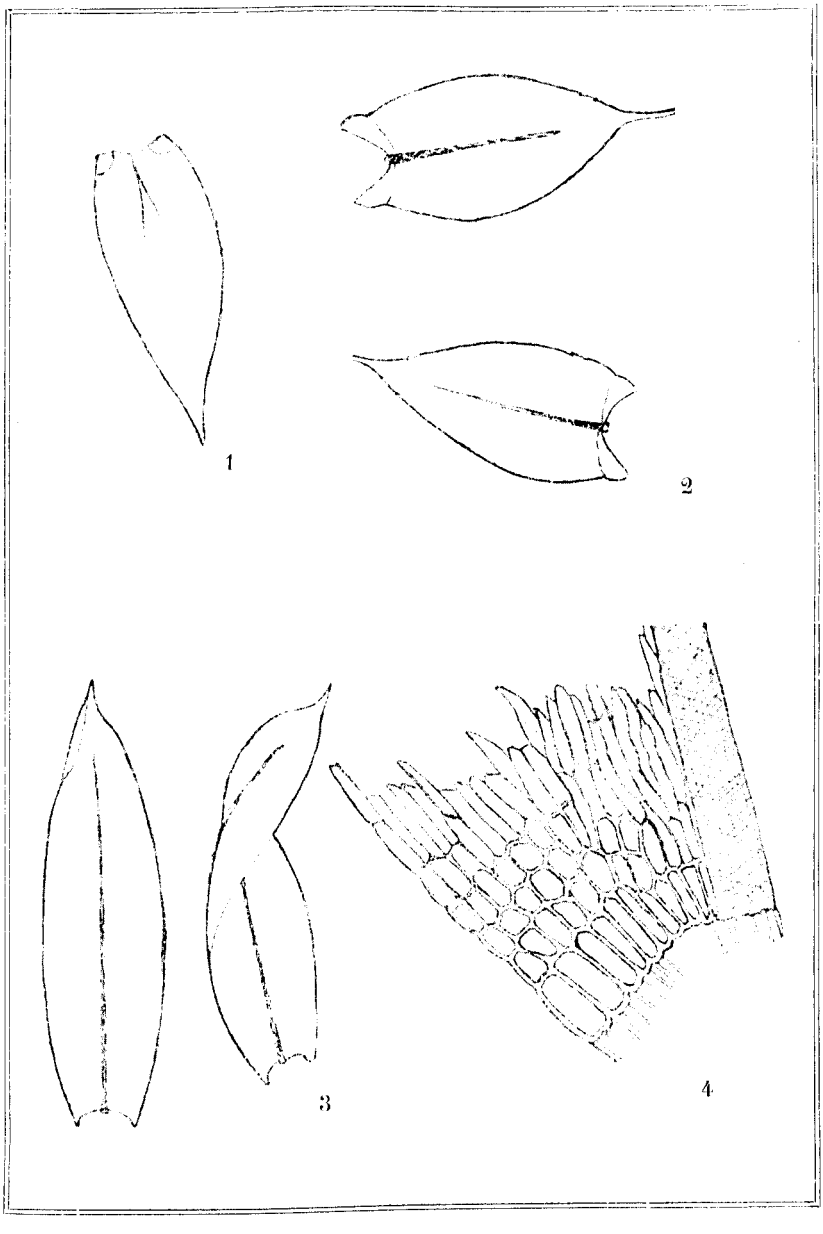
1. Folia *Gymnostomi lævis* (40 × 1).
2. *Fissidens arcticus* (40 × 1).
3. Folium *Polytrichi fragilis* (20 × 1).
4. Folium (40 × 1) et rete foliare *Orthothecii acuminati* (150 × 1).

Tab. II.

1. Folium *Brachythecii salebrosi β binervuli* (25 × 1).
2. Folia *Hypni tundræ* (20 × 1).
3. Folia *Hypni hyperborei* (25 × 1).
4. Rete basilare ejusdem (150 × 1).



1. *Gymnostomum læve* Bryhn. 2. *Fissidens arcticus* Bryhn.
3. *Polytrichum fragile* Bryhn. 4. *Orthothecium acuminatum* Bryhn.



1. *Brachythecium salebrosum* var. *binervulum* Bryhn. 2. *Hypnum tundræ* (Arn.) Jørg. 3—4. *Hypnum hyperboreum* Bryhn.

REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 12.

HJALMAR BROCH:

HYDROIDEN UND MEDUSEN

(MIT 2 TAFELN)

AT THE EXPENCE OF THE FRIDTJOF NANSEN
FUND FOR THE ADVANCEMENT OF SCIENCE

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Es sind während der Expedition nicht sehr viele Hydroiden und Medusen gesammelt worden. Doch bietet das Material seines arktischen Charakters wegen ein grosses Interesse dar. Gewiss, man kann nur selten unter den Hydroiden Arten treffen, die für diese oder jene Zone absolut charakteristisch zu sein scheinen. Es gibt jedoch in dem Material eine Art, die noch nicht ausserhalb des arktischen Gebietes gefunden worden ist, nämlich *Lafoëina maxima*, LEVINSEN. Diese grosse, ins Auge fallende Art ist im Material häufig vertreten und kommt an vereinzelten Stellen massenhaft vor. Leider ist es mir trotz dem grossen Material nicht gelungen, deren Fortpflanzungsindividuen zu finden, wie diese für die *Lafoëina*-Arten überhaupt noch unbekannt sind. Die athecaten Hydroiden sind besonders spärlich vorhanden; es fand sich nur aus dem Gänsefjord (19. Juli 1901) eine *Eudendrium* (wahrscheinlich *rameum* (PALLAS)), die sich jedoch nicht mit Sicherheit identifizieren liess.

Von Medusen gibt es nur vier, zwei craspedote und zwei acraspede, von welchen letzteren die eine neu ist und eine sehr zweifelhafte Stellung in dem Genus *Stenoscyphus*, KISHINOUYE einnimmt. Die übrigen sind rein arktische Formen.

Die Stationen, von welchen Hydroiden und Medusen vorliegen, sind:

Nummer der Station	Datum	Fundort	Tiefe	Beschaffenheit des Bodens
1	$\frac{18}{\text{VIII}}$ 1898	Cap Sabine		
2	$\frac{30}{\text{VI}}$ 1899	Rice Strait		
3	$\frac{24}{\text{VIII}}$ »	— —		Auf Laminarien

Nummer der Station	Datum	Fundort.	Tiefe	Beschaffenheit des Bodens
4	22/VII 1900	Winterhafen	etwa 60 m.	
5	24/VII »	—		
6	25/VII »	—	86 m.	
7	30/VII »	—		
8	1/VIII »	Ausserhalb der Grossen Täler	45 m.	Kleine Steine
9	1/VIII »	— — —	19 m.	
10	3/VIII »	Fosheims Peak		
11	17/IX »	Ausserhalb der Verbannungstäler	4—37 m.	
12	19/IX »	— —	4—37 m.	
13	20/IX »	In der inneren Partie des Gänsefjordes	6—37 m.	Lehm und kleine Steine
14	28/VI 1901	Die Mündung des Walrossfjordes		
15	8/VII »	Die Renntierbucht		
16	18/VII »	Die Mündung des Gänsefjordes		
17	19/VII »	Der Gänsefjord		

Nummer der Station	Die auf der Station gefundenen Arten
1	*Cyanea arctica.*
2	*Solmundus glacialis.*
3	*Campanularia integra, Calycella syringa.*
4	*Grammaria abietina.*
5	*Lafoëa gracillima, Ptychogastria polaris.*
6	*Halecium labrosum, Lafoëa gracillima, Lafoëina maxima.*

Nummer der Station	Die auf der Station gefundenen Arten
7	*Campanularia integra, Lafoëina maxima.*
8	*Lafoëa gracillima.*
9	*Lafoëa gracillima, Lafoëina maxima.*
10	*Stenoscyphus*(?) *hexaradiatus.*
11	*Lafoëa gracillima.*
12	*Halecium muricatum.*
13	? *Coryne brevicornis, Halecium muricatum, Lafoëa gracillima, Calycella producta, Lafoëina maxima.*
14	*Halecium muricatum, Lafoëina maxima.*
15	*Halecium muricatum.*
16	*Grammaria abietina, Sertularella tricuspidata.*
17	*Campanularia integra, Lafoëa fruticosa, Grammaria abietina, Sertularella tricuspidata.*

Hydroiden.

Athecaten.

Coryne, Gaertn.

(?) *Coryne brevicornis*, Bonnevie.

Wahrscheinlich sind ein paar kleine Kolonien zu dieser Art zu rechnen, die in der inneren Partie des Gänsefjordes gefunden worden sind. Da jedoch sämmtliche Hydranten steril sind, ist das Identifizierung nicht ganz sicher.

In der inneren Partie des Gänsefjordes.

Thecaphoren.

Halecium, Oken.

Halecium labrosum, Alder.

Eine kleine Kolonie wurde im Winterhafen 1900 gefunden.

Halecium muricatum, (Ell. et Sol.) Johnst.

Diese ist eine der häufigsten Arten im Material. Die Art ist in den nördlichen Meeren weit verbreitet und scheint, obschon sie auch

in dem Nordmeere und der Nordsee nicht fehlt, ihre Hauptverbreitung in der arktischen Region zu haben. Sie ist früher in diesen Gegenden, wie die vorstehende Art, in der Davis-Strasse gefunden worden[1].

Ausserhalb der Verbannungstäler, in der inneren Partie des Gänsefjordes, bei der Mündung des Walrossfjordes und in der Renntierbucht.

Campanularia, (LAMARCH) LEVINSEN.

Campanularia integra MAC GILLIVR.

Syn.: *Campanularia caliculata*, HINCKS.

Betreffs dieser Art bin ich ganz derselben Meinung wie LEVINSEN (8, pag. 26—27), wenn er keine Grenzlinien zwischen diesen beiden Arten finden kann. Es finden sich nämlich von der Station 7 Individuen mit geringeltem Stiel und ohne solche, mit Ringfurchen an den Gonangien, und ohne Querringe, die jedoch alle an demselben Hydrorhiza befestigt sind; nur haben alle Stiele unterhalb der Hydrotheken wenigstens einen deutlichen, scharf abgesetzten Ring. Was die Fortpflanzungsverhältnisse betrifft, so sind diese noch nicht genügend bekannt, weshalb ich mich nicht der Meinung HARTLAUBS (6, pag. 560—561) anschliessen darf. Man darf die Möglichkeit nicht leugnen, dass hier zwei Arten — oder Unterarten — vorliegen könnten; doch bedarf dies noch eines genaueren Auseinandersetzens als bis jetzt bewerkstelligt worden ist. Die Art ist früher in der Davisstrasse gefunden.

Rice Strait (auf Laminarien), in dem Winterhafen 1900 und in dem Gänsefjord.

Lafoëa (LAMOUROUX) BROCH.

Lafoëa fruticosa, M. SARS.

(Taf. 1, Fig. 1).

Früher in der Davisstrasse gefunden.

In dem Gänsefjord eine kleine Kolonie 1901 genommen.

Lafoëa gracillima, ALDER.

(Taf. 1, Fig. 2).

Über die Beziehungen zwischen *L. dumosa* (FLEM) und den beiden hier genannten *Lafoëa*-Arten ist in einer früheren Arbeit gesprochen (BROCH, 1).

---

[1] LEVINSEN (8).

SCHYDLOWSKY (9) hat diese drei Arten unter *L. dumosa* einbegriffen. Die älteste Art *L. dumosa* besitzt überhaupt keinen eigentlichen Hydrothekenstiel, während dieser bei den beiden letzten Arten nie fehlt. Der Unterschied zwischen *L. fruticosa* und *L. gracillima* wird sofort aus dem Figuren 1 und 2 hervorgehen. Der Hydrothekenstiel hat bei *L. fruticosa* (Fig. 1) 3 bis 4 scharfe, spirale Ringe; das Hydrothek ist im untersten Drittel ziemlich stark angeschwollen, verjüngert sich danach ein wenig, um zuletzt in eine etwas erweiterte Hydrothekenöffnung zu endigen. Die Unterseite des Hydrotheks ist schwach konvex.

Bei *L. gracillima* hat der Stiel in der Regel 2—3 lose Windungen. Das dies jedoch ziemlich starken Variationen unterworfen ist, geht sofort aus den Zeichnungen hervor, und man kann hier nicht immer die entscheidenden Kennzeichen finden. Bei sämtlichen Hydrotheken von *L. gracillima* ist die Unterseite stärker oder schwächer konkav; das Hydrothek ist fast ganz röhrenförmig und von dem Stiel nicht so scharf abgesetzt, wie bei *L. fruticosa* der Fall ist. Es scheint, als ob der Habitus der Hydrotheken einen guten Anhaltspunkt für die Trennung dieser beiden Species liefere.

L. gracillima ist eine kosmopolitische Art; sie ist in dem Material sehr häufig.

Im Winterhafen 1900, ausserhalb der Grossen Täler, in der inneren Partie des Gänsefjordes und ausserhalb der Verbannungstäler.

Grammaria (STIMPSON) BROCH.

Grammaria abietina (M. SARS) LEVINSEN.

Im Winterhafen 1900, im Gänsefjord und an dessen Mündung.

Calycella, (HINCKS) LEVINSEN.

Calycella syringa (HOUTTUYN) HINCKS.

Diese um Grönland herum so gewöhnliche Art findet sich im Material nur aus der Rice Strait auf Laminarien.

Calycella producta, G. O. SARS.

Dieser Art ist bisher nur an den nördlichen norwegischen Küsten nachgewiesen worden.

Im inneren Teil und an der Mündung des Gänsefjordes.

Sertularella (GRAY) HINCKS.

Sertularella tricuspidata (ALDER) HINCKS.

Diese nördliche Art ist in dem Material merkwürdig spärlich vorhanden. Nur in dem Gänsefjord genommen.

Medusen.

Craspedoten.

Trachomedusae.

Ptychogastria polaris, ALLMANN.

Diese Meduse, die früher in der Discovery Bay (Grinnell Land) genommen ist[1], findet sich in einem gut erhaltenen Exemplare aus dem Winterhafen 1900. Die Art, die mit *Pectyllis arctica*, HAECKEL identisch ist (vergl. BROWNE (3) pag. 24 u. folg.), scheint nach diesem vereinzelten Exemplar zu urteilen jedenfalls nicht in der hier besprochenen Region eine besondere „Tiefsee-Meduse" zu sein, wie HAECKEL (5) für sie angegeben hat. Sie ist hier zufällig in die Dregge gekommen, jedoch überschreitet die Tiefe nicht 86 m. — Es fanden sich im Material ausserdem von ein paar Stellen Reste die aller Wahrscheinlichkeit nach von dieser Art herstammen; sie sind in viel geringerer Tiefe genommen; da sie sich jedoch ihres schlechten Konservierungs-Zustandes wegen nicht mit Sicherheit identifizieren lassen, lasse ich sie hier ausser Betracht.

Winterhafen 1900.

Narcomedusae.

Solmundus glacialis, GRØNBERG.

Diese bisher nicht oft gefundene Meduse scheint einen rein arktischen Charakter zu haben. Früher ist sie bei Spitsbergen (GRØNBERG 4) und in dem nördlichsten Norwegen (BROCH 2) genommen worden; ausserdem habe ich sie im Sommer 1903 am Bord des norwegischen Fischereiuntersuchungsdampfers „Michael Sars" in der Dänemarksstrasse im Polarstrom beobachtet. Wenn hierzu Rice Strait gefügt wird, wird

---

[1] Nares Narrative of a Voyage to the Polar sea during 1875—76 in H. M. S. „Alert" and „Discovery". Vol. II. Hydrozoa (nach BROWNE (3) l. c.).

man sehen, dass diese Meduse eine beträchtliche Verbreitung hat; überall ist sie nur ganz vereinzelt beobachtet worden.

Im Material findet sich ein einziges Exemplar aus der Rice Strait.

Acraspeden.

Stauromedusae.

Stenoscyphus (?) hexaradiatus, n. sp.
(Taf. II, Fig. 3—6.)

Schirm glockenförmig. Schirmstiel rund, einkammerig, innen mit 6 Längsmuskeln versehen. Der Stiel ist ein wenig länger als die Glockenhöhe (Fig. 3). Mundrohr kurz, sechseckig. 6 faltige Gonaden hufeisenförmig mit der konvexen Seite abaxial, die beiden Schenkel des Hufeisens wenig divergierend, reichen nicht bis zum Kranzmuskel. 12 Randanker (6 radiale und 6 interradiale) von der Form eines knieförmig gebogenen, gewöhnlichen Tentakels, mit Klebkissen abaxial (Fig. 5); die Succursaltentakeln in 12 (adradialen) Gruppen angeordnet. Die Zahl der succursalen Tentakeln variiert von 7 bis 10 in jedem Bündel; sie stehen in mehreren Reihen am Glockenrande. Unter den succursalen Tentakeln finden sich in jeder Gruppe ein bis mehrere von derselben Form und Ausstattung wie die Randanker.

Unter den Stauromedusen zeichnet sich diese Form durch ihre Sechs-Zahl sofort aus. Es wäre möglich, sich eine Parallelismus zu denken zwischen diesem Exemplar und solchen Actinien, bei denen überzählige Septa gebildet worden sind. Jedoch scheint mir das völlig normale Aussehen aller „Septa“ und die den ganzen Organismus durchdringende sechszählige Anordnung sämtlicher Organe diesem zu widersprechen. Diese Frage kann jedoch erst dann mit Sicherheit gelöst werden, wenn ein grösseres Material von dieser oder nahestehenden Formen zulässt, die Variationen dieser Gruppe näher auseinandersetzen zu können.

Als neue Art zeichnet sich diese kleine Form, ihre Sechs-Zahl nicht berücksichtigt, durch mehrere charakteristische Organisationsverhältnisse aus. Kishinouye (7) erwähnt bei der bisher bekannten Stenoscyphide, *Stenoscyphus inabai*, Kishinouye nichts von solchen, eigentümlich entwickelten succursalen Tentakeln, die sich bei *S. (?) hexaradiatus* finden; auch sind die Randanker bei der letztgenannten Art von einem viel mehr ursprünglichen Bau als die grossen runden kissenförmigen Randanker bei *S. inabai*. Während bei *S. inabai* die suc-

cursalen Tentakeln in Bündeln von etwa 25 am Rande stehen, zählen wir bei *S.(?) hexaradiatus* nur 7 bis 10 solche in jeder Gruppe.

Weiter haben die Gonaden eine unter den Stauromedusen ganz abweichende Form, indem das Hufeisen seine konvexe Seite dem Kranzmuskel zugekehrt hat. Die beiden Schenkel sind adradial, so dass der Verwachsungspunkt radial gelegen ist. Die Gonaden sind gefalten.

Das kurze Mundrohr geht in einen sechseckigen Mund über; der Mundrand ist stark gekräuselt.

An der exumbralen Seite des Glockenrandes sind viele Gruppen von Nematocysten vorhanden. Sonst ist sowohl die Exumbrella als die Subumbrella ganz glatt.

Die Randanker zeigen einen mehr ursprünglichen Bau als bisher unter den Stauromedusen beobachtet worden ist. Sie sind von derselben Grösse als die Succursaltentakeln, knieförmig gebogen (Fig. 5) mit einem einfachen Klebkissen an der äusseren Seite der Biegungs-Stelle; am Ende tragen sie einen Nesselknopf. Unter den Succursaltentakeln, die in 2 bis 3 Reihen angeordnet sind, finden sich ein oder mehrere Tentakeln, die dieselbe Form und Organisation wie die Randanker haben; diese Tentakeln sitzen immer in der äusseren (abaxialen) Reihe unter den Succursaltentakeln.

Der Stiel (Fig. 6) ist rund, einkammerig, innen mit sechs longitudinalen Muskeln, die im Querschnitt in der Regel ein hufeisenförmiges Bild zeigen. Der basale Teil des Stieles ist ziemlich stark erweitert, am nächsten cirkelrund; doch deuten ganz schwache Einbuchtungen am Rande die Ansatzpunkte der Längsmuskeln an.

Es ist die Möglichkeit nicht ausgeschlossen, dass hier ein Repräsentant eines neuen Genus unter den Stenoscyphiden vorliege. Sowohl der Bau der Randanker als der Gonaden zeigt in dieser Richtung, wie auch die sechszählige Organisation. Doch habe ich die Art, jedenfalls vorläufig in den Genus *Stenoscyphus* KISHINOUYE eingereiht.

Ein vereinzeltes Exemplar dieser Art wurde bei Fosheims Peak erbeutet.

Discomedusae.

Cyanea arctica, PER. et LES.

Die Art ist früher häufig in der Davisstrasse beobachtet worden. Ein einziges Exemplar vom Cap Sabine.

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Erklärung der Abbildungen.

Sämmtliche Abbildungen sind unter Benutzung des ABBE'schen Zeichenapparats (REICHERTS Verbesserung) entworfen.

Tafel I.

Fig. 1. *Lafoëa fruticosa* (× 80) aus dem Gänsefjord.
Fig. 2. *Lafoëa gracillima* (× 80).
a. Ausserhalb der Grossen Täler gefunden.
b. Ausserhalb der Verbannungstäler gedreggt.
c. Aus dem inneren Teil des Gänsefjordes.

Tafel II.

Fig. 3 *Stenoscyphus(?) hexaradiatus* (× 7).
Fig. 4. Ein Teil des Schirmrandes desselben (× 20).
Fig. 5. Ein Randanker desselben, optischer Längsschnitt (× 80).
Fig. 6. Querschnitt durch den Stiel von *S.(?) hexaradiatus* (× 80); schwach schematisiert.

C = Nesselknopf.
Ek = Ektoderm.
Ent = Entoderm.
G = Gallerte.
K = Klebkissen.
M = Muskel.

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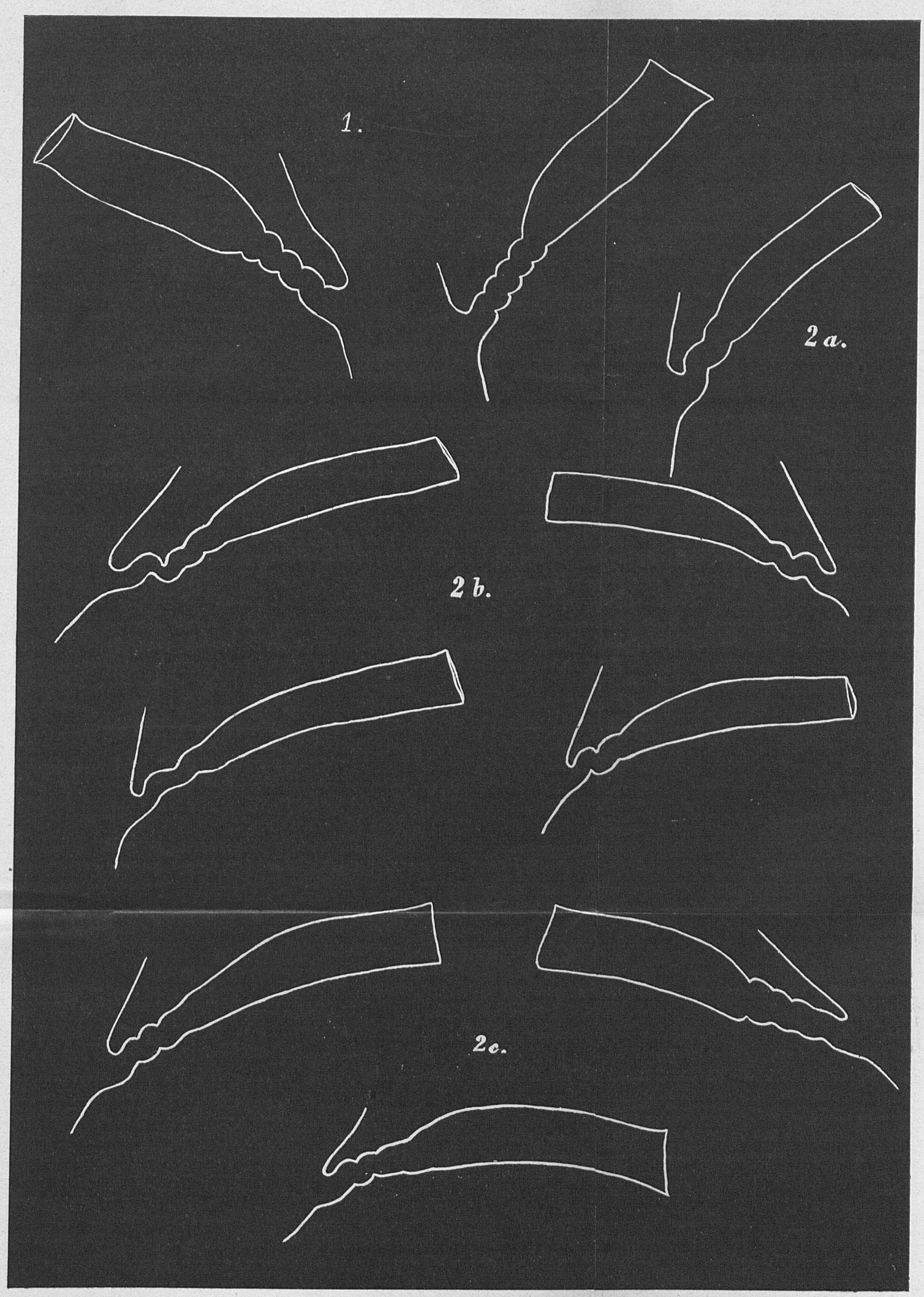
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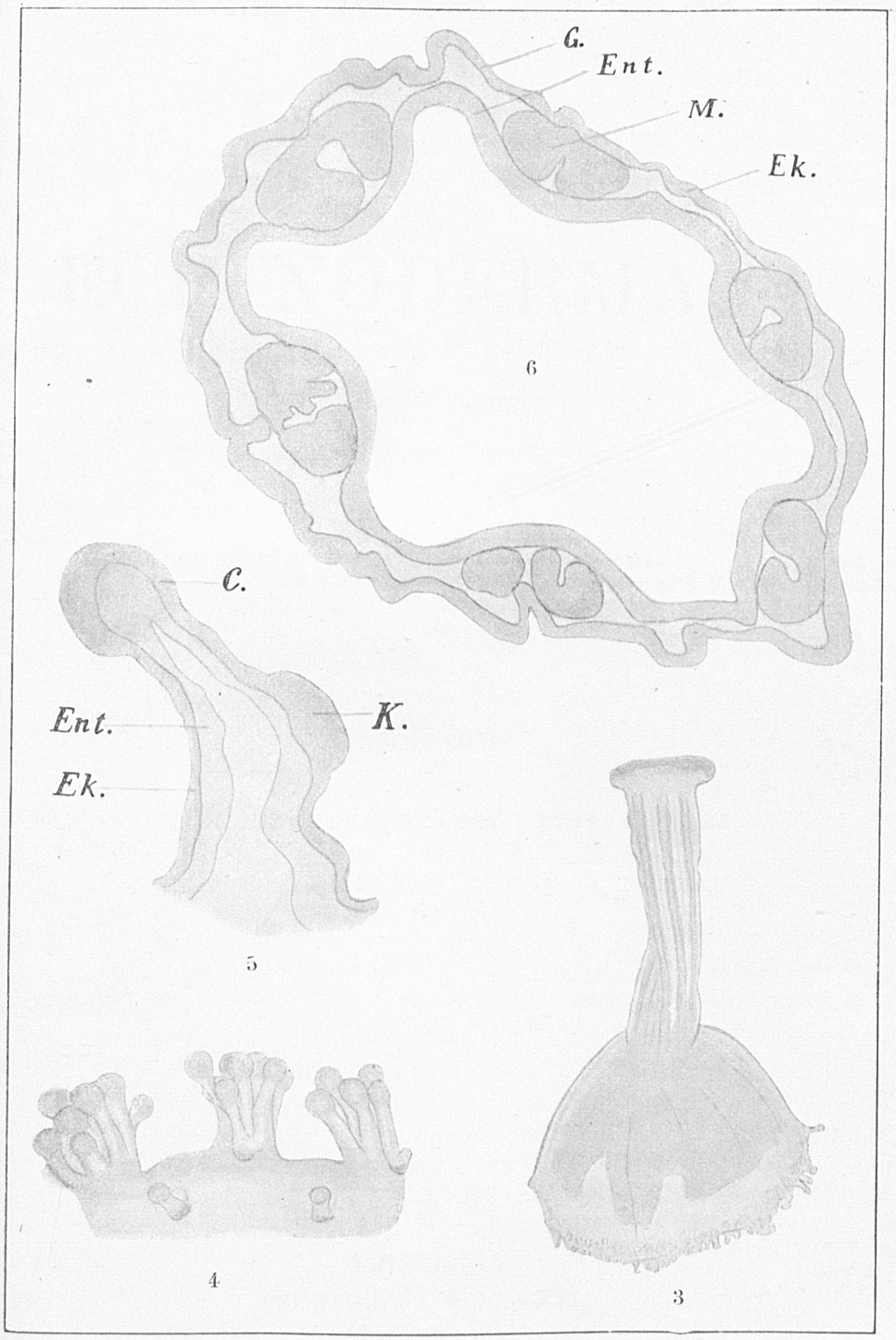
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REPORT OF THE SECOND NORWEGIAN ARCTIC EXPEDITION
IN THE "FRAM" 1898—1902. No. 13.

JAMES A. GRIEG:

ECHINODERMATA

(WITH 3 PLATES)

AT THE EXPENSE OF THE FRIDTJOF NANSEN FUND
FOR THE ADVANCEMENT OF SCIENCE

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The collection of Echinodermata brought home by the 2nd Fram Expedition from Jones and Smith Sounds numbered 17 species, namely 1 crinoid, 6 starfishes, 6 ophiuroids, 1 sea-urchin, and 3 holothurians, of most of which there are numerous specimens. None of these species are new to science, but three of them, *Asterias panopla*, *Gorgonocephalus eucnemis*, and *Psolus fabrici*, have not previously been observed in the waters to the north and west of Baffin Bay. *Asterias panopla* has moreover not been found on the west coast of Greenland, but has hitherto been reported only from the Greenland Sea, the Norwegian Sea, the Barents Sea, the Kara Sea, and the Siberian Arctic Ocean, where its eastern limit is at the Taimur Peninsula. On the other hand, the following 9 species out of those that have previously been observed in those waters, are absent from the Fram collection: *Antedon prolixa* (DUNCAN & SLADEN, 6), *Ctenodiscus crispatus* (FORBES, 11, SABINE, 33), *Solaster endeca* (WALKER, 36), *Cribrella sanguinolenta* (RANKIN, 32), *Pedicellaster typicus* (DUNCAN & SLADEN, 5, 6), *Asterias lincki* (RANKIN 32), *Ophiopleura borealis* (DUNCAN & SLADEN, 6), *Amphiura sundevalli* (DUNCAN & SLADEN, 5, 6; IVES 19; RANKIN, 32), and *Cucumaria calcigera* (FORBES, 11).

According to this, the following 26 echinoderms occur in the archipelago lying north and west of Baffin Bay, namely in Smith Sound, Kane Basin, Robeson Channel, Jones Sound, Lancaster Sound, Barrow Strait, etc, up to Melville Island:

Crinoidea:

Antedon eschrichti, J. MÜLLER.
„ *prolixa*, SLADEN.

Asteroidea:

Ctenodiscus crispatus, RETZIUS.
Solaster papposus, LINNÆUS.
„ *endeca*, RETZIUS.

Solaster furcifer, DÜBEN & KOREN.
Pteraster militaris, O. F. MÜLLER.
Cribella sanguinolenta, O. F. MÜLLER.
Pedicellaster typicus, M. SARS.
Stichaster albulus, STIMPSON.
Asterias mülleri f. *grœnlandica*, STEENSTRUP.
" *panopla*, STUXBERG.
" *lincki*, MÜLLER & TROSCHEL.

Ophiuroidea:
Ophiopleura borealis, DANIELSSEN & KOREN.
Ophiura sarsi, LÜTKEN.
" *robusta*, AYRES.
Ophiocten sericeum, FORBES.
Amphiura sundevalli, MÜLLER & TROSCHEL.
Ophiacantha bidentata, RETZIUS.
Gorgonocephalus eucnemis, MÜLLER & TROSCHEL.
" *agassizi*, STIMPSON.

Echinoidea:
Strongylocentrotus drøbachiensis, O. F. MÜLLER.

Holothurioidea:
Myriotrochus rinki, STEENSTRUP.
Psolus fabrici, DÜBEN & KOREN.
Cucumaria frondosa, GUNNERUS.
" *calcigera*, STIMPSON.

Ophiopholis aculeata is given with some doubt by Fewkes (10) from Lady Franklin Bay, Grinnell Land; but the determination is made from a drawing, and it is said of it that it "also resembles *Ophiocoma*". I am most inclined to think that the brittle-star in question is not *Ophiopholis aculeata*, but *Ophiacantha bidentata*.

Crinoidea.

Antedon eschrichti, J. Müller.

(Pl. 3, fig. 2).

Locality.		
March	7, 1900.	Bay to the south of Sjøpølse Ness; 30—40 m. Small stones with Laminaria.
July	8, 1900.	The Havne Fjord, Winter harbour; about 60 m. Small stones and clay.
July	21, 1900.	The Havne Fjord, Winter harbour; about 60 m. Small stones with calcareous algæ.
July	22, 1900.	The Havne Fjord, Winter harbour; about 60 m. Small stones and clay.
July	23, 1900.	The Havne Fjord, Winter harbour; about 40 m.
July	30, 1900.	The mouth of Stor Valley.
Aug.	1, 1900.	The mouth of Stor Valley; 60—64 m. Small stones and sand.
Sept.	19, 1900.	Off Forvisnings Valley; 40—44 m. Small stones and clay.
Sept.	20, 1900.	The head of Gaase Fjord; 40—6 m. Small stones and clay.
Aug.	2, 1901.	The head of Gaase Fjord; about 40 m. Small stones.
Aug.	16, 1901.	The head of Gaase Fjord; about 14 m.

The cirri in the larger specimens are up to 65 mm. in length, and have 51 joints. The diameter of the calyx is up to 32 mm. Various writers, such as Michailovskij (26, p. 40), Grieg (15, p. 13), and Döderlein (9, p. 398), have already drawn attention to the fact that the relative length of the 3rd pinnule is subject to great variations, even in the same specimen. The specimens from the Fram Expedition exhibit the same variableness. In one, for instance, the proportion in length between the 2nd and 3rd pinnula on three of the brachia varies between 1 : 0.78 and 1 : 1.19, in another between 1 : 0.66 and 1 : 0.85; and in a third specimen it varies between 1 : 0.72 and 1 : 0.92 on four of the brachia.

The calcareous plates in the perisoma of the genital pinnules are comparatively more feebly developed than in specimens from the North Atlantic, and are much more perforated, and looser in structure. They moreover vary very considerably in form and development. In young specimens they are less developed than in older ones; and whereas in the latter they form a continuous series, in young specimens they are separated. (Pl. 3, fig. 2).

Asteroidea.

Solaster papposus, LINNÆUS.

(Pl. 1, figs. 1 & 2. Pl. 2.)

Locality.		
Sept.	7, 1899.	Havne Fjord, the bay; about 6 m. Small stones.
March	7, 1900.	Bay south of Sjøpølse Ness, 30—40 m. Small stones with Laminaria.
June	22, 1900.	Havne Fjord, the rock; about 10 m. Stones with calcareous algæ.
July	21, 1900.	Havne Fjord, Winter harbour; about 60 m. Stones with calcareous algæ.
July	22, 1900.	Havne Fjord, Winter harbour; about 60 m. Small stones.
July	23, 1900.	Havne Fjord, Winter harbour; about 40 m. Small stones.
July	24, 1900.	Havne Fjord, Winter harbour; about 90 m. Small stones.
Aug.	1. 1900.	The mouth of Stor Valley; 60—4 m. Small stones.
Aug.	3, 1900.	Fosheim Peak & the valley on the west side of Havne Fjord; 40—4 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
August.	1900.	The north side of N. Devon.
July	8, 1901.	Ren Bay.
Aug.	30, 1901.	Gaase Fjord; 8 m. Small stones and clay, with brown algæ.

Of the 28 specimens of *Solaster papposus* brought back by the Fram Expedition, one has 9 arms, three have 11 arms, and three 12 arms, the remainder being 10-armed. All the specimens belong to the arctic form, *Solaster papposus* f. *affinis*. As already pointed out by LUDWIG (23, p. 461) with reference to Spitzbergen, specimens varying in the number of their arms may occur in one and the same locality. One of the three specimens from Sjøpølse Ness, for instance, has 9 arms, and two 10 arms; and of three specimens from the mouth of Stor Valley, one has 12 arms, and two 11 arms.

In the largest specimens, those from the mouth of Stor Valley, the diameter between the ends of the arms measures 159 mm. and 180 mm. For the sake of comparison it may be stated that the largest specimens found by the Nares Expedition in Discovery Bay, measured only 93 mm. (DUNCAN & SLADEN, 5, p. 457; 6, p. 36); while those taken by the Princeton Arctic Expedition of 1899 in Smith Sound, measured only up to 80 mm. (RANKIN, 32, p. 174).

Diameter	Arm-radius	Disc-radius	r : R	Number of arms	Number of paxillæ on the inter-radial area	Number of inner ambulacral papillæ	Number of outer ambulacral papillæ	Remarks
mm.	mm.	mm.						
20	10.5	5	1 : 2.10	9	?	3–4	3–5	Several of the inter-radial spaces altogether without paxillæ.
22	11	5.5	1 : 2	10	0–3	3	3–5	
24	12	6.5	1 : 1.85	12	?	3–4	3–5	Several of the inter-radial spaces altogether without paxillæ.
36	18	8.5	1 : 2.12	10	1–4	3–4	3–5	
51	26	12	1 : 2.17	10	15–20	3–5	3–5	
57	30	13	1 : 2.31	12	0–5	3–4	3–5	
68	35	16	1 : 2.19	10	15–18	3–5	4–6	
68	37	15	1 : 2.47	10	7–12	3–5	3–6	
71	36	20	1 : 1.80	10	about 20	3–5	5–6	
75	38	19	1 : 2	11	2–4	3–5	3–5	Paxillæ found only on the outermost half of the inter-radial spaces.
79	41	17	1 : 2.41	10	6–10	3–5	4–6	
81	47	27	1 : 1.74	10	5–7	3–4	3–6	
84	46	20	1 : 2.30	10	10–26	3–5	4–6	
85	43	20	1 : 2.15	10	4–10	3–5	3–7	
87	44	21	1 : 2.05	10	6–10	3–5	3–7	
93	51	22	1 : 2.32	10	about 10	3–5	4–7	
94	50	20	1 : 2.50	10	11–19	4–6	5–7	
110	55	25	1 : 2.20	10	32–38	5–8	6–7	Pl. 2, fig. 1.
159	84	39	1 : 2.15	11	about 20	4–5	4–6	Pl. 2, fig. 2.
180	91	37	1 : 2.46	11	8–13	3–5	4–7	Paxillæ found only on the outermost half of the inter-radial spaces.

The proportion of the disc-radius to the arm-radius varies between 1 : 1.74 and 1 : 2.50. As the table shows, however, most of the specimens belong to the long-rayed form, with an arm-radius more than twice the length of the disc-radius.

There are from 3 to 8 inner ambulacral papillæ (Pl. 1, fig. 2), most frequently 4 or 5. On the adambulacral plate nearest to the oral plate, there may be as many as 8. In old specimens, the number of outer ambulacral papillæ, transverse papillæ, is generally 6, but varies between 3 and 7; while on the plate nearest to the oral plate, there are sometimes only 2 papillæ. In young specimens there are never more than 5.

Like the arctic form of the *Solaster papposus*[1] of the North Atlantic, the older, fully-developed specimens from Jones Sound have numerous inter-radial paxillæ. The number of these, however, as the table shows, is subject to individual variations.

The abactinal skeleton (Pl. 1, fig. 1) consists of a network of tiny calcareous plates. This network is not so wide-meshed, however, as that in some specimens from Spitzbergen that I have had for comparison. In the specimens from Jones Sound also, there are more solitary calcareous bodies in the meshes than in the Spitzbergen specimens. There are one or more papulæ in the meshes, according to the size of the latter. In the larger meshes in a specimen from Havne Fjord, 71 mm. in diameter, there are as many as 7 papulæ. In other respects, the abactinal skeleton is subject to variations, and specimens are to be found in which it recalls the *Solaster papposus* living on the west coast of Norway. This resemblance was most marked in two large eleven-armed specimens from the mouth of Stor Valley, in which the abactinal skeleton was wider-meshed and more robust than in the other specimens from Jones Sound. In these two specimens, also, the abactinal paxillæ differed from those in the others. The paxillæ in the latter recall those in specimens from the arctic regions of the North Atlantic, whereas in the Stor Valley specimens they bear a greater resemblance to those found in specimens from the west coast of Norway.

Solaster furcifer, Düben & Koren.

(Pl. 1, figs. 3–5. Pl. 3, fig. 1).

Locality.

July 23, 1900. The Winter harbour, Havne Fjord; about 40 m. Small stones.

Sept. 20, 1900. The head of Gaase Fjord; 40—6 m. Clay and small stones.

There is only one specimen from each of these localities. Their dimensions were as follows:

---

[1] In a work on the starfishes collected by the "Michael Sars", (16, p. 46), I have given a detailed description of the forms of *Solaster papposus* that occur in the Norwegian Sea.

	Havne Fjord.	Gaase Fjord.
Arm-radius	48 mm.	72 mm.
Disc-radius	15 mm.	36 mm.
Breadth of arm at base	18 mm.	35 mm.
r : R	1 : 3.2	1 : 2
Number of ventro-marginal paxillæ . . .	19—20	21—22
Number of inner ambulacral papillæ . .	3—4	3—5
Number of outer ambulacral papillæ . .	3—5	3—5

The diameter of the Gaase Fjord specimen (Pl. 3, fig. 1) is 134 mm. It greatly resembles the specimen from Discovery Bay, described by DUNCAN & SLADEN (16, p. 45). Like it, the Gaase Fjord specimen is remarkable for its comparatively broad disc, broadly rounded angles between the arms, and very pointed arms. Its arms are not so long, however, as its arm-radius is only twice that of the disc, whereas in the specimen from Discovery Bay, the proportion of r to R is as 1 : 2.73. In the second of the Fram Expedition specimens, r : R as 1 : 3.2. For the sake of comparison it may be stated that in a specimen from Spitzbergen, 139 mm. in diameter, r : R = 1 : 2.6. In specimens from the arctic regions of the North Atlantic, I have moreover found that the proportion may vary betwen 1 : 2.2 and 1 : 3.3; in young specimens it may even be 1 : 3.6 (MICHAILOVSKIJ, 27, p. 168). In specimens from the west coast of Norway, I have found that the proportion r : R varies between 1 : 2.4 and 1 : 3.7.

Another feature of the Gaase Fjord specimen is that the abactinal surface is covered with very large paxillæ, 3 mm. in width, which are furnished with from 20 to 30 wart-like spines — spinelets (Pl. 1, fig. 3). Towards the ends of the rays, the paxillæ become rapidly smaller, the number of spines at the same time also decreasing, so that the paxillæ at the extreme end have only from 3 to 6 spines. The innermost ventro-marginal paxillæ are 4 mm. in width, and may have more than 40 spines. The largest inter-radial paxillæ have 8 or 9 spines. In the above-mentioned large specimen from Spitzbergen, the abactinal paxillæ are only 2 mm. wide, and have up to 24 spines. The innermost ventro-marginal paxillæ may be as much as 3 mm. in width, and have up to 40 spines. The largest inter-radial paxillæ have from 6 to 8.

In the *Solaster furcifer* specimen taken by the Fram Expedition in Havne Fjord, the abactinal skeleton consists of irregular stellate calcareous bodies (Pl. 1, fig. 4) resembling those found in the *Solaster furcifer* living in the cold area of the North Atlantic. In the Havne Fjord

specimen, however, the calcareous bodies do not form a coherent network; most of them lie quite isolated upon the disc, and only towards the edge of the disc begin to be sufficiently numerous and coherent to justify the appellation of network. The inter-radial dermoskeleton (Pl. 1, fig. 5) consists, just as in the North Atlantic specimens, of tesselated irregular, polygonal, calcareous plates. In the Havne Fjord specimen, however, the plates are farther apart, thus making comparatively larger interstices in that specimen's skeleton. In the Havne Fjord specimen, moreover, the interstices between the marginal plates are larger. A more detailed description of the skeleton of the North Atlantic *Solaster furcifer* will be given in a work on the starfishes collected by the "Michael Sars" (GRIEG, 16, p. 69).

Pteraster militaris, O. F. MÜLLER.

	Locality.
Aug. 4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
Sept. 20, 1900.	The head of Gaase Fjord; 40—6 m. Clay and small stones.

There is only one specimen from each of these localities, their arm-radius being respectively 15 and 22 mm., disc-radius 8 and 14 mm., the breadth of their arms at the base 8 mm. and 12 mm., the proportion of the disc-radius to the arm-radius being thus 1 : 1.88 and 1 : 1.57,

Stichaster albulus, STIMPSON.

	Locality.
July 21, 1899.	Winter harbour, Havne Fjord; about 16 m.
July 22, 1899.	— — — ; — 16 „
July 29, 1899.	— — — ; — 11 „
June 22, 1900.	Havne Fjord, the rock; about 10 m. Stones with calcareous algæ.
July 30, 1900.	Mouth of Stor Valley.
Aug. 1, 1900.	— „ — — ; 60—4 m. Small stones.
Aug. 3, 1900.	Fosheim Peak and the valley to the west of the Havne Fjord; 40—4 m. Small stones.
Aug. 4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
Sept. 19, 1900.	Off Forvisnings Valley; 40—4 m. Clay and small stones.
June 28, 1901.	Mouth of Hvalros Fjord.

July	5, 1901.	The Sound.
July	8, 1901.	Ren Bay.
July	9, 1901.	Ren Bay.
Aug.	30, 1901.	Gaase Fjord; 8 m. Small stones & clay, with brown algæ.
July	19. 1902.	North Devon, off the camping-ground, 6—14 m.
Aug.	3 & 4. 1902.	Gaase Fjord, north of the peninsula, 20—30 m.

There are 28 specimens of this species, and it thus seems to be one of the most widely distributed starfishes in Jones Sound. The arm-radius in the larger of the specimens is from 18 to 24 mm., the disc-radius 3 or 4 mm. The average proportion between the disc-radius and the arm-radius is as 1 : 4.3, the proportion varying between 1 : 3 1 and 1 : 6.7. Two of the specimens are three-armed, 2 four-armed, 3 five-armed, 17, or 61 per cent., six-armed, and 1 seven-armed. The majority have one or more arms shorter than the others; only 4 specimens — or 14 per cent. — have all their arms of about the same length, these being the 2 three-armed specimens, one of the four-armed, and one six-armed specimen.

Asterias mülleri f. *grœnlandica*, Steenstrup.

		Locality.
July	21, 1899.	Winter harbour, Havne Fjord; about 16 m.
July	29, 1899.	— — — ; — 12 m.
March	7, 1900.	Bay south of Sjøpølse Ness; 30—40 m. Small stones with Laminaria.
July	24, 1900.	Winter harbour, Havne Fjord; about 90 m. Small stones.
Aug.	1, 1900.	Mouth of Stor Valley; 60—4 m.
Aug.	1, 1900.	— „ — — ; up to 20 m. Small stones with some clay.
Aug.	4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
Aug.	7, 1900.	East Cape, Havne Fjord; 20—50 m.
Sept.	19, 1900.	Off Forvisnings Valley; 40—4 m. Clay and small stones.
June	28, 1901.	Mouth of Hvalros Fjord.
July	8, 1901.	Ren Bay.
July	9, 1901.	— —
Aug.	2, 1901.	Head of Gaase Fjord; up to 40 m.

Aug. 30, 1901. Head of Gaase Fjord; about 8 m. Small stones and clay with brown algæ.

July 15, 1902. Off Havhest Mountain, North Devon. Stones with large brown algæ.

Aug. 3&4, 1902. North of the peninsula, Gaase Fjord; 20—30 m.

Like *Stichaster albulus*, this species has a very wide distribution in Jones Sound. None of them occur, however, in any great quantity.

The measurements of the specimens are as follows:

Arm-radius 8.5—35 mm., disc-radius 2.5—7 mm., breadth of the arms at their base 2.5—9 mm. The proportion of the disc-radius to the arm-radius varies between 1 : 3.3 and 1 : 5, that of the breadth of the arm to the arm-radius between 1 : 2.8 and 1 : 4.3.

In "Echinoderms from East Greenland" (28, p. 68), MORTENSEN comes to the result that different as is the typical *Asterias mülleri* from the typical *Asterias grœnlandica*, yet if one has a sufficiently large number of each form, it will be found that they merge imperceptibly into one another, and therefore "cannot be maintained as two distinct species; the form *grœnlandica* must be regarded as a more or less distinct variety of *Asterias mülleri*". A careful examination of the specimens of the two forms in the Bergen Museum fully confirms MORTENSENS's view. The specimens collected by the Fram Expedition belong to the form *grœnlandica*.

DÖDERLEIN (7, p. 203) supposes that the *Asterias spitzbergensis* from Magdalena Bay, Spitzbergen, described and figured by DANIELSSEN and KOREN (2, p. 177; 4, p. 4, Pl. 1), is only a variety of *Asterias grœnlandica*, which it undeniably very much resembles, except that it has alternately 2 and 3 papillæ on the adambulacral plates, whereas *Asterias grœnlandica* at the most has only two papillæ. An examination of the type-specimens of *Asterias spitzbergensis* that are preserved in the Bergen Museum, will reveal a very great resemblance in the form and armature of the arms and disc, to *Asterias grœnlandica*, a fact which is also made apparent from DANIELSSEN and KOREN's description. They are also similar as regards the shape and arrangement of the pedicellariæ. In the specimen which has formed the subject of DANIELSSEN and KOREN's description, there are 2 or 3 ambulacral papillæ on each adambulacral plate,which, however, are not always alternate; two papillæ are more frequently found than three. In other specimens, determined by DANIELSSEN and KOREN as *Asterias spitzbergensis*, there are, however, only two papillæ. We thus have in *Asterias mülleri* alternately 1 and

2 ambulacral papillæ, though sometimes, on large portions of the arms, the adambulacral plates may have only one papilla[1]. In *Asterias grœnlandica* there is a double row of ambulacral papillæ, but in this form also, only one papilla may sometimes be found. The adambulacral plates in *Asterias spitzbergensis*, like those in *Asterias grœnlandica*, have normally two papillæ, but three may sometimes be found. This difference between these three, otherwise so similar, forms is so small, that upon this character only they cannot be maintained as independent species. *Asterias spitzbergensis* ought, as already indicated by DÖDERLEIN, to be referred to *Asterias mülleri* f. *grœnlandica*.

On the other hand, I do not agree with MICHAILOVSKIJ (27, p. 166) in thinking that *Asterias hyperborea*, DANIELSSEN & KOREN (3, p. 269; 4, p. 10, Pl. 3, figs. 1—7) "keine selbständige Art bildet sondern als die am typischsten ausgesprochene nördliche Varietät der *A. mülleri* (M. SARS) aufzufassen ist". Two specimens of *Asterias hyperborea*, now in the Bergen Museum, were taken by the Norwegian North Atlantic Expedition near Bear Island. It was subsequently found by the "Olga" Expedition between that island and the south point of Spitzbergen. If we compare *Asterias hyperborea* with *Asterias mülleri* and nearly-allied forms, we shall find that it has quite a different and coarser armature on the abactinal face of the disc. This was already apparent, moreover, from DANIELSSEN and KOREN's drawing, but is still more marked in DÖDERLEIN's photographic reproduction of *Asterias hyperborea* (7, p. 198, Pl. 4, fig. 2, Pl. 5, figs. 4 & 5) and *Asterias grœnlandica* (Pl. 4, fig. 3, Pl. 5, fig. 3). The most characteristic difference, however, is in the pedicellariæ. In *Asterias mülleri* there are a few forficiform pedicellariæ on the ambulacral papillæ, or they are altogether wanting; in *Asterias hyperborea*, on the other hand, the pedicellariæ are forcipiform and arranged in groups (Büschel). This difference is so characteristic that DÖDERLEIN has rightly employed it in his key to the *Asterias* species collected by the "Olga" Expedition.

Asterias panopla, STUXBERG.

	Locality.
July 2, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July 18, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones and clay.

[1] There are generally two rows of papillæ on the lower part of the arms. (Cf. Bell. 1, p. 100). M. SARS (34, p. 88) has found three papillæ on larger specimens, and on the largest specimens four, of which the two innermost, however, are obsolete.

July 23, 1900. Winter harbour, Havne Fjord; up to 40 m. Small stones.
July 31, 1900. About Vestre Sound; 20—60 m.
Aug. 1, 1900. Mouth of Stor Valley; about 40 m.
Aug. 4, 1900. Sjøpølse Ness; 30—50 m. Small stones.
Aug. 8, 1900. Winter harbour, Havne Fjord; about 30 m.

Diameter of disc	Arm-radius	Disc-radius	r : R	Breadth of arm at base	Greatest breadth of arm	Greatest length of carinal spines
mm.	mm.	mm.		mm.	mm.	mm.
13	73	8	1 : 9.13	8	10	1.0
13	75	8	1 : 9.38	9	12	1.5
14	102	12	1 : 8.50	12	12	1.5
16	91	9	1 : 10.11	9	12	1.0
16	91	10	1 : 9.10	10	12	1.5
20	98	13	1 : 7.54	12	15	2.0
32	168	18	1 : 9.33	21	35	3.0
33	210	20	1 : 10.50	23	35	4.0

According to DANIELSSEN and KOREN (4, p. 17), the proportion of the disc-radius to the arm-radius in *Asterias panopla* is as 1 : 11.5. In the specimens described by DÖDERLEIN (7, p. 204), it varies between 1 : 9.78 and 1 : 12.36; and MICHAILOVSKIJ (26, p. 474) found it between 1 : 12.8 and 1 : 13. In the specimens now under discussion, the proportion varies between 1 : 7.54 and 1 : 10.5. For purposes of comparison, it may be stated that in some specimens from the Norwegian North Atlantic Expedition, I found that it varied between 1 : 7.9 and 1 : 11; and in a specimen from the Kara Sea it was as 1 : 8.46.

In the diagnoses of this species, the great constriction of the arms at their base is emphasised. The greatest breadth of the arms is not until a little way out from the base. Specimens may however be found, as the above table shows, in which the arms are widest at the base. These specimens, in their habitus, greatly resemble *Asterias lincki* f. *stellinura*, although they may be easily distinguished from that species, as they have a different armature of spines and pedicellariæ.

Several authors, e. g. DÖDERLEIN, LEVINSEN (20, p. 394) and NORMAN (31, p. 409), have already pointed out the great variety in the spinous armature on the abactinal side of the disc and arms. The carinal row of spines never seems to extend beyond the proximal half of the arm, and as a rule occurs only upon the innermost third. It may appear as a distinct row, but is quite as frequently reduced to a few scattered spines, and may even be altogether absent on one

arm or more. The specimens examined by me, however, have not been entirely without carinal spines; on at least one of the arms there has been an indication of this row of spines. The upper row of marginal spines is also subject to great variations. The spines in the under marginal row occur singly or in pairs; and the cases were extremely rare in which I found three spines on one plate. DÖDERLEIN has found as many as 5 spines, however, on one plate. The adambulacral plates have from 1 to 4 papillæ, most frequently 2 or 3. As already shown by MORTENSEN (28, p. 70) and DÖDERLEIN, the dorsal side of the disc and arms is closely set with small forcipiform pedicellariæ; whereas along the ambulacral groove, forficiform pedicellariæ are scarce.

Asterias panopla is new to the waters west of Greenland. The species has hitherto only been found in the Greenland Sea, the Norwegian Sea, the Barents Sea, the Kara Sea, and the Siberian Arctic Ocean, where it is found at numerous stations between the east coast of Greenland (Henry Land) and the eastern part of the Taimur Peninsula. The bathymetric distribution of the species is from 9 to 475 m. Its principal distribution is in the cold area, but it is often met with far down in the warm area[1].

Ophiuroidea.

Ophiura sarsi, LÜTKEN.

(Pl. 1, figs. 6—8).

	Locality.	
Aug.	4, 1898.	Upernivik harbour, 26—6m.
July	21, 1899.	Winter harbour, Havne Fjord; about 16 m.
July	19, 1899.	— — — ; — 12 „
July	18, 1900.	— — — ; — 60 „ Small stones and clay.
July	21, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones with calcareous algæ.
July	22, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July	26, 1900.	West side of the mouth of Stor Valley; about 20 m. Clay.

[1] The bottom temperature at such of the localities where this species is found, as have had their temperature measured, is as follows:
"Vega", —1.4 to —1.7 C.; "Jermak", —0.6 to —1.3 C.; "Willem Barents", —1.2 C.; the Russian expeditions to Spitzbergen, —0.7 to —0.8 C.; "Olga", 1.7 C.; "Vöringen", —1.4 to 1.6 C

July	30, 1900.	Mouth of Stor Valley.
Aug.	1, 1900.	— „ — — ; up to 20 m. Small stones and some clay.
Aug.	1, 1900.	Mouth of Stor Valley; 60—4 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness, 50—30 m.
July	8, 1901.	Ren Bay.
July	12, 1901.	Bay at Land's End.
Aug. 3&4,	1902.	North of the peninsula, Gaasefjord; about 108 m.

The disc in the largest specimens has a diameter of 28 mm.

In "Echinoderms from East Greenland", MORTENSEN (28, p. 83) points out that a large number of *Ophiura sarsi* from Jan Mayen, are all of one size, the diameter of the disc being from 15 to 20 mm. They must thus all belong to the same year. The specimens collected by the "Vøringen" and the "Michael Sars" also show that all the ophiuroids occurring in one locality are of the same size, and therefore of the same age. It appears to be quite an exception when specimens of two, or possibly three, ages occur in one locality (GRIEG, 14, p. 21). VANHÖFFEN (35, p. 239) has also observed that the *Ophiura sarsi* occurring in one locality are all of the same size. He thinks, however, that the fact of large and small specimens not being found together, is due to the greater concealment of the latter. My specimens, however, do not confirm this view. The Fram Expedition collection, like those of the "Vøringen", the "Belgica" and the "Michael Sars", shows that all the specimens taken in one locality are as a rule of the same size, although sometimes individuals of two different ages may be found in the same locality. At a station in Gaase Fjord, for instance, the disc in most of the specimens measured from 19 to 23 mm. in diameter, while one was only 8.5 mm. The specimens from Ren Bay are mostly of two diameters — 14 or 15 mm., and 20 or 21 mm. The above remarks concerning *Ophiura sarsi* appear also to be applicable to the other arctic ophiuroids.

Another ophiuroid was taken in a bay near Land's End together with a typical *Ophiura sarsi.* It had poorly-developed arm-combs, no papillæ on the bursal slits, and three brachial spines of equal length, that were no longer than the lateral plates of the arms (Pl. 1, figs. 6—8). It is especially in this last character that the specimen differs from the typical *Ophiura sarsi,* and more resembles *Ophiura albida,* whose brachial spines, however, are not more than half as long as the lateral plates. The specimen differs moreover from *Ophiura albida* in having

broader brachial ventral plates and several tentacular papillæ. *Ophiura albida*, as we know, has normally only one papilla, though in rare instances the innermost tentacle-pores have two. In this specimen, on the contrary, there were from 2 to 4 papillæ.

The disc of the specimen is 24.5 mm. in diameter. The arms have probably been about 100 mm. in length; but an accurate measurement cannot be given, as large or small pieces of the points of the arms are wanting. The abactinal side of the disc is covered with numerous irregular scales, resembling those in *Ophiura sarsi*. The radial shields are pear-shaped or oval, with the broader end turned outwards towards the margin of the disc, the narrower end inwards towards the centre. They are from 6 to 7.5 mm. long, and from 3 to 3.5 mm. broad, their length being thus double their width. The arm-notches are from 1 to 1.5 mm. deep, and are obtuse-angled; and they are occupied by 2 or 3 dorsal arm-plates. There are a few rudimentary papillæ at only two of the notches, while on the other hand, the remaining notches are altogether without combs The bursal slits begin at the mouth-shields, and extend to the margin of the disc. Their margin is altogether without papillæ. The interbrachial parts of the actinal surface of the disc are covered with scales similar to those on the abactinal surface.

As in *Ophiura sarsi*, the mouth-shields are scutiform, their length being greater than their width (3.5 mm. long, 3 mm. broad). Their distance from the margin of the disc is about 5 mm. The lateral mouth plates are quite narrow. There are 5 or 6 cuneate oral papillæ, the largest of which are above the teeth. These papillæ are connected with the papillæ on the ab-radial margin of the first tentacle-pore, just as in the *Ophiura (Ophioglypha) maculata* from the Bering Sea, described by Ludwig (21, p. 283). On both the ab-radial and the ad-radial margin of the first tentacle-pore, there are from 4 to 6 flattened papillæ.

The arm-plates resemble those in *Ophiura sarsi*. The innermost ventral arm-plates are twice as broad as they are long, and are separated by only an exceedingly narrow space. Out towards the point of the arms, the lateral plates increase in size, thus making the distance between the ventral plates greater and greater. At the same time the latter also decrease in size. The lateral plates are furnished with three robust spines of equal length, which do not extend beyond those plates. The tentacle-pores within the margin of the disc have 3 or 4 flattened papillæ; and in the nearest of those outside the margin of the disc, there are 3 papillæ, or, in exceptional cases, 4. Farther out on the arms the number of papillæ is two, and towards their points there is only one.

The specimen preserved in alcohol is of a uniform olive grey colour on the abactinal surface, and on the actinal surface of a yellowish white.

Of the four arctic species of the genus *Ophiura, Ophioglypha,* this specimen most nearly resembles *Ophiura sarsi.* It differs, however, from the typical form of this species, as already stated, in the larger number of tentacle-papillæ, the absence of papillæ at the arm-notches and along the bursal slits, and in having three arm-spines of equal length. The first of these characters seems, however, to be of no great significance, as in otherwise typical *Ophiura sarsi,* 4 tentacle-papillæ may be found. Moreover the rows of papillæ along the arm-notches and along the bursal slits, may be absent or only slightly developed (see MORTENSEN, 28, p. 82). Nor can any great importance be attached to the mutual proportions of the arm-spines. A typical *Ophiura sarsi* has one short and two long arm-spines. LÜTKEN (25, p. 42) says of these: "The lowest and shortest of the arm-spines is not as long as the lateral plate, whereas the other two in their adpressed condition, extend a little way into the succeeding row of spines". In the specimen now under discussion, on the contrary, the arm-spines are of equal length, and no longer than the lateral plates. The specimens of *Ophiura sarsi,* however, to which I have access, show that the relative proportion of the arm-spines may vary. In some specimens from Ren Bay, for instance, there is very little difference in the length of the arm-spines. On some of the lateral plates in one specimen, the uppermost spine is the shortest; the other two are of the same length. The *Ophiura sarsi* figured by DUNCAN and SLADEN in their "Echinodermata of the Arctic Sea" (6, Pl. 4, figs. 3 & 4), seems moreover to have had comparatively short arm-spines, all of the same length. The specimen from Land's End cannot therefore be regarded as a particular species, but only as a short-spined variety of *Ophiura sarsi.*

Ophiura robusta, AYRES.

(Pl. 1, figs 9 & 10).

Locality.

Aug.	18, 1898.	Bay in Rice Strait.
Aug.	24, 1898.	Rice Strait; 40—8 m.
Aug.	26, 1898.	Bay in Rice Strait.
Winter	1898-99.	Rice Strait.
July	21, 1899.	Winter harbour, Havne Fjord; about 16 m.
Sept.	7, 1899.	Bay in Havne Fjord; about 6 m. Small stones.

March	7, 1900.	Bay south of Sjøpølse Ness; 30—40 m. Stones & laminaria.
June	26, 1900.	The rock in Havne Fjord; about 10 m. Stones with calcareous algæ.
July	21, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones with calcareous algæ.
July	22, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July	22, 1900.	Winter harbour, Havne Fjord; about 16 m.
July	23, 1900.	Winter harbour, Havne Fjord; about 40 m.
July	26, 1900.	West side of the mouth of Stor Valley; about 20 m. Clay.
July	29, 1900.	South-east of Breakfast Point; about 30 m. Stones.
July	30, 1900.	Mouth of Stor Valley.
Aug.	1, 1900.	Mouth of Stor Valley; up to 20 m. Small stones with some clay.
Aug.	1, 1900.	Mouth of Stor Valley; 60—4 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness; 50—30 m. Small stones.
Aug.	8, 1900.	Winter harbour, Havne Fjord; about 30 m.
June	28, 1901.	Mouth of Hvalros Fjord.
June	29, 1901.	Off the camping-ground.
July	5, 1901.	The Sound.
July	8, 1901.	Ren Bay.
July	9, 1901.	Ren Bay.
July	12, 1901.	Bay at Land's End.
July	19, 1901.	Gaase Fjord.
July	11, 1902.	St. Helena; 14—4 m.
July	19, 1902.	North Devon, off the camping-ground; 14—6 m.

The disc in the largest specimens is from 10 to 12 mm. in diameter. On two of the arms of a 10 mm. specimen with no statement of the locality, some of the dorsal and ventral plates are bipartite. Two of its mouth-shields also are divided, one into two, the other into three, unequal parts. The specimen is moreover characterised by numerous papillæ — as many as 25 in each group — at the arm-notches (figs. 9, 10).

In the diagnosis of the species, *Ophiura robusta* is said to have only one tentacle-papilla; but this refers only to the distal brachial joints. It is not unusual to find two papillæ, sometimes indeed even 4 or 5 (see LÜTKEN, 25, p. 46) at the innermost tentacle-pore. Where

there are several papillæ, only one of them seems as a rule to be fully developed.

Under the name of *Ophioglypha maculata*, LUDWIG (21, p. 283, Pl. 6, figs. 11 & 12) describes a brittle-star from the Bering Sea, which, in general appearance, very much resembles *Ophiura robusta*. It differs, however, in the absence of papillæ at the arm-notches, and in having the papillæ along the innermost tentacle-pore joined to the oral papilla. MORTENSEN (28, p. 83) has pointed out, however, that the arm-notches in *Ophiura robusta* are sometimes without papillæ, a fact which I have also several times had an opportunity of observing. In some specimens, for instance, in the above-mentioned 10-millimetre ones, I found moreover the mouth papillæ connected with the adoral papillæ of the innermost tentacle-pore, just as in LUDWIG's species. I cannot therefore regard *Ophioglypha maculata* as an independent species, but only as a variety of *Ophiura robusta*.

Ophiocten sericeum, FORBES.

	Locality.
Aug. 18, 1898.	Bay in Rice Strait.
Aug. 26, 1898.	Bay in Rice Strait.
July 21, 1899.	Winter harbour, Havne Fjord; 16 m.
July 29, 1899.	Winter harbour, Havne Fjord; 12 m.
March 7, 1900.	Bay south of Sjøpølse Ness; 30—40 m. Small stones with Laminaria.
July 18, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones and clay.
July 21, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones with calcareous algæ.
July 22, 1900.	Winter harbour, Havne Fjord; about 16 m.
July 22, 1900.	— — — ; about 60 m.
July 23, 1900.	— — — ; about 40 m.
July 24, 1900.	— — — ; about 90 m.
July 26, 1900.	West side of the mouth of Stor Valley; about 20 m.
July 29, 1900.	South-east of Breakfast Point; about 30 m. Stones.
July 30, 1900.	Mouth of Stor Valley.
July 31, 1900.	Round the Western Sound; 20—60 m.
Aug. 1, 1900.	Mouth of Stor Valley; up to 20 m. Small stones and some clay.
Aug. 1, 1900.	Mouth of Stor Valley; 60—4 m. Small stones.

Aug.	3, 1900.	Fosheim Peak and the valley on the west side of Havne Fjord; 40—4 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
Aug.	8, 1900.	Winter harbour, Havne Fjord; about 30 m.
Sept.	19, 1900.	Off Forvisnings Valley; 40—4 m. Small stones and clay.
Sept.	20, 1900.	Head of Gaase Fjord; 40—6 m. Small stones and clay.
July	8, 1901.	Ren Bay.
July	12, 1901.	Bay near Land's End.
Aug.	2, 1901.	Head of Gaase Fjord; up to 40 m.
Aug.	16, 1901.	— „ — — ; about 14 m.
Aug.	30, 1901.	— „ — — ; about 8 m. Small stones and clay with brown algæ.
July	19, 1902.	North Devon, off the camping-ground, 14—6 m.

Ophiura robusta and this species are the two ophiuroids that occur in the largest numbers in the region explored by the Fram Expedition.

The largest specimens have a disc-diameter of 22 mm. The colour varies, even in specimens from the same locality, from light purplish gray to blackish gray.

Ophiacantha bidentata, Retzius.

Locality.		
Aug.	26, 1898.	Bay in Rice Strait.
July	21, 1899.	Winter harbour, Havne Fjord; about 16 m.
July	21, 1900.	— — — ; about 60 m. Small stones with calcareous algæ.
July	22, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July	23, 1900.	Winter harbour, Havne Fjord; about 40 m. Small stones.
July	24, 1900.	Winter harbour, Havne Fjord; about 90 m. Small stones.
July	30, 1900.	Winter harbour, Havne Fjord.
Aug.	3, 1900.	Fosheim Peak and the valley on the west side of Havne Fjord; 40—4 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness; 30—50 m. Small stones.
Aug.	8, 1900.	Winter harbour, Havne Fjord; about 30 m.
August	1900.	North side of N. Devon.

Sept.	20, 1900.	Head of Gaase Fjord; 40—6 m. Small stones and clay.
July	5, 1901.	The Sound.
July	8, 1901.	Ren Bay.
July	12, 1901.	Bay at Land's End.
July	19, 1901.	Gaase Fjord.
July	19, 1902.	North Devon, outside the camping-ground; 14—6 m.

Ophiacantha bidentata, which is one of the most characteristic brittle-stars in Spitzbergen, was found by the Fram Expedition only in Havne Fjord in any great quantity. In the other localities explored by the Expedition, it occurred sparsely.

The largest specimens have a disc-diameter of 17 mm. As already pointed out by MORTENSEN (27, p. 86), the inner tentacle-pores may often have two papillæ. In one specimen, I found even three.

Gorgonocephalus eucnemis, MÜLLER & TROSCHEL.

		Locality.
July	22, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July	23, 1900.	Winter harbour, Havne Fjord; about 40 m. Small stones.
Aug.	4, 1900.	Sjøpølse Ness; 50 m.
July	17, 1901.	Gaase Fjord.

This species has not previously been found in the waters north and west of Baffin Bay. Only *Gorgonocephalus agassizi* has hitherto been recorded from that quarter (DUNCAN & SLADEN, 5, p. 468, 6, p. 69).

The disc of one of the specimens from Havne Fjord measures 6.5 mm. in diameter. It very much resembles a *Gorgonocephalus agassizi,* measuring 5.5 mm., from Norman Light, Labrador, which I have mentioned in "Grønlandske Ophiurider" (12, p. 10), although the primary plates on the abactinal side of the disc are not yet all covered with granulæ. The arms branched 5 times.

The remainder of the Fram Expedition specimens have a disc-diameter of from 14 to 47 mm., the length of the arms between the first and the fifth branch is from 35 to 79 mm., the thickness of the arms between the first and second branchings from 2.5 to 8 mm. The disc of the *Gorgonocephalus agassizi* taken by the Fram Expedition measures 39 mm., the length of the arm 78 mm., its thickness 4.5 mm.

Thus in this specimen the proportion of the disc-diameter to the length of the arm is as 1 : 2, while in *Gorgonocephalus eucnemis* it is from 1 : 2.43 to 1 : 1.43. The proportion of the thickness of the arm to the diameter of the disc is as 1 : 8.67 in *Gorgonocephalus agassizi*, in the other species from 1 : 5.8 to 1 : 7.67. This is in harmony with what Döderlein (7, p. 227) found, namely that *Gorgonocephalus agassizi* has comparatively longer and more slender arms than the other Scandinavian and arctic *Gorgonocephali*. In young specimens, however, this difference is less striking (see Michailovskij, 26, p. 497; 27, p. 174). Individual variation, however, is here very marked. In one *Gorgonocephalus eucnemis*, measuring 46 mm. in diameter, the proportion of the disc-diameter to the length of the arm as far as the 5th ramification, was as 1 : 1.43, and that of the thickness of the arm between the 1st and 2nd ramifications and the diameter of the disc, as 1 : 7.67. In the specimen measuring 47 mm., on the other hand, these proportions are respectively 1 : 1.68 and 1 : 5.87. In like manner the arms may vary in length and thickness in the same individual. In a specimen measuring 32 mm., the proportion of the disc-diameter to the length of one arm to the fifth ramification, is as 1 : 2.06, of another arm as 1 : 2.19; and the proportion of the thickness of the same arms, between the 1st and 2nd ramifications, to the diameter of the disc, is respectively 1 : 7.11 and 1 : 6.4.

The specimen from Sjøpølse Ness differs from the others in having a smooth, naked skin. In the other specimens, the ribs, at any rate, are covered with granulæ.

Gorgonocephalus agassizi, Stimpson.

Locality.

Aug. 4, 1900. Sjøpølse Ness; 30—50 m. Small stones. One specimen.

Echinoidea.

Strongylocentrotus drøbachiensis, O. F. Müller.

Locality.

July 29, 1898. The harbour, Egedes Minde.
Aug. 4, 1898. The harbour, Upernivik; 26—6 m.
Aug. 18, 1898. Bay in Rice Strait.
Aug. 24, 1898. Rice Strait; 40—8 m.

Sept.	7, 1899.	The bay, Havne Fjord; about 6 m. Small stones.
July	21, 1899.	Winter harbour, Havne Fjord; about 16 m. Small stones.
June	22, 1900.	The rock, Havne Fjord; about 10 m. Stones with calcareous algæ.
July	18, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones & clay.
July	21, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones with calcareous algæ.
July	22, 1900.	Winter harbour, Havne Fjord; about 60 m. Small stones.
July	26, 1900.	West side of the mouth of Stor Valley, about 20 m. Clay.
July	29, 1900.	South-east of Breakfast Point; about 30 m. Stones.
Aug.	4, 1900.	Sjøpølse Ness; 50—30 m. Small stones.
Sept.	20, 1900.	Head of Gaase Fjord; 40—6 m. Clay with small stones.
July	30, 1900.	Mouth of Stor Valley.
June	28, 1901.	Mouth of Hvalros Fjord.
July	5, 1901.	The Sound.
July	8, 1901.	Ren Bay.
July	12, 1901.	Bay at Land's End.
July	19, 1901.	Gaase Fjord.
July	11, 1902.	St. Helena; 14—4 m.
July	15, 1902.	Off Havhest Mt., N. Devon. Stones with large brown algæ.
July	19, 1902.	Off the camping-ground, N. Devon; 14—6 m.

The largest specimens from Jones Sound have a diameter of 63 to 64 mm., the height of the test being from 32 to 34 mm. In the largest specimens from Rice Strait, these measurements are respectively 44—47 mm. and 22—23 mm. For purposes of comparison, it may be mentioned that the diameter of the largest of the Nares Expedition specimens was 43 mm., its height 21 mm. (DUNCAN & SLADEN, 5, p. 453. 6, p. 19). The specimens collected by the Princeton Expedition in Smith Sound measured up to 58 mm. in diameter (RANKIN, 32, p. 170). LÜTKEN, on the other hand (24, p. 25), gives the size of this species from the west coast of Greenland as about 90 mm.[1]; and according to M. SARS

[1] The largest specimens that the Fram Expedition obtained at Egedes Minde and Upernivik are from 55 to 58 mm. in diameter, the height of the test being from 15 to 19 mm. In specimens from Karajak, VANHÖFFEN (35, p. 235) gives the diameter as from 75 to 85 mm., the height of the test from 34 to 55 mm, and the length of the spines from 12 to 16 mm.

(34, p. 95), it attains about the same size on the northern shores of Norway, while on the west and south coast it is only about 40 mm. MICHAILOVSKIJ (26, p. 472) states the size of the species from Spitzbergen to be 80 mm.

The specimens from Jones Sound and Rice Strait appear to have a comparatively lower and more depressed shell than those from the west coast of Greenland (Egedes Minde and Upernivik). In the latter, the average proportion of the height of the test to its diameter was as 1 : 1.81, varying also between 1 : 1.65 and 1 : 2; while in specimens from Jones Sound, the average proportion was as 1 : 1.97, and in those from Rice Strait as 1 : 1.92. The proportion varied between 1 : 1.65 and 1 : 2.3. At Spitzbergen, this species appears to be still more depressed, as, according to MICHAILOVSKIJ, the proportion of the height of the test to its diameter varies between 1 : 1.9 and 1 : 2.5.

The specimens from the south side of Jones Sound, North Devon, are remarkable for their comparatively short (up to 11 mm.) robust spines; while those from the north side, Havne Fjord and Gaase Fjord, have very thin, slender spines, up to 20 mm. in length. In specimens from Rice Strait, too, the spines were short and strong. The spines are subject to great variations with regard to length and thickness, even in specimens from the same locality.

The number of pores varies between 4 and 7, 6 being the most frequently occurring number. The colour varies between purple and greyish green.

Holothurioidea.

Myriotrochus rinki, STEENSTRUP.

	Locality.	
Aug.	18, 1898.	Bay in Rice Strait.
Aug.	24, 1898.	— „ —„—
Aug.	26, 1898.	— „ —„—
July	29, 1899.	Winter harbour, Havne Fjord; 12 m.
July	22, 1899.	— — — ; 16 m.
July	30, 1900.	Mouth of Stor Valley.
Sept.	19, 1900.	Off Forvisnings Valley; 49—4 m. Clay and small stones.

Psolus fabrici, DÜBEN & KOREN.

Locality.

July 25, 1900. Winter harbour, Havne Fjord.
Aug. 4, 1900. Sjøpølse Ness; 50—30 m. Small stones.

The largest of the specimens was 17 mm. in length.

Psolus fabrici has not been found before in these waters, but is mentioned both from the west coast of Greenland (HOLM 17, p. 162; LÜTKEN, 24, p. 13) and from Point Barrow (MURDOCH, 30, p. 157).

Cucumaria frondosa, GUNNERUS.

Locality.

Aug. 4, 1900. Sjøpølse Ness; 56—30 m. Small stones.
July 18, 1901. Mouth of Gaase Fjord.
July 19, 1901. Gaase Fjord.
July 15, 1902. Off Havhest Mountain, N. Devon. Stones with large brown algæ.

Bergen, December, 1906.

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This work has unfortunately not been accessible to me. I have had to use the extract from it found in Jones's "Manual of the Natural History, Geology and Physics of Greenland and the Neighbouring Regions", 1875, p. 510.

A more complete survey of the literature touching upon the echinoderms mentioned in this paper, will be found in "Fauna Arctica", published by RÖMER & SCHAUDINN. (See Nos. 7, 8, 12, 21 and 22 of the present list). In that work there will also be found a complete account of the distribution of the species, and their synonyms.

EXPLANATION OF THE PLATES.

PLATE I.

Fig. 1. Part of the abactinal skeleton of a *Solaster papposus* measuring 71 mm., from Havne Fjord, seen from within.
„ 2. Part of the ambulacral groove of the same.
„ 3. Paxillæ and papulæ from the abactinal surface in a *Solaster furcifer* measuring 134 mm., from Gaase Fjord.
„ 4. Part of the abactinal skeleton of a *Solaster furcifer* from Havne Fjord, seen from within.
„ 5. The inter-radial skeleton of the same, seen from within: *m* marginal plates, *d* abactinal plates.
„ 6. Part of the abactinal surface of a variety of *Ophiura sarsi* from Land's End.
„ 7. Part of the actinal surface of the same.
„ 8. Lateral arm-plates with spines, of the same.
„ 9. Part of the abactinal surface af *Ophiura robusta* from Jones Sound.
„ 10. Part of the actinal surface of the same.

PLATE II.

Fig. 1. *Solaster papposus* from Gaase Fjord.
„ 2. — — from the mouth of Stor Valley. (From photographs.)

PLATE III.

Fig. 1. *Solaster furcifer,* from Gaase Fjord. From a photograph.
„ 2. Joint of a genital pinnula with adambulacral plates and sacculi in a young *Antedon eschrichti.*

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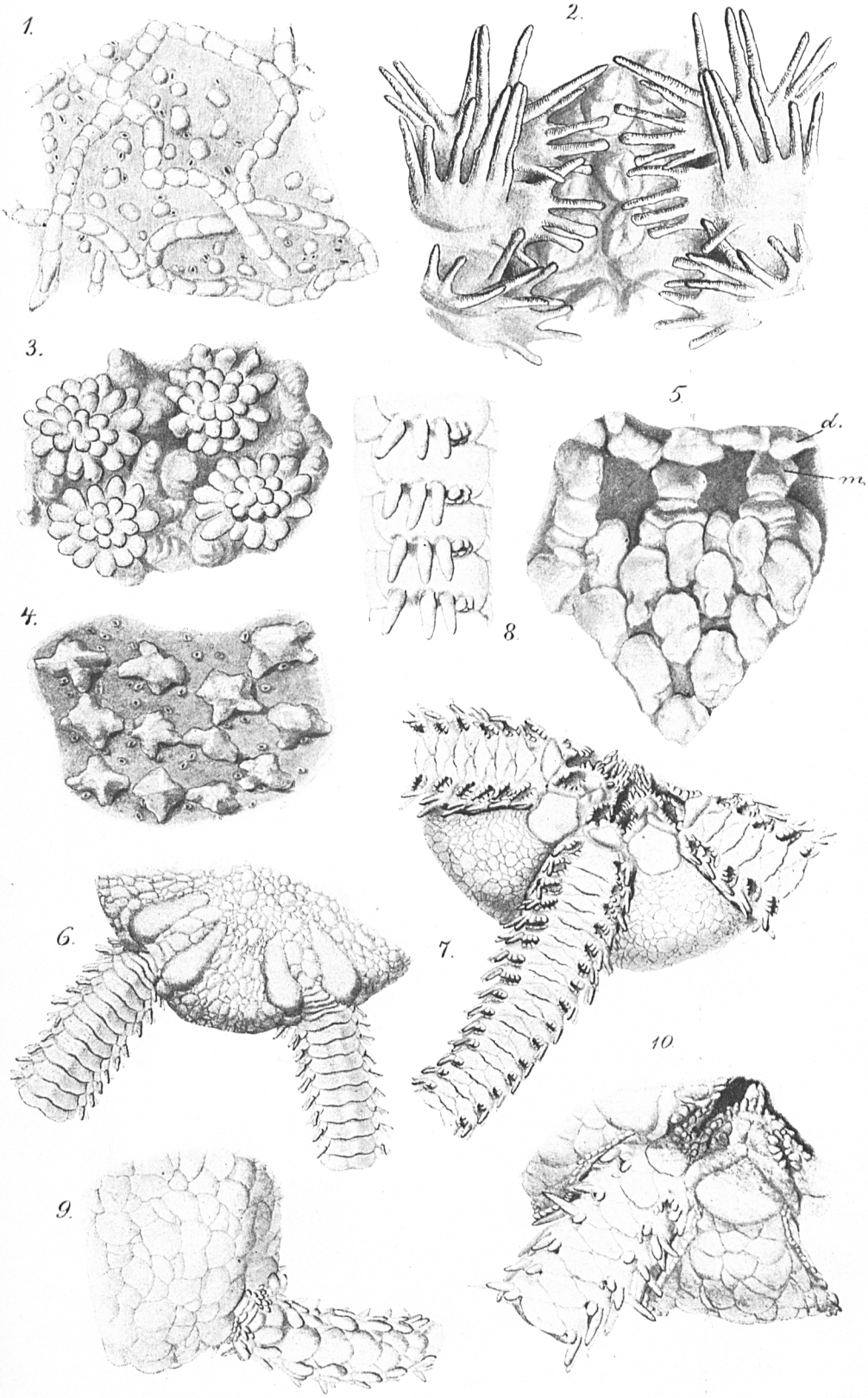

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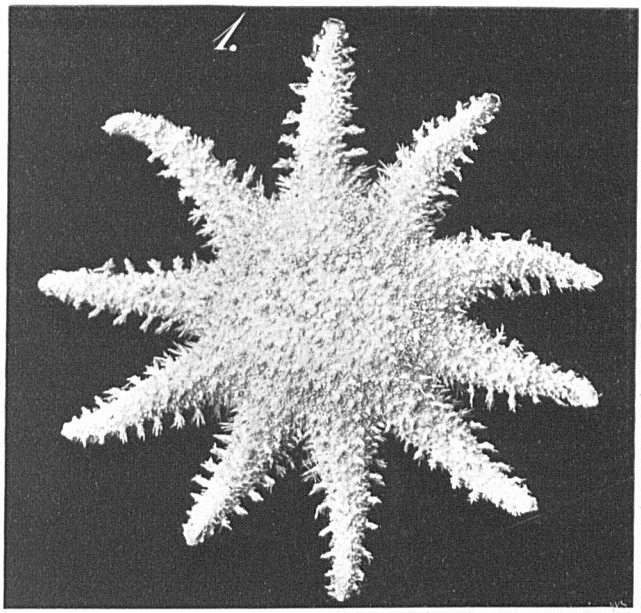
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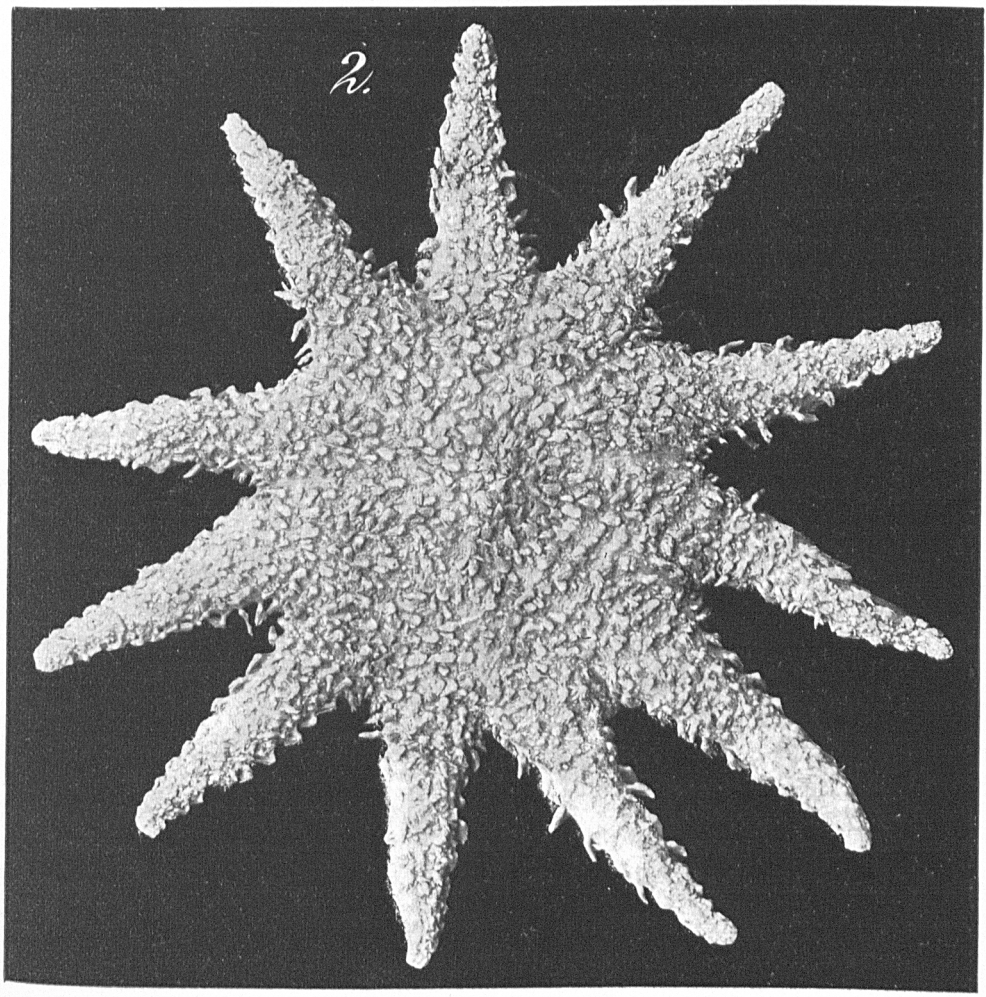
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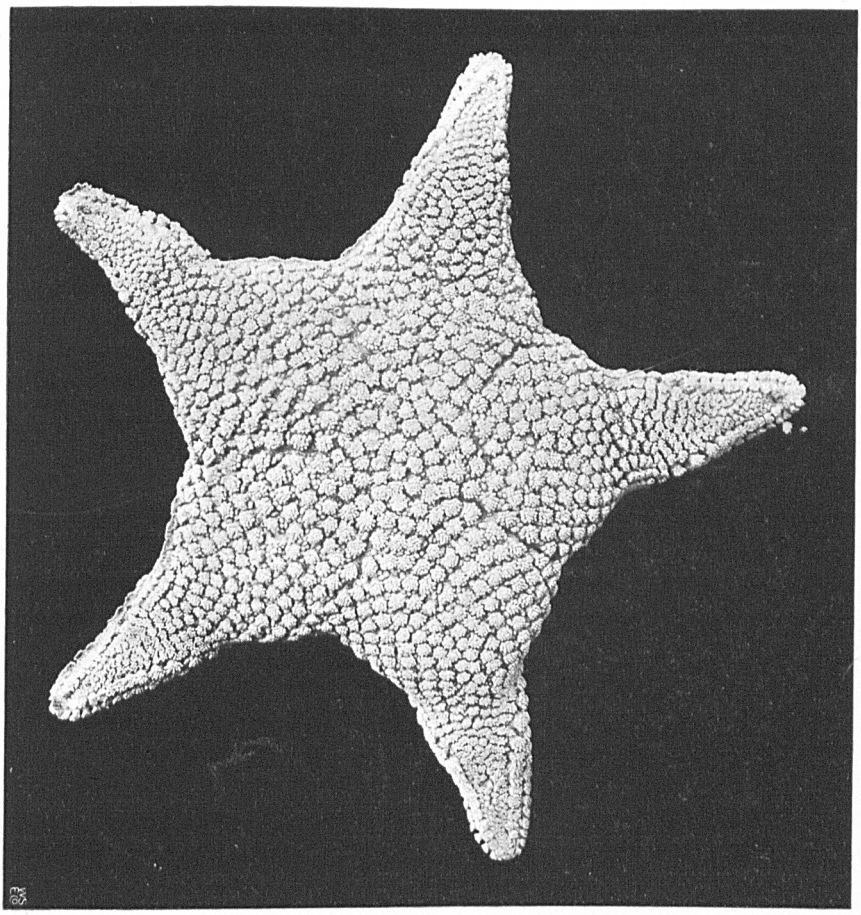

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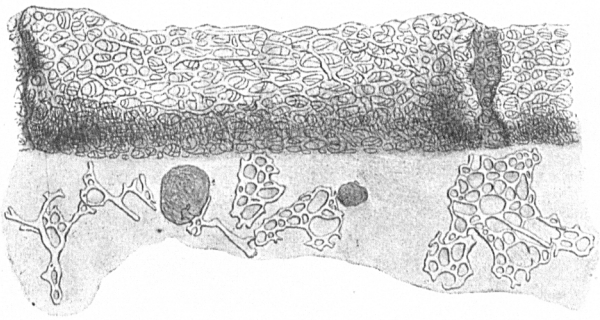

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