

## South-East Greenland. The Seventh Thule Expedition 1932.

From Cape Farewell to Umivik.

By Knud Rasmussen.

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Ever since 1904 it had been my desire to have an opportunity of travelling along the southeast coast of Greenland. But at that time, and for many years afterwards, there was nothing but ice, ice everywhere and all the time.

There was practically no open season. A hundred years ago the Danish umiak expedition under Graah was three summers and two winters in getting to Dannebrog's Island (1828—31); fifty years ago Holm and Garde (1883—85) took the same time to reach Angmagssalik, the very same stretch of coast along which we have repeatedly sailed by motor boat and ship this last summer.

As the years went by, however, I attentively watched the official ice reports from that coast, and had them supplemented with no less important ice reports from the Greenlanders in the Cape Farewell District — until the summer before last I made up my mind to try a reconnoitring trip in a fast motorboat from Julianehaab to Angmagssalik. This was the Sixth Thule Expedition, and the attempt was successful.

The result of that Expedition was the recording of the *completely new circumstance* that this coast, once blockaded by ice, was now navigable from the beginning of July, and that in August and September it was so free of ice everywhere that there was unhindered navigation for motorboats and fair-sized vessels.

It was on the basis of these discoveries that the Seventh Thule Expedition could be planned and carried through. Where once a few isolated umiaks battled their way along that deserted coast through breakers and ice, seven large and small motorboats — besides the Expedition ship "Th. Stauning" — an aeroplane, and in all 62 mem-

bers of the Expedition were gathered; of these 62 members, 25 were Greenlanders, most of them with their kayaks.

Our task was to completely explore the stretch from Umivik to Cape Farewell geodetically, geologically and archaeologically; it was a distance of about 600 kilometres as the crow flies, and the programme was to be completed in a period as brief as two months.

Now it may be that these 600 kilometres do not sound so very impressive (although they correspond to a journey from Oslo to Kiel); but this coast is so extraordinarily wild and so indented that there are more than fifty large and small inlets and sounds. For the different working groups it naturally meant a large number of motorboat trips if the programme was to be accomplished within so short a time, and not unwarrantably we have characterized our Expedition as "the expedition of the many journeys". Altogether our motorboats have traversed a distance of roughly 20,000 kilometres, and the aeroplane has flown about the same distance in 125 flying hours; in other words, a mileage similar to a journey from Ivigtut in Greenland via Denmark to the South Pole! If to this we add the distance sailed by the "Th. Stauning" within the expedition area, we have by water and air made journeys which in total correspond to a voyage round the world:

It goes without saying that the multifarious tasks with which this Expedition had to cope could not be overcome by one man. From the very first, therefore, the Expedition was split up into a number of groups, each of which had a leader with independent objects and the responsibility of attaining them.

My own task was almost exclusively that the general whose job it is to make the objects of all the different groups fit in with one another, a task which I found to be extremely light with the personnel I had at my disposal. Nowadays the modern expedition leader is chained to his wireless station, and in this respect I could not have better help than was given me by the "Th. Stauning"'s radio engineer P. Winther; the work consisted not only in maintaining communication with the outer world, and as far as possible with the motorboats, but also with the aeroplane, which reported its position every 10 minutes during its flights.

As it was impossible to secure a ship sufficiently large, the Expedition unfortunately had to proceed to and from Greenland in relays. Last spring I was thus the first to go, partly for the purpose of making a personal selection of the many Greenlanders we needed, and partly in order to assume the protectorate for Dr. Franck's large film expedition to North Greenland. It was, I considered, of

importance that one with a knowledge of people and country should be a party to the creation of this first Greenland large-scale film. I had therefore to rest content merely to be present at the start of the long motorboat journey from Julianehaab to the East Coast in the last days of June; Captain Gabel-Jørgensen assumed command, and then I left for Umanak in North Greenland. After a month I rejoined the Expedition up in Skjoldunge Fjord in the beginning of August when, on the "Th. Stauning" under the command of my old expedition skipper Peder M. Pedersen, and with the aeroplane on board, we came up to direct the flights on the East Coast. Dr. Therkel Mathiassen was fetched from Angmagssalik, and on 11. August we were all gathered together, with good preliminary results, at Graah's winter quarters in beautiful Imarsivik — to split up again the very next day, some going north, others south, to new tasks along the whole of the coast. Only the "Th. Stauning" remained at Imarsivik with the aeroplane crew.

The chief task was cartographic work from the air; Capt. Gabel-Jørgensen, the second-in-command of the Expedition, was in charge of it, and he was assisted by Lieut. Erik Rasmussen, the officer in command of the aeroplane crew.

This aerial mapping proceeded from 6 bases, with the "Th. Stauning" as mother-ship, for which purpose she was ideal; it took only a few minutes for her to put the machine on to the water by means of winch and derrick, and to pick it up again at the end of a flight.

Thanks to good weather and favourable ice conditions, but particularly thanks to the skilful and well-led air-crew, the East Greenland flight programme, which comprised the whole stretch from Pikiutdleq, north of Umivik, down to Cape Farewell, was carried out with almost mathematical precision to the times arranged and, on 2nd September, concluded with a flight from Lindennows Fjord over the southern part of the ice cap direct to Julianehaab.

With this the air work, which had been looked forward to with such tense anticipation, was brought to a successful conclusion. A total distance of 11,000 kilometres had been flown, corresponding to twice round Greenland, and the two air-photographers, Lieuts. O. Nielsen and H. C. Jacobsen, took about 1000 aerial pictures of splendid quality for the survey.

This photography was continued on the west coast as long as the weather permitted, and, of the 81 days, there were in all 41 flying days with about 100 flights.

Such a large number of flights demonstrates the great daring and rare flying qualities of the two pilots, Lieut. Erik Rasmussen and Artillery-assistant and pilot Thorkil Petersen; but it is also deserving of mention that it is due to the outstanding skill displayed by the mechanics L. Jensen and C. Jørgensen that it was possible to always have the aeroplane and all the many instruments in a constant state of readiness for flight. In addition to the work of the Expedition proper, aerial photographs were taken of the areas on the west coast, where Professor G. Hatt and Dr. Poul Nørlund were making extensive archaeological investigations last summer.

Mention should also be made of the flight made to relieve the Hutchinson family, when Lieut. Erik Rasmussen with the mechanic Jørgensen on board, in one stretch flew from Ivigtut over the ice cap to the Norwegian station Finnsbu north of Skjoldungen (a distance as from Copenhagen to Stockholm), returning in a northerly gale after the news of Hutchinson's rescue had been received by wireless.

Putting all these flights together, the Danish Navy's aeroplane 84 has made a record for flying in Greenland with a single machine. And 19,000 kilometres is no insignificant distance: it corresponds to three Atlantic flights from Paris to New York.

Modern mapping is based upon two things: determination of points, and aerial photographs.

The points are found by the geodesists on the ground, who from a number of stations make astronomical and base measurements whereby the position of these stations is accurately determined, and from which the correct proportionate measurements are entered on the map. From these main stations they then establish characteristic points in the terrain by means of the theodolite, such as mountain tops, glacier tongues, points, coves, islands, and the like, and in this manner they create the system of points which forms the skeleton of the new map. The rest of the map details are taken from the aerial photographs.

From the comprehensive material we brought home the new map will be drawn by the Geodetic Institute in Copenhagen, under the leadership of Professor N. E. Nørlund.

The work of the airmen has been referred to in the first part of this summary. As to the geodesists, they worked in four surveying teams, each consisting of a geodesist and two Greenlanders as assistants. In order to get from place to place they had their own motorboats, and many and exciting are the reports of the

trips they made into the ice fjords and the breakers — often of a very violent character.

For the geodesists the days have been toil from morning to night. Every day up a mountain — perhaps not once but twice, for surveying, and high up among glaciers and the eternal snow in order get a view over the great expanses.

Much new land has been surveyed, many new fjords have been recorded, and over long stretches the map has been greatly altered, especially in the region round about and north of Skjoldungen, where Captain Graah's original map was lost in 1850, and where Holm and Garde did not get so far as to make supplementary triangulations in 1885.

The geodesists, i. e. besides the leader Captain Gabel-Jørgensen, Commanders Madsen and Tegner as well as Lieut. Wittrup-Hansen, have by the way expressed their admiration for Holm and Garde's map, which, according to the standards of that time, has been an extremely fine piece of cartographic work.

I feel I must express the same admiration for the gigantic work of my geodesists in the short time they had at their disposal; fjord after fjord, mountain after mountain, have been mapped by means of triangulations numbering more than 3000.

The geological surveys have been led by R. Bøgvad M. A., who with the utmost thoroughness has completed detail investigations and collections at over 500 places in the sphere of our operations.

The coast, as we already know, consists of granite and gneiss, and contains none of the very interesting sedimentary rocks that we find farther north. And all searching for large mineral deposits has given a negative result.

Besides geological work, the geologist has made zoological and botanical collections in more than 100 localities.

Dr. Poul Nørlund, who was in charge of extensive archaeological excavations in the fjords of Julianehaab, did the Expedition the honour of taking part in an excursion to the Tingmiarmiut area. On that trip he succeeded in finding two more Norse farms in the Cape Farewell district, i. e. the most southerly and most easterly of all known Norse farms in what was then the East Settlement.

On the East Coast itself Dr. Nørlund's investigations gave negative results; the so-called Rolf Ruin in Lindenows Fjord is thus still the only definitely known Norse ruin on the East Coast.

In contrast to the Norse-archaeological research work, the Eskimo-archaeological work was extremely rich in its results, for this is a coast on which in former days there has been a large

Eskimo population. All in all about 200 house ruins have been surveyed, and Dr. Therkel Mathiassen succeeded in visiting all the ancient main settlements within our area, where at different places he excavated 21 ruins.

Dr. Mathiassen divides these ruins into three groups, the oldest of which date right back to the 14th century.

When there was time and opportunity, I myself took part in the archaeological work of examination and survey, but this time my chief interest was especially concentrated upon the chances of life and the possibilities of populating the southeast coast.

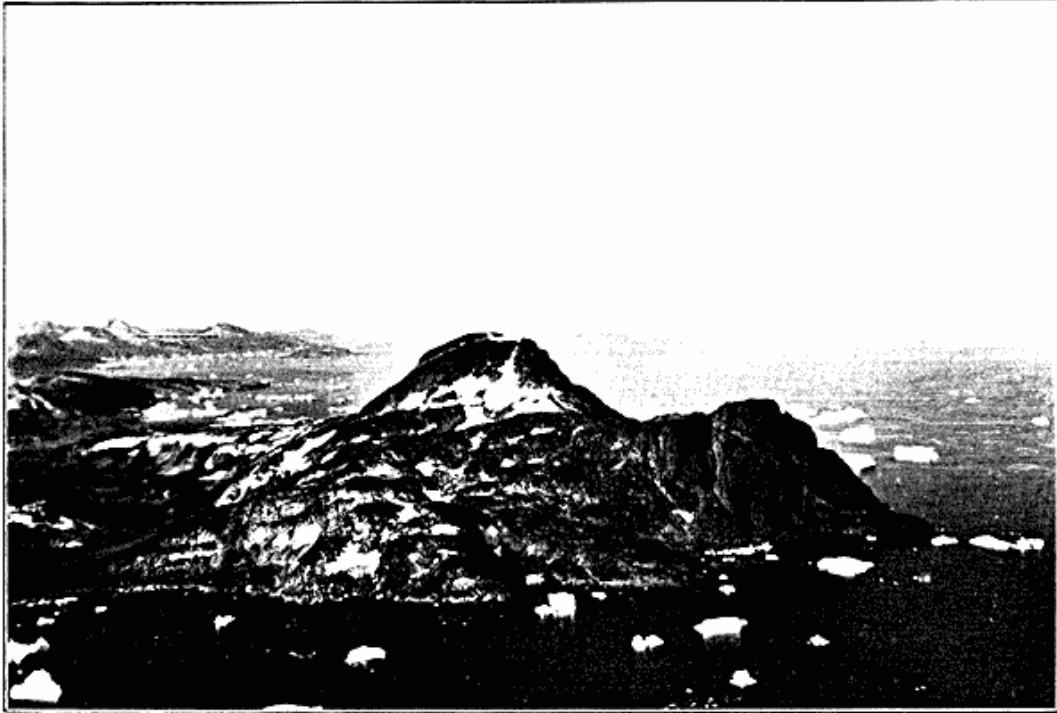
The results of my investigations may be briefly expressed in the following: There is excellent sealing all along the coast, but no land game. Nor are there fish in the fjords or along the coast with the exception of trout in some of the rivers. Thus there is no basis for a white population, but doubtless for a Greenland one. But as the game is exclusively seal, and as this animal comes periodically, life there will always bear the stamp of uncertainty even for these frugal natives.

For the purpose of making further investigations into hunting conditions in order to assist in a more certain judgment of the chances of life on this southern part of the East Coast, two of the members of the Expedition, the hunters Knud Østergaard and Emil Rasmussen were left behind at the old Danish-Greenland hunting station at Narsaq, in Lindenows Fjord.

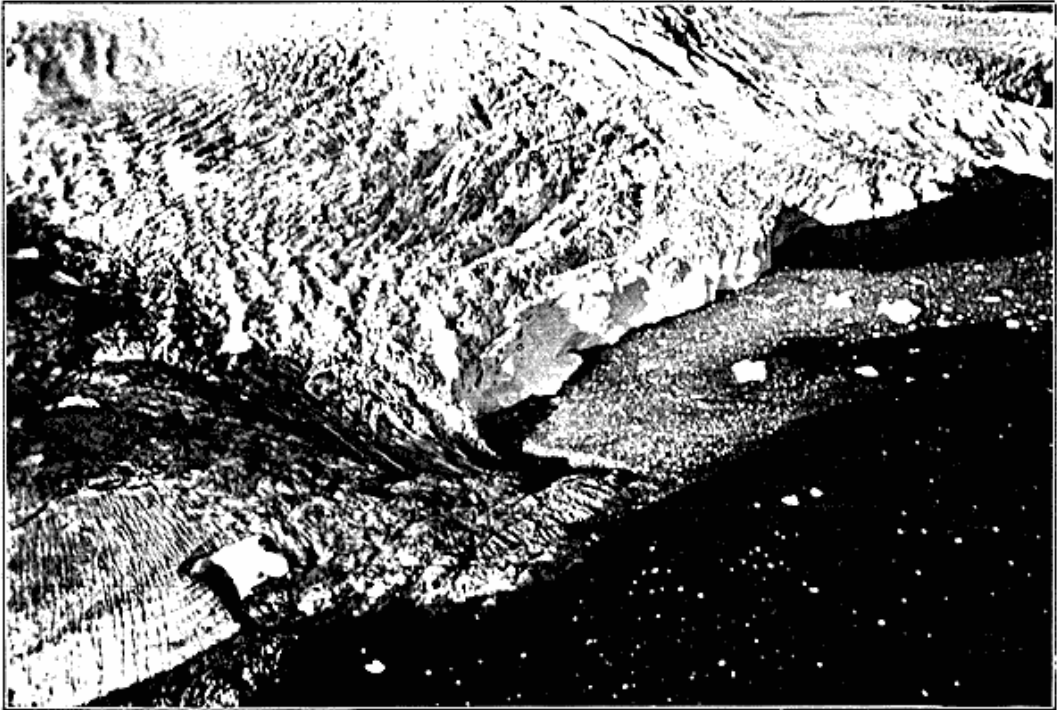
In the region round about Lindenows Fjord Poul Hansen M. A., who for a number of years has been investigating the fisheries along the West Coast, made systematic fishing experiments which produced the result that the sea was too deep, and on the whole too cold, and consequently provided insufficient conditions of life for cod in the fjords and close to the coast. On the other hand it was found that there were numbers of sharks.

The many journeys have provided a splendid opportunity of getting to know the country in detail, and, for the purpose of portraying this coast, which hitherto has been among the least known parts of Greenland, Ernst Hansen the painter and the film-photographer Rimmen have created a unique set of pictures in line and colour, in plate and film. In addition are the many pictures taken from the air, of a purely descriptive character and secured by the two air-photographers already referred to.

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As will be understood, the foregoing is merely a summary sketch of the results achieved; for all branches the full treatment



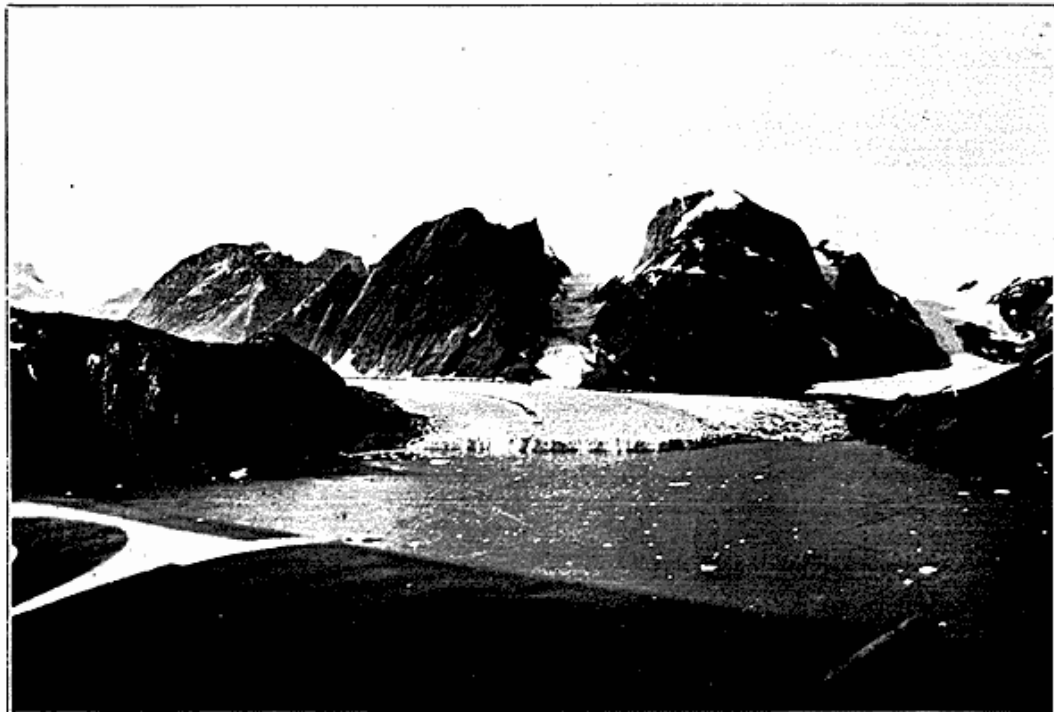
Kap Tordenskjold.  
Cape Tordenskjold.



Stærkt producerende Bræ i Anoritoq-Fjord.  
A very productive glacier in Anoritoq Fjord.



Udsigt fra Lakseelven ved Dronning Maries Dal.  
View of the salmon river in Dronning Marie's Valley.



Parti af Landet bag Skjoldungen.  
The country behind Skjoldungen.





Indlandsisens Rand i Nærheden af Anaiqat.  
Edge of the ice-cap near Anaiqat.



Gletscher-Dale bag Anoritog.  
Glacier Valleys behind Anoritog.



Fangstmand fra Kap Farvel i Stormpels.  
A Cape-Farewell hunter in waterproof kayak-dress.

of the material must proceed at home in Denmark, and it will not be the least part of the work.

Now the Expedition has been brought to an end; the last Danish members of it have returned home on the "Hans Egede". In Greenland remain our native comrades. We have them in mind now and thank them for their share. They have impressed us with their skill and their endurance and gained us as friends for life.

## RESUMÉ

### VII THULE-EKSPEDITION 1932 FRA KAP FARVEL TIL UMIVIK.

af Knud Rasmussen.

For Hundrede Aar siden — 1828—31 — var den danske Konebaads-ekspedition under Graah tre Somre og to Vintre om at naa op til Dannebrog's Øen, og for halvtres Aar siden brugte Holm og Garde lige saa lang Tid om at naa Angmagssalik, men da Sjette Thule-Ekspedition i 1931 med en hurtiggaaende Motorbaad (jvf. Geogr. Tidsskr. Bd. 35, 1932) fra Julianehaab sejlede op langs Grønlands Sydøstkyst til Angmagssalik, viste det sig, at denne Kyst, som i sin Tid var blokeret af Is, nu var sejlbart fra Begyndelsen af Juli.

Paa Grundlag af denne nye Erfaring blev Syvende Thule-Ekspedition planlagt og gennemført. Foruden syv store og smaa Motorbaade og Ekspeditionsskibet „Th. Stauning“ medførtes en Flyvemaskine. Ekspeditionen talte 62 Medlemmer, hvoraf 25 Grønlændere.

Formaålet var at foretage geodætiske, geologiske og arkæologiske Undersøgelser paa Kysten fra Umivik til Kap Farvel, en Strækning paa ca. 600 km i lige Linie, og dette store Program maatte gennemføres paa to Maaneder. Motorbaadene har gennemsejlet ca. 20,000 km, og Flyvemaskinen har været i Luften i 125 Timer og i denne Tid gennemføjlet en lignende Strækning. Hvis hertil lægges den med „Th. Stauning“ gennemsejlede Strækning, har Ekspeditionen til Vands og til Lufts tilbagelagt en Strækning, som svarer til en Rejse rundt omkring Jorden.

Ekspeditionen blev fra første Færd delt i Grupper, hver med sin særlige Opgave og sin egen uafhængige Leder. Dr. Knud Rasmussens egen Opgave blev den, at faa de forskellige Grupper's Arbejde til at passe sammen. Nu til Dags er Ekspeditionsledelsen lænket til sin Radio-Station, i dette Tilfælde om Bord paa „Th. Stauning“, hvor Radiotelegrafist P. Winther gjorde fortrinlig Fyldest.

Deltagerne afrejste i flere Afdelinger, Dr. Knud Rasmussen rejste først til Nord-Grønland (Umanak-Fjorden), Kaptajn Gabel-Jørgensen overtog Kommandoen over Motorbaads-Afdelingen i Sydøst-Grønland, i Begyndelsen af August ankom „Th. Stauning“, ført af Kaptajn Peder M. Pedersen, Dr. Therkel Mathiassen blev afhentet i Angmagssalik, og den 11. August var hele Ekspeditionen forsamlet i Graah's gamle Hovedkvarter ved det

skønne Imarsivik, for næste Dag at spredes ud til de forskellige Arbejdspladser. Kun „Th. Stauning“ blev i Imarsivik med Flyver-Mandskabet.

Hovedopgaven var Kortlægning fra Luften. Kaptajn Gabel-Jørgensen, Ekspeditionens Næstkommanderende, havde Ledelsen af denne Afdeling, assisteret af Søløjtnant Erik Rasmussen.

Takket være det gode Vejr og de gunstige Isforhold, men i Særdeleshed takket være det dygtige og vellejede Flyver-Mandskab blev Flyveprogrammet gennemført med en næsten matematisk Sikkerhed og afsluttedes med en Flyvning fra Lindenows Fjord over den sydlige Del af Indlandsisen til Julianehaab. Fotograferingen udførtes af Løjtnanterne O. Nielsen og H. C. Jacobsen, og gav i denne Egn ca. 1000 fortrinlige Kortlægningsoptagelser. Fotograferingen fortsattes paa Vestkysten, saa længe Vejret tillod det, og af 81 Dage blev 41 udnyttet til Foretagelsen af ca. 100 Flyvninger. Dette store Antal viser Dygtigheden hos de to Flyvere, Søløjtnant Erik Rasmussen og Artilleriassistent Thorkil Petersen, men det skyldes ogsaa Mekanikerne L. Jensens og C. Jørgensens omhyggelige Arbejde.

Der blev ogsaa optaget en Række Luftfotografier paa Vestkysten, hvor Professor Hatt og Dr. Poul Nørlund foretog omfattende arkæologiske Undersøgelser, og det fortjener at nævnes, at Søløjtnant Erik Rasmussen sammen med Mekaniker Jørgensen fløj i eet Stræk fra Ivigtut tværs over Indlandsisen til den norske Station Finnsbu Nord for Skjoldungen, for at komme Familien Hutchinson til Hjælp. De fik der Radio-Efterretning om Familiens Redning, og vendte hjem — ligeledes i eet Stræk — i en Norden-Storm.

Kortlægningen foregaar paa den Maade, at Beliggenheden af en Række Punkter fastlægges astronomisk. Fra disse Hovedstationer indlægges saa talrige karakteristiske Punkter i Terrainet, Bjergtoppe, Bræ-Rande, Øer o.s.v. ved Hjælp af Theodolitmaalinge, og disse Punkter danner saa Kortets Skelet, i hvilket Detaillerne indtegnes fra Luftfotografierne. De nye Kort vil blive udarbejdede i Geodætisk Institut under Ledelse af Professor N. E. Nørlund.

Geodæterne rejste i egne Motorbaade og arbejdede i fire Hold, hvert bestaaende af en Geodæt og to Grønlændere.

Meget nyt Land er blevet kortlagt, og mange nye Fjorde er indtegnede; over store Strækninger har Kortet undergaaet store Forandringer, i Særdeleshed i Egnen omkring og Nord for Skjoldungen, hvor Kaptajn Graah's Kort i 1830 gik tabt, og hvor Holm og Garde i 1885 ikke naaede at faa udført de supplerende Trianguleringer.

Geodæterne har udtrykt deres Beundring for Holm og Gardes Kort, som er et for sin Tid overordentlig smukt kartografisk Arbejde.

Antallet af de udførte Punktbestemmelser er over 3000.

Den geologiske Undersøgelse blev ledet af Mag. scient. R. Bøgvad, som foretog Indsamlinger fra over 500 Lokalteter, Kysten bestaar, som man i Forvejen vidste, af Granit, og indeholder ingen af de interessante Sedimenter, som findes længere Nord paa. Ingen større Minerallejer er fundet. Mag. Bøgvad har desuden foretaget Indsamling af zoologisk og botanisk Materiale fra mere end 100 Lokalteter.

Dr. Poul Nørlund, som ledede de store arkæologiske Udgravninger i Fjordene ved Julianehaab, deltog i en Ekskursion til Tingmiarmiut-Egnen og fandt paa denne Rejse to nye Nordbo-Ruiner i Kap Farvel-Di-

striktet, den sydligste og den østligste af alle kendte Ruiner af denne Art. Paa selve Østkysten gav Dr. Nørlunds Undersøgelser et negativt Resultat. Den saakaldte Rolfs Ruin i Lindenows Fjord er saaledes stadig den eneste sikre Nordbo-Ruin paa Østkysten.

Det Eskimo-arkæologiske Arbejde gav overordentlig rige Resultater. Ialt blev der fastlagt ca. 200 Husruiner, og Dr. Therkel Mathiassen naaede at besøge alle de gamle Hoved-Boplads og at udgrave 21 Ruiner. Han inddeler disse Ruiner i 3 Alders-Grupper, af hvilke de ældste gaar tilbage til det 14. Aarhundrede. Naar Tid og Lejlighed gaves, deltog Dr. Knud Rasmussen selv i det arkæologiske Arbejde, men han concentrede iøvrigt sit Arbejde paa en Undersøgelse af Mulighederne for at befolke Sydøstkysten.

Resultaterne heraf kan kort sammenfattes saaledes:

Der er en ypperlig Sælfangst langs Kysten, men intet Landvildt. Der er ingen Fisk i Fjordene eller langs Kysten med Undtagelse af Laks i nogle af Elvene. Der er saaledes ingen Muligheder for en Bebyggelse af Europæere, men uden Tvivl for en grønlandsk Befolkning, og selv for en saadan vil Livet her altid blive præget af en vis Usikkerhed. Fangerne Knud Østergaard og Emil Rasmussen blev efterladt bag ved den gamle Fangst-Station ved Narssaq i Lindenows Fjord med den Opgave at underkaste Fangstmulighederne en mere indgaaende Undersøgelse.

I Farvandet ved Lindenows Fjorden udførte Mag. Poul Hansen systematiske Fiskeri-Undersøgelser og kom til det Resultat, at Havet er for dybt og Vandet for koldt, og at der derfor ikke er Livsmuligheder for Torsk i Fjordene og langs Kysten. Derimod blev der fanget en Del Hajer.

Maleren Ernst Hansen og Films-Fotograf Rimmen har tilvejebragt et enestaaende Billedmateriale fra disse Egne, som hidtil har hørt til de mindst kendte af de grønlandske Landsdele.

Den fuldstændige Behandling af det store Materiale maa foregaa hjemme i Danmark.

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