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KOMMISSIONEN FOR VIDENSKABELIGE UNDERSØGELSER I GRØNLAND

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THE NATURAL HISTORY
EXPEDITION TO NORTHWEST GREENLAND 1936

LEADER: FINN SALOMONSEN

REPORT ON THE EXPEDITION

BY

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WITH 16 FIGURES IN THE TEXT AND 1 MAP

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INTRODUCTION

The regions situated to the north of Umanak on the west coast of Greenland, viz. from the neighbourhood of the Svartenhuk peninsula through the Upernavik and Thule districts, have been very insufficiently investigated from the point of view of the fauna, and this more particularly applies to the central part of the area, the coasts of Melville Bugt. On the long distance from Svartenhuk and as far as Thule, no scientific zoological collections have been made, and our knowledge both of the sea- and the land-fauna—for that matter also the land-flora—is very slight. Particularly when viewed on the background of the large-scale investigations and collections made in the same latitudes of East Greenland (by the Danmark-Expedition, the Lauge Koch expeditions etc.) it is felt as a drawback that the composition and distribution of the Northwest Greenland fauna are so little known. A more detailed knowledge of the latter is all the more needful, as the chief boundary between a high- and a low-arctic fauna must lie in this part of West Greenland, the course of this boundary, however, not being known in detail. Further, in Upernavik District and Melville Bugt conditions of life are so much harder as regards the fauna than in the more southerly part of Greenland, a distinguishing feature of the country being the propinquity of the many highly productive glaciers; thus, no less than four of the nine glaciers of the first magnitude, which are found on the west coast, are situated in Upernavik District. A comparative investigation of the fauna would, therefore, be expedient, and so there were sufficiently weighty reasons for undertaking a journey of zoological investigation to northwestern Greenland.

The chief object of this expedition, which took place in 1936 and was called "The Natural History Expedition to Northwest Greenland 1936", were ornithological investigations, but in addition numerous other tasks were included in our program. I had been a member of E. LEHN SCHIÖLER'S ornithological expedition to West Greenland in 1925, in the course of which the bird-life was investigated from Julianehaab to Godhavn District and it was the idea that the expedition of

1936 should continue the investigations northwards, and thus complete the field-work for an "Avifauna Groenlandica", which will appear in this volume as the ornithological report from the expeditions of 1925 and 1936. With the exception of a few special articles¹⁾ no account of the journey of 1925 has been published, but one of the members, HENNING SCHEEL, has published a lively, richly illustrated book which in a popular form describes the course of the whole journey²⁾.

Without entering into details a short description will here be given of the most important contributions to the exploration of the said Northwest Greenland coastal stretch. Upernavik District was traversed by the mineralogist GIESECKE in 1807 and by the botanist VAHL in 1835—36, and it was first mapped by C. H. RYDER in 1886—87³⁾. Until then the coast north of 73¹/₂° N. lat. was only known through the English Admiralty charts, which were very deficient, being chiefly based upon the information given by Scotch whalers. Towards north RYDER reached the island of Inugsulik in 74°25' N. lat., and our present knowledge of the geography of these regions is still in the main founded on his maps. On a boat journey in 1891 the Swedish explorer J. A. BJØRLING penetrated somewhat farther north, to Holms Ø in 73°30'⁴⁾. In 1903 the remaining part of Melville Bugt was traversed by "Den litterære Grønlandsekspedition" under the leadership of L. MYLIUS-ERICHSEN, who prepared the first and very sketchy maps of these, until then practically unknown regions⁵⁾.

In Thule District scientific investigations had already been carried out at an early period. The first map-sketch was made by the well-known English explorer, JOHN ROSS, who already visited these regions in 1818.

¹⁾ The material collected was used for two investigations undertaken by E. LEHN SCHIØLER: Om de i Grønland forekommende Racer af Fjeldrypen, *Lagopus mutus mutus* (Montin), Dansk Ornithologisk Forenings Tidsskrift, Vol. 19, 1925, p. 108; Om den vestgrønlandske Skallesluger, *Mergus serrator major*, subsp. nov., *ibid.*, p. 115. Further, numerous scattered observations and descriptions from the expedition are to be found in the large work of SCHIØLER: Danmarks Fugle, med Henblik paa de i Grønland, paa Færøerne og i Kongeriget Island forekommende Arter, Vol. II og Vol. III (København 1926 and 1931). Finally, a short description of the journey with a number of ornithological observations has been published by FINN SALOMONSEN: Paa ornithologisk Undersøgelsesrejse i Grønland, Dansk Ornithologisk Forenings Tidsskrift, Vol. 19, 1925, p. 119.

²⁾ H. SCHEEL: Med Lehn Schiøler og Johannes Larsen i Grønland. Fugleekspeditionen 1925. (København 1927).

³⁾ C. H. RYDER: Undersøgelse af Grønlands Vestkyst fra 72° til 74°35' N. Br., Meddelelser om Grønland, Vol. 8, 1889, p. 203.

⁴⁾ J. A. BJØRLING: En Resa till Grønland Sommaren 1891, Ymer, Vol. 11, 1891, p. 151 (Stockholm 1892).

⁵⁾ L. MYLIUS-ERICHSEN & HARALD MOLTKE: Grønland. Illustreret Skildring af den Danske Literære Grønlands-Ekspedition 1902—1904 (København 1905).

After that time Scotch whalers regularly and in great numbers visited these waters, but they rarely went ashore, and with the exception of a few plants no natural history collections were undertaken by these whaling expeditions. The last year when Northwest Greenland was visited by the Scotch whalers was 1911. The great Polar expeditions during the latter half of the 19th century likewise visited the Thule and the Upernavik districts and made a few collections (as KANE 1854—56 and HAYES 1860—61), and also NATHORST and KOLTHOFF were ashore in 1883 on their journey with NORDENSKIÖLD's vessel the "Sofia". The Thule area was for a number of years the base of PEARY's famous Polar expeditions, and during these expeditions the district was mapped in 1892 southwards as far as Thom Ø (75°40') in Melville Bugt, by the Norwegian explorer EIVIND ASTRUP. Later on Thule was made the centre of KNUD RASMUSSEN's expeditions, and in the course of the II. Thule Expedition Melville Bugt was visited, the final topographical survey and mapping being undertaken by LAUGE KOCH in 1916—17. Some years later KNUD RASMUSSEN gave a description of Thule District and Melville Bugt¹). Finally, it should be mentioned that an American expedition visited the Nûgssuaq peninsula (74°20') in 1897²).

Zoological and botanical collections have been made in the nineties by some of the expeditions of PEARY and later on by the Thule expeditions of KNUD RASMUSSEN. Especially as regards the bird-life there are, in the reports of several of the older expeditions, scattered remarks about birds (*e. g.* from PENNY's journeys 1849—50, INGLEFIELD's and KANE's searches for JOHN FRANKLIN 1852—55, MACCLINTOCK's journey 1857—59 and others), important collections having already been undertaken in the course of JOHN ROSS' travels (prepared by LEACH and SABINE). Also on several of PEARY's journeys a number of birds were collected in Thule District, the material being prepared by WITMER STONE³). From Upernavik there is a list of birds, compiled by the trading manager FENCKER and published by RYDER⁴). In addition, FENCKER has made the Zoological Museum of Copenhagen a present of his ornithological diary, and his results have been used by H. WINGE in his book on the

¹) KNUD RASMUSSEN: Beskrivelse af Thule Distriktet, in: Grønland i Tohundred-aaret for Hans Egedes Landing. Under Redaktion af G. C. AMDRUP, LOUIS BOBÉ, AD. S. JENSEN & H. P. STEENSBY, Vol. I, p. 517 (København 1921).

²) Cf. R. S. TARR: Former Extension of Cornell Glacier near the Southern End of Melville Bay, Bulletin of the Geological Society of America, Vol. 8, 1897 (Rochester).

³) WITMER STONE: Birds collected by the West Greenland Expedition, Proceed. Acad. Natural Science Philadelphia, 1892, p. 145; and: List of Birds collected in North Greenland by the PEARY Expedition of 1891—92 and the Relief Expedition of 1892, Proceed. Acad. Natural Science Philadelphia 1895, p. 502.

⁴) *l. c.*, p. 250.

birds of Greenland¹). KOLTHOFF has published some scattered information on the birds in Northwest Greenland, the observations having been made on his journey with the "Sofia" 1883²). Also on the Crocker Land Expedition 1913—17 ornithological observations were undertaken, and good bird-lists were published by MACMILLAN³). PETER FREUCHEN, who for a number of years was manager of the Thule station, has published a description of the bird-life in the neighbourhood of the station⁴), and he has also in the course of time sent a number of skins to the Zoological Museum of Copenhagen.

Of more recent expeditions to these regions must be mentioned the Godthaab-Expedition 1928, which was, however, principally of a marine character, although landings were made in several places, as for instance on Carey Øer, where some plants were collected. Further must be mentioned the journey of collection undertaken in 1931 by FRITZ JOHANSEN in Upernavik North District, from which a number of plants and a few zoological specimens were brought home. The plants brought home have not yet been investigated, but will be described in connection with the publication of the botanical material collected by "The Natural History Expedition to Northwest Greenland 1936"⁵). In 1934 an English Expedition was undertaken to Melville Bugt under the leadership of J. M. WORDIE and with C. T. DALGETY as ornithologist⁶). The birds obtained have been described by the collector, and are to be found in the British Museum⁷). In the same year another English expedition was made to the Thule area under the leadership of EDW. SHACKLETON and with D. HAIG-THOMAS as ornithologist; the results obtained were, however, meagre⁸).

¹) H. WINGE: Grønlands Fugle, Meddelelser om Grønland, Vol. 21, No. 1, 1898.

²) G. KOLTHOFF: Bidrag til Kännedom om Norra Polartrakternas Däggdjur och Fåglar, Kongl. Svenska Vetenskaps-Akademiens Handlingar, Vol. 36, No. 9, 1903.

³) D. B. MACMILLAN: Four Years in the White North, Appendix VI, p. 403 (New York 1918), and: Etah and Beyond, Appendix I, p. 251 (Boston 1927).

⁴) P. FREUCHEN: Fuglelivet i Nordvestgrønland, Dansk Ornithologisk For- enings Tidsskrift, Vol. 15, 1921, p. 101.

⁵) TH. SØRENSEN: The Flora of Melville Bay, Meddelelser om Grønland, Vol. 124, Nr. 5, 1943, in press.

⁶) Cf. J. M. WORDIE: An Expedition to Melville Bay and Northeast Baffin Land, The Geographical Journal, Vol. 86, 1935, p. 297.

⁷) C. T. DALGETY: Notes on Birds Observed in Greenland and Baffin Land, June—September 1934, The Ibis 1936, p. 580.

⁸) E. SHACKLETON: Arctic Journeys. London 1936.

PLAN AND EQUIPMENT OF THE EXPEDITION

The Natural History Expedition had the following special tasks:

1. A faunistic investigation of the bird-life, including a collection of skins to be used for systematic studies.
2. Ecological investigations. Observations and enumerations of the distribution of the birds in the different biotopes. Their nourishment elucidated through examinations of stomachs and collections of pellets.
3. Investigations of the moult of the North Greenland birds.
4. Special investigations of the effect of the climate on the periodicity of the thyreoid gland and the gonads through collection of fixed material, made at the same time in Greenland and Denmark¹⁾.
5. Photographing of the birds of Greenland and their biotopes. The taking of a film of the bird-life and North Greenland scenery.
6. Investigation of the West Greenland hare with the collection of skins to be used for investigations of the moult. Possibly collections of other mammal preparations, *e. g.* crania of seals. Collections of bones from Eskimo house ruins.
7. A quantitative investigation of the animal life of the level marine bottom by means of the PETERSEN grab.
8. Investigations of the fauna of the littoral zone.
9. Collections of a larger material of *Littorina* for special investigations.
10. Investigations of the microfauna of the soil, by means of BERLESE funnels, arranged according to the different plant associations.
11. Botanical collections and observations of the distribution of the plant associations.

Thus it will be seen that the program to be carried out by the expedition comprised a great number of tasks.

¹⁾ The collection in Denmark was kindly undertaken by Mr. HARRY MADSEN, at the Zoological Museum of Copenhagen.

A number of institutions, foundations and firms have assisted the expedition, partly by donations, partly by gifts of various kinds, and partly by placing instruments and apparatuses at our disposal:

KNUD RASMUSSEN, Ph. D., and Mr. RUDOLF SAND: Passage and board free of cost on the M/S "Dannebrog" and during our stay at Thule, and also the gratis use of the station's motor boat.

THE ADMINISTRATION OF GREENLAND: Free carriage of all the equipment of the expedition to Greenland and back to Denmark.

ZEUTHEN'S Mindelegat: A donation of 5000 Kr.

THE GAME BOARD (JAGTFONDEN): A donation of 1500 Kr. towards the film of the North Greenland scenery, the loan of a complete set of filming apparatuses, and gratis instruction in the taking of films.

THE INTENDANCY OF THE NAVY (The Ministry of Marine): The loan of sleeping bags belonging to the naval depot.

THE GEODETICAL INSTITUTE: Advance copies of surveys in 1934 in northern West Greenland.

THE ZOOLOGICAL MUSEUM OF COPENHAGEN: The loan of glasses and boxes for collections, dredges, Petersen grab and other apparatuses.

A/S DANSK HANDELS- OG INDUSTRI-COMPAGNI "DANISCO": Aalborg aquavit and a greatly reduced price of all concentrated alcohol.

JAGT- OG FISKERIMAGASINET: Contrivances for the cleaning of guns, a fowling piece and all ammunition at a reduced price.

THE CARLSBERG BREWERIES: Beer and mineral waters.

THE FIRM M. & V. SALOMONSEN: Groceries (biscuits, herrings, sardines, tea, cocoa, marmelade, macarony, tomato ketchup).

J. STEFFENSEN'S FABRIKKER: Canned meat (liver-paste, sausages, ham, brawn, cornbeef).

THE FIRM HOLGER FREDERICIA'S EFTF.: Travelling boxes and packing.

A/S DANSKE LLOYD (through the insurance agency HARRY LEVIN): All the insurances of the expedition.

A/S L. E. BRUUN EXPORT: Canned milk "Dancow" at a specially reduced price.

THE HOME FOR GREENLANDERS (by Mrs. K. BINZER): The sewing of anoraks.

Finally THE GOVERNMENT in a letter of February 12th, 1936, exempted the Expedition from all the laws relating to the protection of animals in Greenland.

To the heads of all these institutions and firms the expedition wishes to express its most cordial thanks.

Besides the leader, FINN SALOMONSEN, Ph. D., the members of the expedition were CHRISTIAN VIBE, B. sc., who acted as photographer and

taxidermist, and BOYE THORUP, B. sc., who joined the expedition and did valuable work in the capturing of birds and the preparation of the material collected. Further, a varying number of Greenlanders, generally three to four, on one trip as many as six, did duty as crew. In Thule the geologist SOLE MUNCK, M. sc. took part in several of our trips, and for practical reasons her results are published together with the reports of the expedition¹).

¹) S. MUNCK: Geological Observations from the Thule District in the Summer 1936, Meddelelser om Grønland, Vol. 124, No. 4, 1941.

DESCRIPTION OF THE JOURNEY

The expedition left Copenhagen on May 23rd in the S/S "Hans Egede" and arrived in Upernavik on June 6th. The weather was still quite winterlike; the snow lay high on the slopes facing north and also covered large parts of the southern slope. The thermometer was at zero or a little below, and we arrived in snowy weather. This winter weather lasted for some time, and only few birds were met with in the inclement, inhospitable surroundings of the settlement. In the spots free from snow a number of withered plants were seen; new shoots were only to be found on Willow, Lousewort (*Pedicularis*) and Purple Saxifrage (*Saxifraga oppositifolia*); the latter was even already in bloom.

We immediately set about installing ourselves. We lived in the house of the hospitable manager of the settlement BLICHER-NIELSEN, while the school was placed at our disposal as work- and store-room. This we made our headquarters, and here our very large luggage, consisting of forty-five packages was unpacked and arranged in definite groups according to the various destinations of the objects. In the school were also stored the constantly increasing collections, which we made in the course of the summer.

During the first week we worked in Upernavik and its immediate neighbourhood, the ice precluding long trips with a motor boat. On June 11th we made a hunting trip to Langø south of the settlement, but only few birds were met with. We also undertook littoral investigations in the Upernavik harbour, and on June 13th we made an excursion in a six-men's rowing boat to Gamle Skibshavn on Langø, where marine bottom investigations were undertaken with the Petersen grab, while also a few birds were shot on shore. It was an arduous task to work in the icy water, whilst the snow fell all the time, the ice first having to be cut to pieces, before the grab could be lowered. During those days the cold was constant, the temperature being frequently below zero, and it snowed almost incessantly. But the Brünnich's Murre (*Uria lomvia*) had already been breeding for several days (according to the Greenlanders the first eggs were laid about June 7th—8th) and



Fig. 1. On Nordø, June 15th. The landscape is still quite winterlike.

the Eider (*Somateria mollissima*) was now beginning to breed, so we determined to undertake the first excursion to the bird-cliffs. In the interval we had secured a number of birds from the Greenlanders, a notice put up in the store communicating what prices we were prepared to pay for the different species. We had then already skinned more than twenty birds and collected the contents of their stomachs and crops, when on June the 15th we started our first ornithological reconnoitring trip in the motor boat the "Sarpik". We first went to Nordø, a smaller island south-east of Upernavik, which was *i. a.* known as the breeding place of the Dovekie (*Alle alle*). But the snow-cover was still thick, and also that day the snow was falling, so no birds had begun to breed (fig. 1). But off the coast the dovekies lay in pairs in the water, and we heard their chirping, so it would not last long, before they took to the shore. After then we repaired to the stately cliff Qaersorssuaq, known as one of the largest bird-colonies in Greenland (fig. 4). For the further investigation of Qaersorssuaq we made another excursion there



Fig. 2. View from the glacier inside Qeqertarsuaq across the southern part of Upernavik Isfjord, with the nunataq Ūmánaq in the background (June 24th).

on June 18th, this time in a rowing boat with six oars. The large system of bird-cliffs was closely investigated on this trip, and an estimate was made of the number of birds to be found there; also a quantity of birds were killed for skinning and plants collected on the cliff. When we returned in the evening, there was again a snow-storm. The going by rowing boat was a great waste of time as well as a very difficult means of transport, but unfortunately the motor-boats of the settlement were either out of repair, or they were required by the officials, and this greatly delayed the work of the expedition.

The days immediately ensuing were first of all used for preparing the birds obtained on the hunting trips and the constantly increasing number of birds bought from the Greenlanders, the result being nearly a hundred skins. Secondly, various other tasks were undertaken. Already on June 14th a number of Snow-Bunting (*Plectrophenax nivalis*) were secured, their thyreoid glands and gonads being fixed with a view to

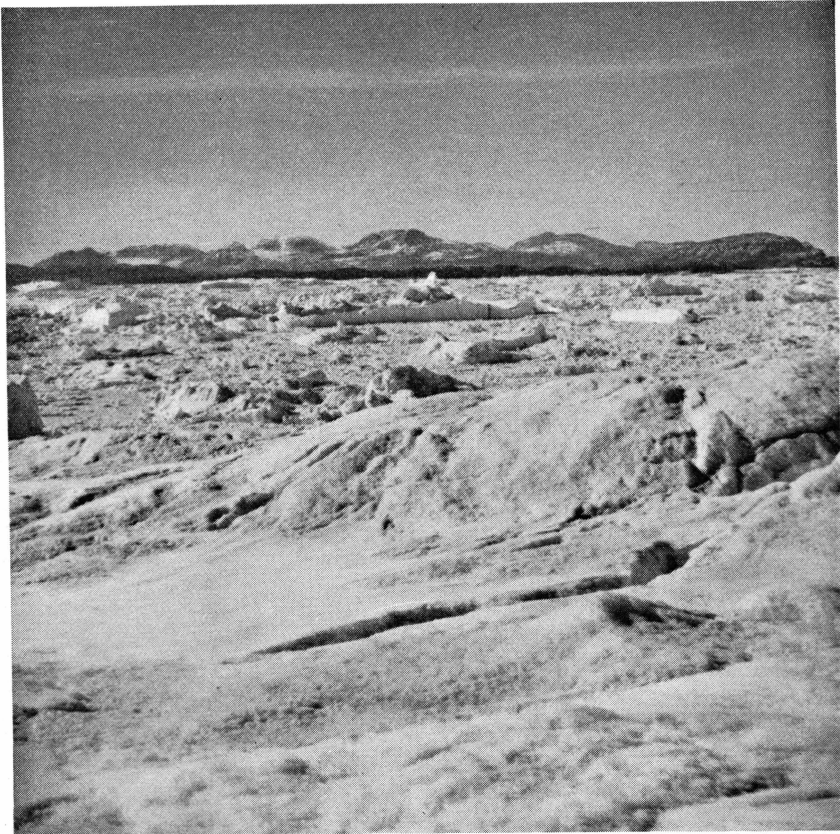


Fig. 3. Northward view of the central main current of Upernavik Isfjord, packed with ice-hummocks (June 24th).

histological investigations; marine bottom investigations were carried out on June 16th and 17th in the harbour of Upernavik, and finally a good deal of film-work was undertaken; thus the opening of the Sysse-raad (☉: district council) on June 15th was filmed, and on June 20th—21st VIBE was sent to Qaersorssuaq together with some Greenlanders to film the bird-life in the bird-cliff there.

Together with several Danes from the settlement we made, on June 24th, a trip in the "Sarpik" to Upernavik Isfjord, proceeding first to the dwelling place of Augpalârtoq and then, as the course is here free from ice, continuing to the south of the island of that name. Also the southernmost part of the icefjord itself is navigable, the southern part of the glacier not being particularly productive. Thus it was possible to reach the island of Qeqertarssuaq and even beyond it to a small nunataq projecting from the ice. At the eastern end of Qeqertarssuaq there still lay a large quantity of unmelted dead ice, but otherwise the

ice had not receded entirely from this island. It is interesting to compare the present conditions with those prevailing at the time, when RYDER visited the icefjord in 1886. Already in 1849 RINK visited this place and designed a map of the southern part of the icefjord, which according to RYDER is "essentially correct"¹⁾, and so since the days of RINK, no essential change seemed to have taken place. During the fifty years intervening between RYDER's and our visits, the shape of the land had changed somewhat, the ice having receded a good deal. According to RYDER "the ice joins the eastern end of Qeqertarsuaq, without, however, touching the latter, as the steep mountain side of the island radiates so much heat that the melting off of the ice can keep pace with its advance"²⁾. This also clearly appears from his design on table XVI. The small nunataq (on this design marked T) was the locality which we reached on our trip in 1936. Between this island and Qeqertarsuaq there was now a sound, the ice not extending so far towards Qeqertarsuaq as in the days of RYDER, and even the small "island" at the margin of the glacier is considerably larger now than indicated on RYDER's map. We took some films there and also ascended the glacier. A picture (fig. 2) taken in a southeasterly direction towards the nunataq of Ūmánaq shows exactly the same landscape, as is seen on the corresponding picture in RYDER's report (table XIV), and also the northward view of the main current of the icefjord (fig. 3), which was closely covered with calf-ice and ice-hummocks, completely resembles the photograph reproduced in RYDER's report (table XV). The bird-life was very poor in this place, viz. only a few specimens of Glaucous Gull (*Larus hyperboreus*), Raven (*Corvus corax*) and Red-throated Loon (*Colymbus stellatus*). In the actual icefjord we saw a few specimens of Black Guillemot (*Uria grylle*), Brünnich's Murre (*Uria lomvia*) and Eider (*Somateria mollissima*).

Whereas the weather had hitherto been very little like summer, with showers of sleet right up to midsummer and the temperature at zero as late as June 19th, the summer suddenly began on June 26th. The temperature rose to about 7° C. and during the ensuing period remained between 7° and 9° C., while at the same time there was an almost constant calm, the sun shining from a cloudless sky. On June 26th and again on the following days (June 27th—29th), in glorious summer-weather, we made trips with the "Sarpik" to the islands, so rich in birds, north and west of Upernavik, on which excursions we were accompanied by four Greenlanders as crew and assistants. We visited partly the rather large island Angissoq (72°54'), partly the complex of skerries Nunánguit (Smaalandene), where we went ashore on a number of islands;

¹⁾ *l. c.*, p. 216.

²⁾ *l. c.*, p. 224.

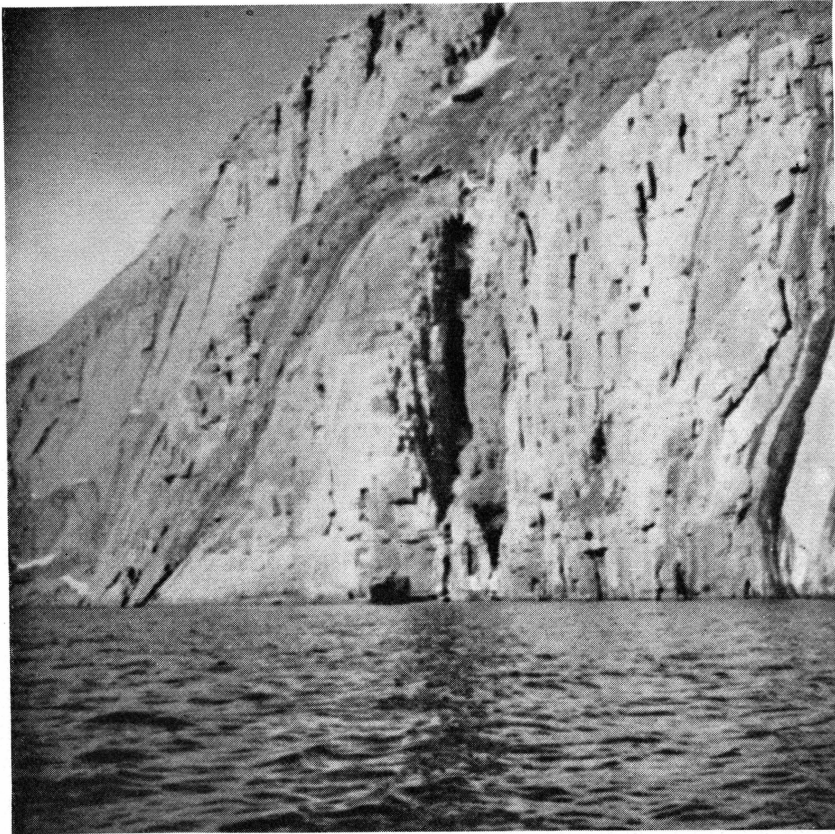


Fig. 4. The bird-cliff *Qaersorssuaq* south of *Upernavik*. The light-coloured part of the mountain is the breeding place of the birds and is more than 100 m high.

the island of *Igdlutalik* ($72^{\circ}48'$) proved to be particularly interesting, but also the islands of *Ituvssâlik* and *Qalilik* ($72^{\circ}47'$)¹⁾ and the southernmost and largest island, *Kingigtuarssuk* ($72^{\circ}45'$), were visited. The latter is not far removed from *Nordø* ($72^{\circ}44'$), which we had formerly visited. Many biological and ecological observations were undertaken relating to the bird-life, as well as collections of birds and at *Angissoq* dredgings of the marine bottom. Finally, also a number of films were taken of the bird-life on *Igdlutalik* and *Angissoq*.

The weather had now for some time been so warm and fine that it should be possible to commence the investigations of the fauna of the soil. On June 30th the first ten samples of various plant associations were collected on *Langø* and then deposited in Berlese funnels at *Upernavik*, where they were to be left for a fortnight. During the trip on June 30th *Langø* presented an appearance, which was quite different

¹⁾ The names of these small islands are not indicated on the official maps.



Fig. 5. Our crew on the "Sarpik".

from what it had been on our excursions during the first half of the month. The snow was now for the greater part melted, many flowers were in bloom, others in bud. On July 2nd we continued the littoral investigations, which we had begun in the Upernavik harbour; mussels (*Mytilus edulis*) were collected for an investigation of the cycle of propagation of this species; also measurings of the temperature of the water, collections of other littoral animal forms, algæ, water samples, etc. were undertaken. At the same time several hundred strand snails (*Littorina*) were collected according to a definite system, with a view to an investigation of their biology of propagation. The greater part of our time was, however, spent in preparing the material collected in the course of the preceding days. The number of skinned birds secured now far exceeded a hundred and fifty. Besides we collected the stomach contents of a large number of birds (Alcids, Eiders) which the Greenlanders had supplied to the Danish households of Upernavik.

An important part of our area of investigation was Prøvens Laksefjord, the most northerly locality to which the fertile vegetation of South

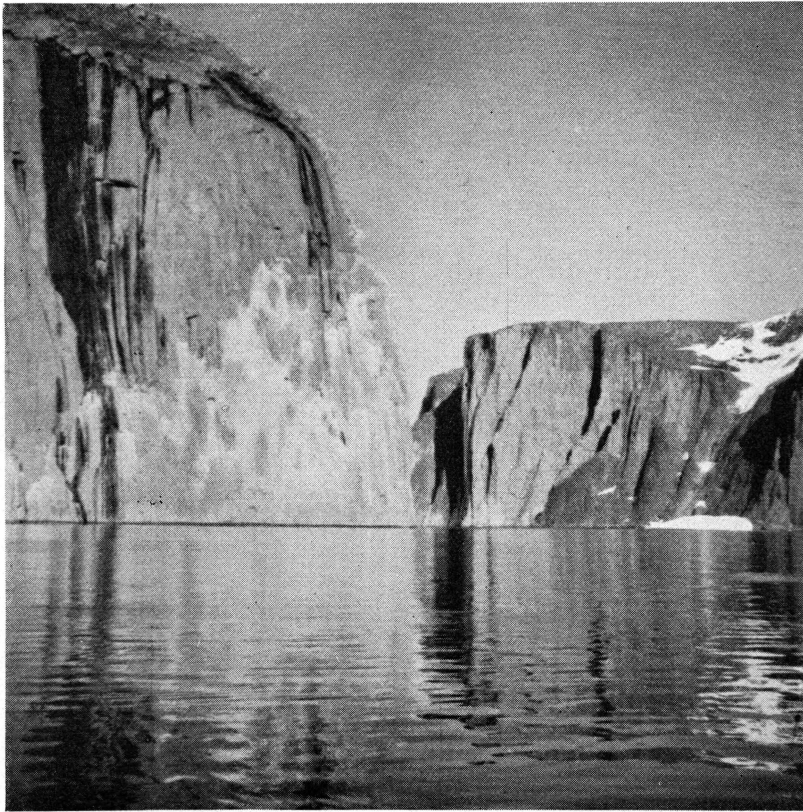


Fig. 6. The sound Sorte Hul with the tall and steep coastal mountains.

Greenland extends, and the bird-life of which had not been investigated. The warm summer weather of recent days had undoubtedly made it possible to navigate this fjord, as the ice had either disappeared, or was so rotten that a motor boat could force its way through it. On July 4th we therefore started on an excursion, the object of which was to investigate the coast land between Upernavik and Svartenhuk and afterwards Laksefjord. A fortnight was set apart for this excursion, which as usual was made in the motor boat the "Sarpik" with a crew consisting of four men (fig. 5). We first visited Nordø, where the dovekies were now in full breeding, and here we collected both eggs and adult birds, while photographs were taken of this breeding place, which represents so many characteristic features. After a short visit at Qaersorssuaq we continued southwards along the tall and steep coasts of this island, which make an excellent landmark to be seen far out at sea—the "Sanderson's Hope" of the English whalers. We continued further into the impressive and rugged sound, Sorte Hul, between Qaersorssuaq and Nutârmiut, which is bordered by gigantic steep mountains (fig. 6). The very large and

characteristic bird-colonies along Sorte Hul were investigated and described. Of greatest interest was Tingmiakulugssuit, which was more than 1000 m high, where a large colony of Fulmars (*Fulmarus glacialis*) were breeding. From there we sailed back to the Qaersorssuaq island, where the small, deserted dwelling-place Kingigtoq made an excellent harbour. As contrasted with the localities which we had hitherto visited, and which all bore the impress of the sea and its fauna, we here for the first time saw inland biotopes, with comparatively luxuriant copses. Several ptarmigan (*Lagopus mutus*) were observed and killed.

On July 5th the results of the preceding day were examined, and a profitable investigation was undertaken of the fauna of the marine bottom at Kingigtoq. Then we continued southwards, still in glorious weather, through the channel between the two large islands, Singarnaq and Nutârmiut. At the entrance to this sound we ascended the small island of Ūmánaq (72°37'), our object being to investigate a small colony of Cormorant (*Phalacrocorax carbo*), which were breeding here. Then we continued to Tasiussaq, a winding fjord on the southern side of Nutârmiut, rich in islands and with a good harbour and anchorage. Here dredgings were made and investigations undertaken of the fauna of the marine bottom of the fjord, and we also secured a great number of birds and undertook an investigation of the bird-cliff Naujat, which is situated on the eastern side of Nutârmiut. On July 6th we investigated the bird-life in some small lakes; here several ducks were shot, while the "Sarpik" passed the southern point of Nutârmiut and took us onboard at Naujat. At this place we also worked with the Petersen grab, however, without any noteworthy results, the bottom being too stony. Then we continued through the narrow sound of Ikerasakitsoq, and two smaller bird-colonies were investigated, viz. Oqaitsut on the western part of the southern point of Nutârmiut and the small island Manit-súnguaq off the south-eastern point of Singarnaq. From here we passed almost due south to Fladøerne, first stopping, however, at a bird-colony on the southern point of the island of Iperaqa, and here we found the northernmost breeding place of the Iceland Gull (*Larus glaucoides*), which bird we had looked for in vain at all the more northerly bird-cliffs. Then we investigated Uiordleq (Lille Fladø), so rich in birds, and the greater and somewhat more southerly Sâtorssuaq (Store Fladø) which, however, offered little of interest from an ornithological point of view. Whereas until then the weather had been splendid, it began to blow during our stay at Sâtorssuaq; black clouds were gathering and threatened a coming storm. We hurried towards the vessel, but before we reached the shore, the storm broke, and the rain came down in torrents. Unfortunately the Greenlanders had not obeyed the instructions we had given them, viz. that the two watchmen were not allowed



Fig. 7. The "Sarpik" wrecked on Sâtorssuaq, July 6th. In the background the coastal mountains round Prøven.

to leave the boat, and it was therefore impossible to heat the engine, before the storm was upon us. Moreover, the engine had lately on several occasions given trouble, which ought to have made the Greenlanders all the more careful, when the boat as here lay tied up along the open shore. In spite of all our efforts to keep it clear of the coast, it was in the course of a few minutes flung against the shore by the violent south-westerly wind and the high waves (fig. 7). Fortunately it was a low coast, consisting of pebbles, and the boat was therefore fairly undamaged by the rough usage. We were obliged to pitch a tent and to carry our whole equipment, including our collections, ashore. The weather soon became better, and for two days we now tried to set the boat afloat. Owing to an insufficient number of hands—we were only seven in all—and our primitive tools, it proved impossible to get the "Sarpik" clear, and we were consequently planning to send the yawl with three men to the outpost of Prøven in order to call assistance, a difficult and rather dangerous passage across the open sea. However, it did not prove necessary to have recourse to this expedient, for on



Fig. 8. Camp at Eqaluarssuit in Prøvens Laksefjord, July 10th.

July 8th three kayakers appeared at our camp, having been attracted there by the "Sarpik", which they had taken for a stranded whale. We sent a message by them to Prøven, and on the same day eighteen men arrived from there and set about getting the "Sarpik" clear. On the night of July 10th this was at last achieved, and we immediately made for Prøven. The three days which our forced stay on Sâtorssuaq had lasted were, however, not quite lost. VIBE took films of various birds, as *e. g.* a brooding loon, and I undertook an analysis of the plant formations¹⁾ and walked across the island to its southernmost point ($72^{\circ}13'$). Owing to the delay we were, however, obliged to give up our original plan of going southwards to the Maligiaq fjord on Svartenhuk, and to continue straight on to Laksefjord. It was more necessary than ever to make good use of the time at our disposal, and during the night we undertook littoral investigations in the sound between Prøven and Sandø, which proved to be extremely rich in animal life.

¹⁾ As to this see the treatment of the botanical material (TH. SØRENSEN, l. c.).



Fig. 9. The river at Eqaluarssuit with the fertile growth of willow along the banks. July 15th.

We made some purchases to complete our equipment, and at 10 a.m. the "Sarpik" entered Laksefjord; then it continued through the constantly narrowing channel into the small bay of Eqaluarssuit, where we arrived in the course of the evening. The country here was fertile and exactly like that of South Greenland. We pitched our camp in an old Eskimo tenting-place with luxurious and thick grass and bones and other remains testifying to former camps (fig. 8). On the other side of the fjord there was a large, open valley, traversed by several rivers which, near their outlet, united into a larger waterfall, round which a willow-copse of man's height extended for about a kilometer into the country. This place is named Orpik and is the most northerly willow-copse of West Greenland. The botanical conditions of this beautiful region are well-known through the investigations of M. P. PORSILD¹⁾, and therefore we collected no plants here. Immediately after our arrival

¹⁾ M. P. PORSILD: Vascular Plants of West Greenland between 71° and 73° N. lat., Meddelelser om Grønland, Vol. 50, 1912.

we made a trip to Orpik, and on our return to the camp we skinned the rather large number of birds collected at Iperaq and on Fladørne, the contents of their stomachs being as usual preserved in alcohol. Not until the morning of July 11th we stopped work, not having slept a wink for two days and nights. The "Sarpik" had in the meantime left for Upernavik and was to fetch us later, by arrangement. Of the Greenlanders we only kept our faithful Aaron. Owing to the mosquito pest in these otherwise beautiful and paradisial surroundings, we determined by preference to make our excursions in the night, when at this time of the year it is as light as by daytime. On the evening of July 11th we separated, Thorup to investigate the bird-life along the road of the reindeer hunters as far as the Uvkusigssat fjord, VIBE to film the animal life in the region south-west of Eqaluarssuit, while I was to investigate the northern side of the fjord at Orpik. In the latter place one of the most interesting finds of the expedition was made, viz. a mixed population of the southerly Redpoll (*Carduelis flammea rostrata* (Coues)) and the northerly Hornemann's Redpoll (*Carduelis hornemanni* (Holbøll)). I continued as far as the mountain "Trækanten" (1027 meters), where I examined the vegetation and admired the glorious view right up to the inland ice.

The five following days were spent in various smaller excursions in the neighbourhood, and among other trips we made one to the innermost ramifications of the fjord. In addition, we carried out some skinning and other preparation work.

On our return journey with the "Sarpik", July 16th, we first passed to the more northerly fjord, Kangerdluarssuk, which, however, looked so desolate that we did not go ashore; then through the channel to the south of the islands Pâ and Naggo, to the north of the islands Amarortalik and Akuliaruseq and farther round Kangeq̄s Halvø to Prøven. We wanted once more to investigate the animal life of this rich locality, and July 17th was spent partly in investigations with the Petersen grab, and partly in littoral investigations. A point of interest was the occurrence of large quantities of *Ammodytes lancea marinus* Raitt in low waters at Sandøen, the latter place being situated far to the north of the hitherto known northern boundary of this fish in Greenland¹). As to the unique richness of the fauna at Prøven the reader is referred to the special treatises on the littoral collections and the quantitative investigations of the marine bottom²). In addition, a few birds were

¹) It was formerly not known north of Jacobshavn; cf. AD. S. JENSEN: On Subspecies and Races of the Lesser Sand Eel (*Ammodytes lancea* s. lat.), Det Kgl. Danske Videnskabernes Selskab, Biologiske Meddelelser, Vol. XVI, No. 9, 1941.

²) H. MADSEN: A Study of the Littoral Fauna of Northwest Greenland, Meddelelser om Grønland, Vol. 124, No. 3, 1940. C. VIBE: Preliminary Investigations on Shallow Water Animal Communities in the Upernavik- and Thule-Districts (Northwest Greenland), *ibid.*, Vol. 124, No. 2, 1939.

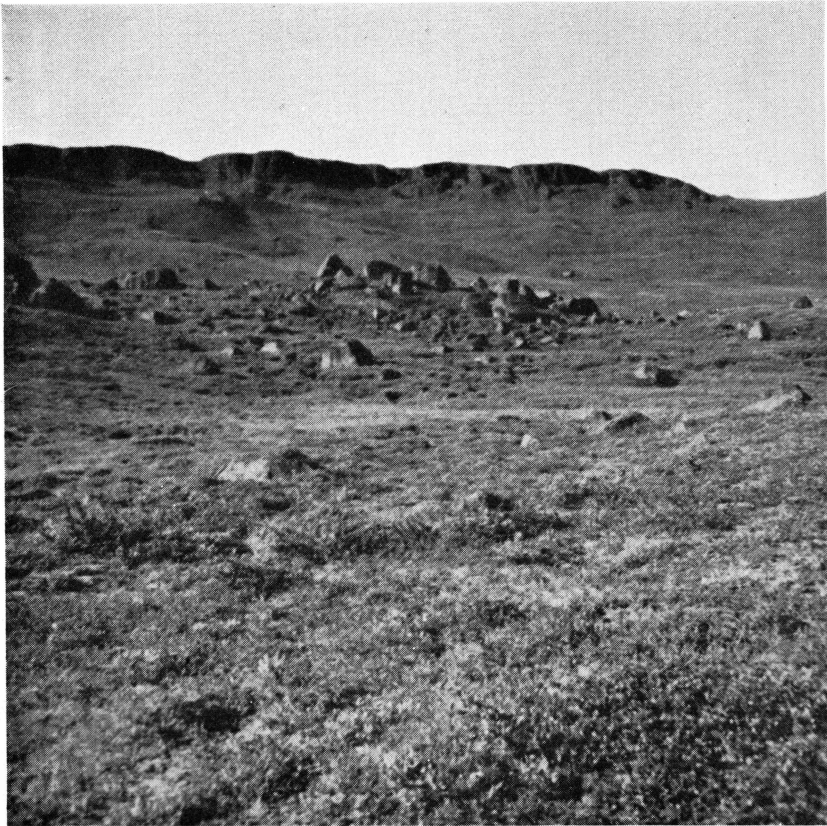


Fig. 10. Heath at Prøvens Laksefjord; in the background basalt mountains, July 15th.

obtained before our return to Upernavik. On our way back we again visited the bird-colonies of Iperaq and Ūmánaq, and in the night of July 18th we arrived at the settlement.

In spite of our accident on Sátorssuaq the trip to the southern part of Upernavik District had yielded very good results. We had collected nearly a hundred bird-skins with investigations of the stomach contents and moulting conditions; besides we had undertaken biological and ecological investigations of the bird-life, including an accurate mapping of all the bird-cliffs of the area, and also surprisingly interesting littoral and marine-quantitative investigations¹⁾; finally we had carried out a good deal of botanical work.

For about a week the expedition was now occupied at Upernavik, where numerous tasks were performed. Most of the investigations

¹⁾ According to VIBE (l. c., p. 17) the largest of the samples from the quantitative bottom investigations at Prøven showed "the greatest weight per $\frac{1}{10}$ sq.m of bottom area taken so far wherever bottom investigations have been made".

hitherto made, which were to be repeated at certain intervals in order to give an idea of the cycle of various periodical phenomena were now continued, such as the examination of the endocrine glands of certain birds by the collection and fixing of new material, the investigations of the fauna of the soil by means of Berlese funnels, the collection of 7—800 *Littorina* for the investigation of the propagation of these snails etc. Further, on July 21st we undertook an investigation of the fauna of the marine bottom in "Sigrid's Havn" on Langø, there being now three series from the Upernavik area (Upernavik Havn, Gamle Skibshavn on Langø and Sigrid's Havn on Langø) for comparison with the more southerly localities Kingigtog, Tasiussaq and Prøven, where similar investigations had been undertaken. Finally, the last collected bird-skins were prepared, and the completed material, in the shape of skins and alcohol glasses, was packed in boxes so as to be ready to be sent home.

At the same time preparations were made for a trip to the northern part of Upernavik District, it being our plan to penetrate so far into Melville Bugt as ice conditions and time permitted. Not until the second half of July do the ice conditions in Melville Bugt make it possible to pass in a boat, so there is very little time to investigate the countries up here during the summer. Like RYDER, BJØRLING and others before us, who travelled by boat, also we were hampered by the shortness of the time at our disposal, as it was of the greatest importance for us to be back at Upernavik in time for the arrival of the schooner, which was to take us to Thule. It was our plan to undertake the same investigations on the trip towards north as on that towards south, with the exception of the investigations of the fauna of the marine bottom, for which we would not have sufficient time. On the other hand, special attention should be paid to the botanical collections, as our knowledge of the flora in these parts was very poor, and we intended to collect plants at all the localities visited.

The time was now favourable for navigating the northern district, and on July 24th we sailed northwards in the "Sarpik", unfortunately in a dense fog, which with interruptions accompanied us during the greater part of the trip. We had a crew of four Greenlanders, one of them officiating as an interpreter, as only few of the inhabitants in those parts understood Danish. Further, we were accompanied by one or two local people, who were familiar with the waters and the known anchorages, as our crew from Upernavik was not conversant with conditions higher up than 74° N. lat. We first headed for the isolated island of Kingigtuarssuk II (72°56'), somewhat north of Angissoq (not to be mistaken for the above-mentioned Kingigtuarssuk I in 72°45' N. lat.), but owing to the dense fog it was impossible to find the island,

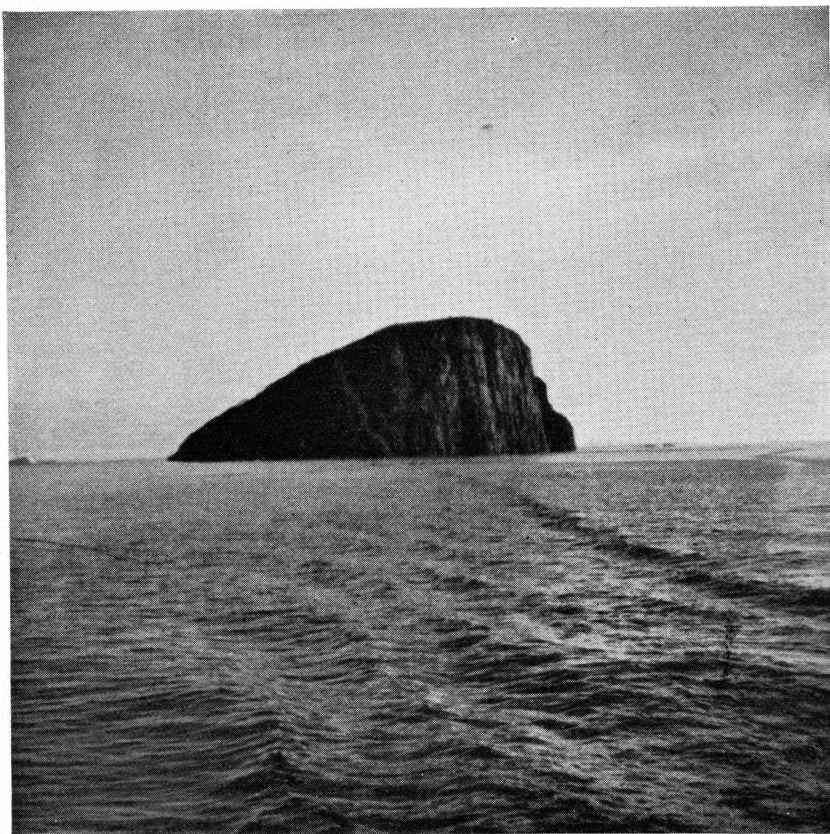


Fig. 11. Qiparqo from the east. July 25th.

even though we lay so close outside it that Auks and Murres from its breeding places hovered round the vessel. We then passed northwards, still in a dense fog, but off the isolated island of Kingigtuarssuk III ($73^{\circ}15'$) the fog had so far lifted that we were able to go ashore to collect birds and plants, to describe the bird-cliffs and to undertake littoral investigations. As the fog came on again, we put to sea in the direction of the outpost of Tasiussaqa, but a constantly thicker fog caused us to lose our bearings, and not until some roaming about did we reach Tasiussaqa at 2 a.m.

The following morning, after having collected plants and secured some birds, we left for the well-known promontory of Horse Head or Agpalersalik, the characteristic bird-colonies of which were examined; and then we visited the small rocky island Qiparqo, which has a very peculiar shape (fig. 11), and where there is a large bird-colony. We took a number of films of the bird-life on this island, the rock being considerably easier of access than is generally the case (fig. 12). Finally we

continued eastwards into the head of the deep fjord Kangerdlugssuaq ($73^{\circ}40'$), where we anchored.

On July 26th we investigated the fjord, collected plants and shot a few birds, the animal-life, however, being rather poor in here. Then we sailed to Agparssuit or Kap Shackleton, a bird-colony which in size far exceeds any other in Greenland or perhaps on the whole of the northern hemisphere. From there on to Kitsigsorssuit (Duck Islands), where there were said to be large eider colonies, but unfortunately they proved to be almost deserted at this advanced stage of the summer. From there we proceeded to the outpost of Kraulshavn on the Nûgssuaq peninsula.

After having collected plants and a few birds we started from Kraulshavn on July 27th, and the photographer JETTE BANG, who had for a long time been staying at the outpost, now accompanied us on our journey farther north. On our passage through Ryders Bugt we first investigated the small islands Upernaviarsuk and then the fjord Kangerdluarssuk ($74^{\circ}20'$). South of Holms Ø the waters were packed with ice, and the "Sarpik" was obliged to keep far to the west of Wilcox Head in order to pass this ill-reputed promontory. The weather was, however, getting worse, and large storm clouds were gathering round us. We shaped our course for Devils Thumb, whose characteristic profile made a strange effect in these surroundings (fig. 13). We anchored at the dwelling-place of Kuvdlorssuaq, which proved to be a very primitive community, curiously deviating from the more civilized dwelling-places farther south. In the course of the night of July 28th we investigated the island, which was rather fertile, and good collections were made. The colossal, steeply projecting "finger", more than 600 m high, the gloomy, leaden sky with the hurrying clouds and the thick fog-banks created a very peculiar effect in the midst of this barren and desert landscape. The huge masses of the inland ice dominated the picture towards east, whereas the waters were filled with closely packed icebergs, as far out in Melville Bugt as the eye could see. In all this whiteness only a few scattered islands projected, and the naked promontories, Wandels Land and Hovgaards Kystland, which rose from the inland ice. Above the closely packed icebergs a remote thunder was now and then heard, which indicated a calving of the ice; otherwise, a complete silence reigned.

On the following afternoon we continued northwards, where we visited Bjørlings Ø ($74^{\circ}39'$) and Amdrups Ø ($74^{\circ}43'$), the latter proving to be rather fertile. As it would be interesting to have some films of the life at one of these primitive dwelling-places in Melville Bugt, VIBE was sent ashore on a neighbouring island, Blochs Ø, in order to take films and photographs of the small dwelling-place of Qârusulik, where

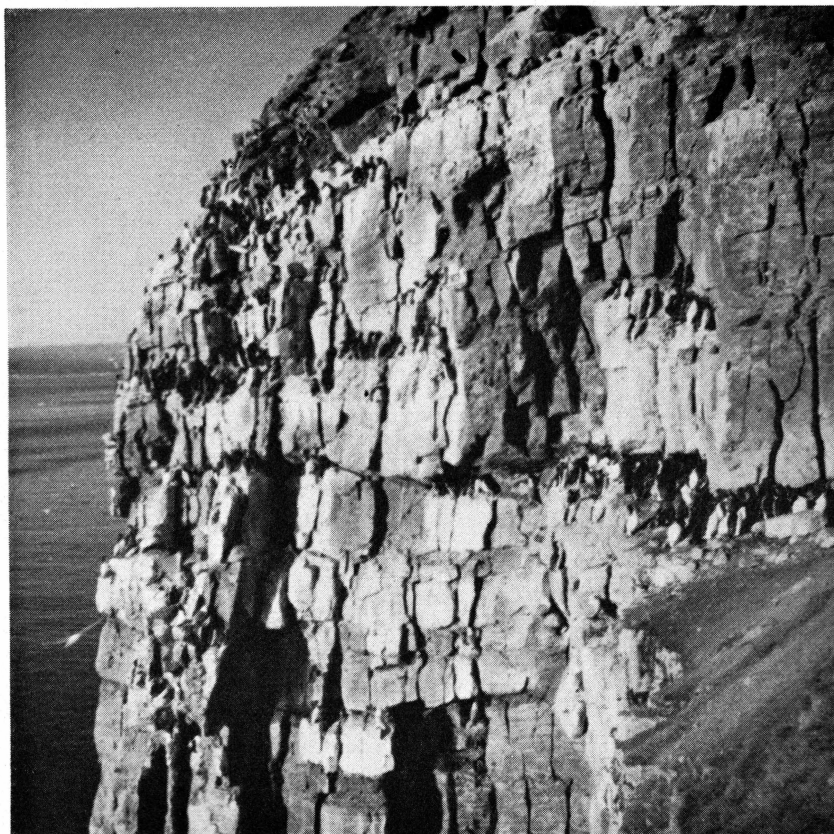


Fig. 12. Bird-cliff on the north-western side of Qiparqo. July 25th.

a population of at most twenty persons live an entirely isolated life in the desolate and gloomy land of the ice. Qârusulik is the most advanced outpost of the inhabited land in Melville Bugt; farther north there is no trace of human occupation, until the most southerly habitation of Thule District, Savigsivik ($76^{\circ}0'$).

In the meantime the expedition proceeded farther north in the "Sarpik". The fog had, however, steadily thickened and now lay everywhere, and in addition the ice became more and more densely packed, the farther north we got. When we arrived at Gardes Øer ($74^{\circ}48'$), we resolved to turn back, partly because it would be a considerable risk to continue to the ice-filled central part of Melville Bugt, as we were insufficiently orientated on account of the fog, partly because we had very little time at our disposal. After having secured a few birds on Gardes Øer, where we also investigated a small bird-colony, we turned back; VIBE was fetched at Qârusulik, and then we sailed due south in a dense fog. As we were pressed for time, we were unable to wait for an

improvement in the weather. Our passage was not free from danger, the thick fog preventing us from looking out or taking landmarks; further, the water was packed with icebergs, and the compass of the "Sarpik" had been broken for years, without any one having taken the trouble to repair it. The sun and the moon were entirely hidden by the fog, and to make the unpleasantness complete, an icy wind had caused a strong swell. All through the night we sailed in this manner, but Josef, our Greenland mate, proved himself a very able man at the wheel. When the fog lifted in the course of the morning, we saw the coast of Nûgssuaq only slightly to the east of us. After a stay of less than one hour in Kraulshavn we continued on July 29th at 1 p.m. in a southern direction across Sugar Loaf Bugt, in order to reach Upernavik as soon as possible. During the passage we only made a short stay at some small bird-colonies on the north side of Tugtoqortôq ($73^{\circ}41'$), where some investigations were carried out. During the return journey we spent our time in preparing part of the material collected. On July 30th at 8 a.m. the "Sarpik" arrived in Upernavik, and already on the following day the Thule vessel arrived, which was to take us further up the coast.

In spite of the somewhat forced journey and the unfavourable weather conditions, the results of the excursion to the northern district of Upernavik had been excellent. We had collected about two hundred plants and more than fifty bird-skins, as well as a number of facts relating to the bird-life, descriptions of the bird-cliffs etc., partly through our own observations, partly through the accounts of the Greenlanders. It was possible to prove that the avifauna of Melville Bugt still belongs to the southern low-arctic type, although in a constantly more impoverished form; on practically no point the northern fauna has penetrated southwards into Melville Bugt.

The less than two days which we spent in Upernavik were intensely utilized in the preparation of birds from the northern trip, the packing of the material to be sent back, the continuation of the collections of the fauna of the soil, the littoral investigations and, finally, in taking some supplementing films of the scenery round Upernavik.

The Thule vessel, the M/S "Dannebrog" left on the evening of July 31st, the captain being the excellent Arctic skipper PEDER MARCUS PEDERSEN, who in that year celebrated his twenty-five years' jubilee as a navigator of Thule. With Mr. PEDERSEN as a captain the journey to the Thule district became both very rich in results and extremely pleasant, owing to the real understanding and interest with which he regarded the work of the expedition. Onboard the "Dannebrog" was SOLE MUNCK, M. sc., who intended to carry on geological investigations in the Thule district, and who took part in several of the excursions of the expedition.

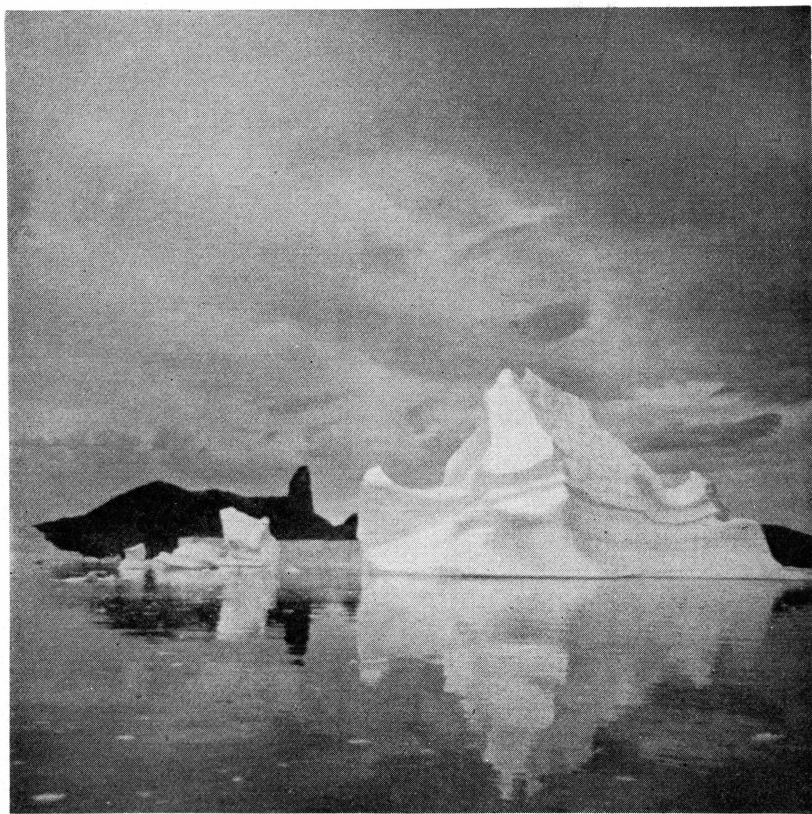


Fig. 13. Devils Thumb in Melville Bugt. Viewed from the waters north of Wilcox Head. July 27th.

On August 3rd we arrived in the Thule settlement at North Star Bay, where the expedition was given working accommodation at the school. During the next three days shorter excursions were made in the neighbourhood of Thule to lakes and valleys in the regions towards the inland ice and as far as Uvdle (fig. 14). Several high-arctic birds were found breeding, such as Snow-Goose (*Anser atlanticus*), King-Eider (*Somateria mollissima*) and Hornemann's Redpoll (*Carduelis hornemanni*). Further, an ample collection of plants was brought together.

On August 7th we left Thule to go northwards to Robertsons Bugt. On August 8th, in the early morning, we anchored at the small outpost of Siorapaluk ($77^{\circ}48'$), and in the course of the day we investigated the huge Dovekie breeding places, collected plants and secured a number of birds. Already the same evening we left this place. We sailed to the south, passing through the sound between Hakluyt Ø and Northumberland Ø, and during the night of August 10th we arrived at our next destination, Carey Øer ($76^{\circ}37'$), after a journey of more than twenty-



Fig. 14. Swampy valley in the hinterland of Thule. August 4th.

four hours. These entirely isolated islands, which are situated in 73° W. lat., were the most westerly point visited by the expedition.

In the course of the night we investigated the bird-life on the island of Breaks and Bjørlings Ø, where we secured a number of specimens and made collections of plants. These remote islands are not visited by the Greenlanders and are only inspected once in a while. They had last been visited by the Godthaab Expedition in 1928, and were now inspected by the manager of the Thule trading post, HANS NIELSEN, who went ashore on several of the islands. In the afternoon we again arrived in Thule. The immediately following days, which we spent in Thule, were employed in skinning birds, and on August 13th we undertook a very successful trip in a motor boat to Saunders Ø. This island is rich in birds, and here breeding places of the high-arctic Puffin (*Fratercula arctica naumanni*) were discovered¹).

On August 14th we undertook what was principally a botanical

¹) The puffin had, however, previously been found breeding in this place (MACMILLAN: *Etah and Beyond* (Boston 1927), p. 252).

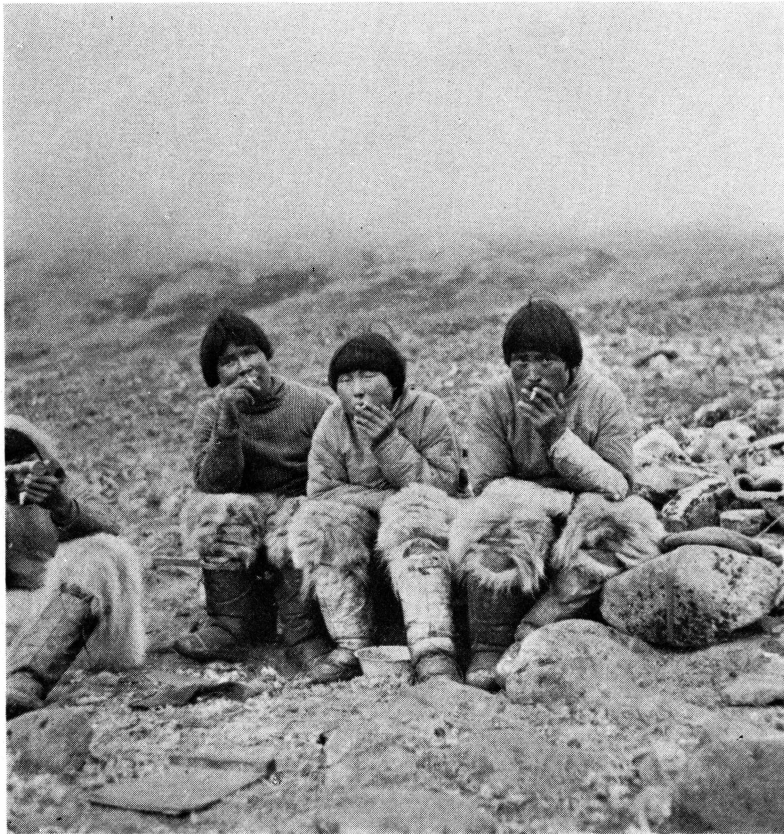


Fig. 15. Natives at Siorapaluk ($77^{\circ}48'$ N. lat.) in the northern district of Thule. The fog lies on the slopes of the mountains. August 8th.

excursion in the neighbourhood of Thule, and also quantitative investigations of the fauna of the Thule harbour; August 15th was spent in preparing and skinning at our work-room in Thule.

On August 16th we left with the "Dannebrog" for the outpost of Savigsivik on Meteorite \emptyset in the northern part of Melville Bugt ($76^{\circ}0'$) where we arrived on August 17th about noon. The remainder of the day was spent in investigating the marine bottom of the harbour with the Petersen grab and August 18th in a longer excursion on the island, where a few birds were secured and plants collected. Meteorite \emptyset is extremely desolate and barren; besides the breeding dovebies there are but a few birds and only thirteen species of flowering plants. This scarcity is undoubtedly due to the vicinity of the island ice. As in the southern part of Melville Bugt the sea round Meteorite \emptyset was everywhere packed with icebergs. In the evening we left for Thule, and after having taken leave of the hospitable trading manager and other



Fig. 16. The outpost of Savigsivik in the northern part of Melville Bugt. To the right winter-houses, to the left summer-tents. August 18th.

friends there we departed southwards for Upernavik, which we reached on August 22nd.

In spite of the short time we had spent in Thule District, the results of the expedition were considerable, comprising more than a hundred plants, sixty-seven bird skins and some twenty glasses with bottom samples. In addition many ornithological observations had been made, although it must naturally be granted that even an approximately accurate investigation of the huge area could not be made in such a short time. Our own observations were largely supplemented by interviews with Greenlanders who had a special knowledge of birds. Finally a great number of films were taken, partly of the bird-life, partly of the population of Thule.

According to our plan we were now to have had a few days to complete our work at Upernavik, before starting on our return journey in the M/S "Disko". On our arrival there we were, however, greeted with

the disagreeable news that our accommodation on the "Disko" had been disposed of for other purposes, although we had been given a definite promise long before our departure from Copenhagen. We were directed to proceed with the "Dannebrog", but as this vessel was leaving on the same day, we had only a few hours to prepare our large luggage for departure. This was highly detrimental to the material collected, while also a number of concluding investigations of the fauna of the soil and the littoral zone had to be entirely abandoned. With the "Dannebrog" we then proceeded to Godhavn, where our boxes had to be taken ashore and repacked, and we had just time for a short hunting trip in the neighbourhood of the settlement and a visit to M. P. PORSILD in the scientific laboratory "Arctic Station". Departure on August 27th and arrival in Ivigtut on August 31st. During our stay there we had the opportunity to undertake an ornithological excursion into Arsuk Fjord and were hospitably received by the managing director of the cryolite mine, the civil engineer HASSELBALCH, and the other employees. On September 5th we left by motor boat for Julianehaab, in the course of which trip we had the opportunity of making several small hunting excursions. We passed through Nyboes Kanal, stayed at Bangs Havn, where we undertook a hunting trip, continued through Torssukátak and Maageløbet, made hunting trips at Qarmat and Constances Havn, and in the afternoon of September 6th we arrived at the Julianehaab settlement. Also here we had an opportunity to undertake smaller excursions, and birds were obtained at Igaliko and Qaqortoq. Thus our collections were augmented with a total of thirty-four bird skins from South Greenland, among which must first and foremost be mentioned a large series of ptarmigan. In addition, Dr. LAURENT CHRISTENSEN, Julianehaab, presented the expedition with a number of rare birds, which he had secured from the Greenlanders of the district.

Our departure from Greenland took place on September 13th in the S/S "Hans Egede", and we arrived in Copenhagen on September 23rd, by a unique coincidence within the same hour as two other Greenland boats, the M/S "Disko" and the S/S "Gustav Holm".

"The Natural History Expedition to Northwest Greenland 1936" was very successful, and large collections were brought home, which after our return were exhibited in the Zoological Museum. All the material collected was given to the latter institution, with the exception of the plants and the original of the film, which were given to the Botanical Museum and the Game Board (Jagtraad) respectively. The program of the expedition mentioned on p. 7 was carried out at all points, with the exception of No. 6, viz. the collection and investigation of various mammals, which had to be abandoned, as hares were extremely rare in

Upernavik District¹⁾, and sealing was only undertaken on a small scale from the actual settlement.

Apart from various smaller collections for special investigations the material brought home consisted of about 100 samples of marine bottom fauna obtained with the Petersen grab, 50 samples of littoral fauna, 30 samples of the micro-fauna of the soil obtained by means of Berlèse funnels, 400 bird-skins, more than 500 stomach and crop contents of birds, besides various smaller collections. Some 300 specimens of plants were also brought back, as well as 600 photographs and 3000 ft. of film.

As in the case of SCHIÖLER's Expedition 1925 a popular description has been given of the expedition of 1936 by CHR. VIBE²⁾.

The expedition being at an end, I wish to express my cordial thanks to the Danish officials, who in many ways with great interest helped the work of the expedition, and whose hospitality made our stay in Greenland an unmixed pleasure. Finally, I also wish to thank my comrades on the expedition, whose efficient and energetic assistance contributed so largely to the results obtained. When no other name is given, the photographs in this record, as well as in the ornithological reports of the expedition, have been taken by CHR. VIBE, whom I beg to thank for the excellent manner in which this task was performed.

No comment on the material collected will be made in this place, the reader being referred to the succeeding treatises in the present volume of "Meddelelser om Grønland", which is devoted to the treatment of the collections of the expedition. In conclusion it is only to be emphasized that part of the material has already been used and dealt with in the literature. Some rare birds, among others the specimens mentioned above, which have been collected by Dr. LAURENT CHRISTENSEN, have been described by R. HØRRING & F. SALOMONSEN³⁾, while the large collection of Black Guillemot (*Uria grylle*) has been used by R. HØRRING in his monograph on this group⁴⁾; the large collections of Ptarmigan (*Lagopus mutus*) have been used by FINN SALOMONSEN for an investigation of the moults and sequence of plumages of this species, and this also applies to the specimens collected of Old Squaw (*Clangula*

¹⁾ This has already been mentioned by RYDER (l. c., p. 214) who says: "The hare is curiously enough of extremely rare occurrence in the Upernavik district, north of Laksefjord, and on the whole of our journey we did not see a single hare and only once a trace of one."

²⁾ C. VIBE: Fangerfolk og Fuglefjelde (København 1938).

³⁾ R. HØRRING & F. SALOMONSEN: Further Records of Rare or New Greenland Birds. Miscellaneous Notes on Greenland Ornithology IV; Meddelelser om Grønland, Vol. 131, No. 5, 1941.

⁴⁾ R. HØRRING: Birds collected on the Fifth Thule Expedition, Report of the Fifth Thule Expedition 1921—24, Vol. II, No. 6; cf. p. 87.

*hyemalis*¹⁾). The *Ammodytes marinus* collected in Prøvens harbour have been used by ADOLF S. JENSEN²⁾ in his investigation of the genus. Further, it may be mentioned in this place that G. THORSEN, Ph. D. communicated to me that in the dredging material from Angissoq he found the Polychaet *Miroserpula inflata* which from West Greenland was hitherto only known from Nordre Strømfjord and Kvanefjord³⁾, this find thus being tantamount to a very great increase of its area of distribution.

¹⁾ F. SALOMONSEN: Moults and Sequence of Plumages in the Rock Ptarmigan (*Lagopus mutus* (Montin)), Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening, Vol. 103, 1939, p. 1. F. SALOMONSEN: Mauser und Gefiederfolge der Eisente (*Clangula hyemalis* (L.)). Journal für Ornithologie, Vol. 89, 1941, p. 282.

²⁾ I. c. p. 22.

³⁾ H. BRATTSTRØM and G. THORSON: Notes on the distribution of the Polychaet *Miroserpula inflata* Dons through the North Atlantic. Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening, Vol. 105, 1941, p. 21. The find of this species at Angissoq has, however, not been published in this treatise, as it was made after it had gone to print.

LIST OF NAMES

The regions traversed by the expedition, as well as its travelling routes have been figured on the accompanying map. The most important localities, where material has been collected, and which will be mentioned in the following papers, will here be enumerated in a list, which gives the names in alphabetical succession. The numerous names of bird-cliffs have not been included in this list, but will be mentioned in the paper on the ecology of the birds (No. 6 of this volume of "Meddelelser om Grønland"). Where nothing else is stated the figures in parentheses indicate the northern latitude.

- Agpalersalik (= Horse Head) (73°38'): Island in Upernavik North District; large bird-cliffs.
- Agparssuit (= Kap Shackleton) (73°48'): Island in Upernavik North District; very large bird-cliff.
- Amdrups Ø (74°43'): Island in Alison Bugt in Melville Bugt.
- Angissoq (72°54'): Little island, northwest of Upernavik.
- Bjørlings Ø I (74°39'): Little island in Alison Bugt in Melville Bugt.
- Bjørlings Ø II (76°36'): Island in the group Carey Øer in Thule District.
- Breaks (76°36'): Little island in the group Carey Øer in Thule District.
- Carey Øer (ca. 76°37', 73°W. long.): Group of islands in Thule District.
- Djævelens Tommelfinger = Devils Thumb.
- Devils Thumb (= Djævelens Tommelfinger) (74°36'): Island in Alison Bugt in Melville Bugt.
- Duck Islands = Kitsigsorsuit.
- Eqaluarssuit (72°29'): Little bay in Prøvens Laksefjord.
- Gardes Øer (74°48'): Group of small islands in Melville Bugt.
- Horse head = Agpalersalik.
- Igdlutalik (72°48'): Little island in the group Nunánguit west of Upernavik.
- Ituvssâlik (72°47'): Little island in the group Nunánguit west of Upernavik.
- Iperaqq (ca. 72°30'): Rather large island north of Prøven.
- Kangerdluarssuk (74°20'): The northernmost fjord in Upernavik District.

- Kangerdlugssuaq (73°40'): Fjord in Upernavik North District.
 Kap Shackleton = Agparssuit.
- Kingigtoq (= Qaersoq) (72°40'): A small dwelling-place, now deserted, on Qaersorssuaq¹.
- Kingigtuarssuk I (72°45'): The southernmost island in the group Nunánguit west of Upernavik.
- Kingigtuarssuk II (72°56'): Little isolated island northwest of Upernavik.
- Kingigtuarssuk III (73°15'): Little isolated island in Upernavik North District, southwest of Tasiussaq.
- Kitsigorsorssuit (= Duck Islands) (74°2'): Isolated group of islands in Upernavik North District, southwest of Kraulshavn.
- Kraulshavn (74°8'): Outpost (Udsted) in Upernavik North District, on the peninsula Nûgssuaq.
- Kuvdlorssuaq (74°36'): Dwelling-place on the island Devils Thumb.
- Laksefjorden = Prøvens Laksefjord.
- Langø (72°45'): Island just south of Upernavik.
- Lille Fladø = Uiordleq.
- Meteorite Ø (76°0'): Island in the northern part of Melville Bugt.
- Nordø (72°44'): Island situated southwest of Upernavik.
- North Star Bay (76°33'): The bay at which the Thule settlement is situated.
- Nûgssuaq (74°8'—74°20'): Peninsula in Upernavik North District.
- Nunánguit (= Smaalandene) (72°45'—72°48'): Group of small islands situated due west of Upernavik.
- Nutârmiut (ca. 72°33'—72°51'): Large and mountainous island, situated in the central part of Upernavik District, to the north extending right to Upernavik Isfjord.
- Orpik (72°32'): Valley with large copse of willows on the northern shore of Prøvens Laksefjord.
- Prøven (72°22'): Outpost (Udsted) in Upernavik South District.
- Prøvens Laksefjord (= Laksefjorden) (72°30'): Fjord in Upernavik South District, somewhat north of the outpost of Prøven.
- Qaersoq = Kingigtoq.
- Qaersorssuaq (72°38'—72°48'): Large island in the central part of Upernavik District, on its western coast with high, perpendicular cliffs (= Sanderson's Hope) with large bird-cliffs, to which the name Qaersorssuaq is often applied.

¹) The name Qaersoq is frequently applied to this place (as *e. g.* by VIBE: Meddelelser om Grønland, Vol. 124, No. 2, p. 13), but its correct name is Kingigtoq (cf. H. BRYDER, M. P. PORSILD and H. OSTERMANN: Upernavik District, in: Grønland i Tohundredaaret for Hans Egedes Landing, under Redaktion of G. C. AMDRUP, L. BOBÉ, AD. S. JENSEN and H. P. STEENSBY, Vol. I, p. 480 (København 1921).

- Qalilik (72°47'): Little island in the group Nunánguit west of Upernavik.
- Qiparqo (73°43'): Little island in Upernavik North District with large bird-cliff.
- Robertson Bay (77°48'): Small Bay in the northern part of Thule District.
- Sandersons Hope (72°42'): Promontory on the island Qaersorsuaq; this latter name is often applied to the promontory, which possesses large bird-cliffs.
- Sátorssuaq (= Store Fladø) (72°13'—72°18'): Rather large island in Upernavik South District, somewhat south of the outpost of Prøven.
- Saunders Ø (76°33'): Rather large island in the central part of Thule District, due west of the settlement Thule.
- Savigsivik (76°0'): Outpost (Udsted) on Meteorite Ø in the southern part of Thule District.
- Siorapaluk (77°48'): Outpost (Udsted) at Robertson Bay in the northern part of Thule District.
- Smaalandene = Nunánguit.
- Sorte Hul (72°38'—72°40'): Narrow sound between the islands Kaersorsuaq and Nutârmiut in the central part of Upernavik District.
- Store Fladø = Sátorssuaq.
- Tasiussaq I (72°37'): Little fjord in the southern part of the island Nutârmiut.
- Tasiussaq II (73°22'): Outpost (Udsted) in Upernavik North District.
- Thule (76°33'): Settlement situated in the central part of the long coast of Thule District.
- Tingmiakulugssuit (72°39'): Promontory on the western coast of the island Nutârmiut, with large bird-cliff.
- Trekanten (72°33'): Mountain (1027 meters) on the northern shore of Prøvens Laksefjord, just north of the valley Orpik.
- Ûmánaq (72°37'): Little island in Upernavik South District, west of Nutârmiut.
- Upernaviarssuk (74°15'): Two small islands in Upernavik North District, just north of Kraulshavn.
- Upernavik (72°47'): Settlement in the district of the same name.
- Upernavik Isfjord (72°56'): Large ice-filled fjord with very productive glaciers at the head.
- Uiordleq (= Lille Fladø) (72°19'): Little island in Upernavik South District, slightly north of Sátorssuaq.



Sketch map of
NORTHWEST GREENLAND

from lat. 72° to lat. 78°

Based on previous maps

1:2 000 000

10 0 50 100 km

--- Travelling-Route of the Expedition