Meddelelser om Grønland

Archaeology and environment in the Scoresby Sund fjord

Ethno-archaeological investigations of the last Thule culture of Northeast Greenland

Hanne Tuborg Sandell and Birger Sandell

Man & Society

15 · 1991

Meddelelser om Grønland

The series *Meddelelser om Grønland* was started in 1879 and has since then published results from all fields of research in Greenland. In 1979 it was split into three separate series:

Bioscience
Geoscience
Man & Society

The series should be registered as *Meddelelser om Grønland, Bioscience (Geoscience, Man & Society)* followed by the number of the paper. Example: *Meddr Grønland, Man & Soc.* 1, 1980.

The new series are issued by Kommissionen for Videnskabelige Undersøgelser i Grønland (The Commission for Scientific Research in Greenland).

Correspondence

All correspondence and manuscripts should be sent to:

The Secretary
Kommissionen for videnskabelige
Undersøgelser i Grønland
Danish Polar Center
Hausergade 3
DK-1128 Copenhagen K.

Questions concerning subscription to all three series should be directed to the agent.

Agent

Geografforlaget, Fruerhøjvej 43, DK-5464 Brenderup.
Tlf. +45 64 44 16 83.

Meddelelser om Grønland, Man & Society

Meddelelser om Grønland, Man & Society invites papers that contribute significantly to studies in Greenland concerning human beings (such as anthropology, archaeology, arts, economics, education, ethonology, history, law, linguistics, medicine, psychology, religion, social sciences). Papers dealing with borderline subjects as for instance exploitation of natural resources and environmental research may be referred to one of the series *Bioscience, Geoscience,* or *Man & Society* according to what is considered appropriate from an editorial point of view. Papers primarily concerned with other areas in the Arctic or Atlantic region may be accepted provided the observations are considered important in a Greenland context.

This volume edited by Hans Christian Gulløv.

Instructions to authors. – See page 3 of cover.

ISSN 0106-1062
ISBN 87-17-06237-3

Archaeology and environment in the Scoresby Sund fjord

Ethno-archaeological investigations of the last Thule culture of Northeast Greenland

Hanne Tuborg Sandell and Birger Sandell

MEDDELELSER OM GRØNLAND, MAN & SOCIETY 15 · 1991

Contents

Accepted 1990
ISBN 87-17-06237-3
ISSN 0106-1062
Printed in Denmark by AiO Print Ltd., Odense

List of illustrations and tables

Maps and drawings are made by Jørgen Ulrich and the photos, except otherwise stated, are by the authors.

Archaeology and environment in the Scoresby Sund fjord

Ethno-archaeological investigations of the last Thule culture of Northeast Greenland

HANNE TUBORG SANDELL and BIRGER SANDELL

Sandell, Hanne Tuborg and Sandell, Birger. 1991. Archaeology and environment in the Scoresby Sund fjord. Ethno-archaeological investigations of the last Thule culture of Northeast Greenland. – Meddr Grønland, Man & Soc. 14, 150 pp. Copenhagen 1991-4-18.

In 1983, during archaeological investigations of Jameson Land in Northeast Greenland, Kalaallit Nunaata Katersugaasivia (Grønlands Landsmuseum) excavated a winter dwelling from the last Thule Eskimo settlement in that area. The results of the excavation are the subject of this book, where they are analysed and presented from an ethno–archaeological point of view.

The introductory section describes the natural conditions and living resources of the area, and is followed by a short historical/archaeological review of Northeast Greenland. Next, the results of the excavation are presented with a description of the finds, and the archaeological data is evaluated in relation to previous material from Northeast Greenland.

This is followed by a section on the material and cultural development and adjustments made by the present population of the Scoresby Sund area, as regards ecology and resources.

An ethno–archaeological analysis is undertaken on the basis of the ethnological material presented, and theories put forward to describe patterns of resource exploitation, mobility, seasonal movements etc. for the people living in the last Thule culture in the Scoresby Sund area. Opportunities for contact with European Whalers and other cultural developments are also discussed.

Hanne Tuborg Sandell and Birger Sandell, Helligdomsvej 8, DK-3760 Gudhjem, Denmark.

Foreword

In 1982, because of surveying for oil in Jameson Land in Northeast Greenland, Kalaallit Nunaata Katersugaasivia/Grønlands Landsmuseum began a series of surveys of the area to bring the mapping of archaeological sites up to date. One of the reasons for this was to protect the historical sites of the area. The existence of several localities with prehistoric remains was known from earlier explorations of the area, such as those undertaken by Scoresby, Ryder and Nathorst, but a proper systematic archaeological survey had never before been undertaken.

Our first summer's field work comprised a journey along the coastal areas of Jameson Land which face Scoresby Sund. One result of this journey from Maqqakajik (Nordøstbugten) to Ittoritseq (Kap Stewart) was the registration of a previously unknown ruin complex at FM 70 Ø1 – IV – 1 (pos. 70°46'N, 24°09'W).

The ruin complex consisting of three winter dwellings and two meat depots, appeared to be extremely interesting, and after a provisional excavation had shown promising results, KNK decided that a more thorough excavation of the locality should become part of the field work programme for the following year.

Excavation of two of the ruined dwellings was undertaken in the period from the 11 to 30 July 1983, resulting in rich finds. For example, an almost complete set of tools and household utensils from the last Thule Eskimo settlement in the area was found. The remainder of the summer was used for surveys in Kangersaajua (Hurry Inlet). KNK's field work continued in the following seasons with archaeological mapping, and we have participated in the survey of Jameson Land every summer until 1988.

During a year's stay in Ittaajimmiit (Kap Hope) in 1971/72, we began an ethnological survey into hunting technology and the exploitation of resources in particular. The material was supplemented by a year's stay in Ittaajimmiit (Kap Hope) in 1975/76, and from 1976 to 1980 the investigations continued in Ittoqqortoormiit (Scoresbysund) itself. We felt it would be productive to build up an ethno-archaeological viewpoint of the excavation. This is based on comprehensive ethnological material concerning the present population's utilization of the area and an intimate knowledge of local conditions, which is combined with the archaeological data from the excavation. (See, Binford 1978; Gould 1978).

By including present-day ethnological material containing quantitative data which is often lacking in older ethnological material, we believe that we are able to throw light on areas that archaeological material seldom covers; for example, the length of time the settlement was inhabited, seasonal movements, the importance of various resources and the comparative efficiency of hunting methods, together with certain socio-cultural aspects.

In addition, a contemporary ethnological description will serve to provide a general impression of the opportunities and limitations of a hunting society, which will be relevant to an interpretation and evaluation of the archaeological evidence. That is why the ethnological section of this book is comparatively extensive and detailed, perhaps more than is required for the actual ethno-archaeological analysis. It can be argued that the contemporary ethnographic material cannot be used directly in an archaeological context, as changes in technology and the resource base make a direct comparison difficult. We believe, however, that in this particular case it is justifiable to use the available ethnological material, partly because the time span is so short that the resource base and the physical background remain almost unchanged, and partly because, despite differences in culture and social background, both sets of data reflect how groups of people adapt ecologically to the same geographic conditions.

During our earlier stays in Scoresby Sund, and in connection with the current survey, we have always met great interest and helpfulness from many institutions and individuals. We would like to thank the following:

KNK (Grønlands Landsmuseum) for assistance on many occasions; Grønlands Geologiske Undersøgelse, Grønlands Tekniske Organisation, Grønlands Fiskeri & Miljø Undersøgelser, Grønlandsfly (Greenlandair Charter) pilots and the land crew at Mestersvig and Constable Pynt for their help during field work. We are particulary grateful to airport superintendants Paul Lassen and Paul Lübbert, and to Ulrik Larsen at GTO. From the telecommunication centre at Ittoqqortoormiit (Scoresbysund), we would like to thank Ib Lorentzen, Tore Andreasen and Klaus Reindel and also Bjarne Thorsen for their reliable support, practical help and un-failing hospitality over the years.

We would like to thank P. O. Pedersen and J. Balslev Jørgensen for their help in analysing human teeth and human bone material respectively, and for processing the subsequent archaeological material; Jeppe Møhl for analysing the animal bones, and Robert Petersen for his comments, criticisms, and close perusal of the manuscript.

We are grateful to Statens Humanistiske Forskningsråd for their financial help in processing the material and to the Rockwool Foundation and the Scoresby Sund Committee for financial assistance towards the translation of the manuscript. The English translation is by Catherine Meinertz-Nielsen, Elizabeth O'Beirne-Ranelagh and Collette Havsteen-Mikkelsen.

Finally, we would like to thank the population of Ittoqqortoormiit (Scoresbysund), who through all the years since our first visit to Ittaajimmiit (Kap Hope) in 1971 have given us so much, both socially and professionally. It would take too long to mention all those, friends and informants, neighbours and travelling companions, who have contributed towards the book and helped us in so many ways. From Ittaajimmiit (Kap Hope) we would particularly like to thank Uluro and Severine Tuko for their friendship over 17 years, together with Sofie, Bent, Ingeborg and Thomas Barselajsen, Abraham and Juliane Madsen, Ina and William Arqe, Magdakalaat Arqe, Janus Mathæussen and Mathias Bajare. From Ittoqqortoormiit (Scoresbysund) we would particularly like to thank Kristian Kunak, Isak Danielsen, Nathan and Bartholine Arqe, Birthe and Niels Arqe, Boas Arqe, Kristian Anike and the Madsen, Pike, Sanimuinaq and Brønlund families. We owe especial thanks to Josva Barselajsen, who has meant so much to both of us. We remember with gratefulness how he and his family received us from the very start of our first visit to Ittaajimmiit (Kap Hope), and this book is therefore dedicated to the memory of Josva Barselajsen.

Regarding the use of East Greenlandic terms, it should be noted that the new orthography has been used throughout, except in the case of quotations.

In connection with place names, the following principles have been used:

(1) Where double names are used, the Greenlandic name appears first, the Danish name in brackets.
(2) In cases where the local East Greenlandic name differs from the official Greenlandic name, the local name is used followed by the Danish name in brackets.
(3) In the many cases where the Danish place name is also used locally, as is most usual, then only the Danish place name is used. For example, Jameson Land, Scoresby Land etc.
(4) Where the local Greenlandic place names have a clearly descriptive geographical function, such as Immikkeerteq (island), the local name is only used at the first mention.

These guidelines concerning the use of place names have been arrived at after long and careful thought, as a way of using Greenlandic place names in as many connections as possible, without preventing references being made to official map material.

Robert Petersen, Ilisimatusarfik/Greenland University, has shown his customary helpfulness and interest in connection with discussions as to the use of place names, and has also been a great help in going through the Greenlandic name material. Any mistakes or deficiences which remain are of course the responsibility of the authors.

I. Introduction

Geography and Topography

Kangersuttuaq (Scoresby Sund) on the East Coast of Greenland is the world's largest fjord system. Together with all its bifurcations it covers an area of about 38,000 square kilometers (Note, in comparison that the total area of Denmark is about 43,000 square kilometers.) The mouth of the fjord is only about 29 kilometers wide between Kangikajik (Kap Brewster) (latitude 70°09'N) and Uunarteq (Kap Tobin) (latitude 70°24'N) but it leads into a fjord system that runs west for approximately 300 kilometers.

The difference between high and low tide as measured at Uunarteq (Kap Tobin) is normally, less than a meter (Farvandsdirektoratet 1978). The fjord complex is named after William Scoresby Junior, an English whaler who was probably the first European to discover and name parts of the fjord in 1822 (Scoresby 1823: 196).

The southern part of the coast from Kangikajik (Kap Brewster) at the mouth of the fjord to Kap Stevenson – Volquart Boons Kyst – is a steep wall of basalt that rises from the sea to heights of between 1000 and 2000 meters. The precipitous walls which face the sea are intersected by numerous small glaciers. In contrast, the northern shore of the fjord is lower with rounded contours. The farthermost point comprises Liverpool Land, where high mountains fall gradually towards Scoresby Sund. The peninsular, which ends in Uunarteq (Kap Tobin), is fairly low – about 100 meters – and the hills only begin to gain height at the bottom of Rosenvinges Bugt.

Jameson Land lies further inland along the north coast, on the other side of Kangersaajua (Hurry Inlet), the arm of which runs directly north for approximately 75 kilometers and forms the boundary of the western part of Liverpool Land.

Jameson Land is a large sedimenary plateau rising smoothly from the coast to a maximum height of about 800 meters. The area consists partly of an elongated ridge with an average height of about 700 meters running in a mainly north-south direction. It lies in the eastern part of the area out towards Kangersaajua (Hurry Inlet), Klitdalen, Carlsberg Fjord and Nathorst Fjord. The remainder of the plateau is spacious lowland, probably the largest such area in Greenland. However, the transition between these two types of landscape is so gradual that no sharp boundary can be drawn between them, and together they comprise an integrated unity that is without parallel in the topography of Greenland.

At some distance into the fjord, about 100 kilometers from its mouth, it changes direction north, becomes broader and forms a basin – Hall Bredning. On the north this is bounded by the inaccessible Scoresby Land with Stauning's Alps, where the terrain is mountainous. Here the central and northern parts reach heights of about 2500 meters. The southernmost part of Scoresby Land in the area around Kangersuttuaq (Sydkap) towards Hall Bredning is, however, considerably lower and much more inviting.

From Hall Bredning the fjord branches out in several directions. West from Sydkap the long, narrow Kangersertuarmmiit Kangersuat (Nordvestfjord) thrusts far inland towards the northwest, surrounded by steep mountains and generally filled with large icebergs. To the west of the Nordvestfjord lies Ikaasakajik (Øfjord) that stretches to the southwest and is also bordered by steep mountains. Øfjord divides into two smaller fjords – Rypefjord and Harefjord – that run in a northwesterly and westerly direction respectively. Towards the south, Øfjord connects with Røde Fjord. At the southern end of Hall Bredning an arm of the fjord runs southwest at Kap Stevenson. This divides at Ujuaakajiip Nunaa (Danmarks Ø) into two branches, Nerterit Kangersuat (Gåsefjord) running towards the southwest, and Ujuaakajiip Kangersua (Fønfjord) running towards the west where it joins up with Røde Fjord and then Øfjord. Between Øfjord and Fønfjord lies Ilimanngip Nunaa (Milne Land), which is steep and partially covered by glaciers.

Apart from Jameson Land, which is distinctly lowlying, the terrain surrounding the various branches comprising the fjord system of Scoresby Sund is markedly mountainous, and in many places the mountains rise sharply from the edge of the fjord. Scoresby Sund is generally filled with ice-bergs thrust out from the numerous glaciers which discharge into the various branches of the fjord.

Climate

The climate in the area of Scoresby Sund is characterized as high-arctic. The boundary between the high-arctic and the low-arctic zone on the east coast lies just to the south of Scoresby Sund approximately at latitude

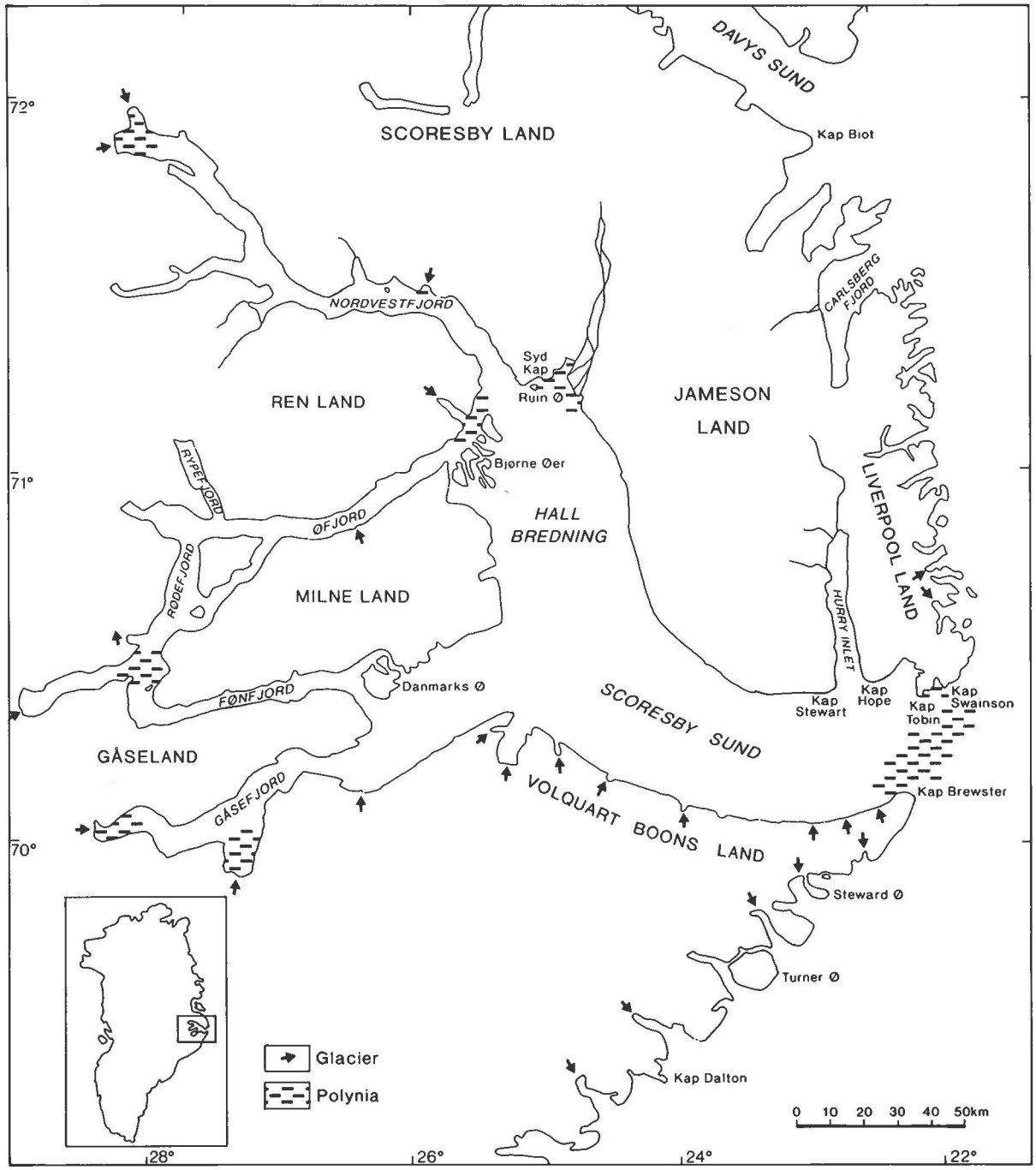


Fig. 1. Map of The Scoresby Sund Area showing polynyas and glaciers.

69°N. The corresponding boundary on the west coast of Greenland lies between latitude 74° and 76°N. The fact that the boundary lies considerably further south in East Greenland is due to the cold East Greenland current.

The winter is long with severe cold and frequent storms. The average temperature in the three winter months of January, February and March has been between −15 og −18°C over a ten-year period from 1971 to 1981. In the same month the extremes have been between −8.4° (January 1974) and −22.5° in 1978. The summer is short with a mean temperature of under +5°C in the warmest month. The three months June,

Fig. 2. View from Scoresby Sund. Kangikajik (Kap Brewster). August 1985.

July and August have an average temperature fluctuating from +0.5°C to about +3°C (ten-year period 1971–1981). There is a dark period of about two months, when the sun does not rise above the horizon from approximately 28th November to 17th January.

Towards the end of October and the beginning of November the fjord begins to freeze over and an edge of ice is formed at the mouth of the fjord. This ice edge, stretching roughly from Uunarteq (Kap Tobin) across the fjord to Kangikajik (Kap Brewster), is not fixed but shifts according to wind and weather.

The first snow usually falls in the beginning of September, although snowfall has occurred as early as 21st July (the last time was in 1986). It disappears again the following year in June or July. As a rule, the frequent storms mean that there is not much snow on the ice in the fjord, and as it becomes very compact there are generally no problems sledging. However, in some years so much snow falls that there can be a problem particularly in the fjord itself. This is especially so if the snow falls in periods of calm weather and is not blown away. This also means that on land the snow is not blown away from places that are otherwise free from snow. (Uloro Tuko 1984, pers. comm.).

Polynyas

There is open water at the mouth of Scoresby Sund all year round, because of its particular physical conditions. The strength of the coriolis forces the cold East Greenland polar current in through the mouth of the fjord. At the same time a discharge occurs because of melt-off, and a surface whirlpool is created between these two oncoming currents. Warmer, more salty water is brought up to the surface and this, combined with wind and heavy swells, ensures that even in winter there will be open water. Such an area of open water is officially called a polynya.

A polynya is defined as "any non-linear shaped opening enclosed in ice". Sometimes the polynya is bounded on one side by the shore and it is then known as a "shore polynya", or if it is surrounded by solid ice it is known as a "flow polyna". If such a polynya occurs in the same place every year it is termed a "recurring polynya" (Schledermann 1980: 292). Schledermann also uses the designation "secondary polynya" to refer to an area that is ice-free several weeks before what is normal for the rest of that area.

The open water at the mouth of Scoresby Sund is bounded in the winter by the ice edge in the fjord as well as by the pack ice that comes drifting in from the

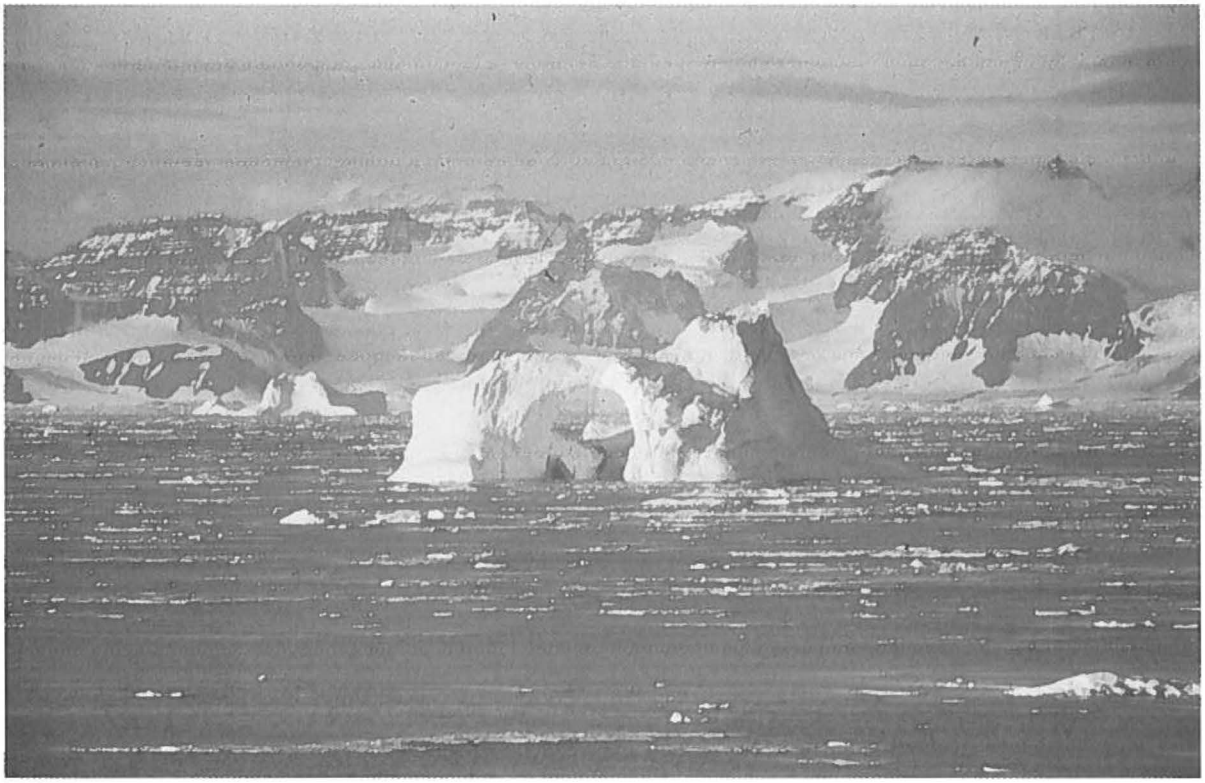


Fig. 3. Iceberg. In the background Volquart Boon's Coast. August 1976.

north and is thus referred to as a recurring flow polynya (see, Born 1984). Smaller polynyas are found at Sulussugutikajik (Stewart Ø) and possibly at Nannut Qeqertaat (Bjørneøerne) and can also be found where currents occur inside the fjord because of the melt-off from the glaciers. Since the inner reaches of the fjord's branches are free from ice earlier than the main fjord, there will be secondary polynyas here. Kangersuttuaq (Sydkap) lies at such a secondary polynya as does Renodden where Rødefjord and Fønfjord meet.

"From Renodden we went over to the depot at Røde Ø to fetch the remains of the stores. We had already seen the seagulls when we came here on May 3, but now there were no more of them. Their presence indicated that under normal conditions there should begin to be open water at this time" (Ryder 1895: 100, authors' translation).

There can be several physical reasons for a polynya occurring, but the so-called "up-welling", when warmer, more salty water is brought up to the surface from the deeper lying layers, is the most important factor influencing the biological process occurring in the polynya.

Polynyas are important because of the potential food resources that are found in the open water; for example for seals, walruses, bears, narwhals, and birds.

1. Wintering place for young ringed seals *(Phoca hispida)*.
2. Wintering place for walruses *(Odobenus rosmarus)*.
3. Spring migration of bears *(Ursus maritimus)*.
4. Summer sojourn for narwhals *(Monodon monoceros)*.
5. Summer sojourn for lesser rorqual *(Balaenoptera acutorostrata)*.
6. Summer sojourn for harp seal and hooded seal *(Pagophilus groenlandicus* and *Cystophora cristata)*.
7. Large concentrations of birds in the spring – for example: little auks and guillemots *(Plotus alle* and *Uria lomvia)*.

Vegetation

The transition from low- to high-arctic conditions – the boundary on the East Coast runs slightly south of Kangikajik (Kap Brewster) – is also important with regard to the vegetation of the Scoresby Sund area.

The outer coast is sparsely vegetated – fell-field vegetation – with a low, creeping flora of willow and birch together with various mosses and lichens, heather, mountain avens and different varieties of herbs and

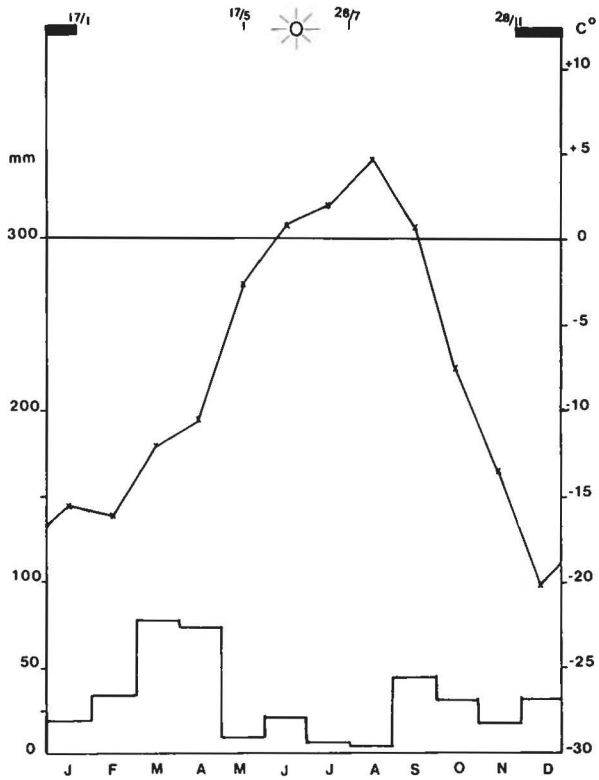


Fig. 4. Hydrothermal Graph. Uunarteq (Kap Tobin) 1980.

grasses. The vegetation within the fjord system itself is far more fertile; for example, on the rich and moist soil in Jameson Land, luxuriant types of heather are found on which large herds of musk oxen forage in the summer. The valleys are often very fertile as they are protected from the wind. Here the slopes are often covered with scrub bushes such as arctic willow *(Salix artica)* and dwarf birch *(Betula nana)* together with lush forms of heather, dwarf scrub *(Cassiope tetragana)*, mountain avens *(Dryas octopetale)*, grassland vegetation and herbs (Bay & Holt 1986).

In the wetter areas by the lakes and rivers, and in the sheltered spots occurring between the stunted bushes of willow and birch (as well as bog whortleberry *(Vaccinium uliginosum)*, crowberry *(Empetrum hermaphroditum)* and bearberry *(Arctostaphylos alpina)*), there are pools with sedges and grasses where large flocks of geese congregate in the summer. The topographical conditions are one of the reasons for this great variety of vegetation, which is affected by differences in light, wind and precipitation.

The distribution of precipitation, which falls mainly as snow, is influenced by these topographical conditions, and there are crucial differences in how much water the plants receive during the summer when the snow melts. If the area is protected from the wind, as in the valleys, then the vegetation will be much more fertile. An example of this is the large river beds on the west coast of Kangersaajua (Hurry Inlet) like Ugleelven where the south-facing slopes are incredibly fertile. Areas of lush vegetation, *e.g.* Fønfjord, Rypefjord and Gåsefjord, are also found among the branches of the fjord in the western part of the Scoresby Sund system.

"We went up the mountains. First, our way led up a very fertile slope of ice-scoured gneissoid granite. In some places, we found rich vegetation such as I have seldom seen on the west coast of Greenland at this latitude. Even though the scrub bushes on the west coast stand higher off the ground compared to the largest here which reached just above our knees, I thought they seemed stronger and grew closer together than on the west coast. The height of the bushes is fairly definitely determined by the deepness of the snow cover, which in the winter protects them partly from the severest cold and also from the parching effects of the Foehn storms" (Ryder 1895: 50, authors' translation).

Fauna

Scoresby Sund distinguishes itself from all the other East Greenland fjords because of the open water at the mouth of the fjord, even in winter. Because of the polynya mentioned above, this area of open water creates particular biological and physical conditions that, among other things, make it an area of nutritional significance for arctic seabirds and an important wintering place for sea mammals. Therefore an extremely well-represented section of marine fauna are found here.

Land fauna are also catered for by particular local conditions where, for example, the wide-reaching areas covered in heather on Jameson Land offer good foraging possibilities for a variety of land animals.

As we have seen, the boundary between the high-arctic and the low-arctic zone in East Greenland lies just south of Scoresby Sund. In the high-arctic zone dominated by stable high pressure weather conditions, the winters are often long with sparse precipitation, while itinerant low pressure areas give unstable and high precipitation in the low-arctic zones. Terrestial mammals such as musk oxen, polar wolves, ermines and lemmings, which have all migrated from North America via North Greenland, have their southern boundary along the east Coast at Scoresby Sund. Here the harsh and inhospitable Blosseville Coast forms a natural barrier to prevent their movement to the low-arctic zones of Southeast Greenland. Therefore in this climatic zone a wealth of species of mammals and birds from both zones is found which is unique.

Over thousands of years, people in the arctic have settled near polynyas and exploited the favourable hunting conditions (Schledermann 1980), and Scoresby Sund is no exception in this respect. The presence of the polynya is the reason why even today the population

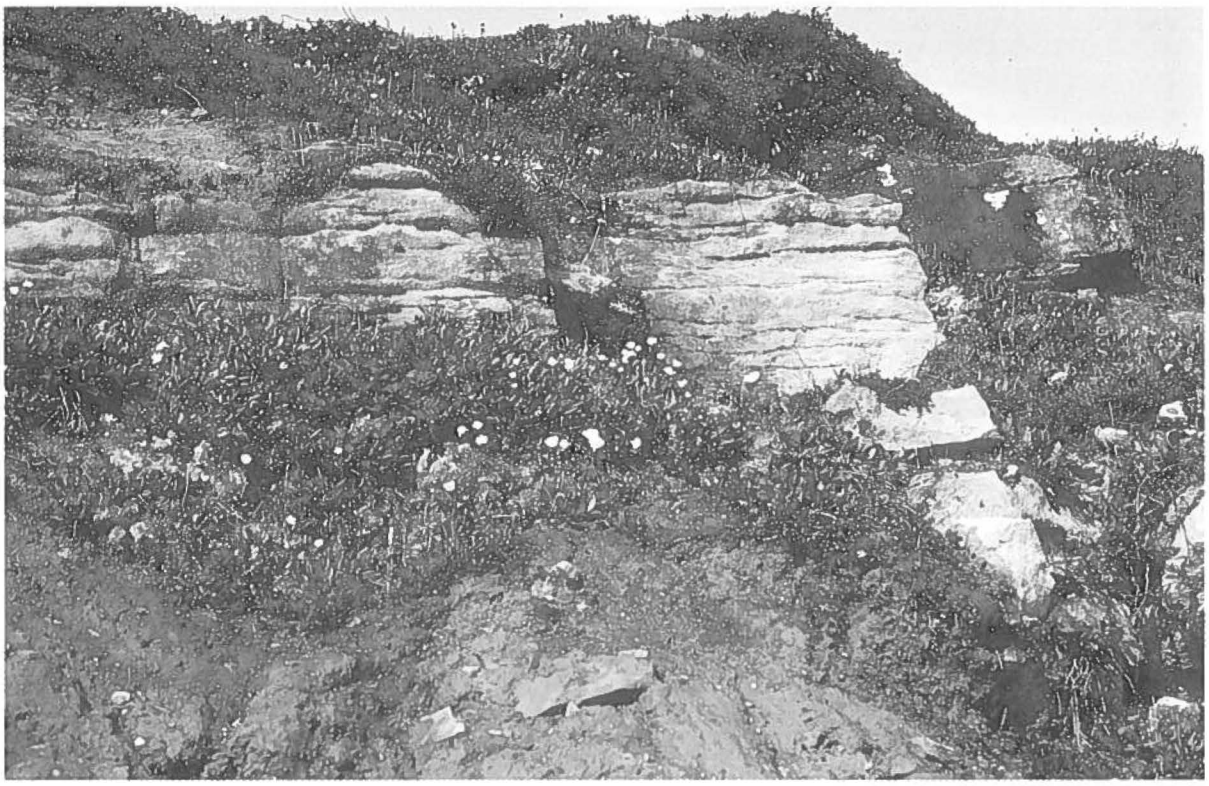


Fig. 5. Herb-slope at Depotelv, Jameson Land. August 1985.

can benefit from the large number of different animals that can be hunted in the area. In what follows the main-emphasis will be on describing the animals that different populations have hunted, and the remaining fauna will be described in less detail.

Of the sea mammals, seals are the most important, and of these the ringed seal is the most stable species and that which appears most freqently and is therefore the most important prey.

Seals

Ringed seal (fjord seal) *(Phoca hispida);* East Greenlandic *puili*

The ringed seal's preferred biotope for winter and spring is the ice-covered fjords and bays. Unlike the other arctic seals it is capable of keeping breathing holes open in ice up to 2.5 meters thick (Vibe 1950: 70). The ringed seal gives birth to a single young between the end of March and the middle of April in a hole made in the snow on the ice in an area where hummocks provide shelter. The reproduction of the species depends on the presence of a stable layer of ice. This results in the older, sexually mature animals dominating the fjords and bays where the ice layer is most stable, and forcing the younger seals to areas with more unstable ice conditions (Born 1983: 40). The younger animals are usually found in the breaking-up zone between the solid fjord ice and the drift ice. The older animals seek out the inner areas of the fjord when the ice starts to freeze up (September–October) and establish breathing holes for the winter. In the spring from April to the middle of July an increasing number of moulting ringed seals can be seen on the ice.

The ringed seal eats mainly fish and crustaceans. During the winter and in early spring it lives mainly on polar cod *(Boreogadus saida)*, and later on in the summer it eats mostly swarming crustaceans (Born 1983: 40).

According to *"Havpattedyr i Østgrønland"* (Sea Mammals in East Greenland), ringed seals in East Greenland are "mostly found in fjords and bays containing glaciers. This is because the movement of the glaciers causes the ice to crack, which gives the seals greater freedom of movement and therefore better opportunities to forage. Also, the deep snow that heaps up around the icebergs outside the glaciers provides good opportunities for the ringed seal to make breeding holes" (Dietz *et al.* 1985: 43, authors' translation). Ac-

cording to the same authors the fjord complex of Scoresby Sund probably contains Greenland's, or at least East Greenland's, largest population of ringed seals (Ibid., p. 43).

The ringed seal is found all the year round throughout the Scoresby Sund area and along the adjacent coasts and fjords. It is also found in the inner parts of the fjord complex (Nordvestfjord, Øfjord, Fønfjord etc.). Older animals particularly are found in these areas, and this is true to a certain extent in Hurry Inlet and in the fjords along the coast of Liverpool Land as well (Pedersen 1930: 396). The inner bifurcations of the fjord are known to house a constant population of old and very large seals (Josva Barselajsen, pers. comm.).

Moulting seals (East Greenlandic *qassimaleq*) can be seen all over the fjord ice in the Scoresby Sund fjord complex, in the fjords along the coast of Liverpool Land and along the Blosseville Coast in the spring from the middle of April to the middle of July. *Qassimaleq* are found in increasing numbers along the south coast of Jameson Land, and from the middle of May it is possible to stand on one spot and count over a hundred seals (Sandell, field notes 1972 & 1980), for instance, around Kangersuttuaq (Sydkap), at Renodden and at several other localities in the inner fjords (Kristian Anike and others, pers. comm.).

In the period of open water in August there is a tendency for the seals to move away from the mouth of the fjord at times when there is little drift ice. According to the hunters, they seek out the pack ice along the outer coast. When, because of wind and currents, the drift ice moves into the fjord, then many seals in "herds" can be expected along the front of the ice edge (Bent Barselajsen and others, pers. comm.).

During September and October the seals are increasingly found at the mouth of the fjord. The young seals migrate out there almost in herds before the ice sets in, to spend the winter there (Pedersen 1930: 396; Josva Barselajsen, pers. comm.). On the other hand the older sexually mature animals seek out the fjords and bays once the ice layer has been formed and establish their winter breathing holes there (Born 1983: 44).

When a stable ice edge has been formed from Napparuutilikajik (Kap Swainson) to Uunarteq (Kap Tobin), stretching southwards to Kangikajik (Kap Brewster), then the seals are found all along the ice edge until the ice breaks up in the middle of July. The seals appear sporadically and often congregate in small "herds". As a rule, they are close to the ice edge in calm weather and at night, and are most often found where there are small bays (Sandell, field notes 1971–80).

Hooded seal *(Cystophora cristata);* East Greenlandic *niiniarteq*

The hooded seal is found most of the year round in the heavy pack ice outside the East Greenland coast up to about 82°N latitude. It is not always found in Scoresby Sund, and when it does appear, during the period of open water, it is only in small numbers. Its diet consists predominantly of cuttlefish and redfish but it will also eat other fish, for instance the Greenland halibut.

In May and June a few animals can be found at the mouth of the fjord, but the majority first appear from the middle of August to about the middle of October when the ice is formed. Both young and old animals can be seen, and usually they appear singly, although small groups of three to five can be observed. The hooded seal is found primarily around the mouth of the fjord and particularly near Napparuutilikajik (Kap Swainson), but single animals can occasionally be met further down the fjord. For instance, we have local information on a hooded seal having been caught at Kangersuttuaq (Sydkap) (Sandell, field notes 1975–80); Born reported having seen a hooded seal at Mågetuen in Nordvestfjord (Born 1983: 62), and Ryder's expedition saw two hooded seals at the mouth of Gåsefjord.

Harp Seal *(Pagophilus groenlandicus);* East Greenlandic *nalanginaq* (mature seal) & *attatteq* (young seal)

The harp seal is found in three separate areas, each with its particular breeding ground: one in the White Sea, one in eastern Canada and one in the Greenland Sea.

The seals in the Greenland Sea gather at the breeding ground towards the end of March. After mating, the animals spread into the area between East Greenland and Jan Mayen. In the period of open water from July to September, the harp seal is normally found along the east coast of Greenland, from the southernmost part of East Greenland to Station Nord. Unlike the hooded seal, the harp seal keeps more to the lighter drift ice and areas of shallow water. It is often found in very large herds. Its diet consists primarily of polar cod (Born 1983: 62).

The harp seal is almost only found in Scoresby Sund during the period of open water. Usually the first animals show themselves at the mouth of the fjord towards the end of July when the ice breaks up, and are younger animals that often come in small groups of five or ten. Some time later around the middle of August, the older animals arrive, and herds of up to 25 can be seen. The migration to Scoresby Sund usually reaches its peak in the last part of September.

The harp seal seldom migrates to the areas west of Hall Bredning (Pedersen 1930: 404). When the new ice is formed in the middle of October, the harp seal leaves Scoresby Sund once again, but the occasional animal can be found along the ice edge right up until February (Sandell, field notes 1975–80).

Bearded Seal *(Erignatus barbatus);* East Greenlandic *anneq*

The bearded seal can be found along most of the Greenland coast, usually in areas with moving pack ice and smaller floes. Its diet consists primarily of animals living on the ocean bed and in the Scoresby Sund area to a large extent of polar cod and sculpin as well (Pedersen 1930: 410). The bearded seal thus prefers the stretches of coastline with relatively shallow water (Vibe 1950: 54). When the fjords freeze over in the autumn, most of the bearded seals move off to areas with drift ice, but some are capable of holding breathing holes open in the solid winter ice (Pedersen 1930: 408).

The bearded seal is a permanent resident in the Scoresby Sund area and, as far as is known, is found throughout the fjord system. It is, however unlikely to winter in the inner parts of the fjord. The bearded seal is principally found in areas with relatively shallow water; for instance, it is most frequently met near Napparuutilikajik (Kap Swainson), Uunarteq (Kap Tobin) in Kangersaajua (Hurry Inlet) and at Sulussugutikajik (Stewart Ø) (Sandell, field notes 1975–80; Born 1983: 65).

During the winter the bearded seal lives along the ice edge at the mouth of the fjord, and the younger seals especially are found here. A few individuals, however, apparently winter under the solid ice as bearded seals are regularly caught both at breathing holes and in nets at the outer edge of the fjord (Sandell, field notes 1975–80).

From May to June the bearded seal is found near cracks in the solid ice and on smaller floes along the ice edge. When the ice breaks up the bearded seal, according to local information, moves away from the mouth of the fjord and ranges over the whole fjord system (Sandell, field notes 1975–80) (Born 1983: 66).

Harbour Seal or Common Seal *(Phoca vitulina);* East Greenlandic *qasigiaq*

It has been maintained that the harbour seal has very occasionally been seen at Scoresby Sund, and has been caught once (Ryder 1895: 80). We have not been able to confirm the information locally about sighting or catching the harbour seal anywhere in the area. According to local information (Evald Brønlund, pers. comm.), a few isolated ring seals with irregular markings are caught every year – we caught one ourselves in 1976 – which can be superficially mistaken for a harbour seal. In our opinion it is in all probability these fjord seals that have been mistaken for the harbour seal. (11 harbour seals that were reported on the hunting lists from Ittoqqortoormiit (Scoresbysund) in 1974 must be based on an error!).

Atlantic Walrus *(Odobenus rosmarus);* East Greenlandic *aaveq*

The Atlantic walrus living along the east coast of Greenland has its main habitat between latitude 81°N and Scoresby Sund, which is approximately latitude 70°N. It is seldom found south of Scoresby Sund.

Throughout its habitats the walrus is dependant on (1) areas with shallow water (under 80 meters) and suitable benthic fauna; (2) ice-free areas in winter; and (3) ice floes or sandy beaches to lie on during resting and moulting periods (Dietz *et al.* 1985: 89).

Until the founding of the Scoresby Sund colony in 1924/25 the walrus was probably found permanently around the mouth of the fjord as all the three preconditions for walrus biotopes are present. Landing places for walruses are known both on Immikkeertikajiit (Fame Øerne) in Kangersaajua (Hurry Inlet) and in Hvalrosbugten (Isachsen & Isachsen 1932). Even though Scoresby makes no mention of having seen walruses during his visit there in 1822, both Ryder and Nathorst observed a few in Kangersaajua (Hurry Inlet) (Ryder 1895: 41; Nathorst 1900: 213 & 231).

A considerable number of walrus were shot in the first few years when the area was re-populated in 1925, but after these first years of hunting the number decreased sharply. According to Mikkelsen & Sveistrup about 70 animals were shot in Scoresby Sund in 1925/26, but only 10, 6 and 2 respectively in the following three years. (Mikkelsen & Sveistrup 1944: 107). (The annual hunting figures for the last twenty years have swung between 5 and 15 (Sandell, field notes 1971 & 1975–86; Born 1983: 70)). The huge decimation of the herd that occurred during those first years of hunting has meant that either the local herd was exterminated, or that afterwards walruses have avoided populated areas.

The staple diet of the walrus consists of different sorts of mussels, a little fish – and ringed seals. Mussel banks are found in the Scoresby Sund area in Kangersaajua (Hurry Inlet), around Napparuutilikajik (Kap Swainson) and near Sulussugutikajik (Stewart Ø). In fact Napparuutilikajik (Kap Swainson) and Sulussugutikajik (Stewart Ø) are known today as the best localities in the district for hunting walrus.

From February to the middle of June walrus appear regularly either singly or in small flocks off the stretch between Uunarteq (Kap Tobin) and Napparuutilikajik (Kap Swainson), and in the area around Sulussugutikajik (Stewart Ø).

When the walrus stays in an area any length of time, the seals, and especially the ringed seals, are known to disappear, as a result of the walrus attacking and eating them (Pedersen 1951: 85). There are actually instances of a walrus attacking and seizing a seal that had been shot and was in the process of being retrieved (Sandell, field notes 1980). The hunters in Scoresby Sund are therefore extremely careful if they have to retrieve a

seal they have shot when there are walrus in the neighbourhood. In such cases the towing line is never fastened to the boat, but held in the hand or with the foot so that should the occasion arise, the seal can be let go. (Sandell, field notes 1971; Bent Barselajsen, pers. comm.).

During the summer occasional walruses can be seen in the drift ice at the mouth of the fjord, but they seldom venture further inwards than around Ittoritseq (Kap Stewart). On one occasion recently, however, a walrus was shot as far down as Kangersuttuaq (Sydkap) (Josva Barselajsen, pers. comm.). In September 1975 a small herd was seen and a bull was shot off Ittaajimmiit (Kap Hope) (Sandell, field notes 1975) and in August 1978 while out sailing we saw a young walrus in open water, just east of Ittaajimiit (Kap Hope) (Sandell, field notes 1978). Nowadays it seems that it is very rare to find a walrus in Kangersaajua (Hurry Inlet); however, an old bull was seen between the Fame Øerne at the beginning of August in 1983 (Emil Madsen, pers. comm.).

Narwhal *(Monodon monoceros);* East Greenlandic qilalugaq

The narwhal lives in the Atlantic part of the arctic in oceanic areas between latitude 65°N and 85°N. It usually spends the winter months in channels and openings in the compact pack ice off the coast. After the solid ice in the fjord breaks up in the spring, it moves into the fjord and inlets to spend the summer there, until in the autumn it is forced out by the fjord freezing over into solid ice again. However, it is not unusual to see narwhals during the summer in the ice off the coasts of East Greenland, as is evident from several descriptions given by former whalers (Lubbock 1968: 32).

The narwhal is thus found in the summer from May to October in the fjords along the coast of East Greenland from Ammassalik northwards, and also partly in the drift ice in Danmarkshavet (Dietz *et al.* 1985: 117). The diet of the narwhal consists of polar cod, which is its most important source of food, Greenland halibut, cuttlefish and pelegaec crustaceans (Born 1983: 72).

The existence of the narwhal has been known in Scoresby Sund since Scoresby observed animals there in 1822, and found remains of bones and teeth at the Eskimo ruins on Ittoritseq (Kap Stewart) (Scoresby 1823: 213 & 214). According to Erik Born it is even probable that the fjord complex is the most important summer residence for narwhals on the east coast of Greenland (Born 1983: 73).

Narwhals can be found in Scoresby Sund from February to the beginning of December. On the basis of Born's description (Born 1983: 74) and our own sources of information, the movements of the narwhal in the fjord system can briefly be described as follows:

From February to April the narwhal can be found along the ice edge at Sulussugutikajik (Stewart Ø) and between Uunarteq (Kap Tobin) and Kangikajik (Kap Brewster). In this period there seems to be a northerly migration. During May and June the narwhal is found close to the ice edge near Sulussugutikajik (Stewart Ø) and around the mouth of the fjord at Scoresby Sund, particularly in the southern part around Kangikajik (Kap Brewster). Towards the end of June and the beginning of July they begin to migrate into the fjord through cracks in the ice. As the ice along Volquart Boons Kyst has mostly been shattered and broken up by the strong currents, the migration mainly occurs along this coast. At this time of the year narwhals can be found in openings at Kap Stevenson, Kap Leslie and near Kangersuttuaq (Sydkap), and presumably around Renodden (Ryder 1895: 100; Thomas Barselajsen, pers. comm.).

In August and September the narwhals stay in the inner parts of the fjord complex. Kangersuttuaq (Sydkap), Bjørneørne, the inner part of Nordvestfjord (Hauge Anderson, pers. comm.), Rypefjord, Renodden (Hjørnedal) (Klaus Reindel, pers. comm.), Ujuaakajiip Nunaa (Danmarks Ø), Gåsefjord and Vikingebugt are all alleged to be good localities for hunting narwhal.

With the formation of the new ice that can occur at the beginning of September in the inner fjord areas, the narwhal migrates out of the fjord complex. Unlike the spring migration, a substantial part of the autumn migration takes place along the south coast of Jameson Land. In September and October, the narwhals can be found at Ittoritseq (Kap Stewart), at the mouth of Kangersaajua (Hurry Inlet) and on the stretch between Ittaajimmiit (Kap Hope) and Uunarteq (Kap Tobin). In the past, narwhals could be seen at Kangersaajua (Hurry Inlet) in the autumn, but this is now a rare occurence (Sandell, field notes 1975–80).

The White Whale/Beluga *(Delphinapterus leucas);* East Greenlandic *qilalugaq akisittoq*

The white whale is a small toothed whale which is found within a circumpolar range. During the winter it stays in the pack and drift ice off the coast, and during the summer it migrates into fjords and bays. Unlike the narwhal it is seldom found in fjords with deep water, but prefers the areas with more shallow water.

It is seldom seen in Scoresby Sund. Nathorst reports having seen white whales outside the mouth of Ryders Elv at the head of Kangersaajua (Hurry Inlet) in the summer of 1899 (Nathorst 1900: 213), and a few later observations exist (Dietz *et al.* 1985: 115). However, the white whale is not important for hunting today, and is hardly likely to have been so previously. Born's information that five or six white whales have been caught

within the last 20–30 years has not been verified (Born 1983: 80).

The Lesser Rorqual *(Balaenoptera acutorostrata);* East Greenlandic *tikaavuttik*

The lesser rorqual or mink whale is a baleen whale just under 10 meters long which can be found along the coasts of East Greenland during the summer. According to Born it should have its northernmost limit of distribution around Scoresby Sund (Born 1983: 80).

Around the middle of June, the first lesser rorquals can be seen along the ice edge at the mouth of the fjord. When the ice breaks up around the middle of July, more animals start to arrive either singly or in small schools, and move a little way down the fjord, but they very seldom come further in than Ittoritseq (Kap Stewart). Most lesser rorquals are usually found in the area around Uunarteq (Kap Tobin), but occasionally single animals can be met right at the bottom of Kangersaajua (Hurry Inlet).

When the new ice forms at the beginning of October, the lesser rorquals leave Scoresby Sund and do not re-appear throughout the winter. Although colonization began in 1925, hunting lesser rorquals only started in 1980. (Sandell, field notes 1980; Pedersen 1930: 416).

The Greenland Whale *(Balaena mysticetus);* East Greenlandic *arpivik*

This baleen whale can be up to 20 meters long, and at times has been a common sight in areas off the east coast of Greenland. The whales used to spend the winter along the edge of the drift ice northeast and west of Iceland, and in the summer they stayed in the drift ice off the northeast coast of Greenland, concentrated in specific whale fields. The northernmost field lay between Greenland and Spitzbergen just south of latitude 80°N, and the southernmost and largest field lay off the coast of Liverpool Land. From here the Greenland whale frequently migrated into Scoresby Sund.

After 1850, because of intensive hunting by Europeans, the numbers of Greenland whale were heavily reduced, and today it is very seldom seen in Scoresby Sund. However, single specimens have been observed in the mouth of the fjord in the last ten years (Sandell, field notes 1976; Ole Nielsen, pers. comm.).

Killer Whale *(Orcinas orca);* East Greenlandic *napaatilik*

The killer whale is seen at intervals in the mouth of the fjord during the period of open water. By all accounts it should arrive with the harp seal and should be found

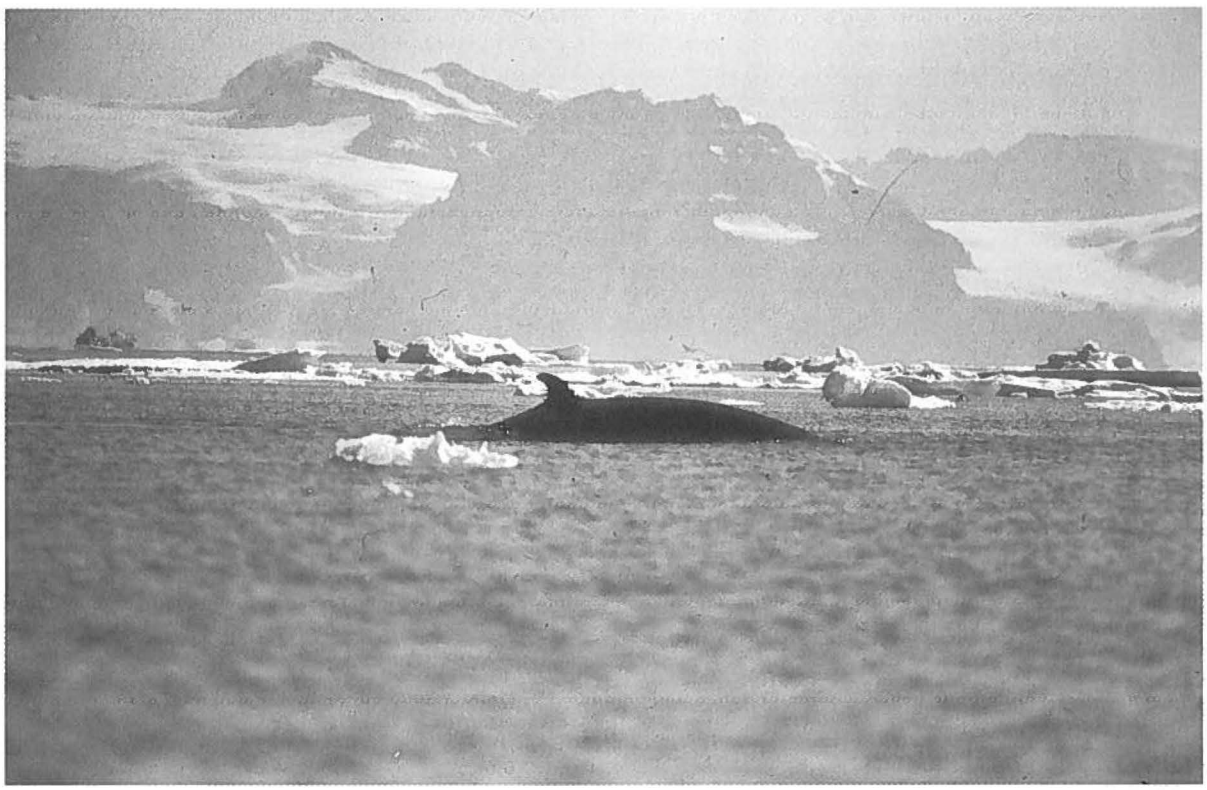


Fig. 6. Lesser rorqual off Uunarteq (Kap Tobin). Sept. 1978.

In spring and summer they stay mainly on the mountain slopes and the more typically lowland areas. The mountains and higher lying regions are their preferred grazing grounds in the autumn.

Their need for minerals also influences where the animals choose to graze; there are certain specific mineral licks in several places in Jameson Land, Scuchert and Ørsted Dalen which the musk oxen seek out in the summer (Sandell, field notes 1985–86; Thing 1985: 56). Presumably it is for the same reason that the musk oxen are often seen along the beach in the summer (Kristoffersen 1969: 99).

Caribou *(Rangifer tarandus eogroenlandicus);* East Greenlandic *tuttu*

The caribou that used to live in the Scoresby Sund area became completely extinct in Northeast Greenland around the turn of the century. During Ryder's expedition of 1891/92 a comparatively large number of caribou were seen in different localities in the Scoresby Sund area (Ryder 1895: 38, 39, 64 & 79). Just under ten years later, during the Nathorst expedition's stay in the area in 1899, only two caribou were seen in Klitdalen at the bottom of Kangersaajua (Hurry Inlet) (Nathorst 1900: 224), and the following year the Amdrup expedition saw no living animals (Hartz 1902: 171).

The number of caribou bones and antlers found around most Eskimo sites, and the many antlers lying on the ground, show that the animal was formerly fairly numerous and of importance for hunting. How long ago caribou were in the area, and whether they perhaps died out at certain times is not known, but finds of caribou bones at a paleo-Eskimo complex at Nerterit Inaat (Constable Pynt) in Kangersaajua (Hurry Inlet) (no date given) points to there having been caribou for quite some time (Sandell 1983a: 54, 1984a: 35).

The previous distribution of caribou in the Scoresby Sund area cannot be explained either, but casual finds of antlers seem to prove that Jameson Land (Sandell, field notes 1975–80, 1982–86), Scoresby Land (Pedersen 1930: 424), Gåseland (Vibe 1967: 159) and Liverpool Land all had a large population (Sandell, field notes 1982–86). In the latter area, there were apparently many animals along the outer coast (Pedersen 1930: 424). We have also found signs of there having been caribous on the northernmost part of Blosseville Coast on Sulussugutikajik (Stewart Ø) (Sandell, field notes 1985).

With reference to the distribution of caribou on Jameson Land, it is significant that most of the caribou antlers were found relatively close to the coast and it is much more unusual to find these remains further inland. This seems to indicate that the population, at any rate at times, stayed near the coast (compare, Ryder 1895: 39), and this is borne out by the almost complete absence of caribou hunting camps inland (Sandell 1984a: 42 & 1986c). For a further elaboration of the complex problem of the caribou in Northeast Greenland the reader is referred to Degerbøl (1957), Vibe (1967) and Meldgaard (1986).

Polar Wolf *(Canis lupus tundrarum);* East Greenlandic *amaroq*

The wolf was once found in this area, but disappeared completely from Northeast Greenland in about 1930 (Dawes 1978). During the last few years, however, wolves have re-migrated from the north to Scoresby Sund, and occasionally a single animal can be seen; for example at Mestersvig, on Jameson Land and at Ittaajimmiit (Kap Hope) (Sandell, field notes 1985; Uloro Tuko, pers. comm.). In the summer of 1986 we saw fresh traces from a single animal in many places on Jameson Land, for instance in Ørsted Dalen, Nordøstbugten and north of Gurreholm (Sandell, field notes 1986).

Arctic Fox *(Alopex lagopus);* East Greenlandic *terianniaq*

The fox is widespread and common throughout most of the Scoresby Sund area. The greatest numbers are found in regions with bird cliffs on Liverpool Land and on the south coast of the fjord from Kangikajik (Kap Brewster) to Kap Stevenson. It is not unusual in Jameson Land either, where, among other regions, Ittoritseq (Kap Stewart) is known to be a good locality for hunting foxes. Similarily, it can be found more or less everywhere on land in the innermost parts of the fjord system. Along the stretch of coast between Kangikajik (Kap Brewster) and Kap Dalton it does not appear to be as numerous (Sandell, field notes 1971). There seem to be large variations in the numbers of animals from year to year. From looking at the number of fox traps used by the earlier populations, fox hunting seems to have been of some importance.

Mountain or Alpine Hare *(Lepus arcticus);* East Greenlandic *ukaleq*

The mountain hare which has its southernmost distribution limit at Scoresby Sund is usually found throughout the area. It lives both on the outer coast and islands of Liverpool Land and in the valley regions in Nordvestfjord. (Pedersen 1930: 372). It can be very prolific at times. It is seldom found on the Blosseville Coast south of Kangikajik (Kap Brewster) and it is not found further south than Kap Dalton (Vibe 1975: 408).

Two further types of land mammals are found in the Scoresby Sund area: the ermine *(Mustela erminea);* East Greenlandic *ukaliatsiaq*, and the collared lemming *(Di-*

In spring and summer they stay mainly on the mountain slopes and the more typically lowland areas. The mountains and higher lying regions are their preferred grazing grounds in the autumn.

Their need for minerals also influences where the animals choose to graze; there are certain specific mineral licks in several places in Jameson Land, Scuchert and Ørsted Dalen which the musk oxen seek out in the summer (Sandell, field notes 1985–86; Thing 1985: 56). Presumably it is for the same reason that the musk oxen are often seen along the beach in the summer (Kristoffersen 1969: 99).

Caribou *(Rangifer tarandus eogroenlandicus);* East Greenlandic *tuttu*

The caribou that used to live in the Scoresby Sund area became completely extinct in Northeast Greenland around the turn of the century. During Ryder's expedition of 1891/92 a comparatively large number of caribou were seen in different localities in the Scoresby Sund area (Ryder 1895: 38, 39, 64 & 79). Just under ten years later, during the Nathorst expedition's stay in the area in 1899, only two caribou were seen in Klitdalen at the bottom of Kangersaajua (Hurry Inlet) (Nathorst 1900: 224), and the following year the Amdrup expedition saw no living animals (Hartz 1902: 171).

The number of caribou bones and antlers found around most Eskimo sites, and the many antlers lying on the ground, show that the animal was formerly fairly numerous and of importance for hunting. How long ago caribou were in the area, and whether they perhaps died out at certain times is not known, but finds of caribou bones at a paleo-Eskimo complex at Nerterit Inaat (Constable Pynt) in Kangersaajua (Hurry Inlet) (no date given) points to there having been caribou for quite some time (Sandell 1983a: 54, 1984a: 35).

The previous distribution of caribou in the Scoresby Sund area cannot be explained either, but casual finds of antlers seem to prove that Jameson Land (Sandell, field notes 1975–80, 1982–86), Scoresby Land (Pedersen 1930: 424), Gåseland (Vibe 1967: 159) and Liverpool Land all had a large population (Sandell, field notes 1982–86). In the latter area, there were apparently many animals along the outer coast (Pedersen 1930: 424). We have also found signs of there having been caribous on the northernmost part of Blosseville Coast on Sulussugutikajik (Stewart Ø) (Sandell, field notes 1985).

With reference to the distribution of caribou on Jameson Land, it is significant that most of the caribou antlers were found relatively close to the coast and it is much more unusual to find these remains further inland. This seems to indicate that the population, at any rate at times, stayed near the coast (compare, Ryder 1895: 39), and this is borne out by the almost complete absence of caribou hunting camps inland (Sandell 1984a: 42 & 1986c). For a further elaboration of the complex problem of the caribou in Northeast Greenland the reader is referred to Degerbøl (1957), Vibe (1967) and Meldgaard (1986).

Polar Wolf *(Canis lupus tundrarum);* East Greenlandic *amaroq*

The wolf was once found in this area, but disappeared completely from Northeast Greenland in about 1930 (Dawes 1978). During the last few years, however, wolves have re-migrated from the north to Scoresby Sund, and occasionally a single animal can be seen; for example at Mestersvig, on Jameson Land and at Ittaajimmiit (Kap Hope) (Sandell, field notes 1985; Uloro Tuko, pers. comm.). In the summer of 1986 we saw fresh traces from a single animal in many places on Jameson Land, for instance in Ørsted Dalen, Nordøstbugten and north of Gurreholm (Sandell, field notes 1986).

Arctic Fox *(Alopex lagopus);* East Greenlandic *terianniaq*

The fox is widespread and common throughout most of the Scoresby Sund area. The greatest numbers are found in regions with bird cliffs on Liverpool Land and on the south coast of the fjord from Kangikajik (Kap Brewster) to Kap Stevenson. It is not unusual in Jameson Land either, where, among other regions, Ittoritseq (Kap Stewart) is known to be a good locality for hunting foxes. Similarily, it can be found more or less everywhere on land in the innermost parts of the fjord system. Along the stretch of coast between Kangikajik (Kap Brewster) and Kap Dalton it does not appear to be as numerous (Sandell, field notes 1971). There seem to be large variations in the numbers of animals from year to year. From looking at the number of fox traps used by the earlier populations, fox hunting seems to have been of some importance.

Mountain or Alpine Hare *(Lepus arcticus);* East Greenlandic *ukaleq*

The mountain hare which has its southernmost distribution limit at Scoresby Sund is usually found throughout the area. It lives both on the outer coast and islands of Liverpool Land and in the valley regions in Nordvestfjord. (Pedersen 1930: 372). It can be very prolific at times. It is seldom found on the Blosseville Coast south of Kangikajik (Kap Brewster) and it is not found further south than Kap Dalton (Vibe 1975: 408).

Two further types of land mammals are found in the Scoresby Sund area: the ermine *(Mustela erminea);* East Greenlandic *ukaliatsiaq*, and the collared lemming *(Di-*

crostonyx groenlandicus); East Greenlandic *nartumukaaq*, but neither of these have any direct importance for hunting.

Birds

As mentioned in the beginning of this section, the presence of polynyas at the mouth of the fjord indicates particularly favourable conditions for seabirds. East Greenland's largest bird cliffs and the only breeding grounds for little auks and Brunnich's guillemots are also found around the mouth of Scoresby Sund. The largest guillemot colonies are found on Appalik (Raffles Island) and at Kangikajik (Kap Brewster), while the little auk breeds in millions along Volquart Boons Kyst and on practically all the islands and promontories along the coast of Liverpool Land (Meltofte 1976: 116).

In the spring, apart from the guillemots and little auks, masses of seabirds – especially eider ducks, long-tailed ducks, kittiwakes and seagulls – congregate in the open water at the ice edge. They forage here before moving off later to their breeding grounds. Also in the spring, large numbers of migrating barnacle geese and pink-footed geese fly over the outer part of the fjord on their way to breeding grounds further north or within the fjord.

After the big spring migration, the birds can be found spread over their various biotopes throughout the summer until they once again migrate out of the area in the autumn. During the winter, the only birds in the area are ptarmigans and ravens.

The following summarizes the most important birds:

Barnacle Goose *(Branta leucopsis);* East Greenlandic *nerteq*

A common breeding bird found throughout the fjord complex, both within the fjord, in the inland valleys and along the outer coast. During the spring migration, towards the end of May and the beginning of June, large numbers of barnacle geese fly over the outermost edge of the fjord. Good migration localities are Sulussugutikajik (Stewart Ø) and Kangersaajua (Hurry Inlet). After the eggs are hatched, the geese collect in large numbers on the flat area of Jameson Land where moulting takes place. Jameson Land is reputed to be the largest known moulting area in Northeast Greenland for both barnacle geese and pink-footed geese (Madsen *et al.* 1985: 1). The barnacle geese leave the area at the beginning of September.

The pink-footed goose *(Anser brachyrrynchus);* East Greenlandic *nerteq angineq*

A common breeding bird found throughout the entire Scoresby Sund area, most often within the fjord. Jameson Land is an important breeding ground and is also the largest known moulting area for the pink-footed goose (Madsen *et al.* 1985: 1). After moulting in July and August, they migrate from the area at the beginning of September.

Snow goose *(Anser caerulescens);* East Greenlandic *kangoq*

This species is known, and is occasionally seen in the spring. (Sandell, field notes 1976; Kr. Kunak, pers. comm.).

Whooper Swan *(Cygnus cygnus);* East Greenlandic *qussuk*

The species is known, and has been seen occasionally (Sandell, field notes 1976; Kr. Kunak, pers. comm.).

King Eider *(Somateria spectabilis);* East Greenlandic *qingalik*

This species is not an uncommon sight in the spring at the ice edge off Napparuutilikajik (Kap Swainson) and Sulussugutikajik (Stewart Ø). Very few breed in the area (Sandell, field notes 1975–80).

Common Eider *(Somateria mollissima);* East Greenlandic *malersorteq*

A common breeding bird found distributed within the fjord and along the outer coast. Well known breeding colonies are found at Dunholm near Sulussugutikajik (Stewart Ø), on the islands off Kangersuttuaq (Sydkap), on Bjørneøerne and on Fame Øerne. The birds are often found in large numbers off the southernmost part of the outer coast of Liverpool Land and at Sulussugutikajik (Stewart Ø) (Sandell, field notes 1975–80).

Long-tailed duck *(Clangula hyemalis);* East Greenlandic *atteq*

This is found concentrated in flocks during the spring along the ice edge at the mouth of the fjord. Later on in the summer, as it is a common breeding bird in the area, it can be found almost everywhere within the fjord system (Pedersen 1930: 429).

Brunnich's guillemot *(Uria lomvia);* East Greenlandic *appa*

This species arrives in Scoresby Sund at the beginning of May. It breeds in great numbers in colonies near the mouth of the fjord where it is a very common sight during the summer. It is seldom found within the fjord. The guillemot leaves the area at the beginning of September.

Little Auk *(Plotus alle);* East Greenlandic *appaliarsuk*

This bird breeds in great numbers along the coast of Liverpool Land and along Volquart Boons Kyst. At the end of the 1920's, Alwin Pedersen estimated the stock to be over 5 million (Pedersen 1930: 488). The little auks arrive in the month of May, and are very numerous around the mouth of the fjord throughout the summer, but are seldom seen west of Ittoritseq (Kap Stewart).

Puffin *(Fratercula arctica);* East Greenlandic *qilanngaq*

Presumed to breed in small numbers on Raffles Island (Pedersen 1930: 489. Sandell, field notes; Kr. Kunak, pers. comm.).

Black guillemot *(Cepphus grylle);* East Greenlandic *serpaq*

Found in abundance as a breeding bird along the outer coast, less often within the fjord. The black guillemot can be found in small numbers throughout the winter along the ice edge (Sandell, field notes 1971/72, 1975–80).

Fulmar *(Fulmarus glacialis);* East Greenlandic *qaquttuk*

Breeds in colonies in many places at the mouth of the fjord and is usually found throughout the summer in the outer part of the fjord.

Glaucous Gull *(Larus hyperboreus);* East Greenlandic *qusii*

Common breeding bird that can be seen all over the fjord throughout the summer.

Herring Gull *(Larus argentatus);* East Greenlandic *qusii*

Irregular visitor that can be seen from the beginning of April to early September (Meltofte 1976: 115).

Great Black-backed Gull *(Larus marinus);* East Greenlandic *qusii*

Regular summer visitor from the middle of April to the beginning of September (Meltofte 1976: 108).

Kittiwake *(Rissa tridactyla);* East Greenlandic *taateraaq*

Breeds in colonies at several places at the mouth of the fjord including Dunholm, Rathbone Ø and Kangikajik (Kap Brewster). Common at the mouth of the fjord throughout the summer from May to September.

Artic Tern *(Sterna paradisea);* East Greenlandic *imeqqitaaleq*

Common breeding bird in many places within the fjord system. The tern can be found in the area from the beginning of May to the end of August.

Red-throated Diver *(Gavia stellata);* East Greenlandic *qaqqaqqaaq*

Breeds in small numbers throughout the fjord system. Is not uncommon along the ice edge at the mouth of the fjord in spring.

Great Northern Diver *(Gavia immer);* East Greenlandic *qartiimiteq*

Breeds in small numbers in the innermost parts of the fjord system; for instance, according to hearsay, on Bjørne Øerne (Thomas Barselajsen, pers. comm.).

Red-breasted Merganser *(Mergus serrator);* East Greenlandic *nujalik*

Commonly found, but only breeds in small numbers in the innermost parts of the fjord (Meltofte 1976: 112).

The great skua *(Stercorarius skua)*, pomatorhine skua *(Stercorarius pomarinus)* and the ordinary arctic skua *(Stercorarius parasiticus)* which are all known as "isunngaq" in East Greenlandic, are not infrequent summer visitors. The long-tailed skua *(Stercorarius longicaudus);* East Greenlandic *isunngaq* is a very common breeding bird, for example on Jameson Land, Gåseland and around Kangersuttuaq (Sydkap).

Ptarmigan *(Lagopus mutus);* East Greenlandic *aqisseq*

The ptarmigan is a common non-migratory bird, but the numbers can vary greatly. It is found nearly all over the Scoresby Sund area.

Raven *(Corvus corax);* East Greenlandic *qaartuluk*

Occurs both as a breeding and a non-migratory bird all through the year.

Snowy Owl *(Nyctea scandiaca);* East Greenlandic *kiialik*

Found spread over many breeding grounds in the innermost part of the Scoresby Sund area. Should be most common on Jameson Land where, at the end of the 20's, Alwin Pedersen estimated the stock to comprise about 500 birds (Pedersen 1930: 493).

Greenlandic Gerfalcon *(Falco rusticolus candicans);* East Greenlandic *kissaviarssuk*

The gerfalcon is found spread over breeding grounds throughout the area. It is not an uncommon sight during migration in the spring and autumn.

Apart from the large birds mentioned here, a range of small birds can be found that are of no importance for hunting:

Ringed plover *(Charadrius hiaticula);* East Greenlandic *tuujuk.*
Golden Plover *(Pluvialis apricaria);* East Greenlandic *anngilik.*
Turnstone *(Arenaria interpres);* East Greenlandic *talippak.*
Knot *(Calidris canutus);* East Greenlandic *anngilik.*
Dunlin *(Calidris alpina);* East Greenlandic ?
Red-necked Phalarope *(Phalaropus lobatus);* East Greenlandic *naluumasserteq.*
Grey Phalarope *(Phalaropus fulicarius);* East Greenlandic *naluumasserteq.*
Wheatear *(Oenanthe oenanthe);* East Greenlandic *kussak.*
Redpoll *(Carduelis flammea);* East Greenlandic *tututteq.*
Lapland Bunting *(Calcarius lapponicus);* East Greenlandic *narsarmiutaq.*
Snow Bunting *(Plectrophenax nivalis);* East Greenlandic *qupaluarsuk (pisi).*

Fish

Of the fish that are found in the Scoresby Sund area the following species can be used.

Arctic char *(Salvelinus alpinus);* East Greenlandic *kaporniagaq*

The arctic char is probably found in and around most of the larger lakes which have outflows to the sea. Some of the well-known localities for arctic char can be mentioned: the lakes at Dombrava, Sødalen and Kalkdalen, together with a lake at Ulveodde which all lie on the east side of Kangersaajua (Hurry Inlet). A few lakes at the bottom of Rosenvinges Bugt have a stock of arctic char, and the same is true of some of the lakes at Store Fjord on Liverpool Land. Holger Danskes Briller at Kangersuttuaq (Sydkap) is known to be especially good for arctic char. At Hjørnedal in Føn Fjord and a few places in Røde Fjord there are also good stocks of artic char, and finally between Sulussugutikajik (Stewart Ø) and Knighton Bugt on the Blosseville Coast there are several rivers with trout rises (Sandell, field notes 1985; Thomas Barselajsen, Niels and Nathan Arqe, pers. comm.).

Greenland Halibut *(Reinhardtius hippoglossoides);* East Greenlandic *qaleralik*

This species can be found in various places in Scoresby Sund, for instance at the mouth of the fjord and at Kangersuttuaq (Sydkap) (Sandell, field notes 1971/72; Josva Barselajsen, pers. comm.).

Other fish which can be found are as follows:

Wolf fish *(Anarchicas sp.);* East Greenlandic *qeeraq.*
Polar Cod *(Boreogadus saida);* East Greenlandic *uugaq.*
Sea Scorpion *(Myoxocephalus sp.);* East Greenlandic *qivaaqi.*
Greenland Shark *(Somniosus microcephalus);* East Greenlandic *niialiaq.*

II. Archaeological Section

Historical-Archaeological Survey

The first European to see Greenland's east coast between latitudes 70° and 75°N, as far as is known, was the Englishman Henry Hudson. In 1607 he attempted to reach China by this route (Orwin 1931: 90).

In the sixteenth and seventeenth centuries the whale catch was large in the area west of Spitzbergen. Whaling was intensive, and when the catch was reduced in this area new hunting grounds were sought between the pack-ice masses off the northern part of East Greenland. At that time the whalers probably kept a watch on the coast and followed the Greenland whale into the ice, and in years when ice conditions were good it is possible that whales were caught in the open coastal waters. However, there is no written evidence that whalers reached the coast or met the Eskimos of the area.

On 27 July 1761, at latitude 70°40'N, Volquard Boon was driven by a strong current into a large fjord, which he estimated to be about 15 miles (about 30 km) wide (Mikkelsen 1934: 27). It is quite obvious that it was Scoresby Sund fjord he had drifted into and the southern side of the fjord was subsequently named after him.

The Eskimo settlement in Northeast Greenland, i.e. the stretch from Scoresby Sund northwards, was so

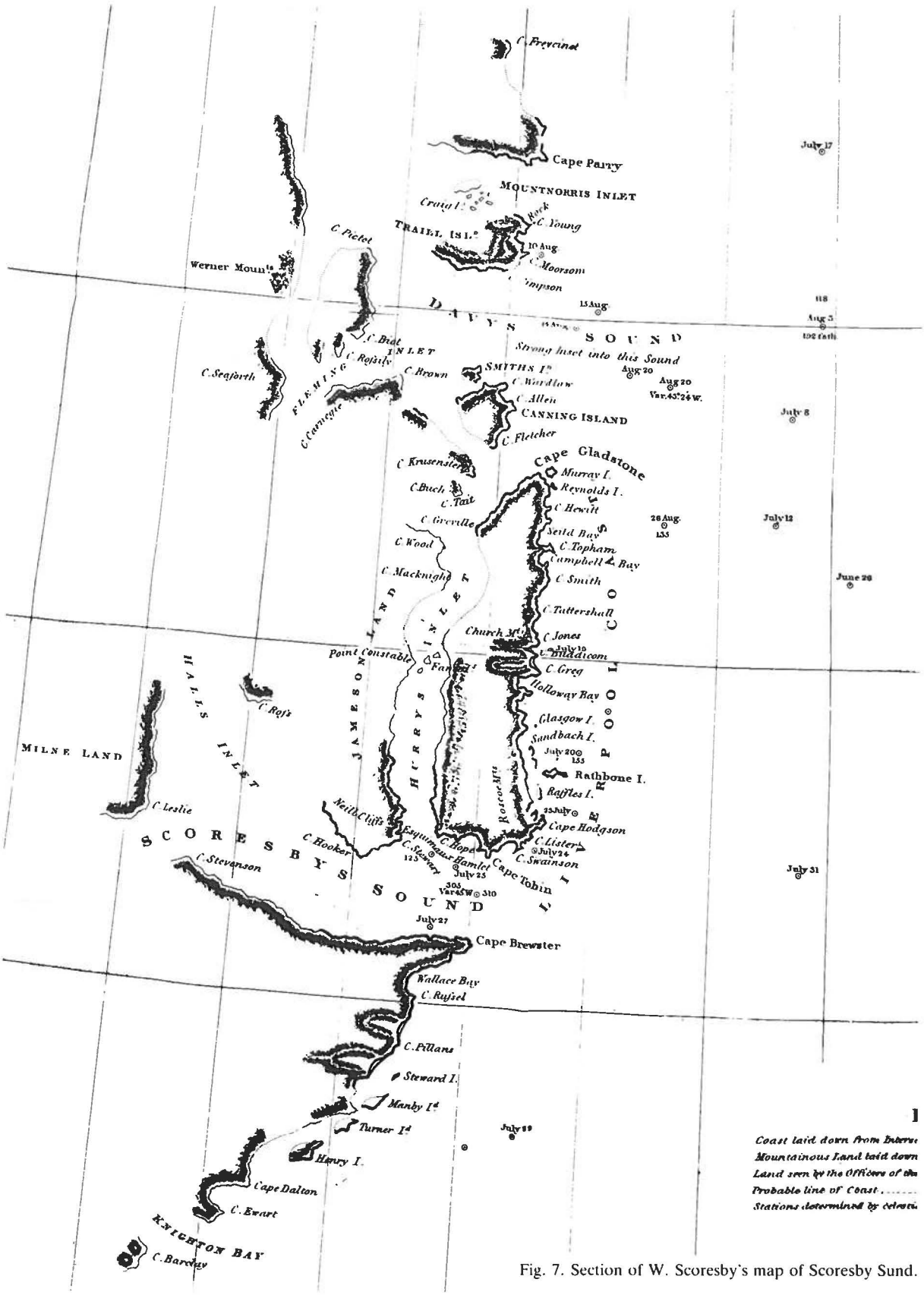


Fig. 7. Section of W. Scoresby's map of Scoresby Sund.

widespread that when the first European expeditions came to those areas they found traces of human activity almost everywhere, in the form of house remains, tent rings, graves, fox traps and meat depots.

In 1822 the English whaler Scoresby junior charted and named the mouth of the present Scoresby Sund, and from him we have the first reference to cultural-historical relics. He came ashore at several places but met no one. However, he found Eskimo settlements, most of which seemed to have been inhabited recently. Scoresby mentions in his description finding winter dwellings at Ittoritseq (Kap Stewart) (Scoresby 1823: 206, 208) and at Ittaajimmiit (Kap Hope) (Scoresby 1823: 203), and tent rings at Napparuutilikajik (Kap Swainson) (Scoresby 1823: 186). These sites appeared so new to him that he concluded that there had to be people still living in the area. "These consisted of two cavities, enclosed by stones, on the edge of a bank, that had been employed as fire-places, and in which were the remains of the fuel that had been used in them, consisting of charred driftwood, with halfburnt moss, and a quantity of ashes. The latter, being of so light a nature as to be liable to be carried away by melting of snow about them, impressed me with the opinion, that they had not been here during the preceding winter, but that the persons who used these simple contrivances for fire-places, must have been on the spot even in the present summer" (Scoresby 1823: 187). On the southern side of Traill Ø he also found winter dwellings and tent rings (Scoresby 1823: 253).

In the same area, at 73°N, in the summer of 1820 a whaler from Bremen found a dead walrus with two Eskimo harpoon heads in its body, and from the condition of the animal, it could be concluded that it had not been dead long. The harpoon heads themselves were four inches long, made of bone and tipped with iron (Scoresby 1823: 333).

In 1823, Major Sabine was sent by the British Admiralty to the east coast. The major had with him an English captain, C. D. Clavering, and from him we have the only documented evidence of Europeans meeting Northeast Greenlanders. Clavering took a boat trip round Clavering Ø and met a group of 12 Eskimos living in tents on the south side. For four days Clavering stayed among them, but on the morning of the fifth day all the Eskimos had disappeared. The previous day Clavering and his men had shown the Eskimos their guns, which had frightened the Eskimos to such an extent that they had left during the night, abandoning their possesions. Apparently no living Northeast Greenlanders have been found since then (Clavering 1830: 21; Vibe 1965). Ruins of houses on the south coast of Clavering Ø, on Kap Mary and on Kap Borlase Warren, were also found on that expedition.

Over the next 50 years there was no indication that Europeans visited Northeast Greenland, and when in 1869–70 the Second German Polar Expedition under the leadership of Koldewey, investigated the area between Danmarkshavn and Kejser Frans Josefs Fjord no people were seen. However, the numerous house ruins, tent rings and graves indicated that there had once been a relatively large population (Koldewey 1873: 586). Musk ox were seen in Kejser Frans Josefs Fjord for the first time.

In the period 1889–1922, 88 Norwegian ships sailed to the northern part of East Greenland (Isachsen 1932: 24). In 1889 the Norwegian sealing ship *Hekla,* under Captain R. Knudsen, sailed along the coast from Kap Hold with Hope to the Pendulum Islands and in 1891–92 Knudsen sailed the same ship for Captain C. Ryder's expedition. They lay up for the winter at Hekla Havn in Scoresby Sund and during their stay a large part of the fjord complex was explored. A large amount of information about the archaeology in Scoresby Sund is available from this expedition, including descriptions of house ruins and tent rings (Ryder 1895: 286).

The Swedish geologist A. G. Nathorst undertook an expedition to East Greenland in 1899 in search of Andree. He examined and charted extensive areas from Shannon Ø to Scoresby Sund, particularly in the completely unknown area between Kejser Frans Josefs Fjord and Davy Sund. In Scoresby Sund itself, in Kangersaajua (Hurry Inlet), a ruin complex on Fame Øer was discovered (Nathorst 1900: 212). One of the members of the expedition, Dr. Hammar, was responsible for the examination of the winter dwellings, tent rings and graves of the Eskimos. A great number of his finds were taken home. A year later a Swedish zoological expedition, under G. Kolthoff, was working in Kejser Frans Josefs Fjord (Kolthoff 1901).

In the years 1898–1900 (the Carlsberg Fund Expedition under the leadership of G. Amdrup (1902)) the stretch of coast between Scoresby Sund and Ammassalik was explored and several new settlements were discovered. In Scoresby Sund, on Uunarteq (Kap Tobin), J. P. Koch mapped and excavated a newly discovered ruin complex (Amdrup 1909: 314).

Some years later (1905) Duke Philippe d'Orleans made a summer trip to the east coast and sketched parts of the coast up to latitude 79°N, and in 1909, when he was again in the area, the stretch from Kejser Frans Josefs Fjord to Shannon Ø. He also discovered ruins on Ile de France and on the south coast of Germania Land (Duke d'Orleans 1907).

The Denmark Expedition under Mylius Erichsen in 1906–08 explored the most northerly areas of Northeast Greenland. The expedition lay up for the winter in Danmarkshavn and the whole of the northern part of the coast was mapped and a great deal of archaeological work carried out. Mylius Erichsen, who undertook the archaeological-ethnographical work, died on the expedition, but Bendix Thostrup continued the archaeological research (Thostrup 1911).

In 1909 Ejnar Mikkelsen travelled to the east coast with the aim of searching for any remaining traces of Mylius Erichsen. The vessel of the Danish Alabama

Expedition (1909–12) was, however, pressed down by the ice in the expedition's winter harbour on Shannon Ø and it was three years before two of the members, Mikkelsen and Iversen, were able to leave the country again (Mikkelsen 1922).

On the first Thule expedition, Knud Rasmussen and Peter Freuchen found tent rings in the most northerly part of East Greenland at the mouth of Brønlunds Fjord (Rasmussen 1912).

In the 1920s and 1930s further new localities of previous settlements were discovered during various scientific expeditions. On the Cambridge Expedition of 1926 and 1929, for which D. McI. Johnson undertook the archaeological work, the area between latitude 72° and 74°40'N was explored (Mathiassen 1929; Johnson 1933). Under Lauge Koch's expedition in 1926–27, further house ruins were discovered in the stretch from Danmarkshavn to Scoresby Sund, and these were charted by A. Rosenkrantz in 1929 (Koch 1930). On Bartlett's East Greenland expedition in 1930, Junius Bird excavated some previously known ruins of houses on Shannon Ø and on Clavering Ø (Bartlett & Bird 1931: 402).

It was not just the scientific expeditions to the east coast which increased knowledge about the previous settlements, but Norwegian and Danish hunters also made their contribution. It was actually as a hunter that the Norwegian archaeologist, Søren Richter, began his investigations in 1929–31 in Kejser Frans Josephs Fjord, and which he continued in the summers of 1932 and 1933 (Richter 1934).

Despite the fact that a significant number of settlements were located, many house ruins excavated and a large number of objects collected, a thorough and systematic investigation within a specific area was still required. Such investigations first began in the 1930s, when Helge Larsen excavated several settlements on the south coast of Clavering Ø (Larsen 1934), Richter, as previously mentioned, worked in Kejser Frans Josephs Fjord (Richter 1934), and Glob in the Kong Oscar Fjord area (Glob 1935). In 1948, Meldgaard and Bandi carried out further archaeological excavations on Clavering Ø (Bandi & Meldgaard 1952). Since that time archaeological research in Northeast Greenland has, by and large, only been carried on through the efforts of Eigil Knuth in Peary Land, where he worked primarily with paleo-Eskimo archaeology for almost 40 years (See, for example, Knuth 1952, 1966/67 1968 & 1983).

The largest and most thoroughly investigated neo-Eskimo settlement lies in Dødemandsbugten on Clavering Ø – incidentally near the place where Clavering met the Northeast Greenlanders. Most of the 43 dwelling sites at the settlement were excavated by Helge Larsen in 1932, and later by Jørgen Meldgaard and Hans Georg Bandi in 1948. It is primarily the results from these investigations that provide the basis for our existing knowledge about the neo-Eskimo cultural development in Northeast Greenland:

There are signs of a Thule-culture immigration around the north of Greenland to Northeast Greenland during the twelfth century. Presumably, in the following centuries, these people settled in the rich hunting areas around the fjords of Northeast Greenland. Later, in the fifteenth century, there are signs yet again of immigration via a route north of Greenland (Holtved 1944 II: 118). These immigrants continued their Thule traditions as an independent group until the sixteenth century, when new immigrants, according to Helge Larsen possibly from the south, arrived and influenced the culture: thus the so-called Northeast Greenland mixed culture developed (Larsen 1934: 164). This mixed culture took on a more local character during the eighteenth century, with characteristic house types and implement forms. In the eighteenth century this culture's population was thriving well along large stretches of the 3000 km long coast, but during the nineteenth century the population disappeared for as yet unknown reasons. The only thing known with certainty is that in 1823, when Clavering landed on the island which now bears his name, isolated family groups were still living in Northeast Greenland.

Although the main developments in the neo-Eskimo culture have to a large extent been charted, there are still many unsolved problems concerning the various immigrant groups, the actual development within Northeast Greenland, and a number of questions still unanswered in connection with the dying out of the population and their possible contact with European whalers.

With regard to some of these problems, the Scoresby Sund area holds a key position. This fjord system, which is so centrally placed both geographically and in other respects, has a rich and varied supply of game and must always have been attractive to a population of hunters. Hence it is probable that this area provided the framework for some of the development phases of the cultures. When publishing material from Knud Rasmussen Land, Helge Larsen pointed out even then that the continued archaeological exploration of Northeast Greenland should be concentrated in the Scoresby Sund area (Larsen 1938: 42). Later several researchers, among others P. V. Glob, have stressed the importance of initiating investigations in this locality (Glob 1946: 38).

Unfortunately the Scoresby Sund fjord system is still an almost unexplored area. Since Ryder and Amdrup's work around the turn of the century, archaeological research has been largely neglected in Scoresby Sund fjord until recent years. In particular the inner area of the fjord complex, archaeologically speaking, must be considered unexplored. When the Scoresby Sund colony was founded in 1924/25, Danish tradesmen were sent to build houses before the arrival of the settlers. One of these, Jens Kai Rasmussen, measured and charted a number of archaeological remains around Uunarteq (Kap Tobin) and Ittaajimmiit (Kap Hope) (Rasmussen 1924/25). In 1937 Helge Larsen undertook a small exca-

vation on Ruin Ø, from which no results were made public, and in 1962 the Irish geologist, James G. Cruikshank, mapped out a number of ruins in and around Kangersuttuaq (Sydkap).

In the summers from 1982 to 1986 we explored Jameson Land, Kangersaajua (Hurry Inlet), around Ittaajimmiit (Kap Hope) and Napparuutilikajik (Kap Swainson) and also Sulussugutikajik (Stewart Ø). These explorations, which were background research in connection with the preliminary surveys for oil on Jameson Land have, however, been largely concentrated in this area. At the same time, during our field work in Scoresby Sund in 1971/72 and 1975–80 and our later summer sojourns in the area we collected local information about, among other things, ruins and relics of the past (Sandell 1985; Sandell, field notes 1982–86). In the summer of 1986, KNK/Grønlands Landsmuseum in cooperation with Ilisimatusarfik/Grønlands Universitet finally began preliminary archaeological investigations at the Kangersuttuaq (Sydkap) (Møbjerg 1988).

On the basis of previously recorded sites, a pattern can be determined of the earlier settlements in Scoresby Sund. This picture is not necessarily complete, as all the areas in the fjord complex have not been thoroughly examined, nor have all the sites discovered dated from the same period. Nevertheless, we believe that it gives a rough indication of the neo-Eskimo settlements in the fjord system.

Winter settlements were concentrated around the mouth of the fjord, on Ittoritseq (Kap Stewart), around Ittaajimmiit (Kap Hope), on Uunarteq (Kap Tobin) and on Sulussugutikajik (Stewart Ø). Further down the fjord there were larger winter settlements around the Kangersuttuaq (Sydkap), Danmarks Ø and possibly at Renodden. In the other areas of the fjord, the winter settlements were more spread out. Here, there was possibly only occasional wintering in many places.

The summer settlements, on the whole, were considerably more spread out, but here also there were apparently places with larger concentrations of dwellings and some were occupied year after year, *e.g.* in the area around Kangersuttuaq (Sydkap), Napparuutilikajik (Kap Swainson) and around Danmarks Ø.

Recorded archaeological sites in the Scoresby Sund area

Kap Swainson. 70 Ø1–II–2 (c. 21°40′W, 70°26′N). 43 tent rings, 5 shelters, 34 meat depots, 3 whale depots. 6 stone walls, 2 graves, 1 fox trap, stone mosaics. (Scoresby 1823: 186; Rasmussen 1924/25; Glob 1946: 29).

Kap Swainson II (Napparuutilikajik). 70 Ø1–II–2. 36 tent rings, 12 meat depots, 5 whale depots. (Rasmussen 1924/25).

Kap Tobin (Uunarteq). 70 Ø1–II–3 (21°58′W, 70°25′N). 9 winter dwellings, 93 tent rings, 15 graves, 188 meat depots, 16 whale depots, 54 fox traps, 8 shelters, 6 kayak stands, stone mosaics. (Amdrup 1909: 315; Rasmussen 1924/25; Glob 1946: 29).

Kap Tobin-Store Sten (Uunarteq-Ujaajittutalaajik). 23 tent rings, 6 meat depots, 3 fox traps. (Rasmussen 1924/25).

Scoresbysund (Ittoqqortoormiit). 70 Ø1–II–15 (21°59′W, 70°29′N). 22 tent rings, 5 meat depots. (Rasmussen 1924/25; Sandell 1985b: 64).

Kap Hope-Scoresbysund (Ittaajimmiit-Ittoqqortoormiit). 19 tent rings, 6 meat depots, 2 fox traps. (Rasmussen 1924/25; Sandell 1984a).

Kap Hope (Ittaajimmiit). 70 Ø1–II–4 (22°21′W, 70°28′N). 24 winter dwellings, 27 graves, 11 tent rings, 66 meat depots, 36 fox traps, stone mosaics. (Scoresby 1823: 203; Rasmussen 1924/25; Glob 1946: 32; Sandell 1984a).

Ittaajik. 70 Ø1–II–7 (22°23′W, 70°29.5′N). 12 winter dwellings, 2 tent rings. (Geodætisk Institut map 70 Ø1; Sandell 1983a: 67).

Kap Stewart (Itoritseq). 70 Ø1–II–8 (22°37′W, 70°27′N). 12 winter dwellings, 7 graves, meat depots. (Scoresby 1923: 208; Ryder 1895: 285; Glob 1946: 32; Sandell 1984a).

Fame Ø (Immikkeertikajik). 70 Ø1–I–4 (22°31′W, 70°49′N). 8 winter dwellings and 1 grave, 1 tent ring, meat depots. (Nathorst 1900: 212; Glob 1946: 32; Sandell 1985c: 51).

Jameson Land. 70 Ø1–III–2 (23°27′W, 70°28′N). 2 tent rings, 1 stone mosaic. (Sandell 1982: 76).

Jameson Land (Flakkerhuk). 70 Ø1–III–1 (23°28′W, 70°28.5′N). 4 winter dwellings and 2 tent rings. (Ryder 1895: 289; Glob 1946: 32; Sandell 1982: 72).

Jameson Land. 70 Ø1–IV–6 (23°37′W, 70°30′N). 1 tent ring. (Sandell 1982: 72).

Jameson Land (Aappalaartukajik). 70 Ø1–IV–5 (23°41′W, 70°32′N). 7 winter dwellings and 5 tent rings. (Sandell 1982: 69).

Jameson Land. 70 Ø1–IV–3 (23°52′W, 70°06′N). 2 tent rings, meat depots. (Sandell 1982: 67).

Jameson Land. 70 Ø1–IV–2 (23°56′W, 70°37′N). 5 tent rings. (Sandell 1982: 66).

Jameson Land. 70 Ø1–IV–1 (24°09′W, 70°46′N). 3 winter dwellings, 3 meat depots, 1 fox trap. (Sandell 1982: 53, 1984a).

Jameson Land. 71 Ø2–II–14 (24°17′W, 71°02′N). 1 grave. (Sandell 1982: 52).

Jameson Land. 71 Ø2–II–13 (24°22′W, 71°06′N). 2 tent rings, 2 tent foundations. (Sandell 1982: 49).

Jameson Land. 71 Ø2–II–12 (24°29′W, 71°10′N). 7 winter dwellings, 8 tent rings, 1 fox trap. (Sandell 1982: 45).

Jameson Land. 71 Ø2–II–1 (24°34′W, 71°12′N). 4 winter dwellings, 2 tent rings, 1 fox trap. (Sandell 1982: 42).

Jameson Land. 71 Ø2–II–11 (24°36′W, 71°13′N). 2 tent rings, meat depots, fox traps. (Sandell 1982: 41).

Jameson Land. 71 Ø2–II–10 (24°35'W, 71°14'N). 4 tent rings. (Sandell 1982: 40).

Jameson Land (Ugleelv/Lollandselv). 70 Ø1–IV–7 (23°10'W, 70°55'N). 3 tent rings. (Sandell 1984a: 42).

Jameson Land (Pingel Dal/Passagen). 71 Ø1–III–1 (23°08'W, 71°23'N). 2 tent dwellings, double meat depot. (Sandell 1986c: 31).

Sydkap (Kuukajik). 71 Ø2–II–8 (25°00'W, 71°18'N). 8 winter dwellings and 1 grave, meat depots. (Kapel 1986).

Sydkap (Kangerssuttuaq). 71 Ø2–II–5, 7, 9, 19, 20, 21, 22 and 23 (25°06'W, 71°17'N). 36 winter dwellings, 86 tent rings, 31 graves, 85 meat depots, 14 fox traps. (Ryder 1895: 289; Glob 1946: 32; Kapel 1986).

Sydkap (Saakattaakajik). 71 Ø2–II–3, 15, 16, 17 and 24 (24°56'W, 71°18'N). 20 winter dwellings, 26 tent rings, 1 grave, 7 meat depots, 3 fox traps. (Ryder 1895: 286; Glob 1946: 32; Kapel 1986).

Ruin Ø (Immikkeertikajik). 71 Ø2–II–4, 25 and 26 (25°02'W, 71°17'N). 21 winter dwellings, 25 tent rings, graves, 36 meat depots, 5 fox traps. (Glob 1946: 32; Kapel 1986).

Immikkeertivaqqat. (24°55'W, 71°16'N). 4–6 tent rings. (Sandell 1984a: 45).

Nordbugt (west side). 71 Ø2–IV–2 (26°31'W, 71°35'N). 5 winter dwellings and 3 graves, tent rings, meat depots. (Ryder 1895: 290; Glob 1946: 32; Sandell 1985b: 99).

Nordbugt (east side). (26°24'W, 71°35'N). Tent rings, meat depots. (Ryder 1895: 290; Glob 1946: 32).

Stormpynt. (25°15'W, 71°27'N). Blinds, meat depots, and shelter walls. (Sandell 1983a: 81).

Vandskelssø (Frederiksdal). 71 Ø2–IV–5 (26°55'W, 71°51'N). Tent rings (tent foundations?). (Brønlund 1975, pers. comm.).

Eskimo Bugt (Nordvestfjord). 71 Ø2–IV–4 (27°12'W, 71°39'N). 6–8 winter dwellings, several graves, tent rings. (Sandell 1984a: 46).

Danmarks Ø. 70 Ø2–III–4 (26°16'W, 70°27'N). 13 winter dwellings, 5 graves, 1 tent ring, 1 fox trap, and meat depots. (Ryder 1895: 293; Glob 1946: 33).

Hekla Havn. 70 Ø2–III–3 (26°09'W, 70°26'N). 31 tent rings, meat depots and fox traps. (Ryder 1895: 295; Glob 1946: 33).

Renodden. 70 Ø3–II–4 (28°15'W, 70°29'N). 4 winter dwellings, 2 graves, 6 tent rings. (Ryder 1895: 290; Glob 1946: 32).

Harefjord. (c. 27°40'W, 71°05'N). Several winter dwellings and tent rings, 2 graves. (Vibe 1967: 159).

Rypefjord. (c. 27°30'W, 70°52'N). Several winter dwellings and tent rings, 1 grave. (Vibe 1967: 159; Sandell 1985b: 98).

Bjørneøerne. 71 Ø2–II–6 (25°20'W, 71°06'N). 1 winter dwelling and 1 grave. Several fox traps. (Sandell 1986c).

Gåsepynt. 70 Ø2–III–2 (26°18'W, 70°22'N). 4 winter dwellings, meat depots. (Ryder 1895: 292; Glob 1946: 33).

Gåsefjord II. 70 Ø2–III–1 (26°29'W, 70°19'N). Tent rings, meat depots. (Ryder 1895: 293; Glob 1946: 33).

Gåsefjord III. 70 Ø3–II–1 (28°25'W, 70°05'N). Tent rings and meat depots. (Ryder 1895: 293; Glob 1946: 33).

Gåsefjord IV. (c. 28°00'W, 70°10'N). 5–6 winter dwellings. (Sandell 1985b: 98).

Milne Land I. (c. 28°05'W, 70°25'N). Several winter dwellings. (Sandell 1985b: 100).

Milne Land II. 70 Ø3–II–3 (28°03'W, 70°27'N). Tent rings, fox traps. (Ryder 1895: 292; Glob 1946: 32).

Hjørnedal. (28°15'W, 70°20'N). Tent rings. (Sandell 1983a: 82).

Moræne Pynt. 70 Ø3–II–2 (27°49'W, 70°26'N). Tent rings, meat depots. (Ryder 1895: 292; Glob 1946: 32).

Føn Fjord. 70 Ø2–III–5 (27°22'W, 70°28'N). Tent rings, meat depots. (Ryder 1895: 292; Glob 1946: 32).

Dunholm. 69 Ø1–0–9 (22°37'W, 69°54'N). 7 winter dwellings, 2 tent rings. (Amdrup 1909: 313; Glob 1946: 33).

Stewart Ø (Sulussugutikajik). 69 Ø1–0–8 (22°58'W, 69°57'N). 8 winter dwellings. (Amdrup 1909: 314; Koch 1902: 279; Glob 1946: 33; Sølberg 1980: 133; Sandell 1985b: 66).

Stewart Ø (Ittikoortaajik). 69 Ø1–0–10 (22°52'W, 69°56'N). 23 winter dwellings and 4 graves, meat depots. (Amdrup 1909: 314; Glob 1946: 33; Sølberg 1980: 131; Sandell 1985b: 67).

Stewart Ø. 69 Ø1–0–11 (22°58'W, 69°57'N). 1 winter dwelling, 8 tent rings, 1 grave and 1 fox trap. (Sandell 1985b: 77).

Manby Halvø (Pukitsukajik). (c. 23°15'W, 69°45'N). 1 winter dwelling. (Sandell 1985b: 97).

Rømer Fjord (south). (c. 23°46'W, 69°35'N). 2 winter dwellings. (Sandell 1985b: 97).

Strathclyde Point. 69 Ø1–0–3 (23°36'W, 69°43'N). 3 winter dwellings, 2 meat depots. (Andersen 1981).

Knighton Bugt. 69 Ø1–0–6 (24°38'W, 69°19'N). 3 winter dwellings, tent rings and fox traps. (Andersen 1981).

Turner Ø. 69 Ø1–0–2 (23°35'W, 69°42'N). 4 tent rings. (Andersen 1981).

Høst Havn (Tuluttaajik). (c. 24°30'W, 69°20'N). 4 winter dwellings. (Sandell 1985b: 97).

Lillefjord (Kangersuatsiakajik). 70 Ø1–I–1 (21°44'W, 70°36'N). Several winter dwellings. (Glob 1946: 29).

Rathbone Ø (Immikkeertikajik). 70 Ø1–I–2 (21°30'W, 70°41'N). Several winter dwellings. (Pedersen 1930: 424, 347; Glob 1946: 29; Danielsen, pers. comm.).

Kap Høegh (Ukaleqarteq). 70 Ø1–I–3 (21°35'W, 70°43'N). Several winter dwellings etc. (Kunak, pers. comm.).

Reynolds Ø. 71 Ø1–I–1 (21°44'W, 71°31'N). Winter dwellings. (Geodætisk Institut map 71 Ø1).

Murray Ø. 71 Ø1–I– 2 (21°40'W, 71°32'N). Several winter dwellings. (Glob 1946: 29).

Kap Wardlaw. (21°55'W, 71°44'N). Several winter dwellings. (Sandell 1983a: 83).

Table 1. Registered sites in the Scoresby Sund Area.

Place	House	Grave	Tent ring	Meat depot	Fox trap
Kap Swainson I		2	43	34 + 3	1
Kap Swainson II			36	12 + 5	
Kap Tobin	9	15	93	188 + 16	54
K.T.-Store Sten			23	6	3
Scoresbysund			22	5	
Scoresbysund-Kap Hope			19	6	2
Kap Hope	24	27	11	66	36
Ittaajik	12		2		
Kap Stewart	12	7		+	
Fame Ø	8	1	1	+	
Jameson Land 1			2	+	
Jameson Land 2	4		2		
Jameson Land 3			1		
Jameson Land 4	7		5		
Jameson Land 5			2	+	
Jameson Land 6			5		
Jameson Land 7	3			3	1
Jameson Land 8		1			
Jameson Land 9			4		
Jameson Land 10	7		8		1
Jameson Land 11			2	+	1
Jameson Land 12	4		2		1
Jameson Land 13			4		
Jameson Land 14			3		
Jameson Land 15			2	2	
Syd Kap 1	8		1	+	
Syd Kap 2	36	31	86	85	14
Syd Kap 3	20	1	26	7	3
Ruin Ø 1	21		25	36	5
Ruin Ø 2			4–6		
Nordbugt	5	3	+	+	
Stormpynt				+	
Vandskelsø			+		
Eskimobugt	6–8	+	+		
Danmarks Ø	13	5	1	+	+
Hekla Havn			31	+	+
Renodden	4	2	8		
Harefjord	+	2	+		
Rypefjord	+	1	+		
Bjørneøerne	1	1			+
Gåsepynt	4		+	+	
Gåsefjord 1			+	+	
Gåsefjord 2			+	+	
Gåsefjord 3	5–6				
Hjørnedal			+		
Mørænepynt			+	+	
Milne Land	+		+		+
Føn Fjord	+		+	+	
Dunholm	7		2		
Stewart Ø 1	8				
Stewart Ø 2	1	1	8		1
Stewart Ø 3	23	4		+	+
Manby Halvø	1				
Rømer Fjord	2				
Strathclyde Pynt	3			2	
Knighton Bugt	3		+		+
Høst Havn	4				
Turner Ø			4		
Lillefjord	+				
Rathbone Ø	+				
Kap Høegh	+	+			
Reynolds Ø	+				
Kap Wardlaw	+				
Trekanten	+				
Murray Ø	+				
Kap Biot 1	5				
Kap Biot 2	2				

Trekanten. (21°45'W, 71°16'N). Several winter dwellings. (Sandell 1983a: 80).

Kap Biot I. 71 Ø1–I–4 (22°32'W, 71°56'N). 5 winter dwellings. (Richter 1934: 96; Glob 1946: 29).

Kap Biot II. 71 Ø1–I–5. (22°32'W, 71°53'N). 2 winter dwellings. (Glob 1946: 29).

Site 70Ø1–IV–1

When in the summer of 1982 KNK/Grønlands Landsmuseum started the first of a series of continuous archaeological reconnaisances in the area, as a consequence of the oil surveys on Jameson Land, one of the first results was the discovery during the first summer of an unknown ruin complex, 70 Ø1–IV–1.

This ruin complex, which lies half way between Gurreholm and Ittoritseq (Kap Stewart) on the south coast of Jameson Land, consists of three winter dwellings. The complex was unknown, even locally, until while reconnoitring for archaeological finds along the south and west coasts of Jameson Land in the summer of 1982, we found and recorded the sites:

"Most of the coastal waters from Tyskit Nunaat southwards to half-way between Lollandselv and Jyllandselv are extremely shallov. Hence the potential for sealing in this area is very poor. However, in the summer months there are enormous flights of geese (pink-footed goose and barnacle goose). About 7 km south of Falsterselv the water depth near the coast increases again and there is no difficulty getting to and from the land.

Here we found, on the south side of a little river, on a large stone at the river mouth, a very dilapidated fox trap (stone chamber trap) which indicated the presence of winter dwellings in the vicinity. About 400 metres further south the ruin complex 70 Ø1–IV–1 was found. It consists of three winter dwellings and three permanent meat depots (see Fig. 8).

The ruins of the dwellings lie on a small, fertile hill which slopes gradually towards the shore, and is flanked to the north and south by two small streams. The growth on the hill consists of willow and grass with a little crowberry and appears somewhat more lush than in the area generally. The shore is a sandy beach as in so many places on the south coast of Jameson Land.

House ruin A. The northernmost of the sites, ruin A,

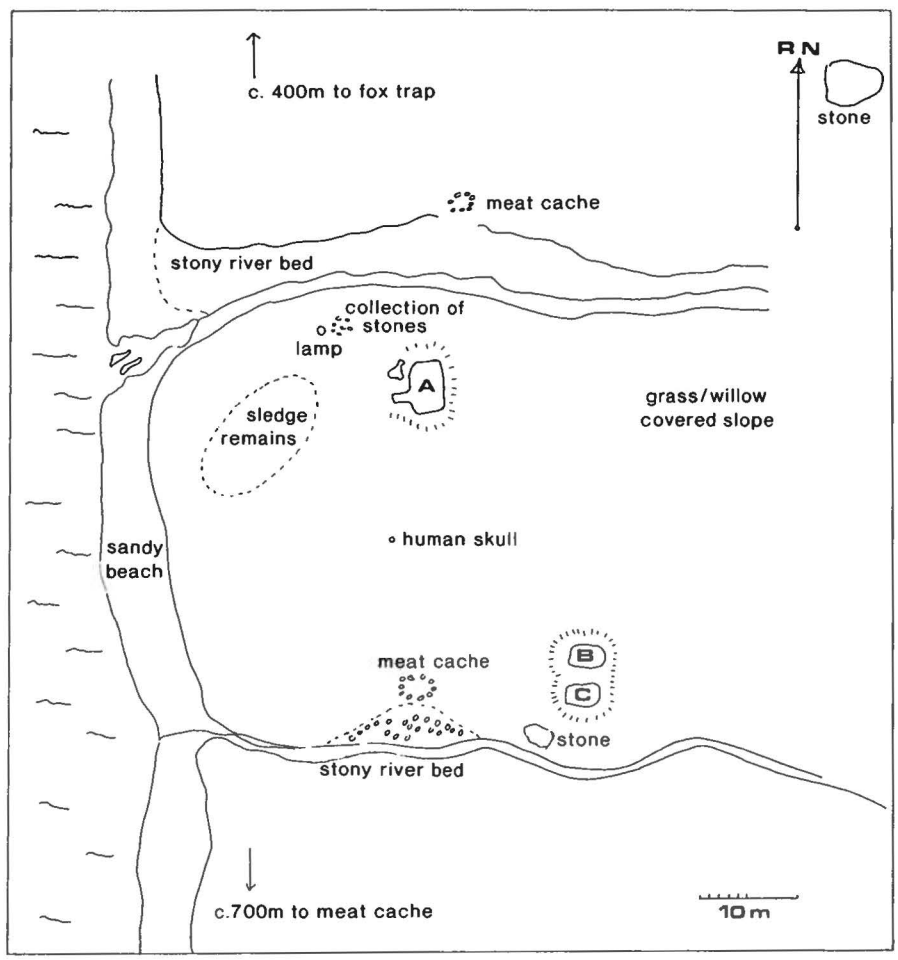


Fig. 8. Plan of the locality 70Ø1–IV–1.

lies about 35 m from the sea and is 4.6 m above sea level. It stands on its own whereas houses B and C stand together on the southern part of the hill in a higher position and a little further away from the shore (47 m from the sea and 6.75 m above sea level).

The site is very well defined and easy to see from the sea, partly because of there is fresher and more fertile vegetation than in the immediate area and partly because it rises out of the surrounding landscape. Just outside the ruin, which seems very well preserved, lies the shoulder blade of a large whale. Its white colour also helps to make the site visible from a distance.

The inside of the ruin is filled with the partly collapsed roof structure which consists of wood, whale ribs, stone and sod. Caribou antlers were apparently also used since they are found both in the house itself and in the ceiling of the entrance passage to the house. The first part of the entrance passage, which is short and deep, has collapsed and is filled with stones, while the last metre before the house is still standing.

Two of the roof beams have been moved from their original position inside the house for use as levers. One now lies by the entrance, the other by the whale shoulder blade which has apparently been moved and turned over. (There is moss on the back of it). Since the inside of the house is full of rubble from the roof, it is not possible to give a precise outline of the inside of the ruin.

No remains of a midden were found in front of house A, but in the snow-filled riverbed north of the ruin many remnants of bones from seal and caribou, whalebone fragments, and antler tines from caribou were found, along with some pieces of wood bearing signs of having been worked on (drilled holes, cutting marks).

Seven metres northwest of the entrance there is a collection of stones, presumably once a fireplace. A circular sandstone lamp was found here (diameter 35 cm). In a wide area stretching from the fireplace southwest down to the shore and partly covered by vegetation, many pieces wooden artifacts were found. Among the identifiable pieces there were several parts of a sledge (six fragments of crossbars, pieces of runners and two sledge shoes made from bone), three pieces of wood from a harpoon or a spear shaft, and a 113 cm long piece of a gunwale from a kayak, still with the remains of a lashing made from sinew thread. (Another piece of a gunwale was later found inland, 500 m east of the ruins, on a hill).

A slate spearhead was found on the roof by the southern wall near the entrance. When a 30 by 30 cm area near the centre of the house was uncovered, five decorated bone discs, 206 bone beads (various animal figures, tooth beads etc.), one stiletto (meat stick or skewer) and two bone mountings were found. The objects were all lying on a flat stone directly under a layer of sod from the roof and between some bones (two half pieces of lower jaws from ringed seals, one lower jaw of a dog, a shoulder blade from a ringed seal and a seal rib). Under a stone inside the house, close to the southern wall, lay an almost intact sandstone pot. (It was left *in situ* due to lack of space).

House ruins B & C stand together and lie slightly higher than A (6.75 m above sea level and 47 m from the sea), close to the southern stream bordering the area. These two ruins are less well preserved than A and have collapsed more. They appear as depressions in the ground, which are deepest near the entrance. The vegetation is mainly grass of the same colour and growth as the surrounding area. The sites are not visible from the sea.

In B there are a few very weathered whalebones and in the remains of the entrance passage there are caribou antlers. There are several stones inside the ruin. In C there are also several stones inside the ruin, whereas there are only few stones in the wall apart from the front wall. The entrance passage has totally collapsed.

B and C presumably date from the same time, and they seem older than A. The heavy weathering of the bones, the vegetation similar to the surrounding area, the absence of preserved wood at the surface and the diffuse appearance of the houses all indicate this.

Ten metres west of B and C a large and well-built meat cache (1) lies on the bank of the stream. It is rectangular and measures 270 × 160 cm. In and around this meat cache, as well as between the stones on the bank of the stream, many bone fragments from caribou were found (part of the skull of a young animal, ribs, shoulder blades and leg bones) as well as a few whalebones and two sledge shoes. On the other side of the stream north of A there is also a meat cache (3), and about 700 m south of the ruins is yet another meat cache (2).

There were no traces of graves on the site, but the top of a human cranium was found about 25 metres south of ruin A.

If we compare the pieces of sledge, kayak and tools found in front of ruin A with the condition of the ruin (the collapsed roof), with the many bone beads and the pot found in the house, and the cranium top which was found on open land, it is reasonable to assume that this is what is known as a "death-house". In other words it was a house in which the occupants died and where their remains as well as their tools and belongings are still in the house. Apart from the condition of the ruin, its atypical shape and size also indicate that it is relatively recent.

As well as being the largest of the measured ruins, it also was the only one having the largest extension right-angled to the entrance passage. House ruin A measures about 5 × 3 m. In comparison B measures about 3 × 3 m and C about 2 × 3 m. All the measurements are approximate measurements, as an exact measurement will only be possible after excavation" (Sandell 1982: 53–57).

The locality and especially the conditions around ruin A differed markedly from the other recordings taken during the summer. In addition to the fact that we apparently had here quite a recent untouched house ruin with the roof construction partially intact, whose inhabitants had died in the house, the position of the ruin was also unusual. The house had apparently stood on its own, since houses B and C as far as can be judged were much older, and since it was over 30 km in both directions to the nearest ruins of any other dwellings, it was also completely isolated.

In the course of the winter, KNK took the decision to include an excavation of the site in the following summer's field work. Everything indicated that a more thorough examination of the site would result in a large, complete find from a limited period, which would increase knowledge of cultural development in Scoresby Sund. As mentioned earlier a systematic investigation of the area had not been made during the last 50 years, so an excavation made with our current knowledge and improved techniques would have been beneficial on those grounds alone.

The decision was also supported by the fact that an expected increase in traffic because of the oil surveys could threaten the so far untouched ruin, and by the great interest in the subject which was evident locally.

The Excavation

After travelling from Denmark via Søndre Strømfjord to Mestersvig, we arrived on 11 July 1983 and were taken by helicopter to the house ruin which became known as the "House of Beads". In the following three weeks we excavated and investigated two of the ruins of the site, until we were collected again by helicopter on 30 July.

The terrain in the southern part of Jameson Land facing the Scoresby Sund Fjord is far from typical of a Greenland landscape. It is a vast lowland – without rocks or characteristic hills – which rises to the north into an undulating landscape. Ryder gives quite an accurate and descriptive picture when he compares this part of Jameson Land to the west coast of Denmark (Jutland) (Ryder 1895: 38). The area where site 70 Ø1–IV–1 is located is typical for this part of Jameson Land. It consists of low hills covered with heather and

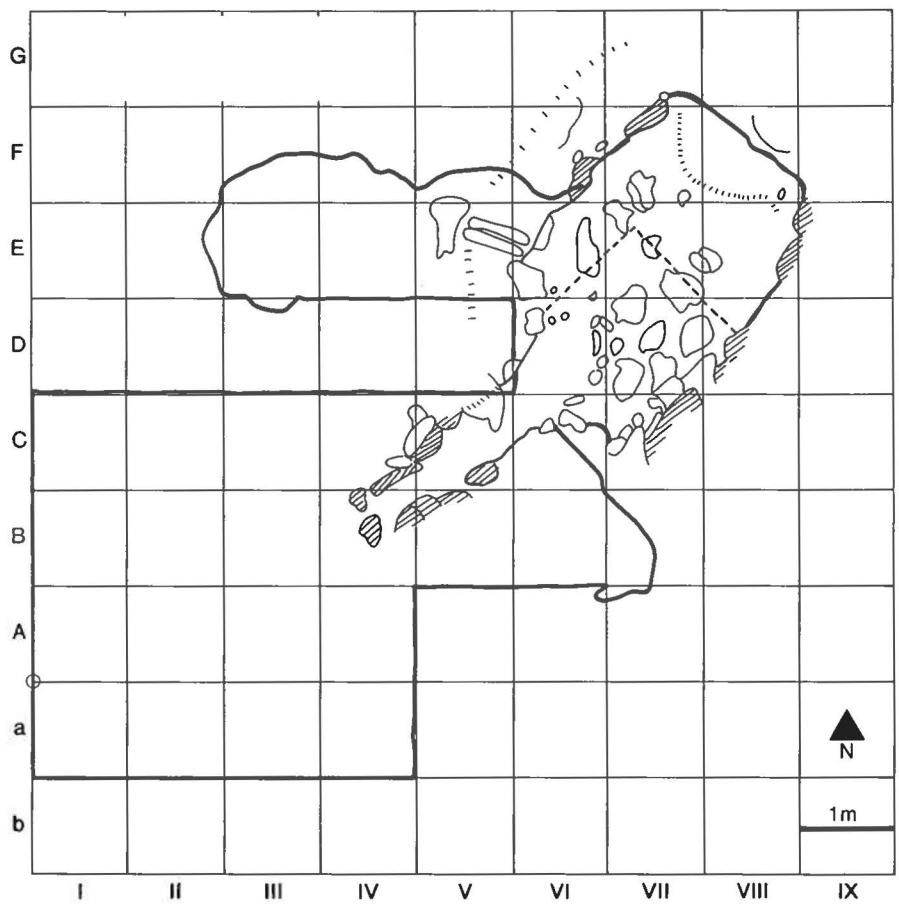


Fig. 9. Plan of the excavated sections.

interspersed with barren, wind-eroded gravel fields. The area is drained by many small streams winding through the terrain and forming ponds and marshland. At the mouth of a stream, where it cuts through the low banks of the coast, a delta is often formed with large areas of shallow waters.

The excavation started with the uncovering of the area in front of house A, and this area was eventually extended to include all that are shown in Fig. 9, a total of 25 sq. m. The actual excavation in front of the house was carried out in sections: each square metre section was uncovered horizontally, and when clearing was complete it was drawn and photographed.

In the sections in front of the house only a single, undisturbed cultural stratum was found, so the excavation here was quite straight forward. In the entrance passage and in the house itself the conditions were somewhat more complicated due to solifluxion and because the roof structure had collapsed into the ruin. The excavation was carried out by following and clearing each individual stratum throughout the house. After drawing and photographing a stratum it was removed and the process continued. After the final clearing of the ruin, the floor stones were removed and the stratum under the floor was examined. In addition vertical sections were cut through the walls of the house. Random excavations were also made around the ruin and at different places in the neighbourhood outside the excavation area proper.

Nearly the same procedure was followed for house B, except that the site was excavated as a whole, and no excavation was made in front of the house. Spot checks had indicated that there was no reason for systematic excavation here.

In addition to the finds of objects and bones, samples from both excavation sites were collected for C-14 dating and pollen analysis.

The House

Before the excavation house A looked like an almost rectangular, low bank surrounding a depression which was partly filled with stones, pieces of wood, whalebones and a few caribou antlers – all more or less covered with vegetation. The site measured about 5 × 3 m and apparently had its largest extent in the north-south direction, perpendicular to the entrance passage, which was about three metres long and entirely dug into the ground. It had collapsed and was full of large stones. The entrance passage was best preserved in the section closest to the house. The bank which surrounded the ruin was highest and widest at the south end of the site,

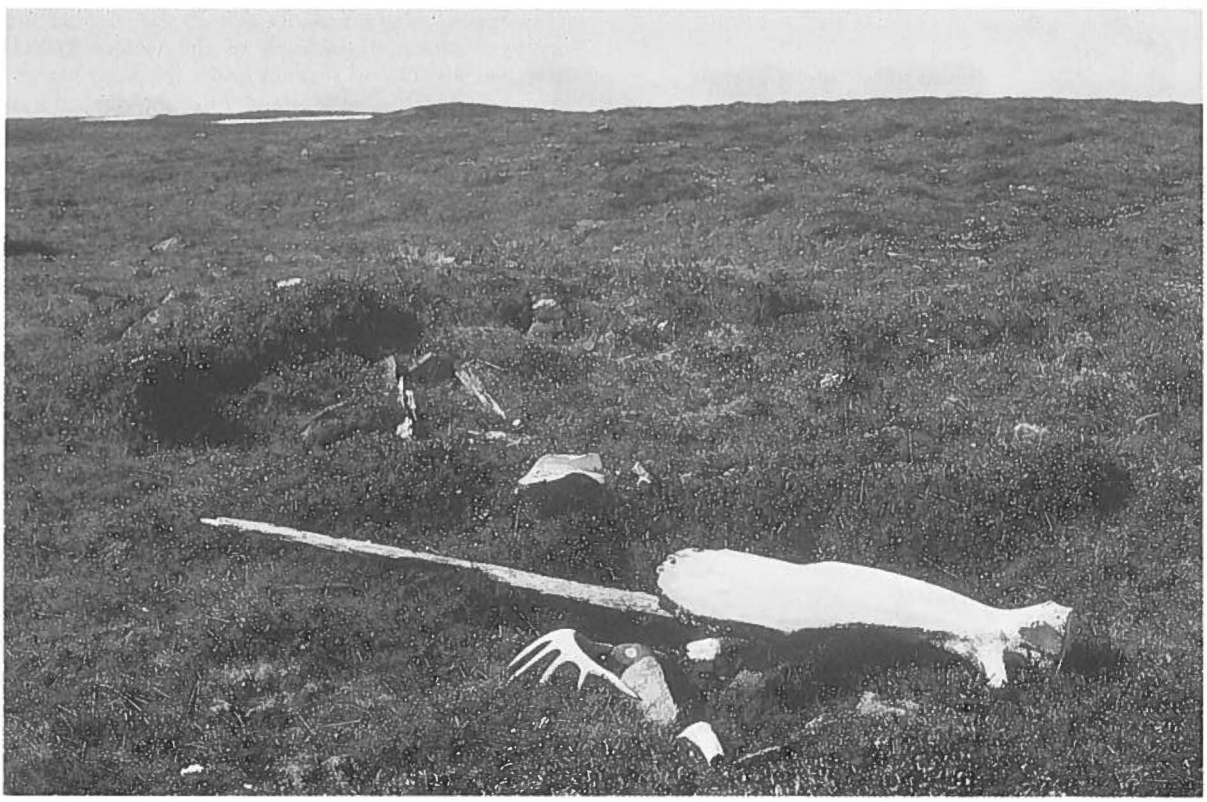
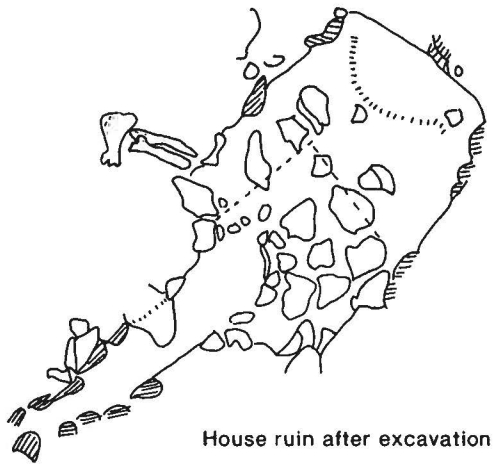


Fig. 10. House ruin before excavation. July 1982.

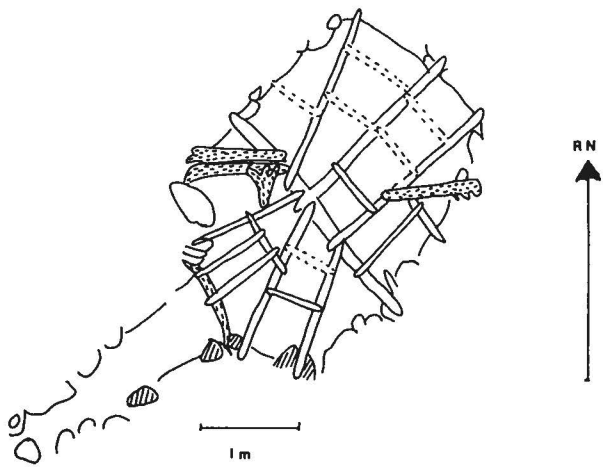
where several whalebones stuck up out of the sod by the end wall.

About two metres west of the ruin a shoulder blade from a Greenland whale was lying. It had apparently been moved from its original position as growth was found on the underside of the bone, and a piece of timber had been pushed under the shoulder blade as a lever. By the collapsed entrance passage there were indications that an attempt had been made to move some of the stones – here also a piece of timber had been wedged in between the stones. Apart from this the ruin appeared undisturbed and untouched.

The vegetation on the site consisted of willow, mostly concentrated on the banks surrounding the house. Inside the house there was willow as well as moss and tufts of grass. In front of the house, towards the sea, the vegetation was characterized by scattered willow, moss, small areas with Cassiope tetragona (Lapland cassiope) and some saxifraga. The vegetation behind the house and further inland was dominated more by Cassiope tetragona and dryas.



House ruin after excavation



House ruin with reconstructed roof structure

Fig. 11. Plan of the excavated dwelling.

After the excavation it turned out that the house was much smaller than originally assumed and that its largest extent as a continuation of the entrance passage and not perpendicular to it as had been presumed. This misinterpretation was due to the fact that before the excavation took place a depot of bones and caribou antlers, lying against the external wall on the south side of the house, had been interpreted as being part of the house itself. Fig. 11 shows a plan of the excavated house A.

After the excavation the house turned out to be almost rectangular, with an addition in the south corner. It measured 250 cm along the northwestern wall and 325 cm along the southeastern wall (this difference in length between the two long walls was because of the addition just mentioned). It was 225 cm along the front wall and 175 cm along the back wall. However, we cannot exclude the fact that the back wall may originally have been a little longer, as the northeastern corner of the house could have slipped inwards due to solifluxion.

The floor was paved with flat stones in the front part of the house, whereas at the rear in the area of the sleeping platform it consisted of the surface gravel. There was no cultural stratum under the floor stones, but under one of the stones a core of a flint-like material was found. The floor of the house was not horizontal but sloped evenly towards the entrance passage. It has not been possible to determine whether this is due to solifluxion or whether it was intended. Helge Larsen reports from Dødemandsbugten that all floors in houses there are horizontal (Larsen 1934: 52), whereas Ryder specifically mentions houses with sloping floors at Gåsepynt in the Scoresby Sund area (Ryder 1895: 292).

Along the first part of the northwestern wall there was a stone-built side platform raised off the floor by stones placed edgeways. However, at the time of excavation the supporting stones had overturned. The side platform was 50 cm wide and had been about 20 cm from the floor. In the extension by the southeast wall the lamp shelf was also built from flat stones and raised above the floor in the same vay. This shelf was 30–40 cm wide and filled the entire extension. One lamp and a pot stood on the lamp shelf. Beneath this shelf and in front of it there were quite a lot of bone remains and charred pieces of wood, and this waste layer was cemented together by blubber.

The rear part of the house was occupied by the sleeping platform. Its front part was originally made of wood and was raised about 20 cm above the floor, supported on stones. Remains of wood from the edge of the plat-

form were found during the excavation lying across the length of the house, and lying under the wood were the overturned platform stones. The platform was 175 cm deep and its rear edge directly on the ground, as this part of the floor formed a plateau about 5 cm above the surrounding floor. On the platform, and especially at the back of it, lay the remains of a layer of Lapland cassiope. A human lower jaw was lying on the south-eastern section of the platform and a short distance away there was also a piece of upper jaw with four teeth. Around these bone remains there were some small bone and slate beads and a few seal and dog bones.

Under the wooden planks of the platform there was a 5 cm thick layer of waste which contained the remains of bones, fragments of wood (carving chips), and quite a lot of other objects, most of which were various bone beads.

The walls of the house were made of stones and turf. There were relatively few stones in the walls which were generally quite low. The lowest was the back wall where there was in fact only one row of stones in the 10–20 cm high bank of turf. The southern front wall was the highest and in places reached a height of more than 75 cm.

The entrance passage leading from the house in a southwesterly direction was 300 cm long and continued a further 75 cm into the house. It was dug almost completely into the ground and its floor below the level of the floor in the house (35 cm lower at the entrance). The walls were built from large stones, some of which had fallen into the passage. The two very large lintel stones nearest to the house blocked part of the passage during the excavation. It was not possible to move them, but we succeeded in digging under them. Beside the entrance to the house a whale rib was lying across the entrance passage.

Flat stones had been placed as vertical tiling in the entrance from the passage to the house. In this innermost part of the entrance passage there was a concentration of bones and pieces of wood, as well as a fair number of other items – everything mixed with a large quantity of lemming droppings. Bones, wood and other items had without doubt fallen into the passage from their original position as a result of solifluxion or leaching. A few of the items found here include a small, elegant lance foreshaft with an inserted slate blade, a small lamp, possibly the mouthpiece of a drill, a hand drill with an iron tip and a very beautiful cross strap tightener from a kayak carved as a bear's head.

In the entrance passage itself, which was 40–50 cm deep, the floor was without stone paving. (The original depth of the passage was presumably greater since, as mentioned, almost all the wall stones had more or less fallen into the passage). Under a relatively thin layer (3–4 cm) of waste containing a few bones and some artifacts, the floor consisted of coarse gravel.

Jammed under a fallen lintel stone at the right-hand side of the inner third of the entrance passage, there was a small wooden box containing bird bones, bone and slate beads, pieces of iron, fragments of slate blades and some flint chippings. Close to it there was a small wooden spoon containing 27 needle-shaped items of bone.

Outside the house, about 2 m to the northwest, a layer of peat was found under the vegetation, and below that the remains of a stone pavement with flat stones which rested on the gravel. We have made the preliminary assumption that this "floor" is the bottom of a meat cache belonging to house A. In the 10 cm thick cultural stratum covering the stones there were some bones and remnants of charred wood.

As mentioned earlier, a large stock of whalebones, caribou antlers and wood was lying against the outer part of the front wall at its southern end. This had no doubt been collected for later use in the production of tools. A couple of bone sledge shoes were also found, as well as a paddle where the wood was unfortunately in such bad condition that it was impossible to carry it back.

When the excavation had finished the house investigated (Fig. 11) appeared as a winter dwelling, partly dug down into the ground and rectangular to slightly trapezoid in shape, with a small extension at the south front of the house. The longitudinal axis of the house ran from southwest to northeast, with the exit facing the sea. The ground plan of the house measured 250–325 cm by 175–225 cm. The walls, which were made from stones and turf, were highest at the front of the house, presumably as a result of the sloping terrain. The walls had collapsed to a large extent and furthermore they appeared to have been not particularly well built, so it is not possible to determine how high they have been originally.

Regarding the roof structure, it was possible to get a relatively precise impression based on the collapsed remains which were lying in the ruin and were removed during excavation. Across the house, positioned in front of the platform, there would have been a heavy purlin made from driftwood. From this to the front and back walls there would be a number of rafters made of smaller pieces of wood and whalebones. The rafters would be connected by short laths (wood and caribou antlers). It was not possible to determine whether the whale shoulder blade which was lying next to the ruin had originally covered part of the roof or was part of the entrance passage.

There was presumably a layer of skin, covering the roof framework, but no remnants of skin were found to support this hypothesis. At the top, the roof would have been covered with a layer of turf, with stones to keep the turf in place. Remains of both turf and stones were found in the house on top of the collapsed roof. It was not possible to determine whether there was originally some sort of window in the front wall above the entrance passage. (Cf. Søren Richter: "Eskimo huts on

northeast Greenland do not seem to have had windows". (Richter 1934: 100)).

On the basis of what remained of the roof structure we feel that the roof can be reconstructed with reasonable accuracy, as shown in Fig. 11.

The 3 m long, straight entrance passage extended from the longitudinal axis of the house towards the southwest. It was below ground level and its floor was lower than the level of the floor in the house. There were many large stones along the sides of the passage and it had presumably been covered by stones for most of its length. Inside the house a 175 cm vide platform occupied the innermost part of the house. Its front part was made from wood and was raised from the floor by stones. The platform was covered with Cassiope tetragona. Along both long walls side benches were placed between the platform and the front wall. On the bench to the right of the entrance in the southern part of the house there was a place for a lamp. Outside the house, close to the south end of the front wall, there was a stockpile of wood, whalebones and caribou antlers for tool making. On the other side of the entrance passage, a couple of metres northwest of the wall of the house, there may have been a meat cache.

The shape of the house ruin and its structure and size, with the rectangular, slightly trapezoidal groundplan, the extension of the front wall, the built-up side benches and the completely buried entrance passage, all lead us to allocate the house to the group designated by Helge Larsen as type 3 (Larsen 1934: 52). Consequently the house should date from the second phase of northeast Greenland's mixed culture.

Chronologically the second phase of the northeast Greenland's mixed culture is quite recent. Helge Larsen assumes that this phase developed in Scoresby Sund in the early eighteenth century and then spread northwards. The period lasted until the population of northeast Greenland became extinct, presumably in the middle of the nineteenth century (Larsen 1934: 168).

Houses of a similar type (type 3) are already known to have existed in most of northeast Greenland. What is more unusual, although not unknown in northeast Greenland, was the fact that the occupants died on the premises.

As mentioned earlier we suspected even before the excavation that this was a death-house. During the excavation this assumption was confirmed. The discovery of human bones as well as the quantity and nature of the objects found inside and outside the ruin could hardly be interpreted in any other way, taking into consideration the condition of the house with its collapsed roof.

The discovery of human bones – and in particular mandibles – in winter dwellings is not unknown in northeast Greenland (Ryder 1895: 294; Thostrup 1911: 278; Rasmussen 1924/25; Bartlett & Bird 1934: 406; Larsen 1934: 19; Richter 1934: 34, 42; Glob 1935: 11). Human bones were also found in one of the house ruins investigated during the excavation by Grønlands Landsmuseum and Ilisimatusarfik at Kangersuttuaq (Sydkap) in the summer of 1986. (Kapel, pers. comm.).

In this context Glob points out in addition that particularly in house ruins where lower jaws are found there are also often many objects of an ornamental nature. However, in his opinion he cannot conclude that the occupants died in the houses but suggests the possibility of re-burials (Glob 1935: 83). As a strange coincidence it should also be mentioned that in a house ruin which in many ways resembles the "House of Beads" (Gauss 4, House III), Richter actually found a lower jaw and the fragment of an upper jaw lying on the platform (Richter 1934: 103).

The Artifacts

Although we had expected the excavation to produce a large quantity of finds, the amount contained in the house ruin exceeded anything we had imagined or hoped for.

In and around house A (the House of Beads) 650 artifacts (KNK 566 × 1–188, 190–204) were found during the excavation. Some were of course fragments but the great majority were full specimens and generally very well preserved. To these should be added the 222 artifacts found during the reconnaissance and brought home the previous year, so that the total number of finds came to 872 items. The other house excavated on the site, house ruin B, only yielded two artifacts (KNK 566 × 189 & 205).

Not only was the quantity of finds unexpected, but also the composition and distribution of the finds in various categories, *e.g.* the large number of harpoon heads, slate blades and beads, was surprising. We will examine this point more later on. A list of the finds with museum numbers and their location is given in appendix B.

The distribution of the finds is described roughly below. (The exact location of each artifact is given in the artifact list and in the artifact descriptions, see also Fig. 9).

In the area excavated in front of the house almost only large artifacts and hunting gear were found, *e.g.* snow knives, bows and arrows, parts from harpoons and spears, an adze, knives etc., all typical men's tools. It was also in front of the house that parts of a sledge and one fragment from a kayak were found.

In the house itself, particularly concentrated around the main sleeping platform nearest to the lamp, there were objects of an ornamental nature (beads etc.) and household utensils. In the area around the side bench the artifacts found were mostly of a "masculine" nature (harpoon heads, whetstone and drill).

In the innermost part of the entrance passage, inside the house, the finds were of a more mixed nature. They

included hunting gear, tools, beads and toys. These objects had presumably fallen down or been washed away from their original place on the platform or on the floor of the house.

All the finds from the House of Beads, in our opinion, form a complete and contemporary collection of artifacts originating from a single family group. The artifacts are furthermore so uniform with respect to shape, technique, polishing and drilling angles etc. that they must have been produced by the same person or persons.

Description of the finds

Weapons and gear for hunting at sea

Harpoon heads

Fifteen harpoon heads and two miniature toy harpoon heads were found during the excavation. Eleven harpoon heads were found outside the house itself (Fig. 12) and it can be assumed from the position of the finds that the hunter in the house kept his tools either on the roof of the entrance passage or against the wall to the right of the passage. In the years since the house was inhabited the objects have fallen or been blown down and were later covered with vegetation.

The three harpoon heads in the house in square E/VII were lying by the side bench where the hunter sat and worked or kept his personal gear.

The most important hunting gear which earlier Eskimos used to catch sea mammals were various harpoons: the knob and winged harpoon with a loose foreshaft was used for hunting from kayaks or from the ice edge. An ice hunting harpoon with a fixed foreshaft was used for breathing hole hunting. Heavier harpoons were probably used for catching narwhals and possibly also larger whales.

Harpoon heads of various sizes and types were used for the different harpoons. The following types of harpoon heads were found:

1. Flat form without barbs and without an inserted blade.
2. Flat form with barbs, but without an inserted blade.

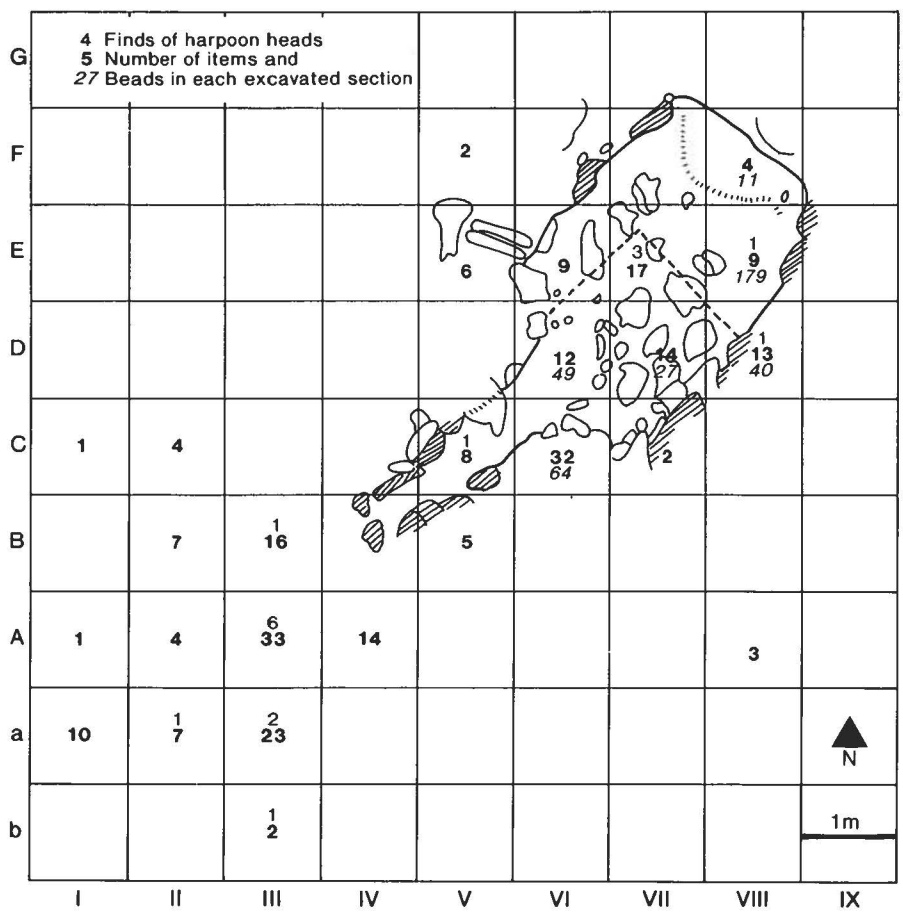


Fig. 12. Plan showing distribution of finds in the excavation.

3. Flat form without barbs, but with an inserted blade and two spurs.
4. Flat form without barbs, but with an inserted blade and one spur.

"Flat form" means that the tool is widest parallel to the hole where the line is attached, whereas "narrow form" is widest perpendicular to this hole. The term "barb" refers to barbs on the harpoon body itself, whereas "spurs" are barbs at the end of the harpoon head around the shaft cavity.

All the harpoon heads found were of the flat form in different variations and their form depended on which type of hunting or catch they were used for. Søren

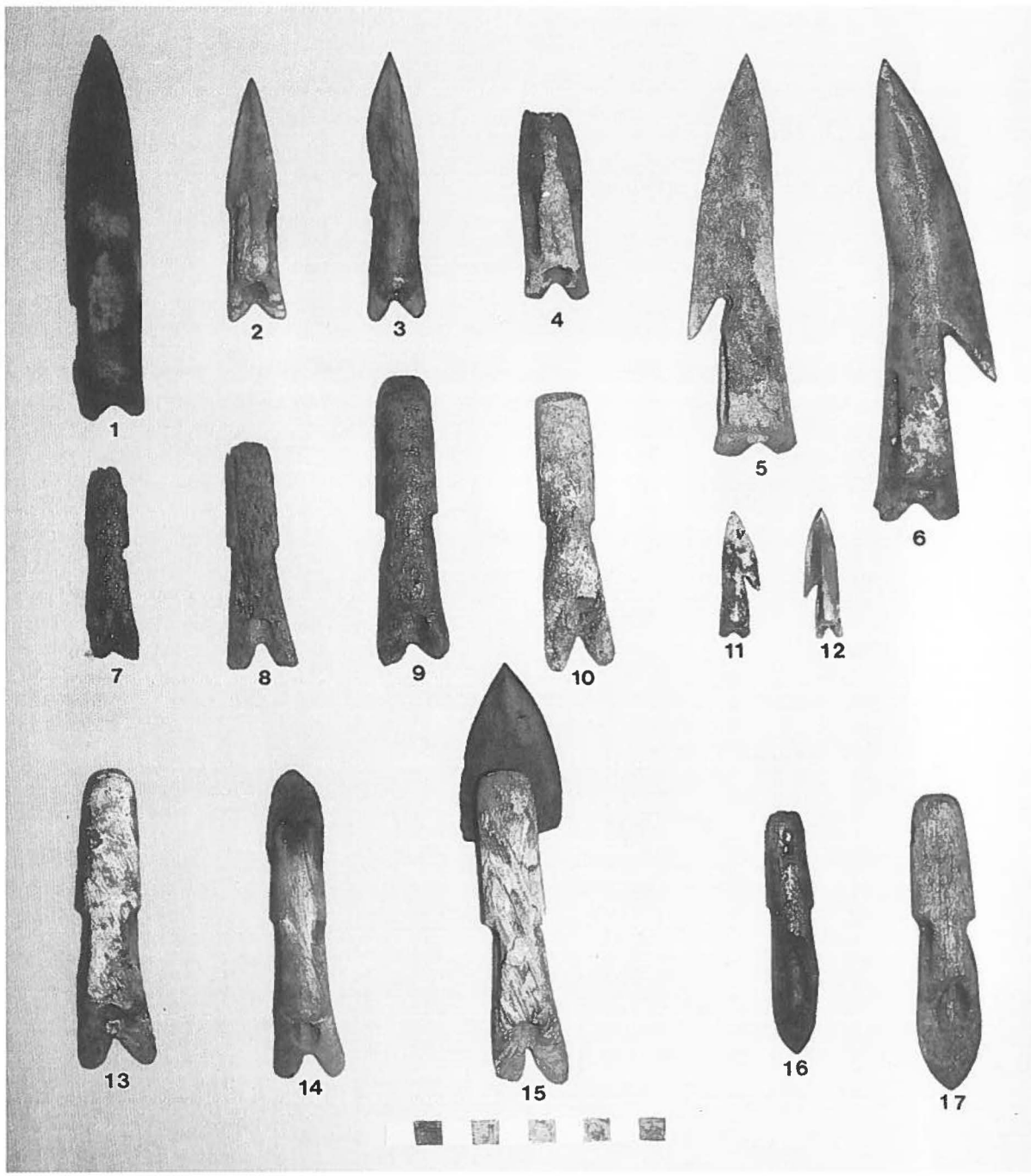


Fig. 13. Harpoon heads.

Richter, who also found several types in one house, also believed that the various types were for different purposes (Richter 1934: 110).

Based on his extensive material from Dødemandsbugten (including 62 harpoon heads), Helge Larsen concluded that the flat harpoon head is the dominating form in the second phase of northeast Greenland's mixed culture (Larsen 1934: 88).

1. Flat form without barbs and without an inserted blade ("the northeast Greenland type")

Four specimens of this type were found (Fig. 13: 1, 2, 3 & 4). They are clearly all flat, with a more or less distinct central keel on the upper part of the body. (On one specimen the point has broken off). They all have a lateral hole for the line with distinct line grooves and they have two dorsal spurs. Three of them are made from caribou antler and one from walrus tooth. The length varies from 9 to 14 cm. Fig. 13: 1 and 3 may originally have had barbs on the left side where there are signs of later processing.

Amdrup's collection from Scoresby Sund contains a fine example of this type from Uunarteq (Kap Tobin) (Thalbitzer 1909: 345, fig. 1), and Ryder also collected the same type in this district (Ryder 1895: 314, fig. 13).

During the Denmark Expedition two harpoon heads of this type were found in a grave at Snenæs (Thomsen 1917, pl. VIII, 2 & 3). At the same location, in house 406, one other of the same type was found, and three of this type, called type I by Thomsen, were found near Rypefjeld (Thomsen 1917: 379–380). On the Cambridge expedition Johnson brought five specimens back from Eleonora Bugt, Kap Weber and Pendulum Ø respectively. Their sizes vary from 11.6 to 8.0 cm (Mathiassen 1929: 146, fig. 1.1). The Bartlett East Greenland Expedition found a harpoon head of the same type in a house on Shannon Ø (Bartlett & Bird 1931: 408, fig. 14,4).

Of the 62 harpoon heads in Helge Larsen's material from Clavering Ø, 32 were of the flat type without blades or barbs and of these 18 dated from the second phase of northeast Greenland's mixed culture (Larsen 1934: 140 & pl. 11, 3–6). Helge Larsen considers nos. 5 and 6 to be the most recent and developed form and states: "if the name of Northeast Greenland Type should be attached to any harpoon head, it would be this one". (Larsen 1934: 140).

Søren Richter has collected six specimens from Gauss Halvø and Myggebugten (Richter 1934: 190, fig. 46). Two of these harpoon heads come from graves in Myggebugten and the others from the very recent houses on Gauss Halvø, (Nos. 5, II & 1, IV). In the Kempe Fjord/Kong Oscar Fjord complex Glob found 11 ranging in sizes from 13.5 cm to 6.6 cm. (Glob 1935, pl. I, 7).

Helge Larsen believes about this type, that it has come to northeast Greenland round Cape Farewell, and writes: "The most common form, with the elegant slender point and the two broad dorsal spurs, is not known at all outside of northeast Greenland, and consequently we must assume that it originated there". (Larsen 1934: 98).

2. Flat form with barbs, but without an inserted blade ("Scoresby Sund type")

There are four of this type in all: two very large and fine examples and two equally well produced, but in miniature. The large specimens are both made from caribou antler. One measures 17 cm, the other 14.5 cm. They have spurs on the left and the right side respectively (Fig. 13, 5 & 6).

The pointed end of these heads is sharp on both sides, but the side opposite the barb is somewhat rounded further down whereas the side with the barb is sharp until the point of the barb. The inside of the barb is rounded and there are traces of boreholes. The lateral line holes have distinct grooves for the line and there are two dorsal spurs.

The two miniature harpoon heads are, apart from the size, almost identical to the larger ones and also have barbs at opposite sides. They are both made from narwhal tooth and are very well and meticulously crafted. Both measure 4.5 cm (Fig. 13, 11 & 12).

At the National Museum in Copenhagen there are two specimens of this type from Uunarteq (Kap Tobin) (Larsen 1934: 98) found by J. K. Rasmussen in house 4 (Rasmussen 1924/25). One is 11 cm long and has the barb at the left side and the other is 13 cm with the barb to the right. On Danmarks Ø Ryder found a similar specimen in house 9 with the barb to the right and a length of 8.6 cm (Ryder 1895: 314, fig. 13b). Outside the Scoresby Sund area this type is only known from one find at Kap Elizabeth in Kong Oscar Fjord (Glob 1935, pl. I, 6). It apparently has limited distribution.

The two larger harpoon heads are unusually big. At an exhibition in Ittoqqortoormiit (Scoresbysund) where the inhabitants had opportunity to see the artifacts found, several of the hunters pointed this out and it was their opinion that these had to be narwhal harpoons. There is no doubt that the hunting of narwhal used to be important, since so many of the artifacts in the excavated material were made of narwhal tooth, and also because migratory narwhal routes exist in many places around the district, at Uunarteq (Kap Tobin), Kangersuttuaq (Sydkap) and several other places in the inner parts of Scoresby Sund (Larsen 1983).

The small harpoon heads may have been playthings, but they are so well made and so functional that it is difficult to imagine that they were not intended for use. The question is what form of hunting they would have been used for.

3. Flat form without barbs, but with an inserted blade and two spurs

Seven specimens of this type were found. Three are made out of narwhal tooth, two from whalebone and two from caribou antler. Five of them are almost identi-

cal in form and size. They vary in length from 11 cm to 7 cm and are all quite flat, except for no. 7 which is somewhat narrower and also the smallest (Fig. 13, 7–10, 13–15).

Like the two previous types they have two dorsal spurs, a lateral line hole, and distinct line grooves. They are blunt and rounded at the point, where a groove has been made on the flat side, parallel to the hole for the line, where a blade can be inserted. On several of them the two narrow sides are parallel between the hole for the line and the point (*e.g.* Fig. 13, 10).

The biggest of this type was found with its slate blade in place (Fig. 13, 15) and one specimen had an inserted iron blade fixed with an iron nail (Fig. 13, 14). The smallest (Fig. 13, 7) is not quite as wide as the others and it is less flat, and resembles to some extent the type described by Thomsen as type IIa (Thomsen 1917: 380), especially a specimen from Snenæs, house 406 (Thomsen 1917, pl. XIII, 5).

Amdrup found a head of this type at Uunarteq (Kap Tobin) with an inserted blade (Thalbitzer 1909: 347, fig. 2), and Johnson found the same type on Pendulum Ø and in Kjerulf Fjord (Mathiassen 1929: 146). The Bartlett Expedition found a similar specimen on Shannon Ø with an inserted iron blade (Bartlett & Bird: 1931: 408, fig. 14, 5).

This flat type with an inserted blade is also known from Søren Richter's surveyed area, *e.g.* Gauss Halvø (Richter 1934: 109, fig. 46, 8) and from Cape Ovibus, where a very large specimen (14 cm long) with an inserted slate blade was found (Richter 1934: 179, fig. 99, 1).

Helge Larsen found nine specimens at Dødemandsbugten. They are all from the second phase of Northeast Greenland's mixed culture and they measure from 5.6 cm to 4.3 cm. He states that this type does not exist in the first phase, but only in the second. It is widespread in Northeast Greenland (Larsen 1934: 140). However, he also found a very large harpoon head from the first phase (13.9 cm) which he believes to have had an iron blade (Larsen 1934, pl. 2, 4), and he says that this: "forms a transitional type between the Inugsuk heads and the flat barbless heads with a separate blade" (Larsen 1934: 97).

Three of the flat form with inserted blades were found in the Kempe Fjord/Kong Oscars Fjord area (Glob 1935: 42). Holtved depicts two specimens from the Thule district dug out of Comer's midden (Holtved 1944: 192, pl. 4, 23 & 24).

4. Flat form without barbs, but with an inserted blade and one spur

In our find material there are two harpoon heads with only one dorsal spur (Fig. 13, 16 & 17). The largest,

Fig. 14. Foreshaft and harpoon head *in situ*. (section B/III).

which is 11 cm long, is made from whalebone and its appearance is very similar to type 3 but notably with only one dorsal spur. The harpoon head was found together with its matching foreshaft (Fig. 14).

The other specimen is also made of whalebone, but is smaller, 9 cm, and in contrast to the first it has holes for a blade nail. It has split near the hole for the shaft (Fig. 13, 16) and is the only one of all the harpoon heads which is not distinctly flat. It could be regarded as a transitional form between the "flat" and the "thin" types.

Like the previous ones, both these specimens have a lateral hole for the line and distinct line grooves. Their appearance is like Thomsen's type IIb (Thomsen 1917: 381, fig. 6d).

The type is known from the Scoresby Sund area; Ryder has an illustration (Ryder 1895: 314, fig. 13c). Helge Larsen has a specimen from Dødemandsbugten which belongs to the mixed culture's second phase (Larsen 1934, pl. 11, 2). This type has also been found at Kap Hedlund and Geographical Society Ø (Glob 1935, pl. I, 3 & 4) and by Richter at Kap Ovibus (Richter 1934: 179, fig. 3) and at Gauss Halvø (Richter 1934: 109, fig. 46, 11).

In general, all the harpoon heads are of the "flat" types which represent a relatively late development, and they give the find material a generally recent character. The so-called Northeast Greenland type (Larsen 1934: 140) which is particularly characteristic of the mixed culture's latest phase is represented by four specimens.

The fairly recent character of the find is also supported by the fact that the trend was apparently for flat harpoon heads with inserted blades to develop from being quite sharply pointed in the early types to having almost square ends in the most recent period (cf. a harpoon head from one of the most recent houses (house 522) at Rypefjeld (Thomsen 1917: 38, fig. 6d)). All the harpoon heads found here of this type are cut straight across at the end and the two lateral sides are parallel.

Of special interest is the type with one barb and without an inserted blade (type 2), of which there are four specimens in the find material, including the two miniature heads. If in addition we include Fig. 13, 1 & 3, which could originally have been of this type, as discussed above, this gives a total of six. All specimens found until now, with one exception (Kap Elizabeth; Glob 1935, pl. I, 6), come from the Scoresby Sund area (a total of seven), so it appears to be a local type which with some justice could be named the "Scoresby Sund type".

Of the 17 harpoon heads found, 9 were intended to have a blade inserted. One of them (Fig. 13, 14) was

Fig. 15. Harpoon heads *in situ*. (section A/III).

found with an inserted and nailed iron blade, and one (Fig. 13, 15) was lying with a slate blade *in situ*. It is more difficult to determine accurately whether the remaining seven were intended for iron or slate blades. However, it is most probable that they were intended for slate blades since the blade grooves was relatively wide and they lacked nail holes in all except one (Fig. 13, 16), which had a narrow blade groove and nail holes. Since the finds form an integral collection, the selection of harpoon heads shows that both types with or without an inserted blade and types with blades of slate as well as iron were in use at the same time.

Regarding the use of the various harpoon heads, we know that the one shown in Fig. 13, 17 belonged to a throwing harpoon since it was found with the matching foreshaft. It is less certain whether it was a common kayak harpoon, because the foreshaft is rather unusual. It would definitely have been used for hunting in open water; it was a harpoon for everyday use. The same is true of the head shown in Fig. 13, 16, but this was also suitable for walrus (Sandell, field notes 1983; Local information).

The heads in Fig. 13, 2 & 3 were no doubt used for hunting at breathing holes. Both specimens fit an ice-hunting foreshaft (Fig. 20, 4) and both are of a suitable size and form for breathing hole hunting. It is possible that the head in Fig. 13, 4 was also used for this.

The two large harpoon heads of the "Scoresby Sund type", as mentioned earlier, were presumably special harpoons for hunting narwhale. The two miniature harpoon heads (Fig. 13, 11 & 12) could also have been for practical purposes, but it is difficult to imagine what type of hunting could be carried out with such delicate gear. Even as fish harpoons they appear small. The possibility that they may have been intended as amulets or as grave offerings cannot be excluded. Miniature tools used as grave offerings are not unusual in North-east Greenland (Thomsen 1917: 362, 380).

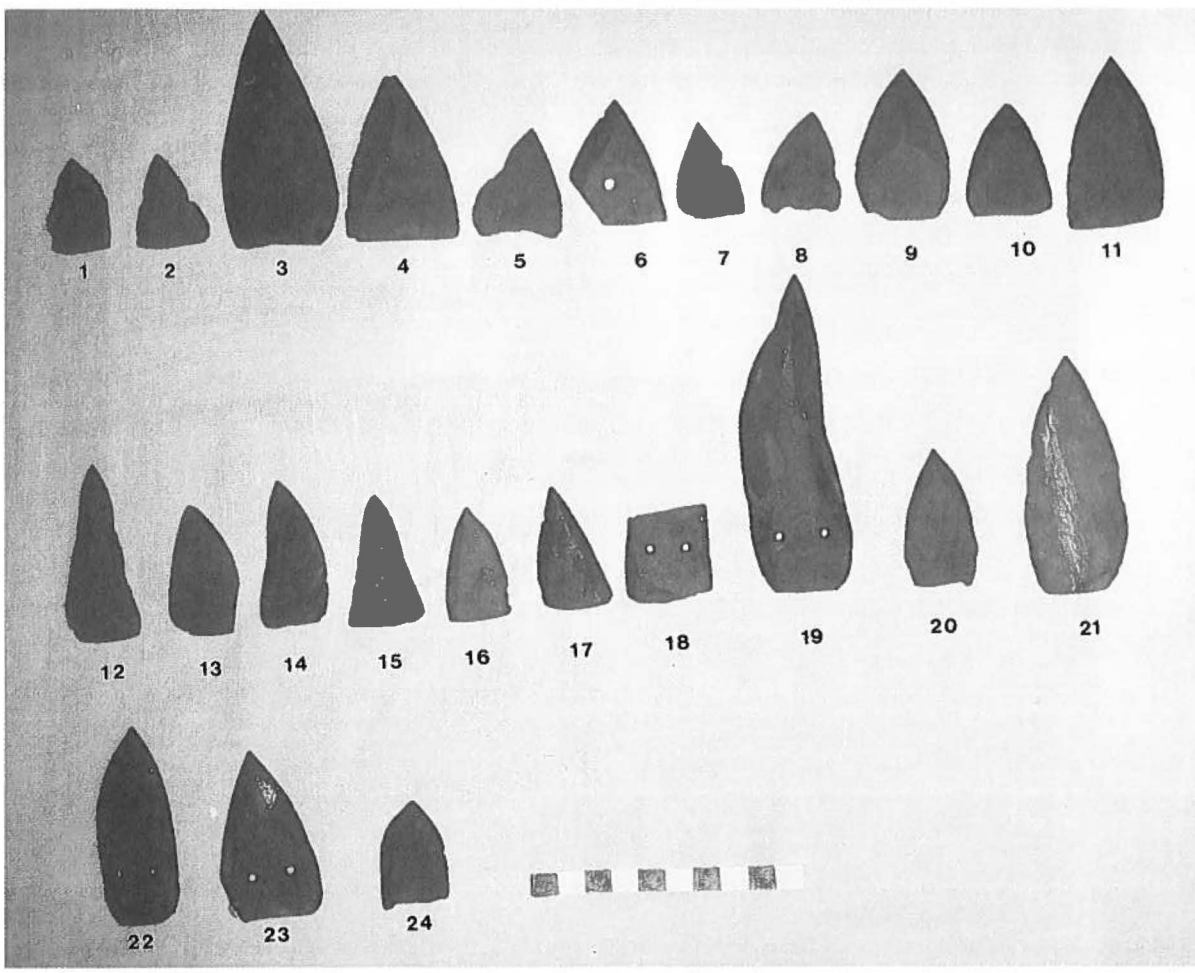


Fig. 16. Slate blades.

Harpoon blades

Eleven slate blades were found which we believe can be designated as harpoon blades (Fig. 16, 1–11). The sizes vary from 3.5 cm to 9 cm and only one of the blades has a medial hole just above the base (Fig. 16, 6).

One of the blades was found inserted into a harpoon head (Fig. 16, 11 & Fig. 13, 15), but otherwise it is difficult to determine whether a blade was intended for a harpoon or a lance, or, in the case of the smaller ones, for an arrow. We have categorized the medium-sized, triangular blades with straight base – usually without a nail hole – as harpoon blades.

Usually the slate blades for harpoons were fitted with wedges or other means were used to reduce the risk of breaking when thrown into the target. Cf. Thomsen in his description of the slate blades found by the Denmark Expedition:

"Of all the 38 stone blades of this type from northeast Greenland, only three have nail holes. – They have probably been cemented with a substance similar to that used by the Central Eskimo. The harpoon heads also point in this direction, only the two with bone blades having holes for nailing" (Thomsen 1917: 385).

The soft slate was a suitable and easy material for making cutting tools. Slate is easily accessible in many places in the Scoresby Sund area. In Kangersaajua (Hurry Inlet), for instance, thick layers of slate are exposed in several places along the coast.

A slate slab (Fig. 35, 12) and a "hand drill" (Fig. 21, 11) found together show how work with the slate was done (Fig. 17). A groove had been made – obviously with the hand drill – on both sides of the slate slab in order to extract a suitable piece. When the desired basic shape was achieved, the piece was then worked and polished until the right finish was obtained. Fig. 35 shows several pieces of slate at different stages of production.

Items of slate are amongst the most frequent finds in Northeast Greenland. Helge Larsen collected 158 pieces from Dødemandsbugten and has this to say about them:

"If this slate is easy to work, it also has the drawback that it breaks easily, and consequently the harpoon heads have often had to be renewed. This is the reason why weapon blades of slate are among the objects which most frequently occur in and about the ruins and tent rings in Northeast Greenland" (Larsen 1934: 99).

Elsewhere he also points out that the occurrence of slate items apparently decreases slightly during the development of the mixed culture (Larsen 1934: 88).

The relatively large number of complete and finished slate blades in our material could indicate that reserve blades were kept in stock, ready to replace lost or damaged blades. On the Denmark Expedition, for instance, 18 slate points (blades) were found in a house at Snenæs, of which 14 were lying together in a little wooden box (Thomsen 1917, pl. XII, 3–15).

Fig. 17. Slate plate and hand drill. (Photo by KNK).

It is not certain whether the smallest of the blades we have classified as harpoon blades could have been intended as arrowheads. Ryder, for instance (Ryder 1895: 309, fig. 8) collected some small slate blades which he believes are arrowheads, and we found one arrowhead with a groove for inserting a blade (Fig. 24, 12).

Harpoon blades of bone and iron

Only a few blades made from bone were found, a total of seven pieces (Fig. 19), and it was even more difficult to classify these either as harpoon or as lance blades.

Two of the blades are very well made and in appearance they are true copies of the slate blades: a harpoon or lance blade with three holes and a possible lance blade with one hole (Fig. 19, 5 & 7). Fig. 19, 3 shows a harpoon blade with two fixing holes. The other four specimens are unfinished blades, all still with distinct drill marks along the edges.

On the Denmark Expedition two harpoon heads with inserted bone blades were found (Thomsen 1917: 384). Strangely enough Helge Larsen found no bone blades in Dødemandsbugten (Larsen 1934: 98), even though they are not uncommon finds in Northeast Greenland.

As mentioned earlier one of the harpoon heads had an inserted iron blade (Fig. 13, 14). The blade was fixed with an iron nail.

Harpoon foreshafts

Outside the house two foreshafts for kayak harpoons were found. The longest, which measured 58 cm, was lying with the harpoon head in its correct position (Fig. 14). There was no trace of the rest of the harpoon. This foreshaft had a conic base and two holes for the lines (Fig. 31, 3). The harpoon head is shown on Fig. 13, 17.

The other foreshaft (Fig. 20, 2) is 28 cm long and, like the first, made from whalebone. The foreshaft has a tenon at the base for the socket and 7 cm from the end there is a hole for the strap which holds the foreshaft to

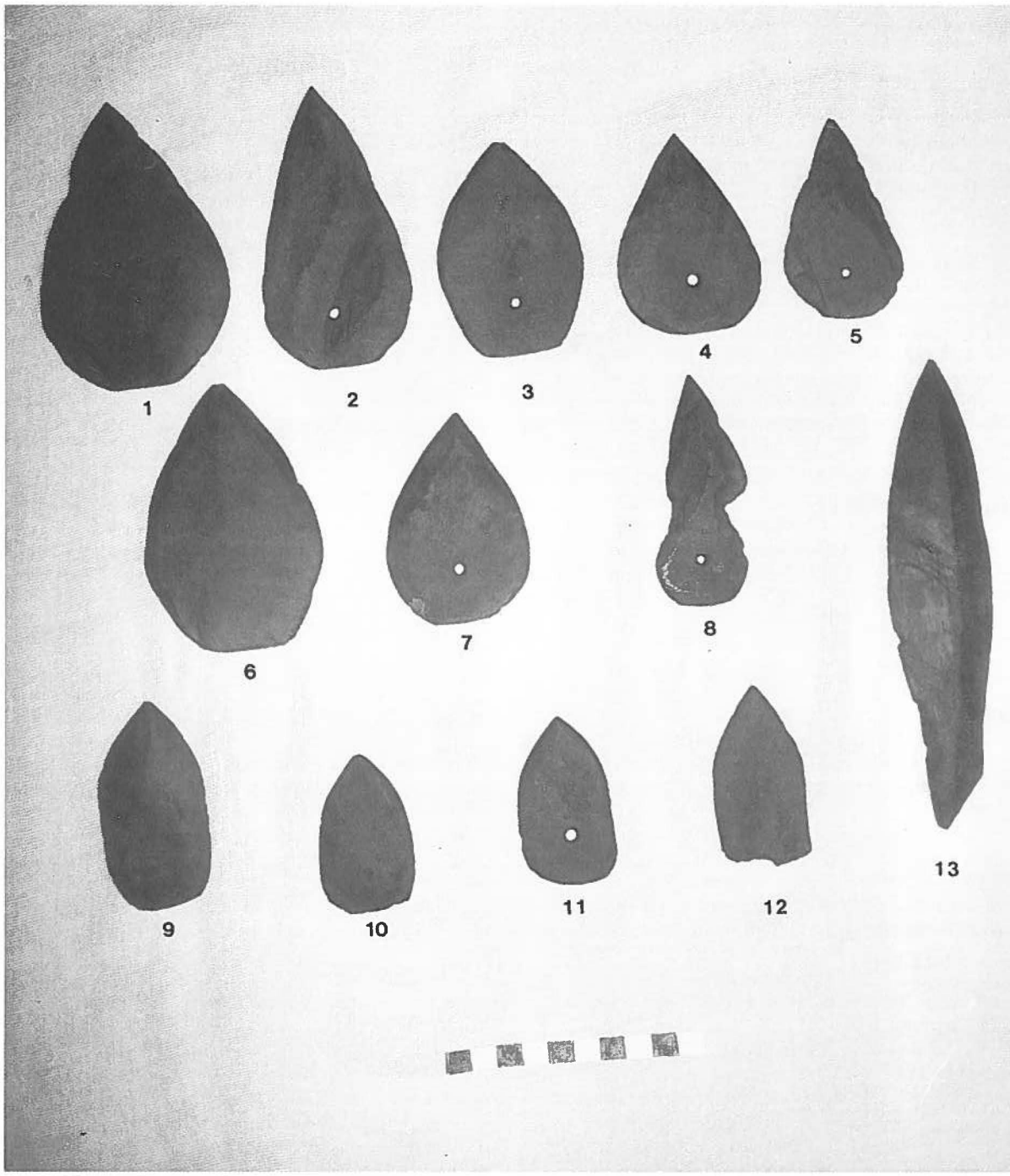


Fig. 18. Slate blades.

the harpoon shaft. Along both sides there are deep grooves from the hole towards the base.

Foreshafts with conic ends were earlier found in the Scoresby Sund district on Danmarks Ø (Ryder 1895: 313, fig. 12b) and Richter collected two specimens from Gauss Halvø. (Richter 1934: 115, nos. 2 & 3). On Ryder's specimen (Nat. Mus. Lc. 721) the line hole is not straight through the shaft, but consists of two slanting holes on the same side connected to each other. The two specimens from Gauss Halvø, both have two line holes. However, the top hole does not go through the shaft, but is connected internally to the lower line hole.

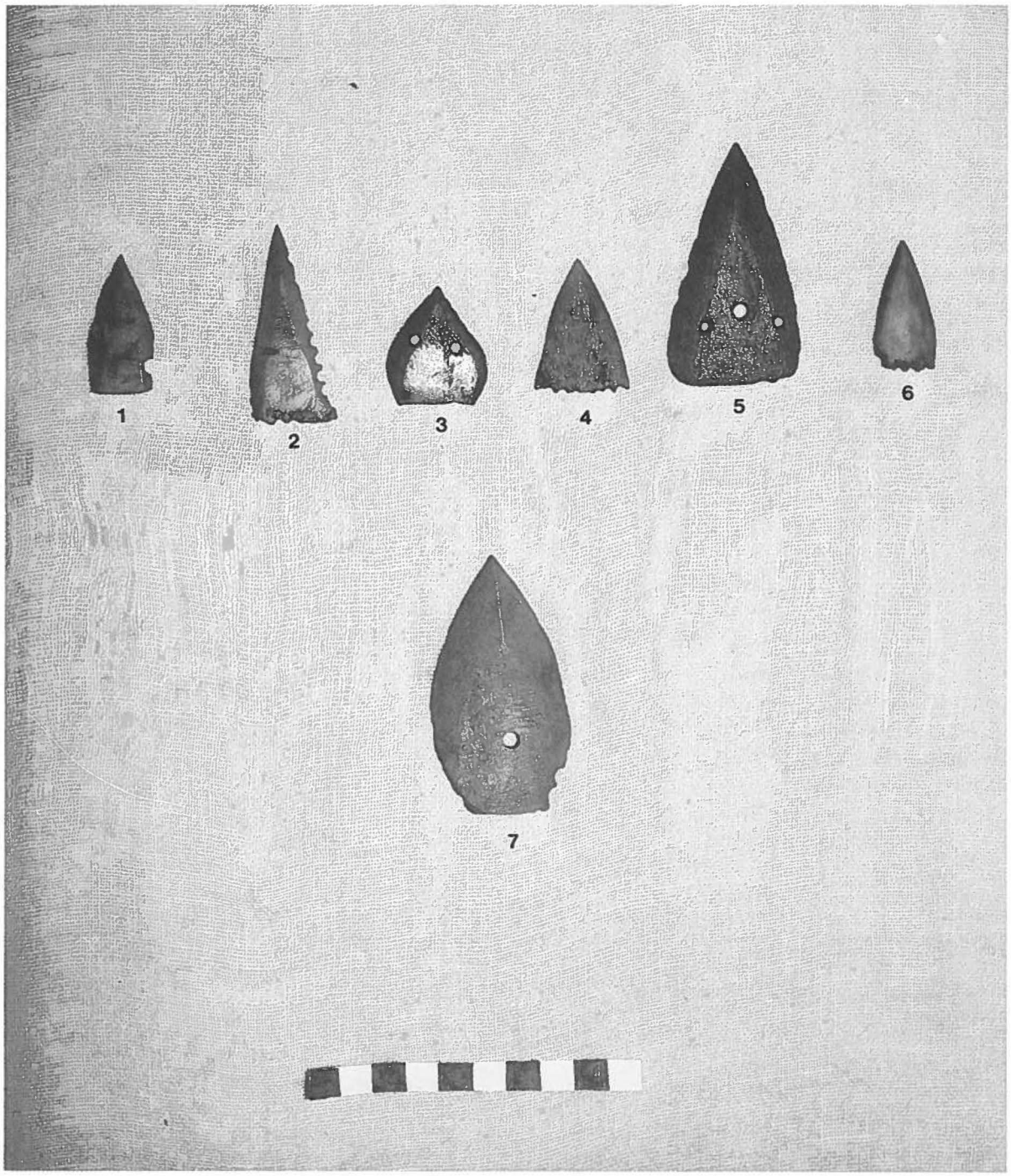


Fig. 19. Bone blades.

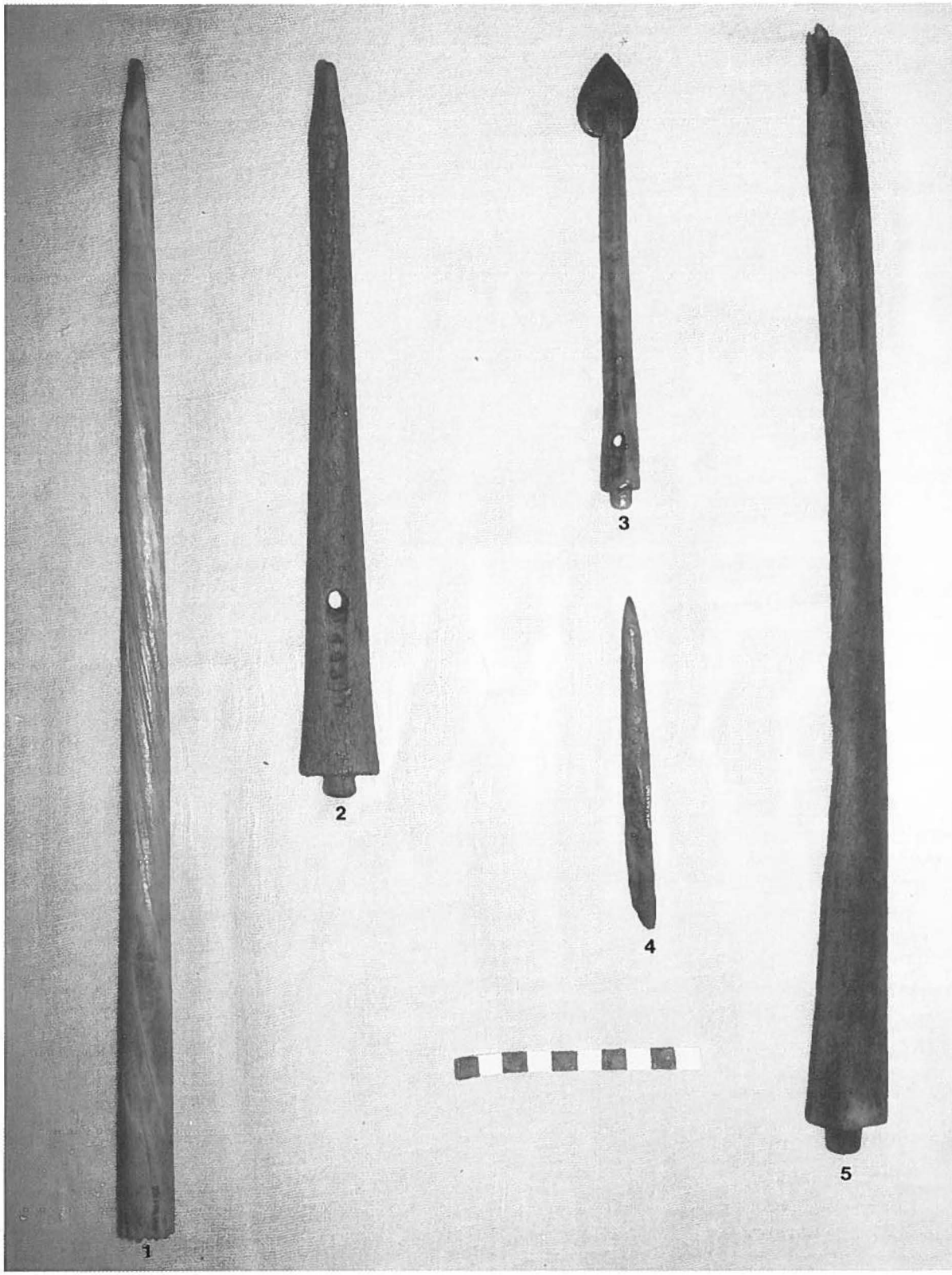


Fig. 20. Foreshafts.

Both Ryder's and Richter's specimens are considerably shorter than ours – they vary in length from 16 to 25 cm. However, Richter found a foreshaft 57 cm long, which does not have a conic end but ends in a tenon (Richter 1934: 115, fig. 48, 1).

The unusually long foreshaft with a conic end could be the foreshaft of a kind of bladder dart with a loose harpoon head, of the same sort known ethnographically from Baffin Island (Boas 1964: 86) and earlier also from West Greenland (Porsild 1915: 171, 174). This could explain why, in the same collection, there were both foreshafts with conic ends and foreshafts with a tenon at the base – two types which are not usually considered contemporary. Erik Holtved also indicates this possibility in connection with similar foreshafts from his excavation in Thule (Holtved 1944: 199). From Morris Bugt in Washington Land in the northernmost parts of Greenland, Lauge Koch has collected a similar foreshaft which is presumably from a bladder dart (Mathiassen 1928, fig. 7, 1).

Ryder found three foreshafts with tenons at the base in the Scoresby Sund area (Ryder 1895: 313, fig. 12a), and Helge Larsen has a fragment of this type from Dødemandsbugten, from the first phase of the mixed culture. He writes about this foreshaft: "The speciment has broken off at a large medial hole, and it is probable that it has had no more than this one hole, as kayak harpoon foreshafts with several holes are not known from Northeast Greenland" (Larsen 1934: 101).

Fixed foreshafts

The foreshaft of a harpoon used for ice hunting was found (Fig. 20, 4). It is of narwhal tooth, 9 cm long, and at the bottom end there is an oblique cut scarf face. It is pointed at the top, and at the bottom where the lashing is placed, incisions have been cut to secure the fastening. The harpoon head (Fig. 13, 3) found near the foreshaft fits it exactly.

Foreshafts for ice-hunting harpoons are common in finds from Northeast Greenland. Helge Larsen, for instance, collected a total of 24 from Dødemandsbugten (Larsen 1934: 90). They are apparently dominant in the second phase of the mixed culture. The Denmark Expedition collected a complete ice-hunting harpoon, consisting of a wooden shaft, foreshaft and harpoon head, from a grave at Snenæs (Thomsen 1917, pl. IX, 3).

In Ittoqqortoormiit/Scoresbysund after the excavation we were later shown an object made of narwhal tooth which had been found a couple of years earlier very close to "The House of Beads". The object was made from a thick piece of narwhal tooth. It was about 5 cm in diameter and measured 57 cm in length. It was originally a little longer as a piece of the point had broken off. At the broad end there was an oblique cut scarf face and opposite this, on the lashing surface, there were incisions to secure the lashing and there were two holes which were probably nail holes. A tenon was formed 8 cm from the base by chamfering. A hole was drilled lengthwise through the tenon to form an eye, and 20 cm from the bottom there was a similar eye. The area between the two projections (eyes) had been chamfered away. The eyes were remarkably small (diameter 3 mm), so if they were intended to hold a line, it must have been a sinew string as the holes were too small for a thong.

Similar artifacts, also of narwhal tooth, have been found previously in Northeast Greenland. At the National Museum there are two specimens from the Scoresby Sund area. One (Lc. 1425) is a casual find from Danmarks Ø, 56.5 cm long and with three eyes in a row at varying distances from the bottom. The other specimen (L1 385) is 82 cm long and also has three eyes. It comes from Ittaajimmiit (Kap Hope) (House III, Rasmussen 1924/25).

On the Cambridge Expedition a 110 cm long specimen with similar eyes was found at Eleonora Bugt (Mathiassen 1929: 149) and a similar piece is known from Lille Pendulum Ø. (Koldewey 1873: 603, fig. 10). The fragment of a similar piece from Renskæret near Danmarkshavn is mentioned by Thomsen (Thomsen 1917: 388, pl. XVI, 2). Nathorst has a very large specimen of 150 cm from Kap Weber. Like our specimen, it has an oblique cut scarf face at the broad end and it has two eyes. Nathorst believed that the tool might have been used for whale hunting (Nathorst 1900: 344).

In Thalbitzer's opinion two small narwhal tooth points from Uunarteq (Kap Tobin) are toy versions of whale harpoon foreshafts (Thalbitzer 1909: 371, fig. 9). The use of whole narwhal teeth as thrust harpoons is known from Thule among other places (Holtved 1967: 97).

Lance foreshafts

The foreshaft of a lance was found outside the house ruin. It is made of whalebone and measures 47 cm. At the base there is a short tenon and there is a line hole through the shaft 5 cm from the base. The shaft is broadest at the base where it measures 3.5 cm in diameter. Further up, it narrows to a point 18 cm from the base and then it widens again. At the end, which it now somewhat imperfect, there is a trace of a blade groove and a hole for a rivet (Fig. 20, 5).

Lance foreshafts, either with a conic base or a tenon and flat base, are common all over Northeast Greenland. There is a specimen from Kap Humboldt almost identical to the one described here (Richter 1934, fig. 48, 5) and the Cambridge Expedition collected a foreshaft for a lance from Pendulum Ø which is also nearly identical. The latter specimen has a inserted iron blade and is considered by Therkel Mathiassen to be a recent type (Mathiassen 1929: 147, fig. 2, 1).

Ryder collected two lance foreshafts from the Scoresby Sund area itself. One of them has a conic base, the other a tenon (Ryder 1895: 315). Foreshafts with conic

base were brought home by the Denmark Expedition (Thomsen 1917: pl. XV), by Amdrup from Dunholm (Thalbitzer 1909, pl. XVI, 12) and by Larsen from Dødemandsbugten (Larsen 1934: 104).

In addition to the large lance foreshaft a very beautiful, small specimen was found (Fig. 20, 3). It is made of narwhal tooth and is 16 cm long. It has an inserted slate blade. The slate point, which is fixed with an iron nail, is triangular – 3.5 × 2.5 cm and with a straight base. The blade has been carefully sharpened. The foreshaft proper has a flat base and tenon, and a line hole going through it. At first we thought the foreshaft was a toy weapon owing to its size but later we were more inclined to think it was a real weapon – a small lance. We do not think it likely that a toy would be equipped with such a well sharpened and slender slate point; it would break the first time it hit a hard target.

However, the possibility that the foreshaft may have been intended as a grave offering cannot be excluded. Richter found a similar foreshaft 15.5 cm long in a grave. He was also of the opinion that it had been used for hunting despite the fact that it was found together with some miniature foreshafts which were definitely grave offerings (Richter 1934: 148, 150, fig. 84, 1).

Lance blades

We found 13 slate blades which in our opinion can be classified as lance blades.

The two largest were without a nail hole, possibly because they are unfinished specimens. They are 10 and 11 cm long respectively and are both 7 cm at their widest part. They are triangular in shape but rounded at both sides towards the base, which gives them a very beautiful and characteristic appearance (Fig. 18, 1 & 6).

Five of the lance blades are of similar shape: rounded towards a base which is cut straight. They all have a hole for a nail. This hole is on the centre line, about 2 cm (a finger's width) above the base, at the blade's widest point.

Four specimens are of a slightly different shape, as they have straight sides. Their length varies between 6 and 8 cm and they are between 3.5 and 4 cm wide. Only one of these blades has a nail hole, so it is arguable whether they should be included as lance blades at all.

In the summer of 1982 we made a casual find of a blade in the wall of the house (Fig. 18, 8). It is possibly an original lance blade which was later changed into a knife blade.

Helge Larsen writes about slate blades for harpoons and lances that even though they come in different forms, they all have the same basic triangular shape with three sharpened facets, and there appear to be three main types (Larsen 1934: 99):

(1) with slightly convex sides and a straight base;
(2) with a short base and the widest point just above the centre;
(3) as (1) but wider relative to the length.

According to this classification the lance blades found should belong to groups 1 and 2. We have no specimens from the last group where the width exceeds the length.

Richter found a very beautiful lance blade of grey-green slate as a grave offering in Myggebugten (Richter 1934: 113, fig. 42, 2). It was 7.5 cm long and had three holes for fixing. The two holes at either end were in a straight line whereas the central hole was staggered.

We have a similar lance blade, though not of slate but of bone (Fig. 19, 5). Here also the end holes are in a straight line with the central hole a little higher; the opposite of Richter's specimen, where the central hole was lower than the end holes.

Glob found a lance blade with two holes at Kap Harry which he classifies as being from the most recent phase of the mixed culture (Glob 1935, pl. 2, 1). The Denmark Expedition brought several lance blades home, some of which are reproduced in Thomsen's description of the expedition's finds (Thomsen 1917, pl. XIV, 1 & 2 and XII, 3).

The blade of a lance or a spear (a dagger without a handle?) of an entirely different appearance is shown in Fig. 18, 13. This blade is 18 cm long and measures 3.8 cm at its widest point. The tool is assumed to have belonged to a thrusting weapon, a spear without a foreshaft or possibly with a fixed foreshaft (as opposed to the ordinary lance which has a loose, removable foreshaft) and to have been used for larger animals such as bear, caribou, whale and possibly musk ox.

A similar find is known from Snenæs (House 406). This specimen has a length of 11.2 cm and has a hole just above the tang (Thomsen 1917, pl. XII, 2). A large number of slate blades for lances and harpoons were found in the same house.

We know that nos. 22 and 23 in Fig. 16 are blades for a combined dagger/small thrusting lance as they were both found *in situ* with partly preserved wooden shafts and still with trace of the sinew lashing which kept the blade in position. Both shafts were about 45 cm long. One blade (no. 22) is 7.7 cm long and 3 cm wide, with two holes ca. 2 cm above the base (the width of a finger). The other specimen (no. 23) is 6 cm long, 3.5 cm wide and also has two holes. In addition to these two there were two unfinished specimens of the same type.

It is probable that blades of this type and size with the two fixing holes parallel to the base, were generally intended for this sort of short thrusting lance.

Other parts of harpoons and lances

Sockets (Shaft mountings)

None of the four sockets for harpoons or lances which were found were particulary well made. In contrast to almost all the other items found they lacked finish and appeared crudely made (Fig. 21, 3, 4, 5 & 6).

No. 3 measures 3.5 × 3.5 cm and no. 4 measures 3 ×

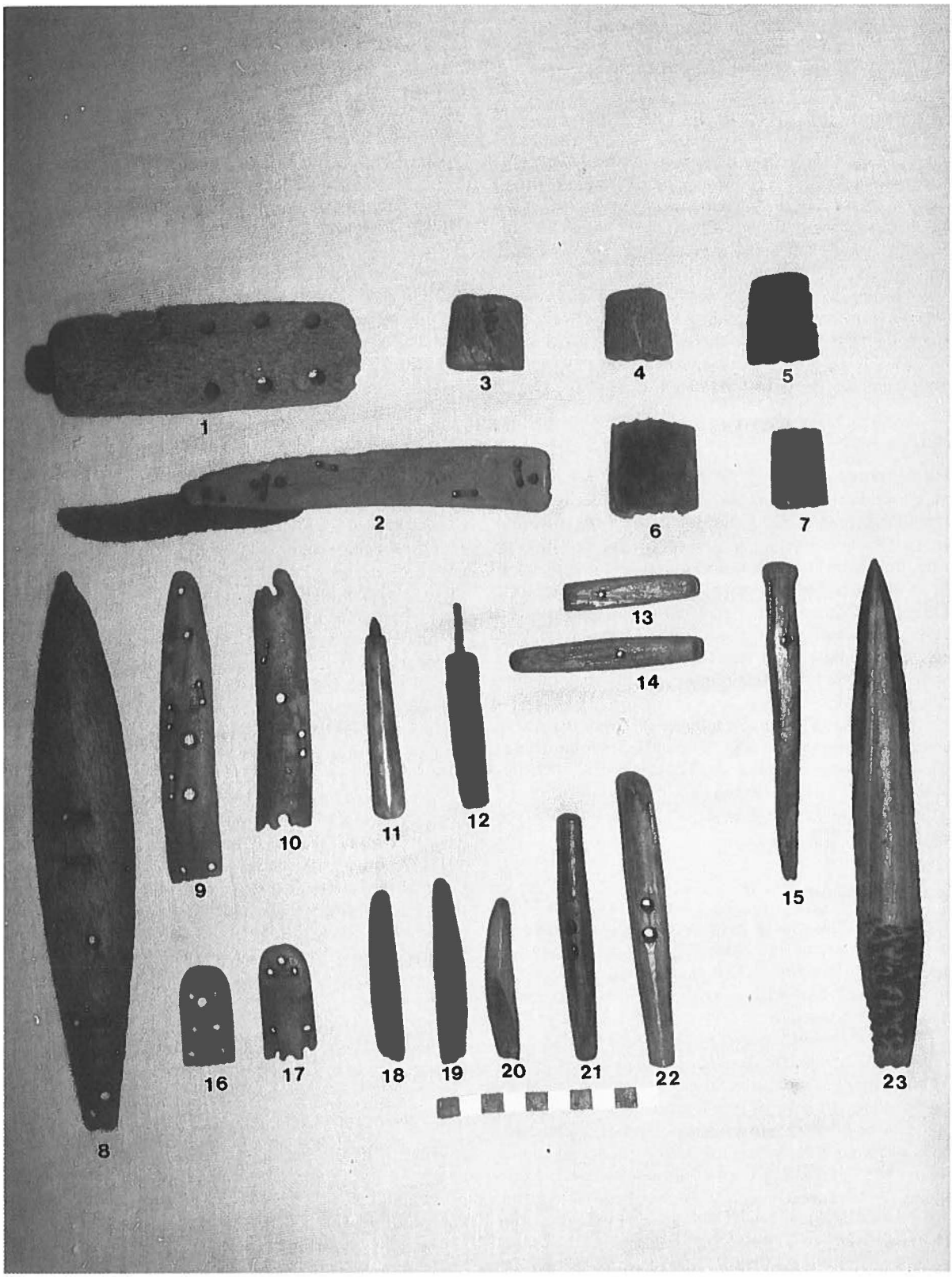


Fig. 21. Various bone implements, some with iron tips/blades.

3 cm. Nos. 5 and 6 are unfinished examples. All four are cylindrical and have an almost circular cross section.

Helge Larsen shows a socket of similar appearance from Dødemandsbugten (Larsen 1934, pl. 11, 16).

Block for winged harpoon

An unfinished example of a block for a winged harpoon was found. (A block is the bone piece lying between the wings at the rear of the harpoon which gives support for the throwing board.) It is a square block with a keel on one of the wide sides, and it measures 2.8 × 2.5 × 4.1 cm (Fig. 21, 7).

According to Helge Larsen this type is not known outside Northeast Greenland and it belongs to the second and recent phase of the mixed culture (Larsen 1934: 163, pl. 11, 14 & 15). Richter has a similar specimen from Gauss Halvø (Richter 1934: 155, fig. 88a, 14).

Finger rests

Three examples of finger rests for lance or spear shafts were found (two of them are shown in Fig. 22, 10 & 13). The first specimen is 2.5 cm high and 1.7 cm wide and has two fixing holes. The second specimen, only has one hole, but there are several drill marks and it appears to be an unfinished or rejected piece. The third finger rest, which was lying in the wooden box in the entrance passage, is smaller than the others, 2.4 × 2.1 cm, and only has one hole. Here also the base has distinct traces of drilling. This finger rest is more angular than the first two described.

Thomsen has a picture of a finger rest with two fixing holes from Rypefjeld near Danmarkshavn which resembles our specimen no. 10 (Thomsen 1917: 392, fig. 11b). Helge Larsen collected two finger supports of the same form, but both have only one fixing hole (Larsen 1934, pl. 11, 17 & 18).

Harpoon wing

The fact that the winged harpoon was known is demonstrated not only by the block for the rear of the shaft described earlier, but also by the finding of one of the wings (Fig. 21, 8). Oddly enough we did not succeed in finding its counterpart!

However, the one specimen found is a very fine example. It is of whalebone, flat on one side and convex on the other. It measures 26 cm and is 4.5 cm at its widest point. Its form is nearly lanceolate with a small bulge at the bottom. Almost in the centre there are two pairs of fixing holes which are connected by a groove. Nearer the top there are two more holes which are also connected by a groove, and at the same end of the wing there are three nail holes for fixing the wing to the shaft. The two fixing holes nearest the shaft end are presumed to have been for making the wing fast with a fishjoint or scarf either to the shaft or possibly to the wing block. The two wings were connected to each other with sinew lashings through the two pairs of holes in the middle of the wing.

Ryder found two wings, 9 cm long, for a toy harpoon in the Scoresby Sund area (Danmarks Ø, House 2). Apart from the size they are very similar to the specimen found here (Ryder 1895: 314, fig. 14).

Richter has a similar, 20 cm long wing of whalebone from Kap Herschel, and another example made of whalebone and 16 cm long was found by a Norwegian expedition in 1929, presumably in the same area. (Richter 1934: 113, fig. 47, 7 & 8). Helge Larsen found a wing of he same form, but made of wood, at Dødemandsbugten. He classifies this type as from the second phase of the mixed culture (Larsen 1934: 142, fig. 34). Glob found a fragment of a wing at Kap Elizabeth (Glob 1935, pl. 1, 16).

Only relatively few harpoon wings are known from Northeast Greenland.

Ice chisel (tooq)

The ice chisel, which is an indispensable tool in winter, is well known in Northeast Greenland. However, we found only one example (Fig. 21, 23). It is of caribou antler, 23 cm long and 3 cm wide. On the lower 6 cm there is a rough incision for securimg the lashing which binds the tool to the shaft.

Only one ice chisel, found on Renskæret close to Danmarkshavn, is known of from the Denmark Expedition (Thomsen 1917, pl. XVI, 3). This piece, which was damaged, measures 19.5 cm and has a hole for a rivet. Thomsen mentions that Koldewey brought home a 25 cm long ice chisel, also with a rivet hole (Thomsen 1917: 393).

Sixteen ice chisels are known of from Dødemandsbugten (Larsen 1934: 90) and Richter has four very fine examples from the area a little further south (Richter 1934: 116, fig. 49). In the Kempe Fjord and Kong Oscars Fjord complex Glob found eight ice chisels from the "Early Culture" and two from the mixed culture (Glob 1935: 42 & 62). One of these examples is identical in form and size to our piece (Glob 1935, pl. 1, 14).

Weapons and equipment for hunting on land

The bow

In front of the house ruin an almost complete bow lay under the vegetation. Unfortunately it was not very well preserved, but we succeeded in picking up the individual fragments (Fig. 23).

The body of the bow was originally 125 cm long and made up of two pieces of wood. The bow is 4 cm wide – narrowing slightly in the middle – and 2 cm thick. About

25 cm from the ends there were three symmetrical incisions on both sides to support a reinforcement of the back of the bow with thread made of sinew.

Bows and bow fragments are not uncommon in finds from Northeast Greenland. In the Scoresby Sund area there is a 15 cm long bow fragment with three symmetrical lashing notches from Uunarteq (Kap Tobin) (House 4) (Nat. Mus. L1 879; Rasmussen 1924/25). Søren Richter has a bow fragment from Gauss Halvø (ruin group no. 5) with incisions for reinforcement of the back of the bow (Richter 1934: 119, fig. 52, 1) and in the same area Norwegian hunters found a bow body

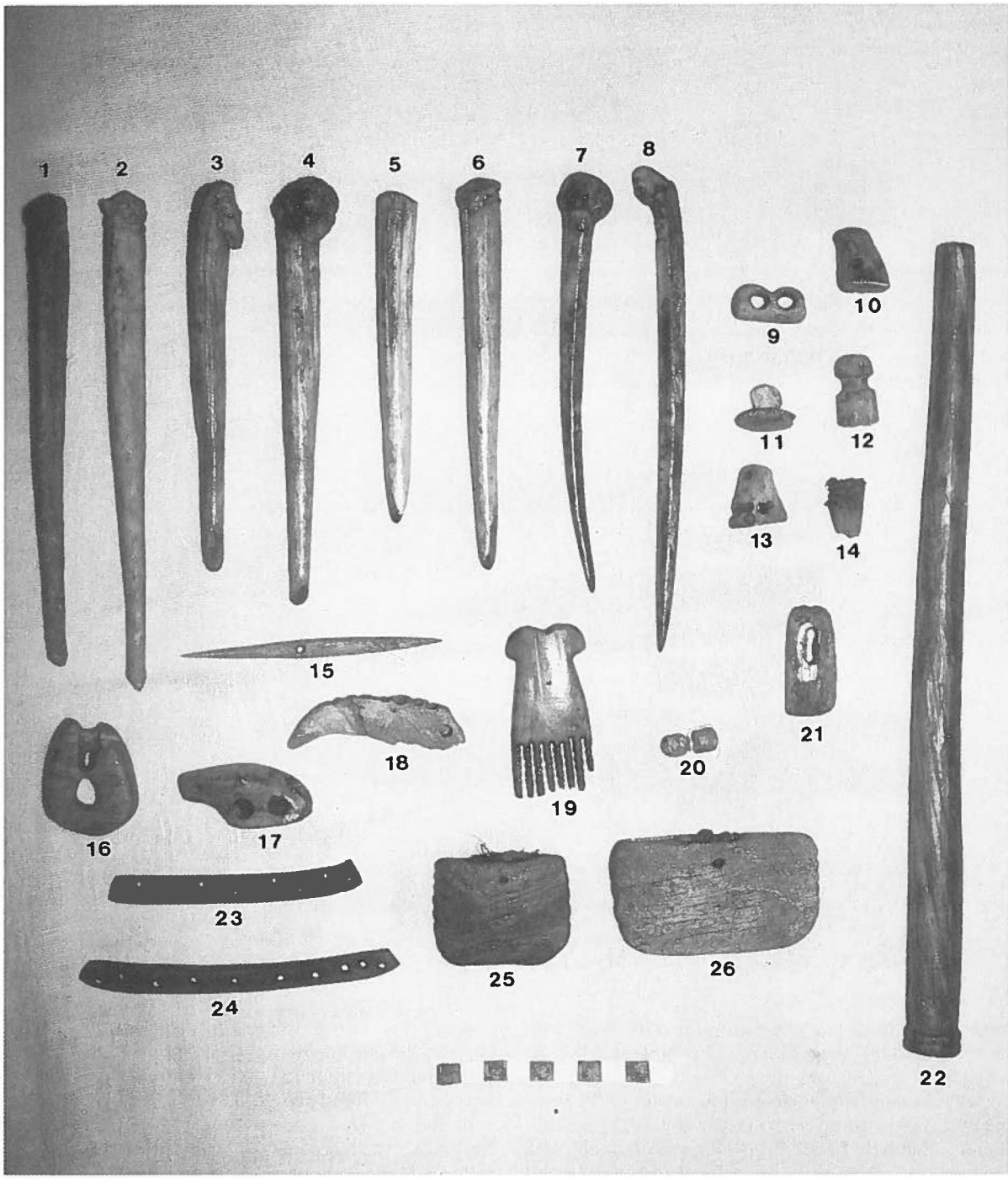
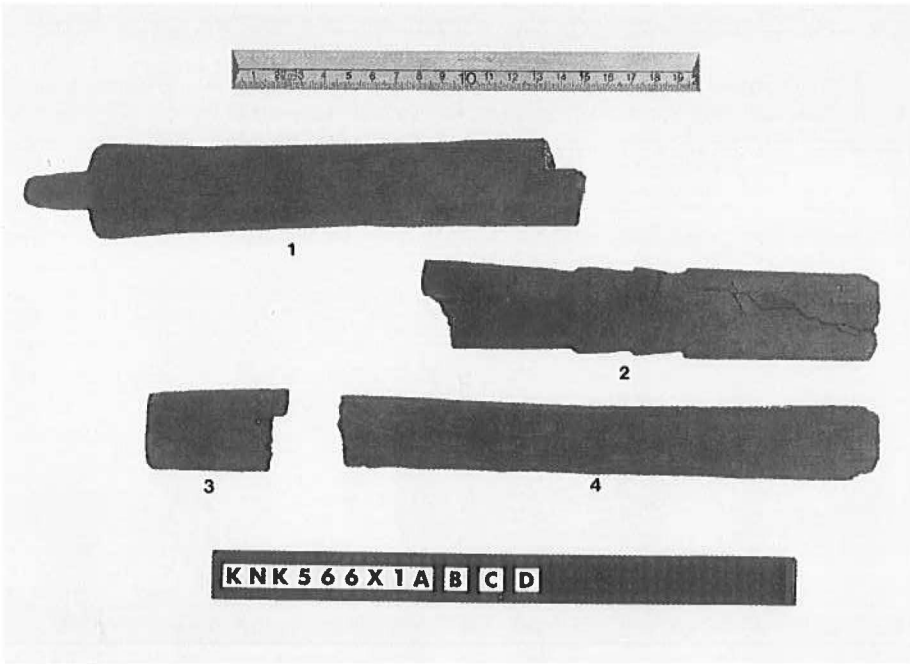


Fig. 22. Various bone implements.



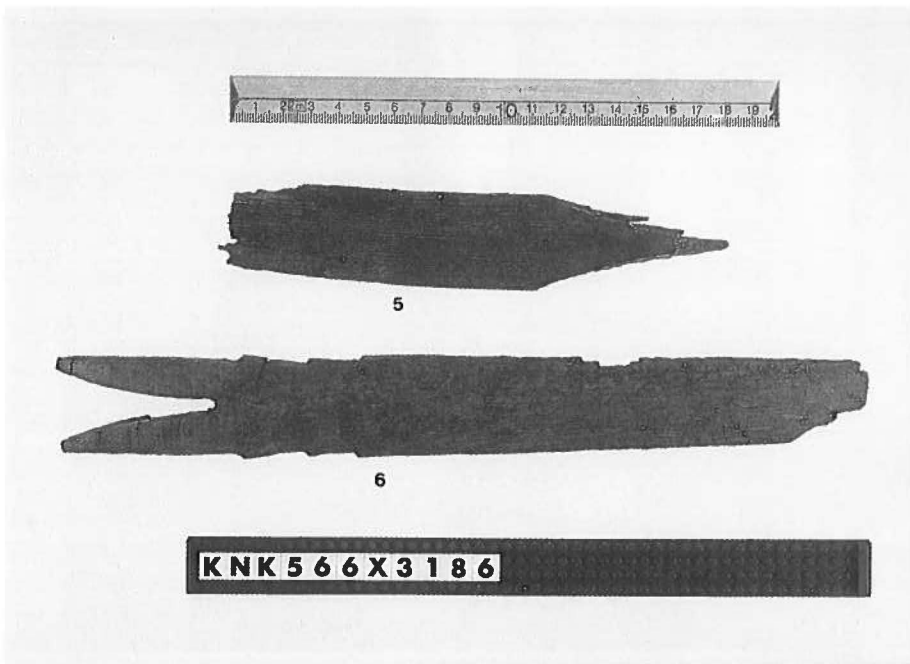


Fig. 23. (a + b) Fragments of bow. (Photo by KNK).

intact, made from one piece of wood, with three symmetrical incisions in each end. This bow was 143 cm long (Richter 1934: 149, fig. 83, 1).

Nathorst depicts a complete bow made up of three pieces found at Kap Weber. According to the description it would have been 130 cm long and originally with the bow body reinforced, but without incisions for this (Nathorst 1900: 345).

A toy bow with incisions was found on Clavering Ø (Larsen 1934, pl. 14, 4) and Glob has a similar toy bow with three sets of notches which was found in a grave at Suess Land (Glob 1935, pl. 3, 8).

In the entrance passage to a ruin on Shannon Ø Bartlett's expediton found a 114 cm long bow made from wood which, as far as can be seen from the illustration, has incisions for reinforcement of the back of the

bow. Another bow depicted from the same area is unusually long, 156 cm, and made up of three pieces of wood (Bartlett & Bird 1931: 410, fig. 17).

Ryder collected an S-shaped bow body from the Scoresby Sund area. It was made from two pieces of wood fixed together by fishjoint and without incisions. This bow was 120 cm long and 3.5 cm wide (Ryder 1895: 307, fig. 7). Mathiassen mentions fragments of bows of the same S-shaped type from Eleonora Bugt (Mathiessen 1929: 151). For the different types of bows and their general distribution in Greenland the reader is referred to K. Birket-Smith (1918).

Bow accessories

To draw the sinew thread which acted to reinforce the back of the bow tight, marline spikes and sinew twisters were used.

A complete sinew twister and fragments of two others were found (Fig. 21, 13 & 14). The complete example is made from bone and is 8.5 cm long, 1.2 cm wide and 0.7 cm thick. In the middle there is a drilled hole and at both ends the edges bend outwards to opposite sides so that the object almost has an elongated S-profile. The two fragments are also made of bone and were originally the same shape and size as the complete example.

Only one marline spike was found (Fig. 21, 15). It is of bone, 14 cm long and 1 cm wide at the top, narrowing towards the bottom. The width increases slightly 3 cm from the top and a hole has been drilled through it.

Similar tools were found earlier in Scoresby Sund (Ryder 1895: 311, fig. 11), at Kap Harry in Kong Oscar Fjord (Glob 1935, pl. 6, 26), in Myggebugten (Richter 1934: 122, fig. 55) and in Dødemandsbugten on Clavering Ø (Larsen 1934, pl. 4, 12). Koldewey illustrates a specimen found during the Second German Polar Expedition (Koldewey 1873: 603, fig. 16) and several were brought home by the Denmark Expedition (Thomsen 1917: 403, fig. 18).

Arrowheads

The finds included 18 arrowheads of various sizes made of bone or caribou antler. (Fig. 24, except 8). Apart from one which lay inside the house ruin, they were all found on the slope in front of the house where, as mentioned earlier, a bow was also found.

The smallest arrowhead (Fig. 24, 1) is 8 cm long and 0.8 cm wide. The longest measures 38 cm (Fig. 24, 18). One of the arrowheads (Fig. 24, 4) has a very distinct keel in the middle, giving it a triangular cross section. The arrowhead (Fig. 24, 7) which is 10.5 cm long and 2.5 cm wide, differs from the rest with its broad, somewhat crude form. A striking feature of this arrowhead group is the great variation in size, from the shortest at only 8 cm to the longest at 38 cm.

The form of arrowhead found most frequently in Northeast Greenland is the type with a lanceolate blade, conical tang and a short thread – like those found here. All the arrowheads in our material are with "interrupted" thread, a type which, in Helge Larsen's opinion, may well have developed in Northeast Greenland independently of the corresponding form in West Greenland (Larsen 1934: 108). All the arrowheads we found have a thread cut from the left.

Ryder found ten arrowheads in the Scoresby Sund area made from caribou antler and between 11 cm and 22 cm long. Most of these had signs of threading and almost all the threads were cut from the left, which is the most natural if the producer is right handed (Ryder 1895: 304, fig. 9). One of the arrowheads we found has a groove for fitting in a slate or a bone blade (Fig. 24, 12).

The Denmark Expedition found an arrowhead with a blade groove at Rypefjeld and at the same location arrowheads with threads and triangular cross sections were also found (Thomsen 1917: 406, fig. 20 & 21). Søren Richter has 20 arrowheads in his material of which the longest measures 28.8 cm by 2 cm. One of the arrowheads has a blade groove. Most of these arrowheads come from Gauss Halvø (Gauss 5, Houses II & III) and from Kap Humboldt. A very few are from Clavering Ø and the arrowhead with a blade groove mentioned above was found at Kap Herschell. The arrowheads vary in length from 28.8 cm to 5.5 cm (Richter 1934: 121, fig. 54).

Helge Larsen found arrowheads with matching shafts, as well as fragments of a bow, in a grave on Clavering Ø. The longest of these arrowheads is 27 cm (Larsen 1934: 69, fig. 22). In his material Larsen also has an arrowhead wih a long continuous thread which belongs to the second phase of the mixed culture. This is said to be exceptional in Northeast Greenland, where the interrupted thread is dominant (Larsen 1934: 145, pl. 12, 6). There are six arrowheads among the Cambridge Expedition finds, all with interrupted threads and conical tangs and without blade grooves. (Mathiassen 1929: 151, 146 & fig. 1, 6 & 7).

Amongst our finds there is the rather unusual tip of an implement (Fig. 24, 13). It is probably another arrowhead, but as one end has broken off it is difficult to be certain of this. It has two barbs, but otherwise it has a close resemblance in form to an arrowhead vith one barb found at Eleonora Bugt by the Cambridge Expedition (Mathiassen 1929, pl. 1, 6).

A blade of bone or slate would have been inserted in the arrowhead with a blade groove. As mentioned earlier it can be difficult to determine whether, any given blade was intended for an arrowhead or a harpoon.

Some of the bone arrowheads were found *in situ* with matching shafts (Fig. 25). These shafts were made from wood and originally 45–50 cm long. They were all in poor condition and could not be picked up complete. There were no visible remains of lashing, a stabilizing feather or a notch at the end.

It is obvious that the bow and arrow were very important implements in the Scoresby Sund area, since Jame-

son Land especially once had a good stock of caribou. Today caribou antlers from the now extinct population can be found in many places on Jameson Land. Caribou bones and antlers were found in large quantities in the bone material from the "House of Beads".

Use of the bow was not limited to caribou hunting, but was definitely also used for hunting moulting geese. Geese appear in large numbers in the spring and summer months along the coasts and around the lakes and rivers on Jameson Land. They make a tempting and easy prey.

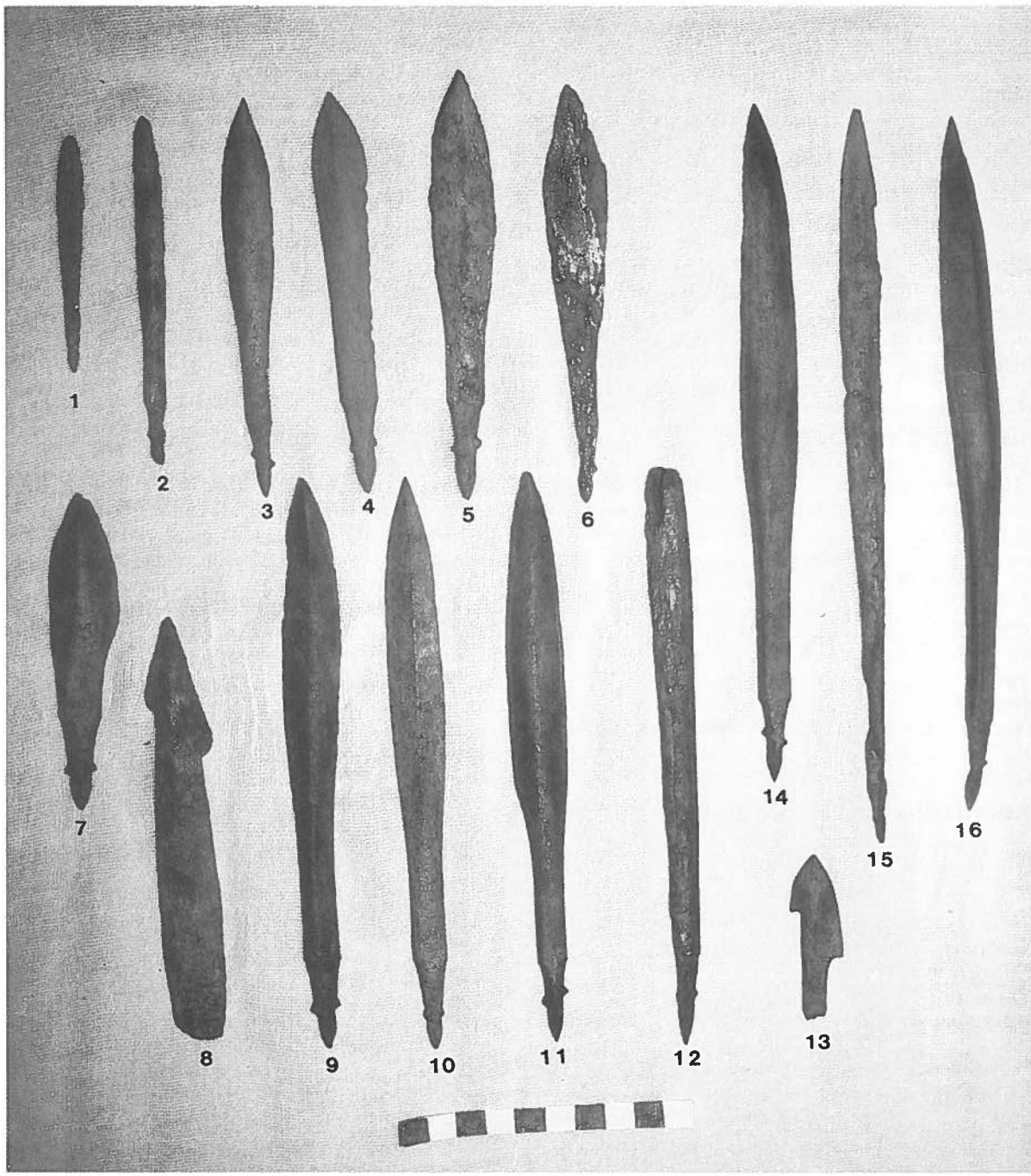


Fig. 24. Various arrowheads.

Fig. 25. Arrow heads *in situ*. One with the remains of the shaft.

Blunt arrowheads

Ryder mentions four blunt arrowheads made of the tips of caribou antlers and thinks that they were probably used for bird hunting (Ryder 1895: 310, fig. 10).

In the entrance passage to the "House of Beads" three similar examples were found lying together (Fig. 21, 18, 19 & 20). These were also made from the tips of caribou antlers. They were slightly sharpened and cut at an angle at the back, with a coarse surface for a fish-joint. They are 7–8 cm long.

Thomas Thomsen describes three examples of the same type from the area around Danmarkshavn. However, these three were not found together, but came from three different locations (Thomsen 1917: 408, fig. 22).

Similar arrowheads from eighteenth-century West Greenland are mentioned by Hans Egede, who says about their use: "The bird arrows have two or three blunt bones at the end in order just to kill the birds and not damage the meat" (Egede 1741, reprint 1925: 354, authors' translation).

There can be very little doubt that these blunt arrowheads were used for bird hunting with a bow and were used on land, as distinct from the tool used from a kayak and known as a bird dart.

Toggle-shaped gull hook (gorge)

Two gorges were found. One lay in the little wooden box found in the entrance passage. Box and gorge are shown in Fig. 41. The other gorge is shown in Fig. 22, 15.

Both gorges are about 11 cm long with a diameter of almost 1 cm at the widest point in the middle, where there is a hole through the centre. They taper from the middle towards both ends and are as sharp as a needle. The gorge from the box was broken.

Gorges are known from Northeast Greenland, *e.g.* from Koldewey (Koldewey 1873: 605, fig. 19b), and Glob has a similar gorge, also with a central hole, from Kap Harry (Glob 1935, pl. 2, 12). A gorge from Eleonora Bugt lacks a central hole, but instead has a narrower waist for the line (Mathiassen 1929: 146, fig. 1, 9). From the second phase of the mixed culture at Dødemandsbugten gorges both with holes, and with waists were found (Larsen 1934, pl. 11, 20 & 21). Apparently the two types occur at the same time.

Fish spears

The point with two barbs shown on Fig. 24, 8 is presumably the branch of a fish spear. It is of caribou antler, 15

cm long and 2.2 cm wide and at the top it has two opposite barbs of different size. At the fixing end there is a rough groove for a lashing.

A blade mentioned earlier (Fig. 24, 13), may also be the branch of a fish spear, but as it resembles some arrowheads it has been classified as such.

Richter found a fish spear with side branches on Gauss Halvø, and another one on Strindberg Land where the heads have holes for fixing to the shaft (Richter 1934: 118, fig. 51, 4 & 199, fig. 119). Neither Glob nor Helge Larsen have any parts of fish spears in their material, but in one of the plates from "Dødemandsbugten" an object is depicted which strongly resembles the branch of a fish spear (Larsen 1934, pl. 11, 27). In general there are not many fish spears in finds from Northeast Greenland.

Wooden shafts

In front of the house ruin several tools with shafts and objects made of wood were found. Due to poor preservation in a moist bed just under the vegetation, the wooden objects were in very bad condition. However, it was possible to pick up the following fragments:

1. Wooden shaft for a small lance (Fig. 27, 1 & 2).
2. Wooden handle for a kayak knife or a small lance.
3. Shaft for a small lance (Fig. 28).
4. Arrow-shaft.
5. Arrow-shaft.
6. Wooden object with hole (Fig. 27, 3).
7. Wooden fragment (from a whip?) (Fig. 27, 4).
8. Fragments of a paddle.

(1) The small lance or kayak knife as found *in situ* is shown in Fig. 26. The shaft, which was originally 45 cm long, has been broken in two. The cross section of the shaft is rectangular with rounded edges (ca. 3.0 × 1.5 cm). The slate blade is in position in a blade groove, and there are traces of a sinew thread lashing. The slate blade is shown in Fig. 16, 22.

(2) The knife with its handle is shown lying *in situ* (parallel to the harpoon foreshaft) in Fig. 14. The wooden handle was so decayed that no precise dimensions can be given. However, the shaft was originally about 40 cm long. The blade of the knife is shown in Fig. 16, 19.

(3) The small lance with the remains of a shaft is also shown *in situ* in Fig. 14, with the lance blade partly covered by the foreshaft. Only about 15 cm of the upper part of the shaft was preserved, so original measurements cannot be given. The blade was originally fixed to the shaft with a lashing, but no remains of this were found. The blade was not inserted in a blade groove, but rested against a cut in the shaft (a partial blade groove). The lance blade is shown in Fig. 16, 23.

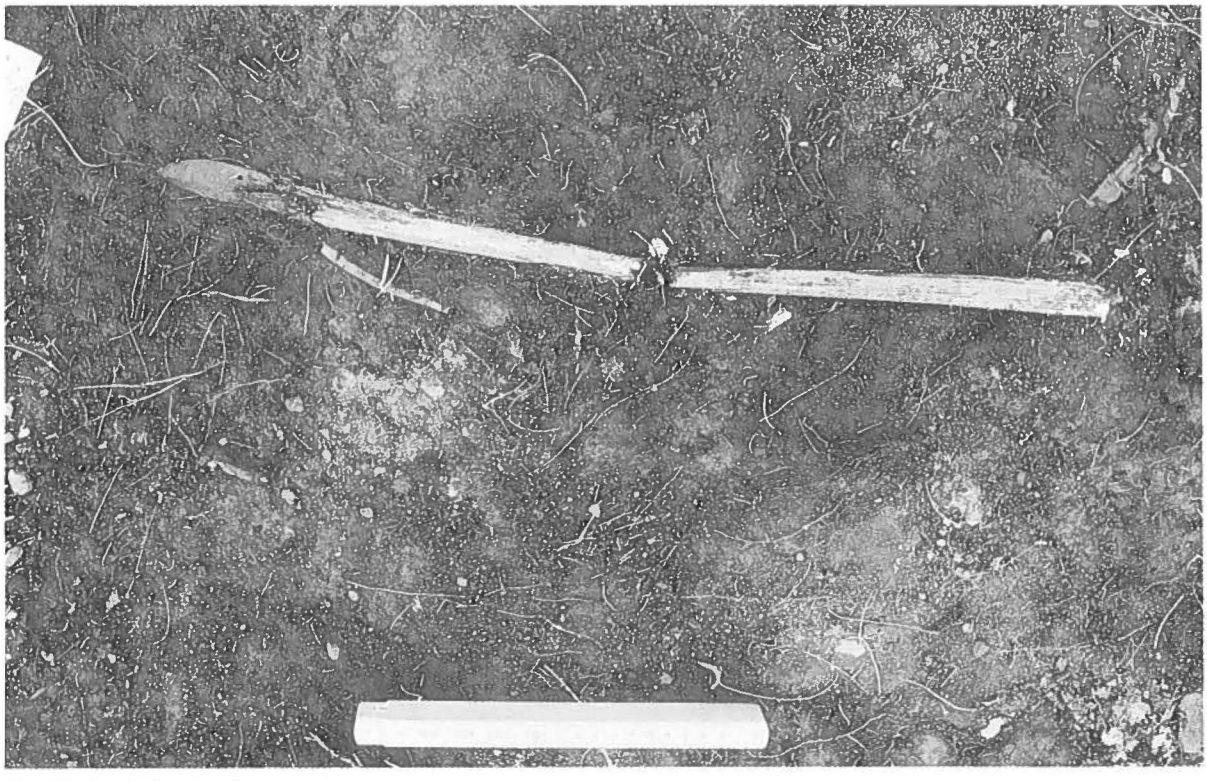


Fig. 26. Small thrusting lance *in situ*.

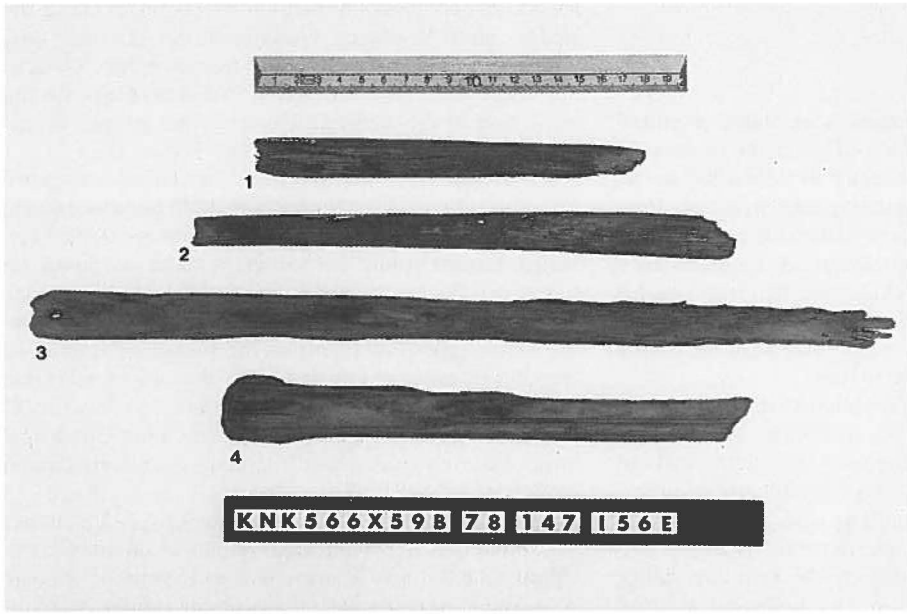


Fig. 27. Fragments of wooden handles. (Photo by KNK).

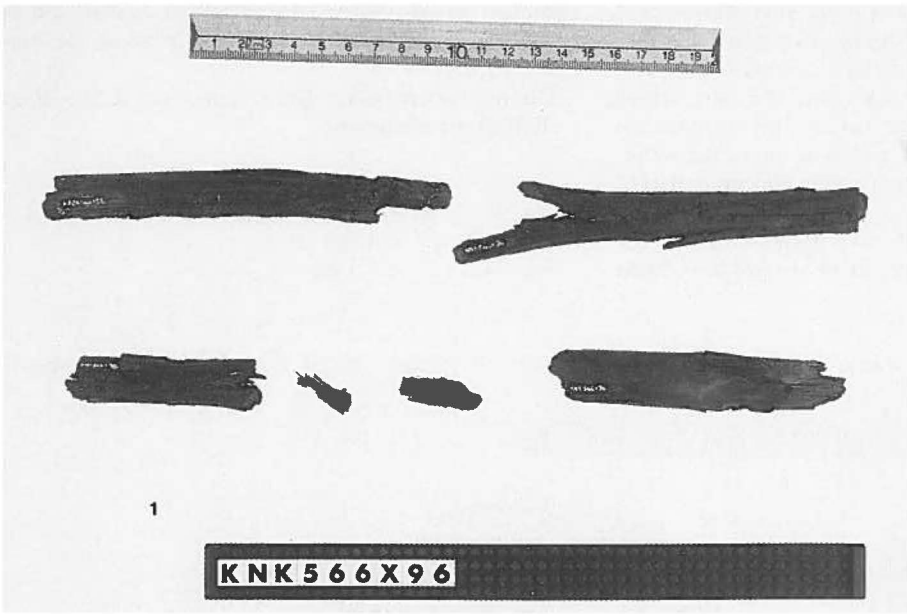


Fig. 28. Fragments of a shaft for a small lance. (Photo by KNK).

(4) Alongside the bow described earlier lay an arrow shaft and head. The shaft was badly decayed and in several pieces. It was originally almost 50 cm long and judging from the remains its cross section was approximately circular, with a diameter of about 1.5 cm. The rear of the shaft was missing so it could not be determined how the notch was made or whether there may have been stabilizing feathers. The arrowhead is shown in Fig. 24, 17.

(5) Remains of another arrow shaft with its head *in situ* are shown in Fig. 25. As can be seen, the shaft has almost vanished, but the dimensions were probably the same as the previous shaft. The arrowhead is shown in Fig. 24, 1.

(6) This is a wooden object, presumably a shaft of a kind, with a length of 40 cm and a width of 2.5 cm. It has a hole through it at one end. Its use is unknown.

(7) This is a wooden shaft, about 25 cm long, with an enlargement, as if for a handle, at one end. It may be a fragment of a whip shaft.

(8) Fragments of a paddle. They are described below with the kayak.

Transport

Sledges

A number of wooden fragments were found as casual finds spread out on the surface of the slope in front of the house. Several of them could be identified as remains of a sledge. Unfortunately, they were too fragmentary to give an impression of the original appearance and dimensions of the sledge. A fragment of a crossbar (Fig. 29, 1) shows that these had incisions for lashing in the same way as is done today, but the fragment additionally has a hole which may have been used for fixing the crossbar to the runner.

In an area like Northeast Greenland with a high arctic climate and where the sea is covered with ice for most of the year, it is difficult to imagine people living without sledges and dogs. Mobility is of fundamental importance, both for the daily hunting trips and for longer journeys in order to follow the movements of the animals hunted. In most months of the year the sledge would really have been the only possible way to move around and to transport animals killed over even quite short distances. Scoresby Sund especially offers almost ideal conditions for dog sledging, particularly because the sea is covered with ice for about nine months a year; where frequent and strong gales pack the snow firmly and where pack ice and ice cut by the currents are virtually unknown. Sledges and dogs must therefore, then as today, have been an extremely important part of the hunter's life.

Although the sledge must have been common, only relatively few wooden fragments of sledges have been found, and we do not in fact know very much about the sledge from Northeast Greenland. So far, the only known, complete example, was found on the "Germania" expedition in 1870 near Kap Broers Ruys on the north side of the mouth of Kejser Franz Josephs Fjord. It is described by Thalbitzer (1909: 508–511).

Regarding other wooden parts for sledges a Swedish expedition headed by Nathorst in 1899 found a 167 cm sledge runner and two crossbars (Thalbitzer 1909: 511). Helge Larsen found no sledge remains of wood on Clavering Ø, but he describes a 273 cm long sledge runner and two crossbars from Strindberg Land. (Larsen 1934: 109). Glob mentions the find of an 81 cm long crossbar from Kong Oscars Fjord – Kempe Fjord (Glob 1935: 52), and from their investigation on Clavering Ø in 1948, Jørgen Meldgaard and Hans Georg Bandi also have one crossbar and two fragments of runners (Bandi & Meldgaard 1952: 48).

In the Scoresby Sund area a complete sledge runner was found near some tent rings on one of the Immikertivarqat islands near Kangersuttuaq (Sydkap). (Hauge Andersson, pers. comm.). This sledge runner, which is only 72 cm long, is presumably from a child's sledge. Although wooden parts for sledges are uncommon in Northeast Greenland, sledge shoes of bone are frequently found.

Our material includes eight fragments of sledge shoes – all made of whalebone:

Fig. 30, 4: 10 × 5 cm
Fig. 30, 5: 40 × 6 cm
Fig. 31, 4: 57 × 8 cm
Fig. 31, 5: 50 × 4.5 cm

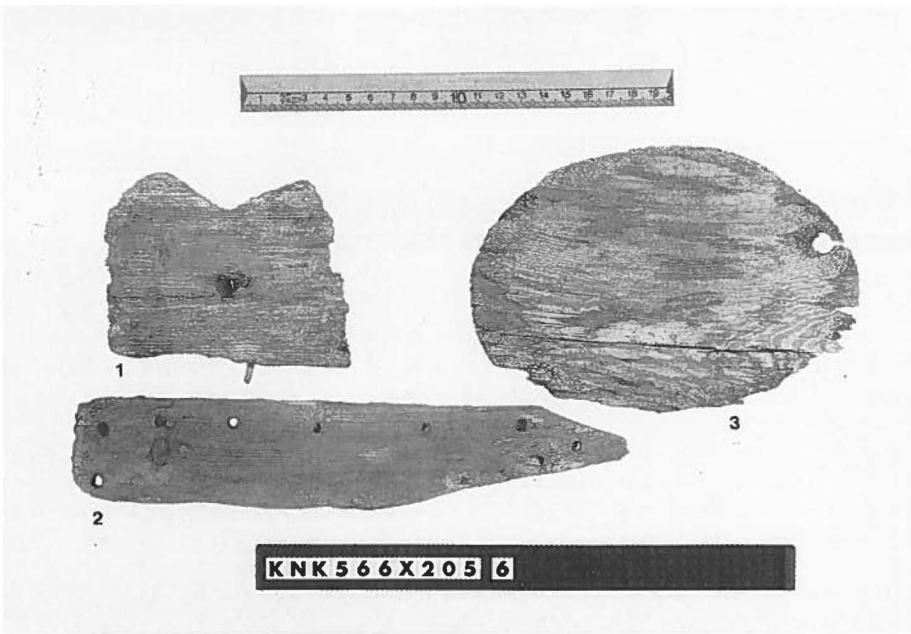


Fig. 29. Wooden objects. (Photo by KNK).

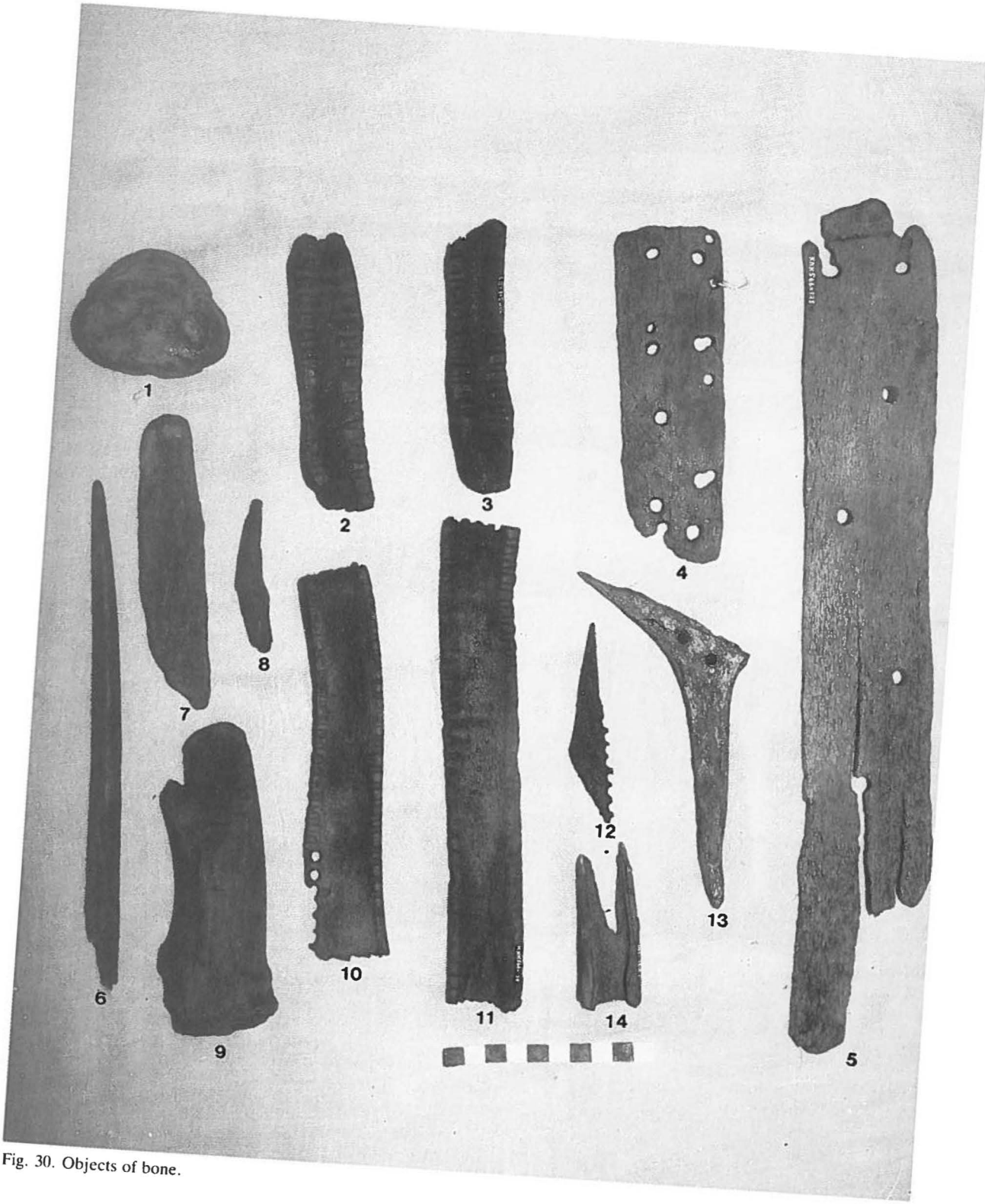


Fig. 30. Objects of bone.

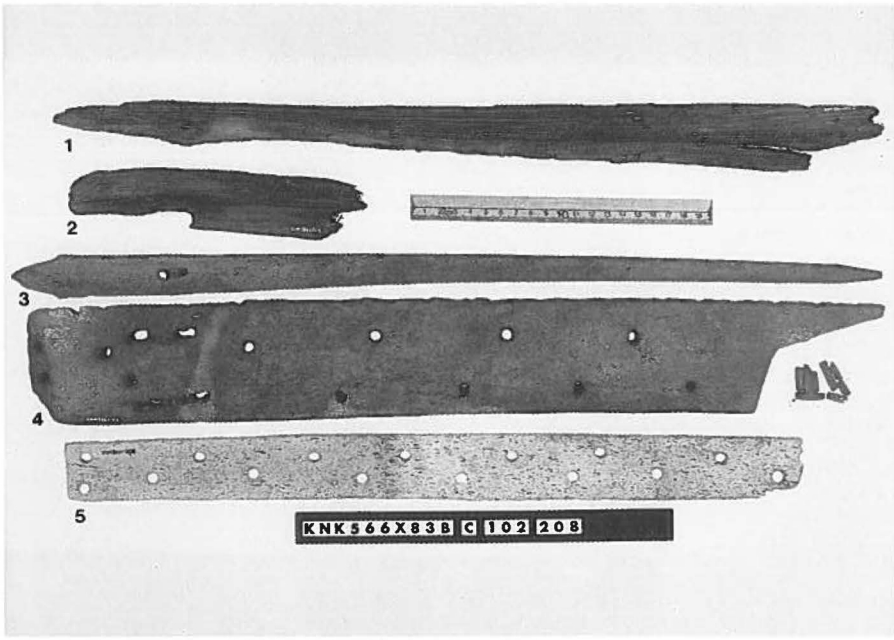


Fig. 31. Bone and wooden objects. (Photo by KNK).

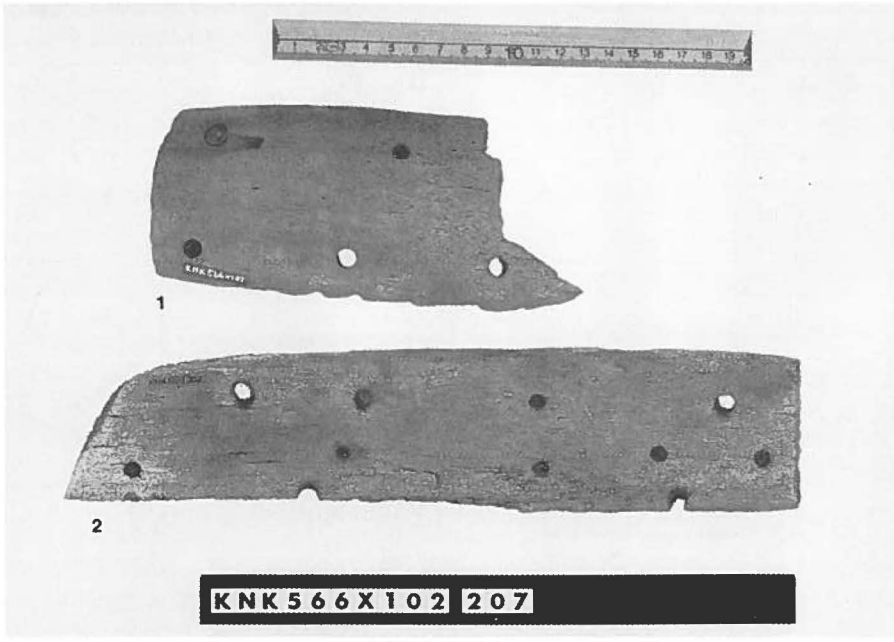


Fig. 32. (1+2) Sledge shoes. (Photo by KNK).

Fig. 32, 1: 17 × 8 cm
Fig. 32, 2: 30 × 7 cm
Fig. 32, 3: 35 × 8 cm
Fig. 32, 4: 10 × 7 cm

On the longest fragment (Fig. 31, 4) there are still remains of the wooden nails which held the shoe to the runner.

Judging from the width of the shoes found, there were two types of shoe, one wide, measuring 7–8 cm, and one narrower at about 5 cm. Today, in Scoresby Sund, different widths of shoe are used depending on the season and the snow conditions. In loose snow and in spring a relatively wide sledge shoe is used (about 8 cm), whereas a narrower shoe (about 4 cm) is preferred on ice and packed, frosty snow. It is tempting to assume that a similar practice was also in use earlier, so that the shoes on the sledge were changed according to conditions.

In the Scoresby Sund area Ryder found 28 fragments

of sledge shoes, most of which can also be grouped into two widths, one about 5 cm wide (the majority) and the rest about 7–8 cm (Ryder 1895: 305). On the Cambridge Expedition 36 sledge shoes were found. The widest measure about 10 cm, but the majority were about 5 cm wide (Mathiassen 1929: 153). From Dødemandsbugten there are sledge shoes with widths varying between 4 and 8 cm (Larsen 1934, pl. 12), most of the total of 50 sledge shoes brought home by the Denmark Expedition were 5–6 cm wide with a variation between 3.7 cm and 7.5 cm (Thomsen 1917: 413).

Trace buckles

In contrast to the large number of sledge shoes, only one example of a trace buckle was found (Fig. 22, 16). It is made from bone and. measures 4.5 × 3.5 cm. Seen from above its shape can be described as an angular egg-shape with a notch at the narow end. There is a hole at the wide end and a smaller hole a the opposite end. From the small hole to the end hollows are cut on both sides as a bed for the trace.

Ryder too has only a few trace buckles from Scoresby Sund, seven in all (Ryder 1895: 306, fig. 5). These buckles are of a more elongated shape than our example, and so are the few trace buckles found by Richter (Richter 1934: 142, fig. 76). Trace buckles of this elongated, elliptical shape are also known from two specimens from Snenæs (Thomsen 1917, pl. XIII, 11 & 12).

It seems odd that relatively few trace buckles have been found in Northeast Greenland, considering that it is an object which must have been commonly used and that each hunter would have used several at the same time.

In addition to this one example of a trace buckle, 32 miniature trace buckles were found. They either would have been used as toys or have served as trinkets (beads). Most of these are shown in Fig. 46. These miniature buckles will be dealt with later, but it should be mentioned that similar small trace buckles are known from a grave in Myggebugten (Richter 1934: 151, fig. 85, 2).

Toggles

Two toggles made from narwhal tooth were found. One is 13 cm long, the other 11 cm. They both have a circular cross section and two holes in the middle (Fig. 21, 21 & 22).

Kayaks

As mentioned earlier, a number of casual finds of more or less decayed fragments of wood were made on the slope in front of the house. One of them was a 113 cm long piece of wood, which had to be the fragment of a gunwale from a kayak. A similar, somewhat shorter piece was found about 500 m east of the house ruins, on a hill further inland.

As with the sledge not much is known about Northeast Greenland kayaks, but the remains of a kayak were found on the south side of the mouth of Segelsällskapets Fjord. Although the fragments found were in such poor condition that a complete reconstruction was not possible, enough was preserved to give an impression of the boat:

"As part of the hull is missing the length of the kayak cannot be determined, but it may with certainty be said that it has exceeded 5 m, – it has been a kayak of the type higher in the bow than at the stern. The frame timbers, a few of which have been preserved, are slender, rectangular in cross-section and have tapered ends. They have been lashed to the keel and lateral laths, but have been mortised into the under-side of the strake. Most of the cross-struts have been recovered; they are similarly tapered at the ends and have also been mortised into the strake. The longest strut is 62 cm and, taking into consideration the diameter of both strakes, the kayak must therefore have had a max. width of at least 65 cm" (Richter 1934: 142).

Paddles

Outside the house, amongst the stock of whalebones and antlers, the remains of a paddle were found: two end mounting fittings made of bone and between them, the almost completely decayed wooden paddle. The wood was in such a condition that it was not possible to pick up large fragments. For the same reason it was not possible, on the basis of the remaining wood, to determine anything about the original form and dimensions of the paddle. The distance between the two end mountings was 285 cm measured along the visible remains of the paddle. (Measured in a straight line between the mountings the distance was 250 cm). This indicates that the paddle was unusually long. H. C. Petersen states that in West Greenland the paddle length usually varies between 160 and 200 cm, with 230 cm as the longest measured (Petersen 1986: 65). At the present time we have to go to the Iglulik district in Canada to find paddles of similar length. Th. Mathiassen has a paddle from there measuring almost 3 m, judging from the photograph (Mathiassen 1928a, fig. 52).

However, a paddle like this one with a length of more than 250 cm is not unique in Northeast Greenland. Paddles and paddle remains found previously indicate that the Northeast Greenland paddle was indeed very long. Richter, for instance, found a complete paddle measuring more than 350 cm, and several of the paddle fragments he depicts also appear to have been more than 280 cm long originally (Richter 1934: 143, fig. 78). All these paddles had carved drip rings, but as mentioned, no detail could be seen on the paddle we found.

On the Bartlett expedition one find amongst others from a house on Shannon Ø was:

"– half of a well preserved double-bladed kayak paddle with a 46 inch blade, 3 inches wide, a large drip ring, and a mid section over 26 inches long; the paddle must have measured more than ten feet (305 cm) originally (Bartlett & Bird 1931: 406).

The end fittings, which are of different sizes, are of whalebone and are beautifully made. In form they are almost rectangular, with the two corners furthest away from the paddle rounded. The larger mounting measures 9 × 5 cm and the smaller one 6 × 5 cm, and they are both 1 cm thick. They have a square slot for the paddle and each has a hole for nailing on to the handle. The fittings are shown in Fig. 22, 25 & 26 and the remains of the paddle itself are shown in Fig. 31, 1 & 2.

Paddle end mountings have been found previously in Northeast Greenland. Glob, for instance, found an example at Kap Harry made of walrus tooth (Glob 1935, pl. 4, 40), and there is a similar mounting from Strindberg Land (Richter 1934, fig. 124, 3). However, neither of these has quite the same form as our two examples.

Cross strap bone fittings

We found a very fine example carved like a bear's head. Ears, eyes, nostrils and mouth are all visible. The fitting measures 5 × 2 cm. It is made from narwhal tooth and has two holes through the neck for reins. There is another hole in the neck which does not go all the way through (Fig. 22, 17). Both the form and the size of the object suggest that it is a bone fitting for the kayak cross strap.

Helge Larsen mentions an almost similar bear's head found on Strindberg Land (Larsen 1934: 132), and a similar bear's head figure is known from Snenæs near Danmarkshavn. It is 8 cm, has a flat base and also has two holes through it. Despite its size Thomsen considers it to be a finger support from a throwing weapon and refers to the fact that very large finger supports are found among the Central Eskimos. It seems more likely to us because of its form that the object is a cross strap fitting (Thomsen 1917: 375, fig. 2a).

The object in Fig. 22, 9 is possibly also a cross strap fitting. A similar one was found at Snenæs (Thomsen 1917, pl. XI, 15). However, it is also possible that it could have been a buckle for a kayak suit. In the film "Palo's Wedding" a similar buckle can be seen used to hold the strap which ties the hood tightly around the face. The buckle is apparently identical to our example (cf. Thalbitzer 1914: 572, fig. 296).

Hunting float

Three objects for use in connection with a hunting float were found: a mouthpiece for a float (Fig. 22, 12); a mending disk, which was presumably used for the hunting float (Fig. 22, 11); and finally a "double ball" (Fig. 22, 20), the use of which is uncertain. It may have served the same purpose as the mending disk.

Amongst the bone beads several examples of miniature double balls were found. These will be described in the section on beads.

Tools

Snow knives

The three snow knives found in and in front of the house are shown in Fig. 33. They are all made from whalebone and have the form which is most common in Northeast Greenland, *i.e.* with two shoulders and a curved handle (Larsen 1934: 111).

The largest (Fig. 33, 1) was found outside the house in front of the entrance passage. It was made up of two parts as the knife handle had a knob attached to the end. The knob, which lay next to the handle, was fastened to the snow knife with a lashing through two sets of holes. The snow knife is 43 cm long and 9 cm wide at the shoulders. The knife is flat on one side and slightly convex on the other. The tool was given extra support in the hand by the little knob, and it does in fact lie well in the hand. A similar, very fine snow knife of the same size was found in a grave in Myggebugten (Richter 1934: 123, fig. 56, 1).

The second snow knife (Fig. 33, 2) was also found outside the house. It is smaller than the first, 24 cm long and 8 cm wide across the shoulders, and it is a short, broad and robust knife. Two similar snow knives of the same size and the same wide form are known from Ella Ø and Kap Humboldt (Richter 1934: 123, fig. 56, 2 & 5).

The last snow knife (Fig. 33, 3), which was found inside the house ruin, is, judging from its size, a toy version. It is 15 cm long and apart from the size it is a true copy of the one in Fig. 33, 1 (although it is made in one piece without a knob joined to the end).

The snow knives appear to demonstrate that the inhabitants of the house knew and needed the technique of building snow houses (or snow shelters). In the Scoresby Sund Fjord complex it is usually not difficult to find snow suitable for house building, and today's hunters do sometimes use a snow shelter if they are overtaken by bad weather while they are out.

It is possible that snow houses played a more important role in the Scoresby Sund area than is usually assumed. This suggestion is supported by the presence of snow knives as well as by the hunting conditions in winter in the inner parts of the fjord complex, where breathing hole hunting required a high degree of mobility.

Thus Helge Larsen points out that the large number of snow knives from Northeast Greenland seem to indicate that snow houses were of importance in this part of Greenland (Larsen 1934: 111). In contrast, Richter

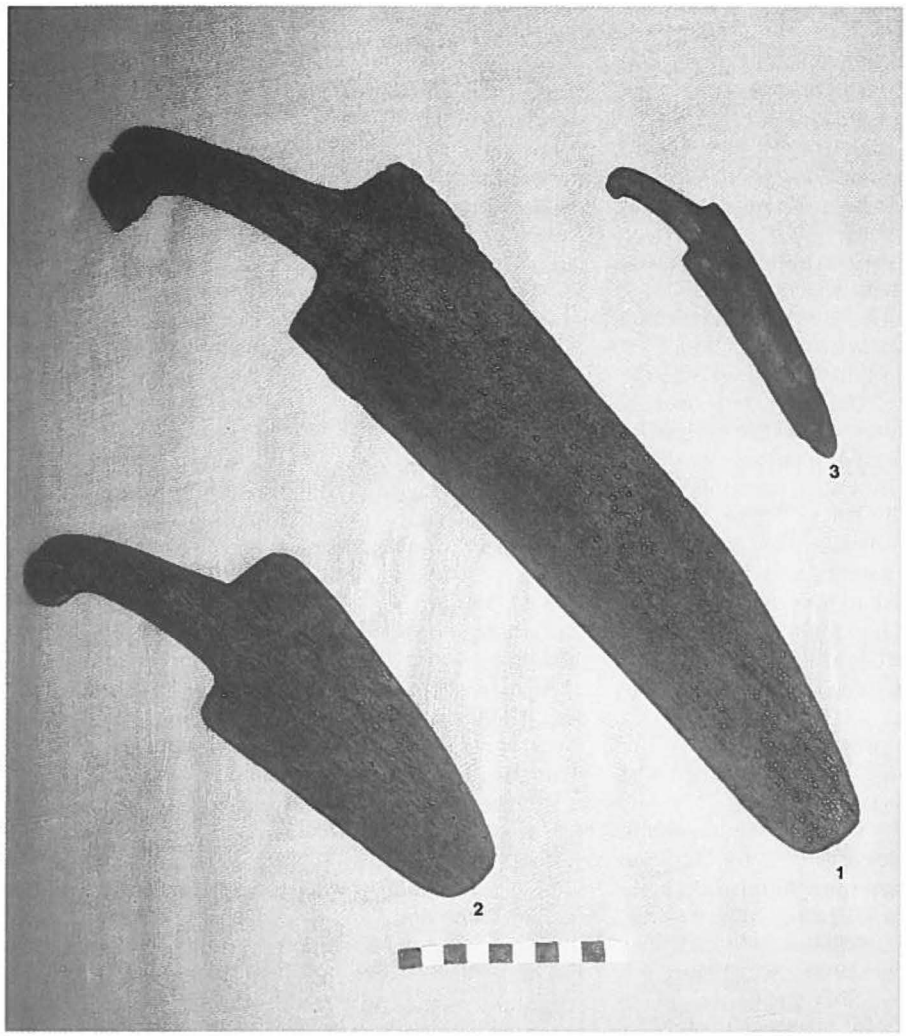


Fig. 33. Snow knives.

does not believe that snow houses were a major necessity, as he maintains that long hunting trips were not needed. In his opinion the snow knife was probably used for building snow shelters while engaged in breathing hole hunting (Richter 1934: 124).

As mentioned, the snow knife is commonly known throughout Northeast Greenland. In the Scoresby Sund area there are, for instance, four examples from Danmarks Ø (Ryder 1895: 320, fig. 19). Ryder calls them ice scrapers, but they are snow knives. Amdrup found a snow knife at Uunarteq (Kap Tobin), 31 cm long (Thalbitzer 1909: 438, fig. 62) and the National Museum in Copenhagen has three examples, (Nat. Mus. L1 185, 186 & 197) which were brought home from Ittaajimmiit (Kap Hope) by colony manager Johan Petersen in 1927.

Nathorst shows one example at 41 cm, but unfortunately without stating the finding place (Nathorst 1900: 345; Stolpe 1906: pl. 10). Glob found four snow knives on Suess Land. Three are made from wood and only one from whalebone (Glob 1935, pl. 13, 2). Richter found several snow knives in the stretch between Kong Oscars Fjord and Clavering Ø. Five are shovn in his book (Richter 1934: 123, fig. 56).

Dødemandsbugten has contributed 33 snow knives from the two phases of the mixed culture (Larsen 1934, pl. 4.6). In the Denmark Expedition's material there are nine complete snow knives and fragments of two. (Thomsen 1917: 421, pl. XX).

Among the many beads in our find, there are also three miniature snow knives. Two of these are of the long form and one is of the robust type. They are shown in Fig. 45 together with some of the other trinkets.

Knives

Although slate knives with the blade and handle in one piece are common and characteristic of Northeast Greenland (Larsen 1934: 112), none were found during

the excavation despite the large quantity of slate objects.

However, a knife with an iron blade and an atypical handle was found (Fig. 21, 2). The blade is 11 cm long and is indistinguishable from a European blade, but it could of course have been made from a barrel hoop washed ashore. (This question must be left open for the time being as the iron objects have not yet been analysed).

The handle iself is made of caribou antler and consists of two symmetrical halves held together around the blade with lashings and nails. The handle is 13.5 cm long and the complete knife measures 22 cm.

We found two more sets of similar handles during the excavation, one set complete, the other as fragments (Fig. 21, 9, 10, 16 & 17). Handles of this type are said by Glob to be particular to the southern part of Northeast Greenland (Glob 1935: 53). They have been found previously in the Scoresby Sund area by Ryder on Danmarks Ø (Nat. Mus. Lc. 1483; Ryder 1895: 323), and in Richter's area two complete examples with inserted iron blades are known from a grave in Myggebugten (Richter 1934, 57, 1 & 3). Finally, Glob found similar handles in the Kempe Fjord complex (Glob 1935: 53). But apart from these there do not seem to be further examples in Northeast Greenland.

Knife blades of iron are, however, known in most of Northeast Greenland, although they are found most frequently in the southern part.

Ryder found two iron knives with wooden handles in the Scoresby Sund area (Ryder 1895: 32, fig. 21), and colony manager Johan Petersen brought one iron knife with a wooden handle home in 1927 (Nat. Mus. L1 198). In the register of Nathorst's collections in Stockholm's Etnographic Museum (Catalogue 1902. 10. 5) there is a knife with a handle of caribou antler and an iron blade from Ittoritseq (Kap Stewart) (cf. Nathorst 1900: 347). The Amdrup expedition found an example at Uunarteq (Kap Tobin) (Thalbitzer 1909: 455, fig. 48).

Further north a knife with an inserted iron blade was found at Kap Harry (Glob 1935, pl. 12, 21), and around Myggebugten three knives with inserted iron blades as well as a loose iron blade were found by Søren Richter (Richter 1934: 125, fig. 57, 1, 2 & 3). The Bartlett and "Germania" expeditions also found knives with iron blades at Clavering Ø and Little Pendulum Ø respectively (Bartlett & Bird 1931: 408, fig. 14, 18; Koldewey 1873: 605).

Several examples of another type of knife, with a double-edged slate blade and a long handle, were found. One of them is shown in Fig. 14.

Adzes

Together with the iron knife, an adze head, also with an inserted iron blade, was found (Fig. 21, 1). The adze head proper, which is made of whalebone, was well finished. It is 13.5 cm long, 4.8 cm wide and about 2.5 cm in thickness. The inserted iron blade projects 1.2 cm from the adze head and is 2.4 cm wide. The adze head has six pairs of holes passing through it for fixing to the shaft. The shaft itself was not found, but was probably a wooden handle.

From the second phase of Northeast Greenland's mixed culture on Clavering Ø, Helge Larsen found an almost identical adze head, except that the lashing holes were placed on the side of the head (Larsen 1934, pl. 12, 13). Ryder found an adze head of whalebone in the Scoresby Sund area with six holes placed as in our example (Ryder 1895: 325, fig. 24). An adze head which is believed to have had an iron blade was found on Suess Land by Glob (Glob 1935: 54 & pl. 3, 12).

Whetstones

The whetstone used to be indispensable for working the many slate blades. As confirmation, three complete whetstones and two fragments were found. The largest is 11.5 × 2 × 2 cm and the two others measure 10.5 × 2 × 2 cm and 9.5 × 2 × 1.5 cm respectively. The latter had a hole at one end for suspension (Fig. 34, 9, 10, 11, 12 & 13).

All the whetstones were of fine-grained sandstone, four-sided with blunt ends and with four whetting surfaces. None of the special Northeast Greenland variety with grips at the ends were found.

Richter found one whetstone in a grave in Myggebugten, 17 cm long, which, like ours, also has four whetting surfaces and no grips (Richter 1934: 130, fig. 64, 1). Glob has a total of 30 whetstones from the excavations in the Kempe Fjord and Kong Oscar Fjord area, and of these only a few have whetting surfaces on all four sides (Glob 1935: 53). On the other hand, the four-sided whetstone is the most frequently occurring in Dødemandsbugten, both in the first and in the second phase of the mixed culture. However, here there were relatively far fewer whetstones found from the second phase. According to Larsen this is due to slate being less used towards the end of the cultural period (Larsen 1934: 114, 147).

Drills

The drill was indispensable to the population of Northeast Greeland. It was used for almost every work process in which a drill could be employed. There is hardly any other place in the Eskimo world where the drilling technique was used to such a degree, and this technique, together with the extensive use of slate, became a characteristic of the more recent culture in Northeast Greenland.

In our excavation material too, the majority of the objects show signs of the use of drills. By drilling a line of holes next to each other bone could be split into material for tools, and in many cases the drill was used to give crude form to an object. Many of the objects

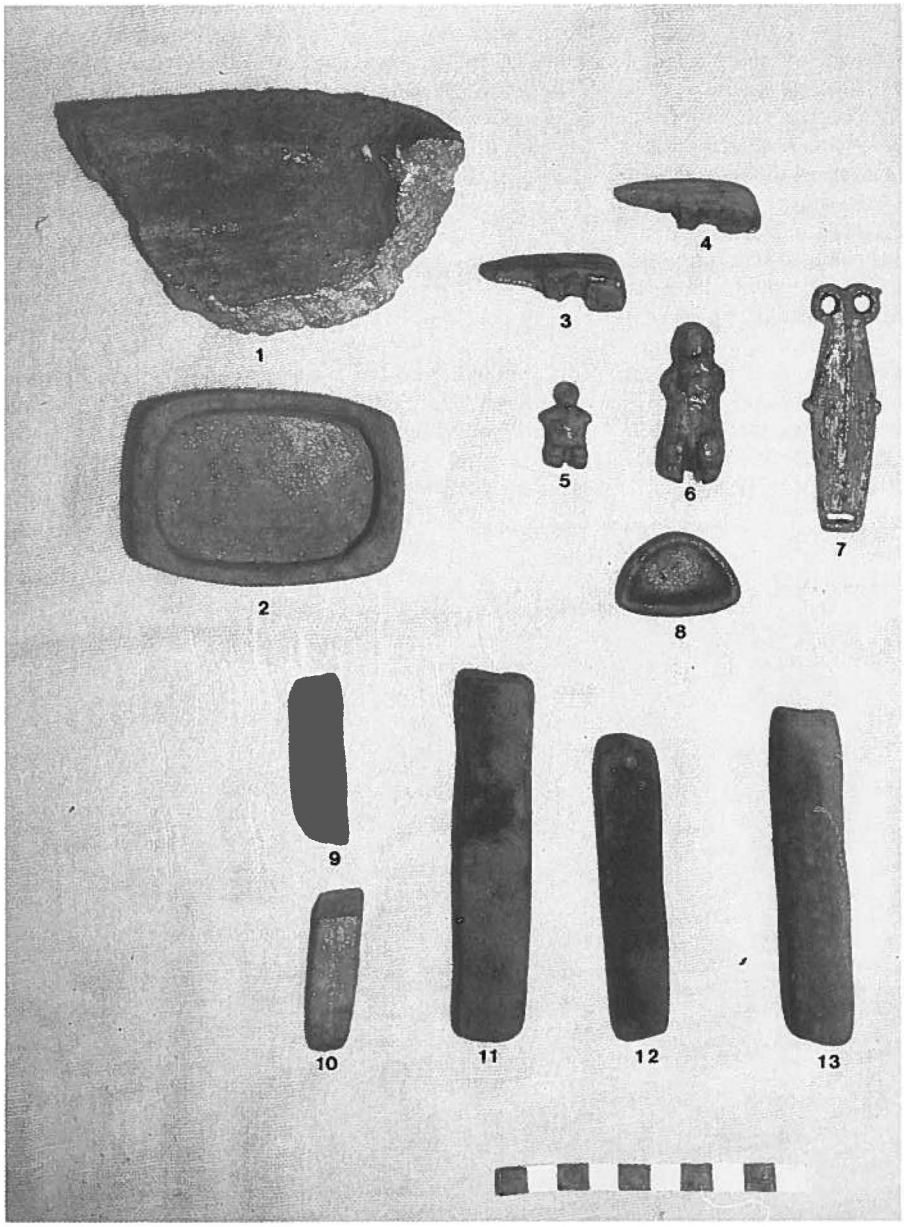


Fig. 34. Whetstones, toy lamp & cooking pot, human & bear figurines and lamp fragment.

found also have holes drilled in them of varying sizes, from very small (ca. 1 mm) in some of the beads to the largest, with a diameter of 1.5 cm, in the shaft socket of the harpoon head.

Strangely enough only one drill shank was found (Fig. 21, 12). It is made of caribou antler 7 cm long and has a drill bit of iron. In the end opposite the drill bit, the drill is cut obliquely, so that it can be attached by a fishjoint to a piece of wood or bone.

The rest of the drilling equipment, *i.e.* the mouthpiece, bow and drill bits of other sizes, were not found. However, we do have a hand-sized stone with a hole which fits a drill shank (Fig. 30, 1), but whether it was used for drilling is somewhat doubtful, as in this case the object should have been hand held. Usually the drill bearing is an "astragalus" or ankle-bone from a caribou which was held in the mouth during work.

Drills with iron bits have been found previously in Northeast Greenland, for instance at Uunarteq (Kap Tobin) (Thalbitzer 1909: 453, fig. 47), at Ittoritseq (Kap Stewart) (Nat. Mus. Lc. 1469), at Kap Harry (Glob 1935, pl. 2, 14) and at Shannon Ø (Bartlett & Bird 1931: 408).

Fig. 30 shows several pieces of bone where the drill marks indicate the technique used when a part was to be split from a larger piece of material.

"Hand drill"

A very fine small tool, which for want of another name we have chosen to call a "hand drill", was found next to a slate disc. The slate disc (Fig. 35, 12) had an incised groove on both sides, undoubtedly made with the hand drill, which clearly demonstrated one of the functions of the tool.

The hand drill itself (Fig. 21, 11) consists of an 8 cm long shaft of narwhal tooth, into which a small iron bit, only 5 mm long, was inserted. This bit had a triangular cross section narrowing down towards the tip, which was sharp.

Hand drills of the same form, but most often with wooden handles, are known from Dødemandsbugten in both the first and the second phases of the mixed culture (Larsen 1934, pl. 5, 10, 11, 12 & pl. 14, 9). The latter example has a bit made of slate.

A 7.2 cm long hand drill made of narwhal tooth was found in house ruin 141 on Marossia near Danmarkshavn, with the same conical shape as our specimen (Thomsen 1917: 466, fig. 47). In the Scoresby Sund area a hand drill with a 9.5 cm wooden handle and an inserted iron blade was found between the houses at Ittoritseq (Kap Stewart) (Nat. Mus. Lc. 1483).

Household utensils

Lamps

In the summer of 1982, when we discovered the ruin complex during exploration, we found a circular sandstone lamp lying upside down near a fireplace, about seven metres in front of House A (The House of Beads). The lamp, which was made of reddish sand-

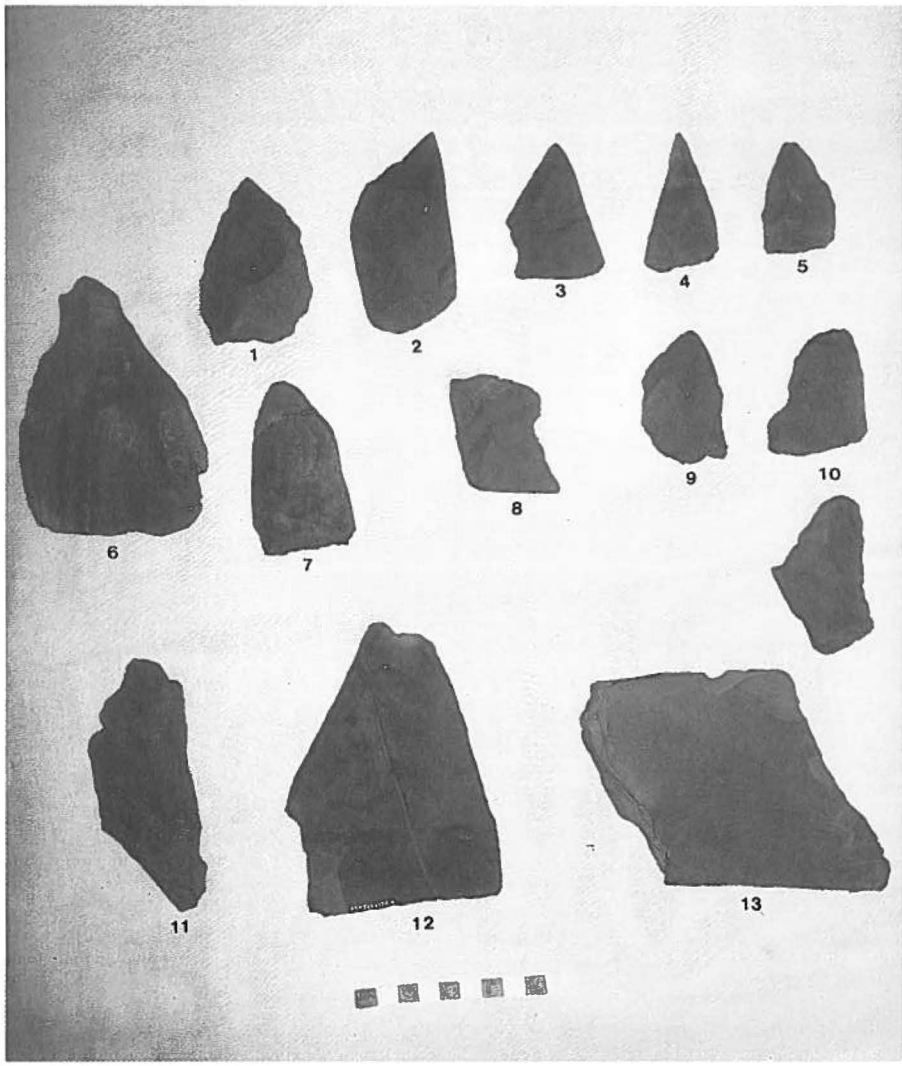


Fig. 35. Slate plates and unfinished blades.

stone, had a diameter of 35 cm, a height of 3–5 cm and a natural depression on the top (Fig. 36, 1). On the top there were clear signs of solidified blubber.

On Ella Ø, (Kap Harry, House 1), in a house which was unusual in many ways, P. V. Glob found a similar lamp. This lamp measured 20 × 26 cm and was 4 cm deep (Glob 1935: 10, fig. 4 & p. 56). Richter, who found similar lamps around Ymer Ø and Traill Ø, remarked: "The Greenlanders of the north-east coast do not seem to have paid any particular attention to the shape of the blubber lamp and in many huts they have been content with suitable large stones with presumably natural hollows" (Richter 1934: 135 & fig. 70).

Elderly people in Scoresby Sund, who have been shown the lamp, were of the opinion that such "lamps" were more likely to have been used as bowls set under the lamps to catch the drips (Sandell 1982: 58).

Inside the house ruin, standing in its place on the remains of the lamp stand, a complete sandstone lamp was found (Fig. 37, 1). In Fig. 38 the lamp is shown *in situ*. The lamp is of the common, almost crescent shaped type, with rounded corners and without a wick ledge. It measures 36 × 27 cm and is comparatively deep along the back edge.

As well as this example, a smaller, slightly damaged lamp was found near the entrance to the passage and outside the house lay a single lamp fragment, also of sandstone. The little lamp, which was somewhat more roughly made than the other, was also oval/half-moon shaped without a wick ledge, comparatively deep, and of sandstone. Judging by the size of the lamp and the location where it was found, it is assumed that it is an *atteq*, that is, the little lamp which was used among other things for keeping the cold away from the floor. During the excavation, a toy lamp of similar type as the other two lamps was also found (Fig. 34, 8).

In Northeast Greenland complete lamps of similar form are known particularly from the Scoresby Sund area where Ryder among others found one specimen made of soapstone (Ryder 1895: 327, fig. 25). In Ittaajimmiit (Kap Hope) in 1924 a lamp was found in place on the lamp shelf of a house ruin with a collapsed roof (House I) (Rasmussen 1924/25), and in 1986 a complete lamp which, judging by the description, is very similar to our example, was found in the settlement (Sandell, field notes 1986).

A sandstone lamp measuring 28 × 17 cm is known from a grave in Myggebugten, and there exists an example of the same size (36 cm) as ours from Kap Moorsom, but somewhat more roughly crafted (Richter 1934: 136, fig. 71, 202, fig. 121).

Two complete lamps are known from Snenæs and Stormbugten near Danmarkshavn. The lamp from Snenæs was found in a house ruin (House 406) standing in its place and with fragments of a cooking pot lying around it. This lamp measures 24.5 × 15.5 cm. The other lamp from the east coast of Stormbugt measures 30 × 20 cm (Thomsen 1917, pl. XXIV, 1 & 2; Thostrup 1911: 278).

Helge Larsen found no complete lamps in Dødemandsbugten, but based on the toy lamps he did find he felt able to conclude that lamps with wick ledges dominated the first phase of the mixed culture, whereas they did not occur at all in the second phase (Larsen 1934: 122).

Fig. 36. Sandstone lamp or drip bowl. (Photo by KNK).

Fig. 37. Sandstone lamp. (Photo by KNK).

Pots for cooking

In the summer of 1982 we had already discovered a stone cooking pot standing inside the house ruin by the south wall and covered by a stone. During the excavation we discovered that it was not, unfortunately, complete and undamaged as we had assumed at first. As it was jammed between two stones, which had fallen down, it had broken a little, and it was slightly weathered at the corner which had been exposed to the elements.

The pot was fine and elegant, made of sandstone with rounded corners and a flat bottom. Its form was square and inside each corner at the top there was an edge with holes for hanging it up. There were still the remains of suspension straps in two of the holes. The pot measured 40 × 20 cm and was 18 cm deep (Fig. 39). A complete toy pot of a similar shape but without strap holes was also found (Fig. 34, 2).

Pots with an internal edge and strap holes are common to the Inugsuk culture in most of Greenland (Mathiassen 1930: 314; Holtved 1944: 264). In the

Fig. 38. Lamp during excavation.

Fig. 39. Cooking pot.

southern part of East Greenland, they are known from Ammassalik in both the early neo-Eskimo culture and later (Mathiassen 1933: 55 & 94). Further north in East Greenland the type is found at Clavering Ø, where several fragments of pots exist with the internal edge for hanging up (Larsen 1934: 122, pl. 6, 4).

From the area north of Scoresby Sund, Richer mentions a type of pot completely lacking suspension holes, as well as a type with holes but without an internal edge (Richter 1934: 136–137, fig. 73, 2). In Dødemandsbugten an almost complete pot was found from the second phase of the mixed culture. It has suspension holes but no internal edges (Larsen 1934: 151, fig. 38). Finally, at, Eskimonæs in the very north of Northeast Greenland, fragments have been found of yet another type of pot, namely a form with an external edge and suspension holes (Thomsen 1917: 448).

Several fragments of pots with suspension holes have been found in the Scoresby Sund area, and a toy pot with holes and a distinct internal edge was found in a grave (Ryder 1895: 328, 336). Jens Kai Rasmussen found three complete pots in the area, but unfortunately details of size or type are not available. He mentions a pot of soapstone from House I in Ittaajimmiit (Kap Hope), where the lamp mentioned previously was found, and he describes the find of two "vessels" near some tent rings at Gule Fjeld in Rosenvinges Bugt:

"At the edge of the cliff there stood two vessels, crudely made out of sandstone which is light yellow like Sandstensfjeldet which lies 1 km inland from the coast. The vessels were standing as if the intention had been to take them along on departure, but at the last moment they had been left behind because they were too heavy" (Rasmussen 1924/25, authors' translation).

Ladles

The material found contained no large ladles but in the entrance passage a miniature version of a ladle was found. It was made from wood and almost complete. The ladle was well preserved as it was embedded in perma frost.

The ladle, which is cut from one piece of wood, has a flat bottom and the two long sides are almost vertical. The front widens a little and ends in a characteristic oblique edge. The ladle itself is 5 cm long, 3 cm wide and with an internal depth of 1.3 cm. Including the handle, which is missing a piece, the full measurement is 6.5 cm.

Ryder found a very fine ladle with the same characteristic oblique front edge in a grave at Hekla Havn on Danmarks Ø. This ladle measures 25 × 15 × 6 cm and has an 11 cm long handle (Ryder 1895: 330, fig. 28a) In the National Museum in Copenhagen there is a small ladle from Ittoritseq (Kap Stewart) which is like our example in form and size (Nat. Mus. Lc. 1454).

In House I at Ittaajimmiit (Kap Hope), which has been mentioned several times before, Jens Kai Rasmussen found a number of food ladles made of wood and in another house ruin on the site (House VI) lay "a small wooden ladle (very fragile) and other objects including something which surprised me very much, namely a piece of broken glass, apparently the neck of a beer bottle" (Rasmussen 1924/25, authors' translation). Due

to their poor state of preservation it was not possible to conclude anything about the form of the ladles (Ibid.).

On Shannon Ø a small wooden ladle measuring 6 × 5.4 cm was found. It appears to be exactly like ours (Bartlett & Bird 1931: 408, fig. 14, 22). Richter found food ladles at Clavering Ø and Kap Ovibos, which are also like our example in form (Richter 1934: 138, fig. 74 & 183, fig. 103, 9).

Lying in the small ladle which we found, there were 27 very small, processed, needle-like objects of bone and a small piece of iron (Fig. 40). All 27 needles were polished, were square in cross section and were sharp at one end and obliquely cut at the other. They were all without eyes! The longest measured 28 × 2 × 1 mm and the smallest 16 × 1 × 0.9 mm.

It is difficult to tell what these small needle-shaped objects were intended for. They appear too small to be early stages of sewing needles, but that possibility cannot be excluded. (In a woman's grave in Kangerlussaq two small needles of walrus tooth were found together with a winged needle case. They were square in cross section and the longest, which had an eye, measured 3.2 cm (Mathiassen 1934: 6, pl. 1, 19)). Other possibilities are that they could be tattoo needles, small drill bits (many of the beads found had holes with a diameter less than 1 mm!), or simply tooth picks.

The small piece of iron which also lay in the ladle was 10 mm long. It is possibly the remains of a sewing needle.

Sucking tubes

No trace of a water bucket was found in the house ruin, but a fine and complete sucking tube, which lay on the floor near the lamp shelf, could serve as indirect proof of the existence of a kind of water container.

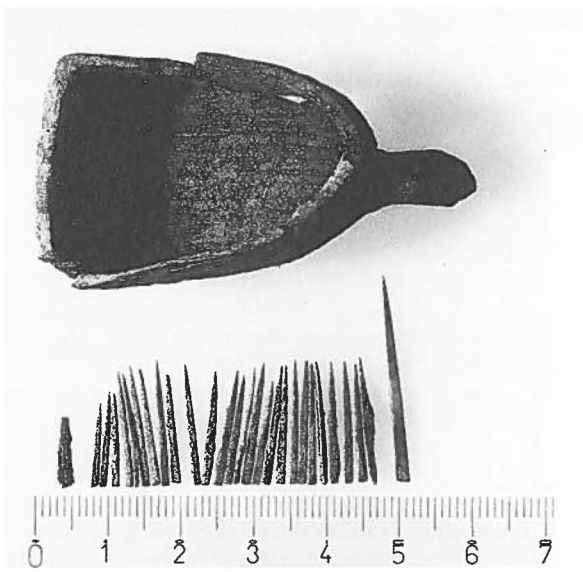


Fig. 40. Miniature laddle with bone needles. (Photo by KNK).

The sucking tube (Fig. 22, 22) is made of narwhal tooth, 33 cm long and circular in cross section. At the thick end, where a double flange is cut, the diameter is 2.8 cm and at the other, narrow end it is 1.5 cm.

Ryder has a fragment of a piece of carved narwhal tooth from the Scoresby Sund area. The fragment, a hollow cylinder with two raised rings, is without doubt the end of a sucking tube (Ryder 1895: 338, fig. 39a). Glob has a small sucking tube from Geographical Society Ø with a flange at the end, and a sucking tube of wood from Suess Land (Glob 1935, pl. 3, 4 & 5). A sucking tube with a double flange at the ends and at the middle has been found in Dødemandsbugten. It is said to belong to the first phase of Northeast Greenland's mixed culture.

Within Greenland, sucking tubes are ethnographically described from Ammassalik (Holm 1972:202), and outside Northeast Greenland they are known archaeologically from both Thule (Holtved 1944: 268) and the northern part of West Greenland (Hjarnø 1974: 32 & pl. 6, 2). In recent times similar sucking tubes are also known from the Central Eskimos (Boas 1964: 127, fig. 100).

Bone mountings

Two bone mountings intended for the edge of a water bucket or similar were found. They are both of whalebone with flat undersides, convex tops and a line of holes for the fixings (Fig. 22, 23 & 24). The longest is 13 cm long and 1 cm wide, and the other measures 10 × 1 cm.

Similar edge mountings are common in the entire Eskimo area. In Northeast Greenland for instance, they have been found in Scoresby Sund (Ryder 1895: 335, fig. 34), at Kap Mackenzie and in Eleonora Bugt. (Mathiassen 1929: 159).

Scrapers

Two objects of caribou antler are shown in Fig. 30, 7 & 9. They may have been used as scrapers.

Bodkins etc.

In the summer of 1982 a bodkin-like object was found in the house ruin (Fig. 22, 8). It is made of bone, 20.5 cm long and slightly curved. It is sharp at one end and the other end is finished off with a head. One side of the head is level with the rest of the bodkin while the other side forms a bulge hrough which there is a diagonal hole.

Therkel Mathiassen, who describes a similar object from Inugsuk, believes it to be a meat stick (Mathiassen 1930: 240). In Northeast Greenland similar objects are known from Dødemandsbugten (Larsen 1934, pl. 14,

5), from Kejser Franz Josephs Fjord (Richter 1934: 205), and from Scoresby Sund (Ryder 1895: 320; Thalbitzer 1909, fig. 53). Ryder considers the object to be a wound pin and the example depicted is also smaller than ours and possibly with a rhomboid cross section. One example from Ittaajimmiit (Kap Hope), now at the National Museum in Copenhagen, is catalogued as: "Meat fork made of walrus tooth, curved, pointed; a bulge at one end with an oblong hole, 0.25 m long" (Nat. Mus. L1 199).

During the excavation of the "House of Beads" in 1983 a further seven bodkin-like objects were found (Fig. 22, 1–7). They have all been slightly crafted, made from rudimentary tusks of narwhals, and they vary in size between 13 and 21 cm. Several of them are cut diagonally at the pointed end, and one (Fig. 22, 6) has been cut from two sides so it is wedge shaped at the point.

Specimen no. 7 may be a meat stick – an almost identical example is known from Gauss Halvø (Richter 1934: 153, fig. 87, 2) – but there are several possibilities regarding the use of the others. They may have served as pegs for e.g. skin stretching, as was done in Ittaajimmiit (Kap Hope) until a few years ago. Another possibility is that they served as wedges and/or chisels. The latter seems obvious, taking into consideration the degree to which the drilling technique was used.

Ryder has an illustration of a tool which he calls a skin scraper, but the size seems to indicate that it is more likely to be a type of wedge (Ryder 1895: 33, fig. 31c). Therkel Mathiassen mentions a wedge from Eleonora Bugt 13 cm long made of caribou antler (Mathiassen 1929: 156).

Comb

A very fine comb of narwhal tooth was found inside the house (Fig. 22, 19). It has eight teeth and measures 7 × 3.5 cm. The teeth take up one third of the total length. At the top it narrows down a litle and ends in two wings which probably symbolize a narwhal tail or the hind flippers of a seal.

There is a complete comb from Renskæret near Danmarkshavn measuring 6.8 × 3.9 cm (Thomsen 1917: 453, fig. 40), but it shows little similarity to our comb apart from the fact that this example also has eight teeth. In connection with this comb, Thomsen pointed out that combs were rarely found in Northeast Greenland (Thomsen 1917: 453). This is apparently still true: Helge Larsen has a single example from Dødemandsbugten (Larsen 1934: 126, pl. 7, 7), there is a single, quite unusual comb from Dunholm, a little south of Scoresby Sund (Thalbitzer 1909, figs. 55 & 56), and Johan Petersen brought back a decorated comb of walrus tusk from a grave in Ittaajimmiit (Kap Hope), (Nat. Mus. L1 193); but apart from these, combs are not found in Northeast Greenland, as far as is known. None of the combs found resemble our example.

Among the finds in the death-house at Nualik, south of Scoresby Sund, there is one comb which resembles our example (Thalbitzer 1909: 607, fig. 333).

From outside Greenland, on the other hand, there is an ethnographic description of a comb from the Iglulik area. It seems to match the comb from the "House of Beads". (Mathiassen 1928a: 202, fig. 161, 2).

Wooden box ("amulet box") and contents

In the permafrozen floor of the entrance passage lay a small, wooden box containing various small items (Fig. 41). The box wood was well preserved owing to the permafrost, but the box had been crushed by a falling stone. The box was made of thinly cut driftwood and had been carefully notched and nailed together with wooden nails. The nails were well preserved and were still in position. The box was square, measuring 14.5 × 12 cm and 4 cm high. It had a bottom but no lid, and a small carved bone knob was inserted into one of the long sides (Fig. 42).

Glob found a similar small box, but more roughly made, in a house ruin at Kap Harry on Ella Ø. It measured 12.8 × 10 × 7.2 cm and was also put together with wooden nails. It had a bottom but no lid (Glob 1935: 57, fig. 28). Glob points out that the house ruin (Kap Hary I) where the wooden box was found was atypical in many ways, containing for example a large number of objects including a human lower jaw (Glob 1935: 8).

A grave at Hekla Havn in Scoresby Sund held the sides of a small square box made from thin pieces of wood. This box measured 14 × 8 × ? cm. Next to the small box about ten thin wooden sticks were found. They were 8–10 cm long and no thicker than matches (Ryder 1895: 335). (Notice the similar "needles" found in the small ladle near the wooden box, which were mentioned above).

Thalbitzer mentions a small wooden box (23.5 × 10 × 7 cm) found on Jackson Ø by the Second German Polar Expedition in 1870, which in his opinion is a kind of tool or clothes box of the same type as known from Ammassalik, called *tummaqqat* (Thalbitzer 1909: 520). Looking a little more closely at the circumstances of the find, another possible use of the box can be suggested: "However, an interesting find was made at the rocks near Ostkap. Between the large stones in this place Peter Iversen found a piece of wood which he picked up thinking it was driftwood. Instead it turned out to be a systematically crafted, rectangular, thin board with numerous small holes along the edge. Immediately we moved more stones and soon uncovered yet a similar board and underneath this there was a well preserved human cranium as well as several arm and leg bones. – The only explanation we could give for this find was that it must have been placed there for some religious reason" (Koldewey 1873: 648, authors' translation).

Linked with a grave at Uunarteq (Kap Tobin), a

Fig. 41. Amulet box *in situ*.

similar find was made by Jens Kai Rasmussen: "Two metres north of the grave (grave no. 6) between some pieces of loose rock I found a small wooden box made with wooden nails. It had fallen apart, that is the bottom and the lid had fallen off. Between the stones under the box there were some miniature objects, for instance a small mussel-shaped lamp, a pot, an *Ulo* and a slate whetstone. It all lay in such a way that I had to assume that at some time the objects had been put into the wooden box" (Rasmussen 1924/25, authors' translation).

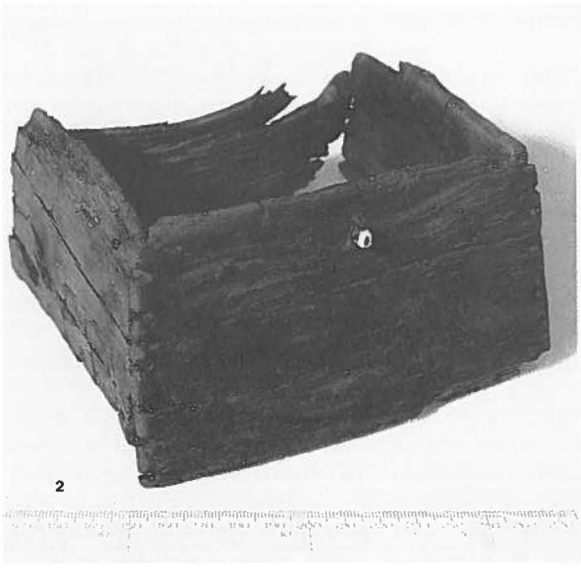


Fig. 42. Amulet box. (Photo by KNK).

On the Cambridge Expedition three pieces of wood for a box (17 × 15 × 5 cm) were found at Kap Mackenzie. The circumstances of the find are not quite clear, but it is probable that the pieces came from a grave (Mathiassen 1929: 157). Helge Larsen found a side of a square box (7 × 4 cm) at Dødemandsbugten (Group III, House 7) (Larsen 1934, pl. 14, 11) and at the same place Bandi and Meldgaard also found the side of a small box lying on the ground (Bandi & Meldgaard 1952: 55).

Of course we do not know with certainty what these small boxes were originally used for – Thalbitzer may be right when he describes them as tool boxes. The circumstances under which several of these boxes were found seem, however, to indicate that they may also have had an alternative use, *e.g.* as amulet boxes or boxes for grave offerings.

The objects found in the wooden box support the hypothesis about amulet boxes (Fig. 43):

1. 1 gull gorge.
2. 1 "double ball".
3. 1 bladder mouth-piece.
4. 1 swivel.
5. 64 cylindrical bone and slate beads.
6. 3 flint chips.
7. 6 pieces of iron.
8. 1 sandstone fragment from pot or lamp.
9. 1 whetstone.
10. 1 finger rest.
11. 1 slate blade (fragment).
12. 1 slate lance blade (fragment).
13. 8 split bird bones and 1 seal bone.
14. 1 piece of wood (may come from the box).

Table 2. Finds of wooden boxes in Northeast Greenland.

Finding place	Comments	Source
House of Beads	Death-house	
Hekla Havn	Grave	Ryder 1895: 335
Uunarteq (Kap Tobin)	Grave	Rasmussen 1924/25
Kap Harry	Death-house	Glob 1935: 8
Kap Mackenzie	Grave?	Mathiassen 1929: 157
Clavering Ø	House ruin	Larsen 1934: 41
Clavering Ø	Casual find	Bandi & Meldgaard 1952: 55
Clavering Ø	House ruin	Bandi & Meldgaard 1952: 69
Jackson Ø	Grave	Koldewey 1873: 648

(1) The gull gorge, apart from being broken, is identical to the other gull gorge found and described above.

(2) The "double ball" is similar in form to the examples mentioned earlier. The large examples may have been used for mending hunting floats, but we are unable to explain the use of the very small balls found together with the various types of beads.

(3) The bladder mouth-piece was the only object of its kind found. It is made of bone, 2 cm long, cylindrical with a diameter of 1.8 cm and has three flanges. It is a relatively common type.

(4) Swivel. This too was the only example of its kind in the total find. The swivel is of bone, barrel shaped, 4 cm long, 2.3 cm in diameter and nicely made. At each end there is a hole with a diameter of 1 cm and on the side there is an oblong, keyhole-shaped slot. A movable, square piece of bone is inserted into the hole at one end. It has a knob at one end and two holes at the other (Fig. 43, 4).

Helge Larsen found a similar swivel at Dødemandsbugten which he believed to date back to the first phase of the Northeast Greenland mixed culture (Larsen

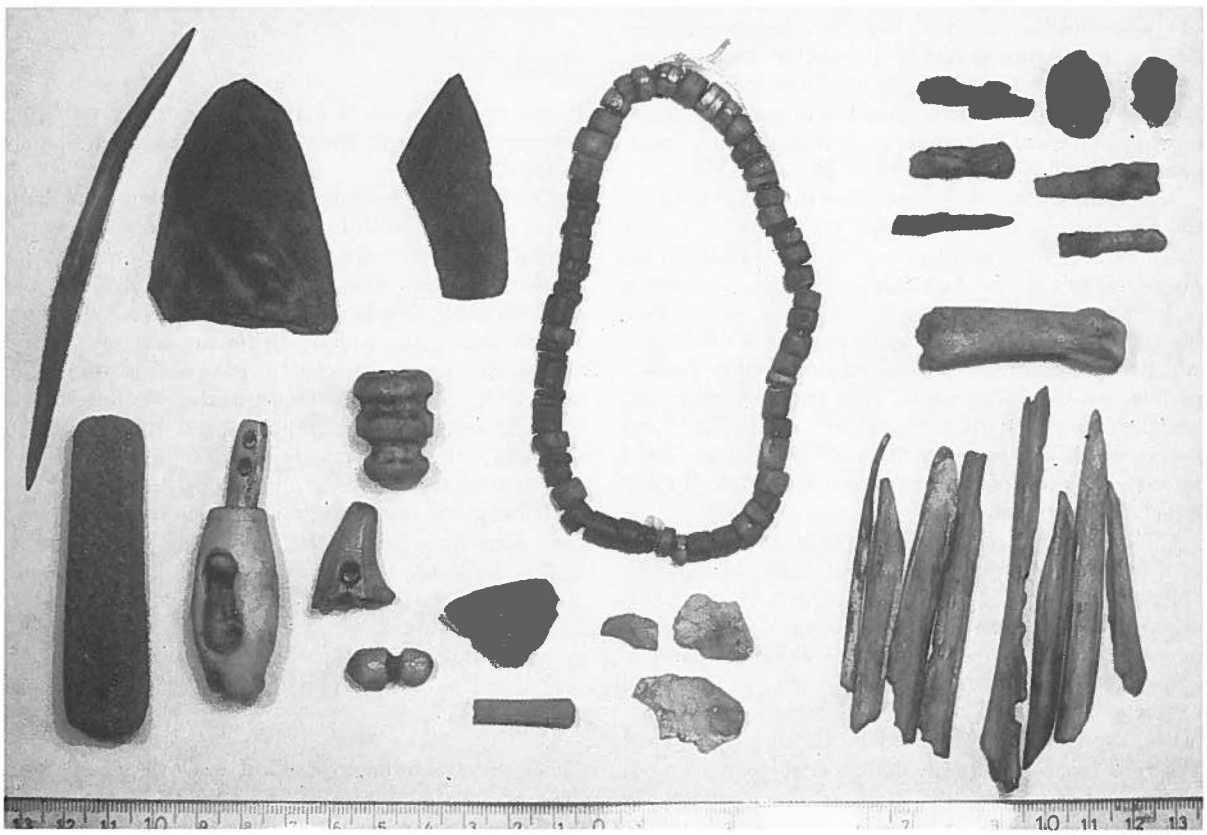


Fig. 43. Contents of the amulet box.

1934, pl. 2, 16), and in that context he points out that the barrel-shaped swivel is unknown outside Northeast Greenland (Larsen 1934: 103). Other barrel-shaped swivels from Northeast Greenland include one at the National Museum in Copenhagen from Uunarteq (Kap Tobin) (Nat. Mus. L1 667), a 5.5 cm long barrel-shaped swivel which Richter found at Gauss Halvø (Richter 1934: 151, fig. 85, 7), and a damaged example which Glob found at Geographical Society Ø (Glob 1935: 48).

A swivel was found in an oblong wooden box in a woman's grave in Kangerlussuaq. Therkel Mathiassen says about this: "The swivel (pl. 1, 30) is a surprising item in a woman's trinket box; presumably it has been made for practical use, but has been found suitable as a drop pendant" (Mathiassen 1934: 10). It is natural in this case to presume that the swivel not only served as an ornament, but may also have had a magical significance.

(5) Bone and slate beads (Fig. 43, 5). Out of the 64 beads found in the box, 28 are of slate. Of these, three are of greenish slate and the other 25 of black slate. They are all cylindrical with a diameter of 0.6 cm and with lengths varying from 0.6 to 0.1 cm.

The 36 bone beads are also cyindrical and of varying length. The diameter of these beads is 0.7 cm and the length varies from 0.1 to 0.7 cm. All the beads show signs of having been used and are worn.

(6) Flint chips (Fig. 43, 6). The three chips, which are of a pale flint-like material, may have had magic significance. Flint chips found under similar circumstances are known from a grave at Rypefjeld near Danmarkshavn where, together with a number of grave offerings, a core of flint and two chips were contained in a small, oval wooden box (Thomsen 1917: 364 & pl. VII, 12).

Jens Kai Rasmussen also mentions flint chips found in the Scoresby Sund area both in graves and in winter dwellings: "In the eastern side of the house (Kap Hope, House II) just inside the entrance passage there was a niche against a flat stone. It contained some stone blades, a broken slate knife and a number of flint chips, which apparently were worth collecting, since on several occasions I have found such chips carefully put aside" (Rasmussen 1924/25, authors' translation), and he reports from Uunarteq (Kap Tobin) that he found not only the remains of a bear's paw in a grave, but also a piece of flint (Ibid.).

(7) Iron (Fig. 43, 7). In addition to the six small pieces of iron in the wooden box, the total find material includes a relatively large number of iron objects. This seems to indicate that the use of iron was not completely new, and that iron was available, although in small quantities. It would have been possible to a limited extent to find iron in wrecks and other items washed ashore from the European whale hunting which took place off the coast. It was definitely thought to be of value, and may also have been credited with magic powers.

(8) Fragment of lamp or pot (Fig. 43, 8). This presumably served as an amulet.

(9) Whetstone (Fig. 43, 9). The whetstone in the box was of the same type as those described earlier.

(10) Finger rest (Fig. 43, 10). This example is a little smaller than the others found, but it does not differ from them otherwise.

(11) & (12) Blade fragments (Fig. 43, 11 & 12). They are presumably amulets. These slate blades do not differ from the others in the find material.

(13) The eight slit bird bones, which presumably are goose bones, as well as the one seal bone, are assumed to be amulets (Fig. 43, 13).

Amulet cache

One of the single-collared tear-shaped beads, which will be described later, had a large hollow on one side, which could quite well have been a cache for an amulet. The bead can be seen in Fig. 45 at the right hand side of the top row.

Helge Larsen mentions a small wooden artifact from Dødemandsbugten which has a similar hollow containing a bumble bee and, without doubt correctly, interprets the object to be a cache for an amulet (Larsen 1934: 129). He also draws attention to the fact that the use of the bumble bee as an amulet is peculiar to the Central Eskimos (Ibid.).

"Dolls"

In the lamp described earlier, there lay a very fine human figure made from bone, together with other bones (Fig. 34, 6).

The figure represents a man, standing with bent knees and his hood turned up. The feet and legs are carefully shaped, while the arms are only roughly indicated. The face looks straight ahead and is flat and expressionless. The height of the figure is 51 mm.

A smaller figure, with a hole for suspension, which is almost identical to this figure, is described under the beads (Fig. 34, 5). This figure is also standing in the characteristic position with bent knees. It is difficult to determine whether these are seated figures or whether they represent a hunter at a breathing hole.

Nathorst has a similar figure of a man with bent knees from Kap Weber (Nathorst 1900: 348), but otherwise human figurines (dolls) in Northeast Greenland are generally of the type commonly known in the rest of Greenland: upright, with legs, but with arms only suggested and often without facial expression.

"Bears"

There are two almost identical bear figurines, both made of narwhal tooth (Fig. 34, 3 & 4). One was found outside the house ruim, the other lay within the house

itself. They both measure 45 × 15 mm. Both the bear figurines and the human figurines could have been toys, but it is also possible that they had some religious significance.

Similar small bear figurines are known in Northeast Greenland, from among other places Snenæs (Thomsen 1917: 375, fig. 2), Clavering Ø (Richter 1934: 183, fig. 103; Larsen 1934, pl. 16, 22), and Uunarteq (Kap Tobin) (Thalbitzer 1909: 477, fig. 57). Bear figurines are also depicted, without the localities being named, by Nathorst (1900: 348) and Thomsen (1917: 376, fig. 3).

In Fig. 22, 18 a bear tooth is shown, which is still attached to a piece of jawbone. It has a hole through it. Helge Larsen has a similar bear tooth with a hole bored through it from Dødemandsbugten (Larsen 1934, pl. 7, 5).

Toys

In Fig. 34, 2 & 8, two very fine examples of a toy cooking pot and a toy lamp are shown. They were both found in the house itself. The cooking pot is made of sandstone and measures 80 × 60 mm. The lamp, which is crescent shaped, is of soapstone and measures 40 × 25 mm.

As mentioned earlier, the two small harpoon heads could be toys, but their whole execution is so perfect that it is tempting to suggest that they would have been used as tools.

Beads, figurines and ornaments

As early as the trial excavation of summer 1982, 211 different bone beads and ornaments had been found in house ruin A (Fig. 44). It was this bead find, among other things, which led us to believe that an excavation of the house ruin would be worthwhile.

In the excavation in 1983, a further 412 beads were found (Fig. 45), so that the sum total from house ruin A came to 623 beads. This must be considered a very large number from a single locality, and it is the largest bead find yet to be made in Greenland. On this basis it was

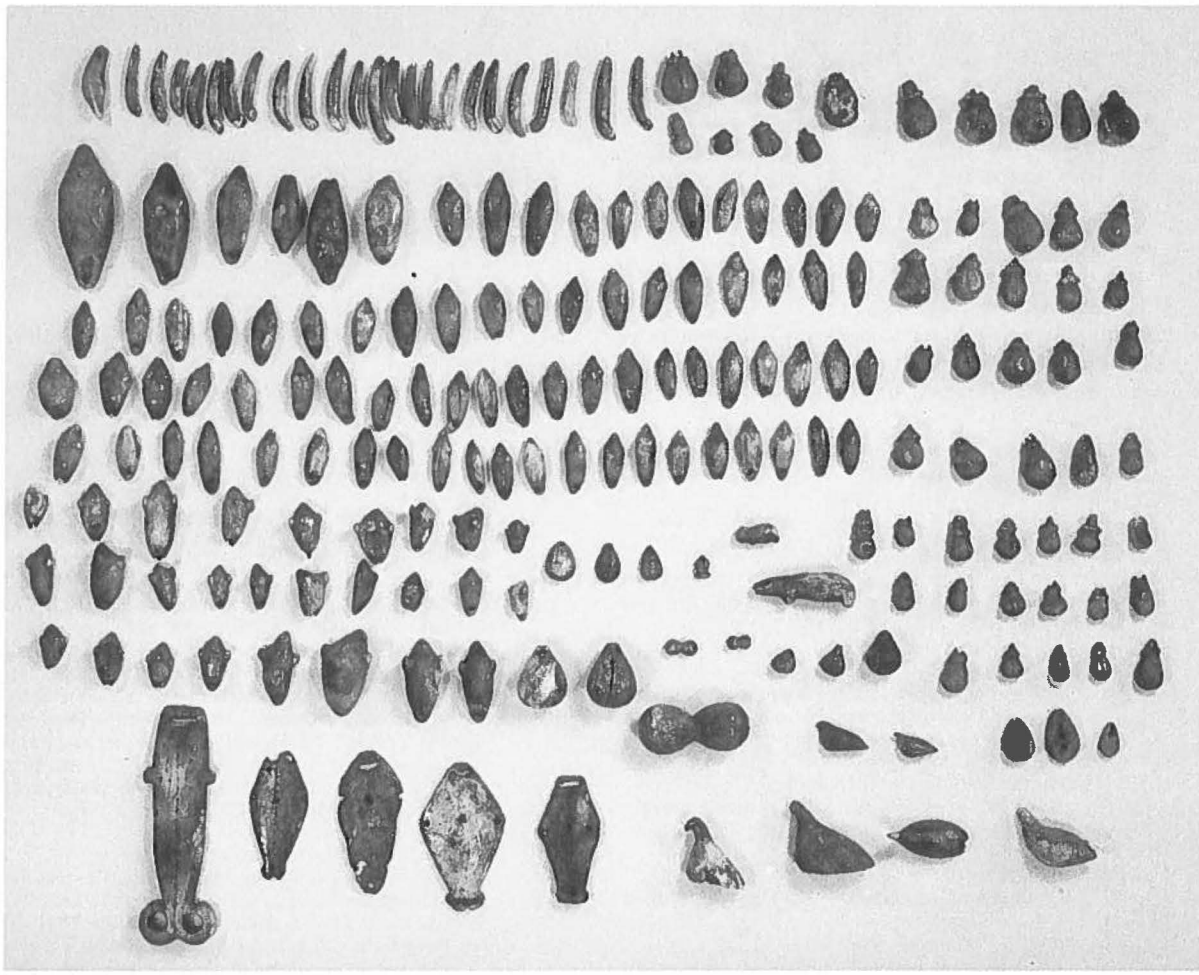


Fig. 44. Beads excavated in 1982.

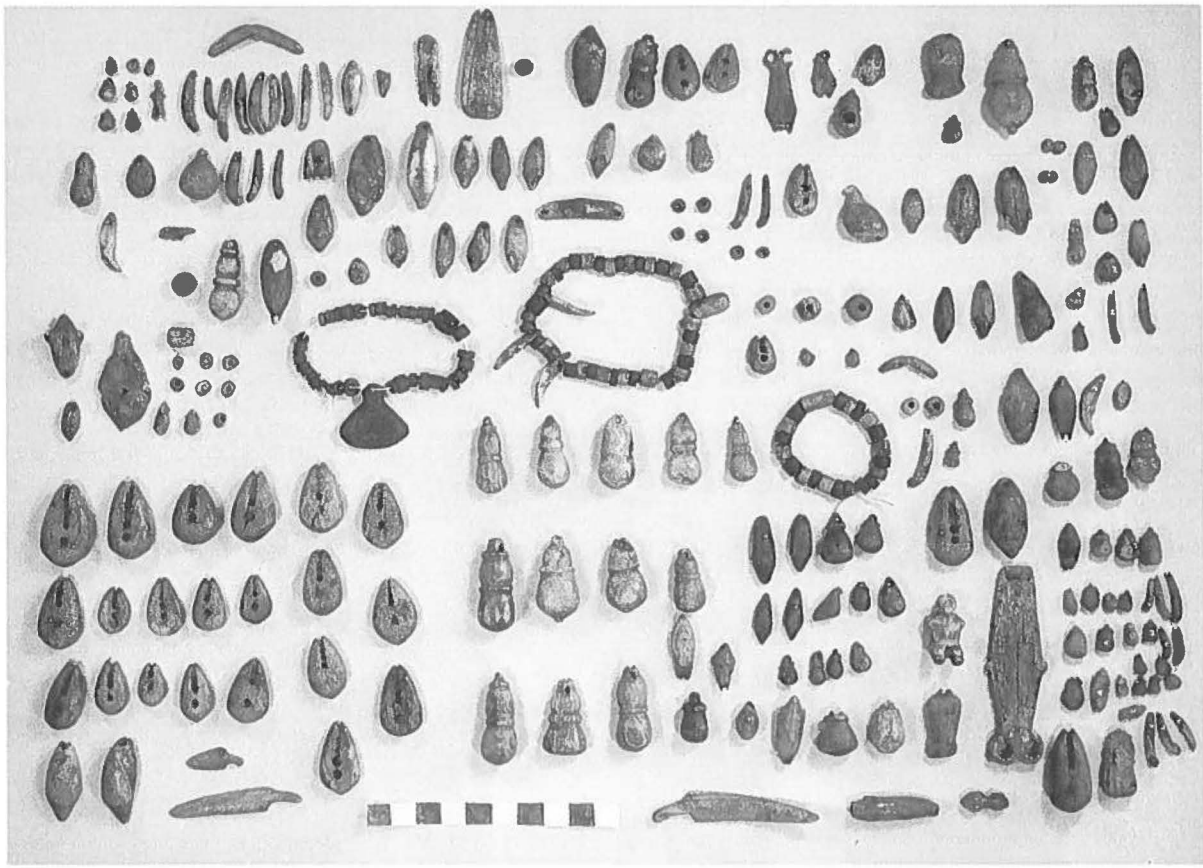


Fig. 45. Beads excavated in 1983.

natural that the house ruin became known informally as "the House of Beads", instead of the rather more difficult and prosaic description 70 Ø1 – IV – 1, house ruin A.

The beads came in the following "types". The references below refer to previous finds.

1982	1983	Type
1	0	*Dog* (hare or musk ox?) The figurine measures 13 × 5 mm and has a hole between the hindlegs for hanging up. See also (Glob 1935, pl. 4, 12 & 13).
1	1	*Bear* The example from 1982 is 35 mm long while the figurine from 1983 measures only 14 × 4 mm. The latter is executed in great detail, with eyes and all four legs carved. On the large figure, the hind legs are not separated and it is, on the whole, more roughly carved. See also (Thalbitzer 1909: 477, 534).
1	0	*Walrus* (Possibly a bird figure).
5	3	*Birds ("Swimming Birds")* The largest measures 25 × 25 mm and the smallest 10 × 9 mm. All of them have holes for hanging up and flat bottoms so that they can stand. Similar birds are known from Northeast Greenland from, among others, the following localities: Uunarteq (Kap Tobin). See also (Thalbitzer 1909: 478), Kap Hedlund (Glob 1935, pl. 4), Clavering Ø, (Larsen 1934, pl. 16), Danmarkshavn (Snenæs, House 406) (Thomsen 1917, pl. XI, 2 & 3), and in a house ruin containing human bones on Shannon Ø the Bartlett expedition found a total of 36 small bird figures. See also (Bartlett & Bird 1931, fig. 15).
27	10	*Seals (with clearly carved front flippers)* Figurines representing seals on ice, or possibly hunting floats. Sizes vary from 35 to 11 mm, but the majority are about 25 mm long. They all have a threading hole. See also (Richter 1934: 151, fig. 87, 3; Glob 1935, pl. 4; Thalbitzer 1909: 478, 479).

1982	1983	Type
80	36	*Seals (lying on their backs)* These were found in sizes from 51 mm down to 10 mm. Most were between 20 and 30 mm long. Many of them were very well made, and all had a threading hole. See also (Richter 1934: 151, fig. 87, 3; Thalbitzer 1909: 478; Thomsen 1917, pls. XI & XXV). In the previously mentioned house at Shannon Ø, where the many bird figures come from, there were also seal figures of both types mentioned here. See also (Bartlett & Bird 1931, fig. 15).
3	29	*Trace buckles* Most of the trace buckles are depicted in Fig. 46. These trace buckles varied in size from 34 × 17 mm down to 12 × 6 mm. Most of them (26) have two holes, whereas one has three holes and the rest have one hole. All of them have a groove for "the trace". Twelve of the trace fasteners have the "gorge hole" filled up with a little piece of iron. We are not able to give a reasonable explanation for its purpose. Most of these miniature trace buckles were found within a very limited area, where they lay close together. See also (Richter 1934: 151, fig. 85, 2; Ryder 1895: 336).
6	12	*Tear- or pear-shaped beads without ridges* The 18 examples, found varied in length from 20 to 5 mm. See also (Richter 1934: 151, fig. 85, 3; Ryder 1895: 338).
49	45	*Tear- or pear-shaped beads with a single ridge* Beads of this type vary somewhat in appearance and shape. The ridge on some is placed at the top by the threading hole and on others in the middle of the main body. The beads were found in sizes ranging from 35 to 7 mm. Most of the larger beads were found close together. Fig. 47 shows some of these single-collared beads. See also (Richter 1934: 151, fig. 85, 1; Thomsen 1917, pls. VII, 14; XI, 9 & XXV, 11, 12; Larsen 1934, pl. 7, 4).
2	16	*Tear-shaped beads with double ridge* The largest of this type is a very fine example, 38 mm in length. One ridge is placed directly

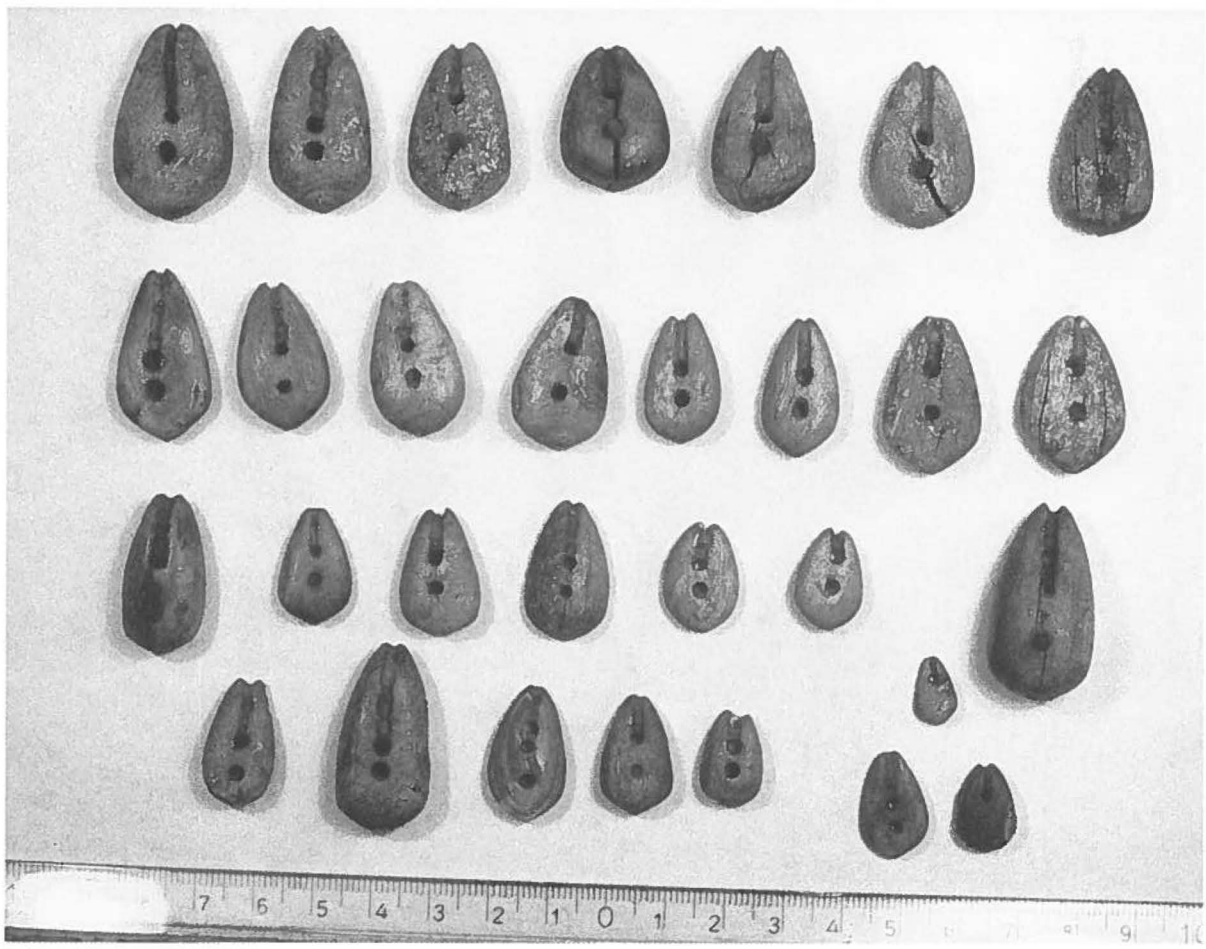


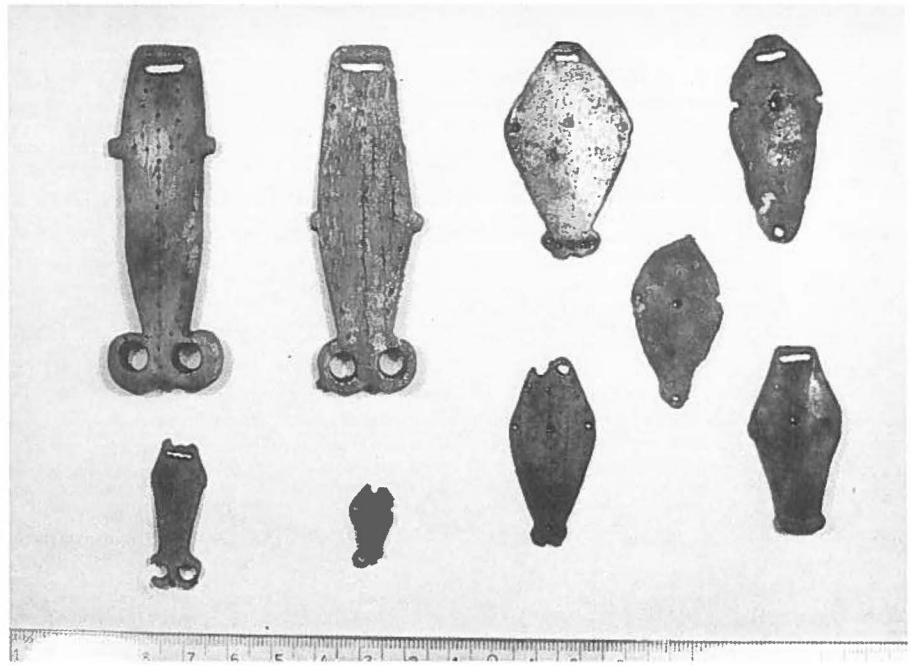
Fig. 46. "Trace buckles".

1982	1983	Type
		under the threading hole, the other, which has a little knob at the end, at about the centre of the main body. Fig. 47 shows some of these double-ridged beads. See also (Richter 1934: 151, fig. 85, 1; Larsen 1934, pl. 16, 14; Glob 1935, pl. 4, 26).
3	3	*Tear-shaped beads with a single flat side* Three of these small beads have fine dot ornamentation. One is shown in Fig. 47 (second row, furthest to the right). One flat tear-shaped bead of stone is depicted in the find descriptions from the Denmark Expedition. See (Thomsen 1917, pl. XI, 13).
24	30	*Beads made from teeth* Animal teeth with a hole for threading. Most of these "beads" were found together and it is assumed that they were strung on the same thread. See also (Richter 1934: 151, fig. 85, 3; Thalbitzer 1909: 417; Thomsen 1917, pl. VII, 13).
3	3	*"Double balls"* The largest is 40 mm long and the smallest only 6 mm long. All six are made from tooth, presumably walrus tooth. These "beads" are the only ones in the material which are without holes for threading. It is not known what these small double balls could have been used for. The larger examples, as for instance the previously mentioned ball in the wooden box, may have been used for mending a float. These small double balls are apparently unknown in other finds in Northeast Greenland.
0	2	*Human figurines* The two human figurines with threading holes are very different. The smallest is only 15 mm high, an upright figurine with a distinct head and spread legs with a hole through one of them. The arms are suggested and even a belly is noticeable. It is a very pretty and fascinating small figure. It was found together with some beads, which were also extremely small, *e.g.* two trace buckles at 6 mm and tear-shaped beads at 6–7 mm.

Fig. 47. Drop beads.

1982	1983	Type
		The other, larger human figurine is 27 mm high and measures 16 mm across the shoulders. This too is beatifully made and unusual, as it represents a sitting or squatting person. Arms are suggested and legs, knees and feet are clear. The face is large and the eyes indicated with two small holes. Between the legs there is a threading hole. A larger doll, almost identical to the one described here, was found lying in the lamp. A similar, small human figurine, 21 mm long, with a hole for hanging up was found at Uunarteq (Kap Tobin) (Nat. Mus. L1 148).
0	3	*Snow knives* All three snow knives have two shoulders and each has a hole in one shoulder for hanging up. They are true miniature copies of real snow knives. The largest measures 65 × 10 mm and the second longest 52 × 10 mm. (Both "long" snow knives recur in large versions in Fig. 33, 1). The smallest measures 23 × 9 mm and it is of the "wide" type. (A large version is shown in (Fig. 33, 2). A 25 mm long snow knife from Uunarteq (Kap Tobin), which is made of walrus tooth, with two shoulders and a hole for hanging up, is at the National Museum in Copenhagen (L1 141). See also (Richter 1934: 151, fig. 85, 2; Glob 1935, pl. 4, 37).
1	2	*T-shaped beads* In the summer of 1982 a single bead of this type, only 7 mm long, was found. In 1983 a further two, somewhat bigger T-shaped beads were found (20 and 22 mm long respectively). See also (Richter 1934: 181, fig. 101, 12; Thomsen 1917, pl. XI, 12).
0	35	*Bone beads (cylindrical)* Most of these beads have a diameter of between 5 and 6 mm and the length varies between 3 and 5 mm. A few are up to 13 mm long. See also (Richter 1934: 151, fig. 85, 1; Thomsen 1917, pl. VII, 8; Ryder 1895: 338, fig. 39; Thalbitzer 1909: 493, fig. 70, e, f).
0	2	*Oblong, cylindrical beads* The largest of this type is 34 mm long and has a diameter of 5 mm at the ends. In the middle the diameter is 7 mm. The other, smaller bead is 9 mm long and has a diameter of 7 mm. See also (Thomsen 1917, pl. XI, 10; Larsen 1938: 65 & pl. 3, 11).
0	86	*Slate beads (cylindrical)* These beads have a diameter varying between 5 and 6 mm. A few are up to 13 mm long, but the majority are between 3 and 5 mm long. They are all heavily worn around the holes as well as on the end surfaces. The circumstances of the find indicate that they were most frequently strung so as to alternate with the cylindrical bone beads mentioned above.
0	1	*A woman's knife (sakkeq)* The example is made from slate and it was found together with some of the cylindrical slate and bone beads. It measures 25 × 22 mm and has a threading hole in the part forming the handle. At the National Museum in Copenhagen there exists a similar miniature woman's knife from a grave at Uunarteq (Kap Tobin) (L1 966), and Helge Larsen found a similar small *sakkeq* but without the threading hole at Clavering Ø. See (Larsen 1934, pl. 16, 11).
0	1	*Thimble holder* (miniature) The example is made of bone and is 30 mm long and 8 mm wide. Each of the two legs is 15 mm long and has a hole through it at the end. A new hole had been drilled in one leg under the original hole which had broken.
0	1	*Pendant* A flat, trapezoid bone disc with the lower edge bent up. The two long sides measure 44 mm and the two parallel sides are 6 and 15 mm long respectively. At the wide end the outer 7 mm bend upwards. There was originally a hole at the top of the narrow end, but this had broken at some stage and a new one was drilled next to it. In the bent edge there is a larger hole. See also (Larsen 1934, pl. 7, 3).
0	2	*Toggles* One is made from the canine tooth of a seal. It is curved, 21 mm long and has a hole through the middle. The other toggle is of bone, very beautiful and well made. It measures 36 × 4 mm and forms an angle around the threading hole in the middle. Along "the back" there is fine dot ornamentation and both ends are finished off with an animal head. See also (Thalbitzer 1909: 488, fig 65).
0	1	*"Handle"* This is made of bone, 34 mm long, 7 mm wide and slightly curved. In the middle there is a threading hole and in each end there are two elongated holes at the side. On the "back" there are three rows of dot ornamentation.
0	1	*Unfinished bead?* A small artifact measuring 15 × 10 mm with a hole through the centre and with clear signs of boring at the base. It resembles most a miniature version of a finger rest.
0	2	*Ball-shaped beads* Two distinctly ball-shaped bone beads with an eye bored through at the top (Thomsen 1917, pls. VII, 15 & XI, 8; Richter 1934: 151, fig. 85, 4; Glob 1935, pl. 4, 19).
1	2	*"Ornamental plates" ("sinew twister")* In the summer of 1982 five so-called "ornamental plates" were found, of which one was of the "sinew twister" type (Fig. 48, 1). It is 80 mm long, 25 mm wide and 5 mm thick. It is a very finely made example made of bone and has dot ornamentation on one side. During the excavation work in 1983 one example was found, almost identical to the one found the year before (Fig. 48, 2). This example is also 80 mm long, 25 mm wide and 5 mm thick and similarly decorated on one side with dot orna-

Fig. 48. Ornamented plates.



1982	1983	Type

mentation. The only difference between the two pieces is that the latter has the two small "horns", which both examples have on the sides, somewhat further back towards the centre.

On both examples one end is finished off with two "rings". From the bottom the rings have holes bored vertically at an angle and between the rings a third hole passes through to the back. At the opposite end the two plates have a broad, horizontal threading hole. The dot ornamentation runs in a line along the sides and down the centre of the plates. From a line between the small "horns" and up to the threading hole run a further two lines of dots. Between the small "horns" and the "rings" there are three parallel lines of dots and from the "horns" to the end there are five lines of dots.

A smaller example of the same type is shown in Fig. 48, 3. It is 34 mm long and 17 mm wide. It is made of bone and somewhat defective. The rings at the bottom have borings as described for the two examples above, except that the two horns at the sides are missing. There is dot ornamentation in three lines on one surface: along both sides and down the centre line. This example was found together with the miniature *sakkeq* described earlier and a few small beads. An almost identical example of this type of ornamental plates was found in a grave on Gauss Halvø (Richter 1934: 151, fig. 85, 4).

The two large examples of these artifacts may have served a practical purpose, *e.g.* as sinew twisters, but the circumstances of the find (they were found together with beads of various kinds) suggest that they were most likely trinkets.

1982	1983	Type
4	2	*"Ornamental plates" (rhomboid)*

The six plates found are shown on Fig. 48, 4–9. They are all relatively thin bone plates – just under 3 mm thick on average. No. 4 measures 40 × 20 mm. It has dot decorations along the edges and on the centre line on one side. At the widest point there are three holes in a line, one at each edge and one in the middle. At one end there are two slightly bigger holes. (One was broken at some time and a new one drilled a little below the original). At the opposite end the plate ends in a tail which has a hole in the middle.

No. 5 measures 50 × 30 mm and has dot decorations on one side, like the previous one. It also has three holes at the widest point and one end is formed as a tail with five holes in it. At the opposite end there is a wide, horizontal threading hole (made by breaking away the joins between three holes).

No. 6 measures 45 × 22 mm and like the two previous ones has decorations and three central holes. It is without a "tail" but has a hole at that end. In the opposite end it has, like no. 5, a wide threading hole.

No. 7 measures 40 × 20 mm but does not deserve its description, as it has no ornamentation at all! It has, like the previous ones, three holes at the widest point. At the end forming the "tail" there are three vertically drilled holes. Two lead to either side and the middle hole ends on the reverse side in the same way as on the large plates with "rings".

No. 8 is only 18 × 8 mm. It had two "rings" at the bottom. At the widest point there is a hole on either side and at the end opposite the rings there are the remains of a threading hole. There

1982	1983	Type
		are traces of dot decorations along the edges and the central line on one surface. This "plate" seems to represent a transitional form between the rhomboid "plates" and the "ringed plate". No. 9 is 40 mm long and 20 mm wide and has three holes aligned across the widest point. There is a threading hole at one end, but since the artifact is rather worn it cannot be determined whether there was a similar hole at the other end. There are dot decorations along the edges and the centre line on one side. These ornamental plates are characteristic of Northeast Greenland and are presumably a locally developed item (Larsen 1934: 152). They appear to be found most frequently together with beads and often in graves or "death-houses", so there is little doubt that they were trinkets and were included in strings of bead or possibly sewn on to clothes. At the National Museum in Copenhagen there is a rhomboid plate from Uunarteq (Kap Tobin) made of walrus tusk and decorated (L1 136). The plate measures 56 × 36 mm and has the same three characteristic holes across the middle as well as a "tail" and a wide threading hole similar to the examples described here. Richter found two ornamental plates together with bone beads in a large grave in Myggebugten. These plates are very similar to nos. 5, 6, 8 & 9 (Richter 1934: 151, fig. 85, 1). A plate with dot decorations came from Snenæs on Germania Land (Thomsen 1917, pl. XI, 1). It comes from a house whose inhabitants are said to have died on site (Thostrup 1911: 278), and from Rypefjeld there is a similar plate. (Thomsen 1917, pl. XXV, 19). Therkel Mathiassen describes plates from a grave find in Eleonora Bugt which are rather similar to those we found. (Mathiassen 1929: 157, fig. 1, 12 & 13). Glob found two ornamental plates at Kong Oscar Fjord (Kap Harry) (Glob 1935, pl. 4, 38 & 39). And finally Nathorst describes a plate from a grave find at Kap Franklin (Nathorst 1900: 364; Stockholm 1902. 10. 264).

1982	1983	Type
211	412	Total: 623

The table sums up the number of beads and pendants found. Fig. 12 shows how the beads and pendants were distributed over the respective excavation areas in and around the house ruin.

Bone material from the excavation

Bones were gathered from each square metre as the area was excavated. The bones collected were later examined and their origin determined by museum conservator Jeppe Møhl of the Zoological Museum in Copenhagen.

The house ruin did not have a proper midden, but a few bones were spread around outside the house immediately in front of the entrance passage as well as on the slope down to the small stream beside the ruin and in the stream itself. There were presumably more bone remains in the river bed originally, but over the years they will have been washed to sea by meltwater in the spring. The relatively few bones and the absence of a proper midden indicate that the house was only inhabited for a short time.

A total of 593 bones were collected. The majority, 525 pieces, lay in the house itself, 21 lay at the beginning of the entrance passage, and only 43 lay outside the house. Fig. 49 shows the density of bones and their position in the respective excavation areas in and around the house. It is not possible to say whether there would have been meat depots under the sleeping platform, as this was not immediately detectable during the excavation, partly due to solifluxion. Table 3 shows the distribution according to species of the bone material.

The majority of the bones come from seals. Of these only 21 have been identified with certainty as coming from the ringed seal, but of the remaining 377 where accurate species identification has not been possible, it is probable that the majority also comes from this seal. Of the larger seals the hooded seal is represented with just one bone. From the individual bones we can conclude that they must come from at least ten seals (ringed seal), one hooded seal and possibly a walrus.

Of the larger sea mammals there are bones from whale and narwhal. It is not possible to determine with certainty whether the species is Greenland whale, but it is very likely. In addition to the bone fragments from whale which were brought home, as described earlier whalebones were also incorporated into the house structure, *e.g.* ribs, a shoulder blade and a few fragments of jaw.

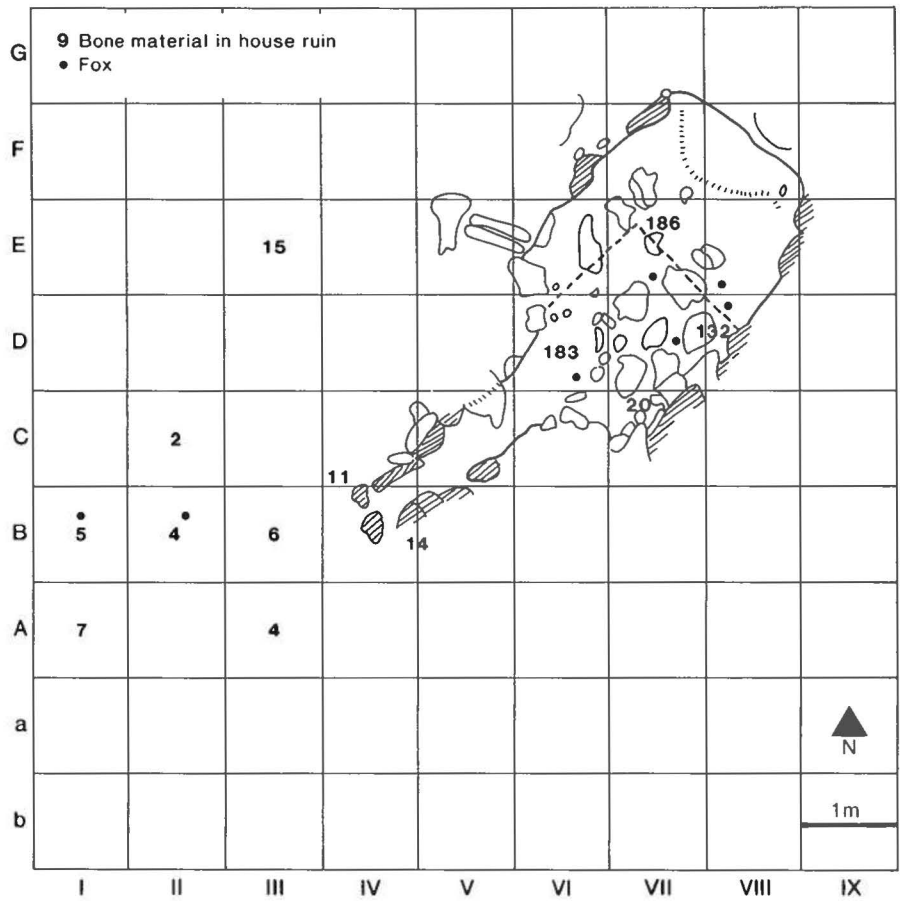
67 bones come from caribou and it can be concluded that they must come from at least three animals. The size of the bones also reveal that these were small or medium-sized animals.

Of the larger animals there are bones of bear, and from smaller animals bones of a hare and two foxes. The 22 dog bones were all found inside the house ruin itself and from the individual bones only one dog can be identified with certainty. The single lemming bone, along with the clear signs of lemming activity (remains of nests, passages etc.), shows that lemmings had passages and habitats in the house ruin, just as chipmunks in Alaska do (Giddings 1968: 193).

The barnacle goose is the most richly represented bird species in the bone material, with 14 single bones which it is concluded represent at least three geese. The other bird bones are from at least one Brunnick's guillemot and one king eider.

In the summer of 1982 we found the top of a human skull lying in the open on the surface about 25 metres south of the house ruin, and during the excavation

Fig. 49. Plan of bone concentration in the excavation.



proper a further 19 human bones and 21 teeth were found inside the house itself. Table 4 and 5 shows the individual bones and teeth and their position in the house.

The teeth were examined by Professor P. O. Pedersen D. D. S. (Table 5) who concludes that the lower jaw with eight teeth comes from a person between 15 and 18 years of age. Three of the single teeth belonged to this lower jaw. Three of the other single teeth belonged to the upper jaw fragment with five teeth, and this person was probably around 30 years old. The sex of the two persons cannot be determined from the teeth, but P. O. Pedersen believes that the older one may have been a woman since there was a groove indicating wear on the premolar, which is very often seen in Eskimo women. Unfortunately two teeth were not included in P. O. Pedersen's examination as they were included in the bone material which was sent to the Zoological Museum. These last two single teeth are not believed to have come from the people mentioned above, so the possibility that there were two more people in the house cannot be excluded.

Dr. Balslev Jørgensen, who examined the human bones, established that the parietal bone and the right temporal bone come from a person less than 40 years old. The left thigh-bone, shin-bone, fibula and ribs come from a lightly built person, but the sex cannot be determined. The right shin-bone and left forearm come from a sturdy person. The shin-bone is from a man. Some ribs and a right elbow bone come from a child between 10 and 14 years old.

By comparing the information about the teeth and the various bones it can be concluded with some caution that there must have been a woman of around 30 (under 40) and a man (age unknown). The lower jaw apparently comes from a person between 15 and 18 years old, but whether the child bones come from the same person is uncertain (child 10–14 years old). The bones from the lightly built person could come from the woman or from the young person.

It is therefore concluded that a man (of unknown age) and a woman in her thirties, as well as one or possibly two children between 10 and 18 years died in the house.

Table 3. Distribution of bones according to species.

Species	Latin name	Scoresbysund name	Number
Caribou	Rangifer tarandus	Tuttu	67
Ringed seal	Phoca hispida	Puili	21
Seals	Phoca sp.		377
Hooded seal	Cystophora cristata	Niiniarteq	1
Walrus	Odobenus rosmarus	Aaveq	2
Whale	Cetacea sp.	Arfeq	4
Narwhal	Monodon monoceros	Qilaluaq	2
Bear	Ursus maritimus	Nanu	2
Fox	Alopex lagopus	Terianniaq	21
Hare	Lepus arcticus	Ukaleq	2
Dog	Canis familiaris	Qimmeq	22
Barnacle goose	Branta leucopsis	Nerteq	14
King eider	Somateria spectabilis	Qingalik	2
Brunnic's guillemot	Uria lomvia	Appa	1
Lemming	Dicrostonyx gr.	Nartumukaaq	1
Human	Homo sapiens	Inuk	20
Unidentified bones			34
Total			593

Conclusions

Following this account of the extensive material from the excavation of the "House of Beads", we make an attempt in this chapter to analyse and evaluate the material in its entirety, we discuss a few particularly interesting finds in more detail, and we try to place it in a larger framework.

The house

As stated in the chapter about the house, the "House of Beads" must be considered characteristic of the late type of house in Northeast Greenland's neo-Eskimo culture. With its rectangular plan, its elevated side benches, the extension by the front wall and the completely underground entrance passage, the house clearly falls within the framework of the latest of the three house types established by Helge Larsen at Dødemandsbugten. He describes this type as follows: "Rectangular to trapeziform houses with the greatest dimension in the direction of the passage. They are partly dug into the ground, have well preserved stone walls, and the floors covered entirely with flat stones. The passage is more or less well preserved, but with the roof stones always in position. They are surrounded by a thick grass-covered mound interspersed with deep cracks" (Larsen 1934: 60).

This three-way classification of the Northeast Greenland neo-Eskimo house types, however, was later amended and expanded to include one more type (Bandi & Meldgaard 1952: 30), but as the amendment

Table 4. Homo sapiens bones, types and position.

Area:	B. IV & V	B & C. IV	D. VI	D. VII & VIII	E. VII & VIII	Total
Type:						
Parspefrosa	1					1
Tibia		1	1		2	4
Costa		1		3	1	5
Femur					1	1
Fibula					1	1
Ulna				2		2
Phalangs				1		1
Humurus			1			1
Calvarium						1
Mandibularis					1	1
Maxilaris				2		2
Total						20

Table 5. Homo sapiens teeth, types and position.

Area:	B. IV & V	B & C. IV	D. VI	D. VII & VIII	E. VII & VIII	Total
Type:						
Mandibularis						
W. 8 dens					8	8
Maxilaris						
W. 5 dens					5	5
Calv m. 1 dens				1		1
Single dens			2	1	4	7
Total						21

concerns the early types only, it is without consequence in this context.

Admittedly some of the characteristics of house type 3 are missing from the "House of Beads", *e.g.* the straight rear wall and the very well-preserved walls, but the present rounding of the back wall could easily be due to solifluxion. With regard to the relatively broken-down walls and the not very distinct mound around the ruin, the house does not appear to have been very well built. Judging from the relatively thin layer of waste and the relatively few bone fragments, the house was only in use for a very short period – possibly only one winter or part of a winter. This, and possible differences in the building materials, could explain why the walls are not particularly well preserved.

Since there is good correlation between the objects found, the state of preservation and the house type, we believe that the house can be dated to the period 1750–1800, maybe even as late as 1850.

Similar houses of this type (type 3), apparently also quite recent (judging from the state of preservation and the finds), are found in Northeast Greenland from Sulussugutikajik (Stewart Ø) to the district around Danmarks Havn:

On Sulussugutikajik (Stewart Ø) there are houses of type 3, both among the houses at the Sulussugutikajik ruin complex and at Ittikoortaajik. In the latter locality in particular, ruins A, B, C and D are very well preserved and would seem to be very recent (Sandell 1985b: 71).

From Scoresby Sund Fjord many of the houses described by Ryder can be classified as type 3 (Ryder 1895: 295), and some of the ruins on Danmarks Ø (Hekla Havn, Houses 2 & 6), moreover, according to the descriptions are almost identical to the "House of Beads" (Ryder 1895: 294). Furthermore, in House 2 there were details of the finds which were analogous to the circumstances in the "House of Beads": The roof structure had collapsed into the house, there were human bones in the ruin and the lamp and the cooking pot were in their proper place (Ryder 1895: 294).

The four house ruins at Renodden (Ryder 1895: 291) and two houses at Ittoritseq (Kap Stewart) (Houses 2 & 9) also appear to belong to type 3 and are relatively late (Ibid., 287). Houses of this type are also described from Ittaajimmiit (Kap Hope) (House I, III & VI) as well as Uunarteq (Kap Tobin) (House I & IV) (Rasmussen 1924/25; Amdrup 1909: 315). Further north, in the Kempe Fjord – Kong Oscar Fjord system, the house ruins investigated most recently appear so far to be somewhat older than the late houses in Scoresby Sund and they look slightly different:

"The latest houses in Kempe Fjord and King Oscar Fjord are very different from the latest houses in Dødemandsbugten. They fall naturally into two groups: The large house (Cape Harry House III, V and VII; houses a trifle smaller are Geographical Island II, House III and IV; Cape Elisabeth House VI; Suess Land House IV) with the front corners having a pronounced bulge and quantities of stone used in walls and on the floor, and very small houses (Cape Beijer House I; Cape Hedlund House I–III), which signify a reduction of the earlier, characteristic house type" (Glob 1935: 79). – "The later part of the culture without doubt is contemporaneus with the later houses in Dødemandsbugten and thus in the main in Kempe and King Oscar Fjords is contained within the 18th century. In Dødemandsbugten it extended a little way into the 19th century" (Ibidem: 82).

One single house (Kap Harry House I) which Glob considers to be early (Glob 1935: 10) may be an exception, since this house, in our opinion, has much in common with some of the latest houses, both as far as the house itself is concerned and for some of the finds inside it.

A little further north, around Kejser Franz Joseph Fjord, we again find houses of type 3 from a late period. Here they are concentrated particularly in the area around and on Gauss Halvø, but even as far west in the fjord complex as Kjerulf Fjord a house of type 3 has been recorded (Nathorst 1900: 257; Johnson 1933: 54). Some of the late houses on Gauss Halvø (Gauss 4, II and Gauss 5, II & III) are described by Søren Richter as being among the latest in the area altogether, and in his opinion they were inhabited after 1823 – the year when, as far as we know, Europeans met Northeast Greenlanders for the first and only time (Clavering 1830: 21; Richter 1934: 83).

In the area of Clavering Ø there are apparently many houses of this type. It was partly using material from Dødemandsbugten that Helge Larsen established his classification of house types in Northeast Greenland. From the latest settlements in Dødemandsbugten there are good examples of houses of type 3, *e.g.* Houses 5 and 6, site I, site II, 1, 4 and 7 and also site III, 7 and 22 (Larsen 1934).

On the south side of Shannon Ø, 21 ruins of winter dwellings from four localities have been recorded so far (Glob 1946: 17). Some of the houses are from a very recent period and appear to be of type 3 (Thostrup 1911: 335; Bartlett & Bird 1931: 405). The following statement has been made about some of these houses from the recent period: "The tendency in later times seems to have been towards the construction of smaller houses. In three cases walls had been built inside the original houses, considerably reducing their interior dimensions" (Bartlett & Bird 1931: 405). J. K. Rasmussen made the same observation in connection with a late house ruin in Uunarteq (Kap Tobin):

"In my opinion a small family, possibly a single Eskimo came to the settlement to winter, found the ruins too big, but decided to use the entrance passage of ruin no. III for the winter habitat in order to make the work easier" (Rasmussen 1924/25, authors' translation).

Finally, winter dwellings classified as type 3 have also been identified around Danmarkshavn. The houses on Snenæs (Houses 406 & 407) and Rypefjeld (Houses 523 & 524) should be mentioned here in particular. Bendix Thostrup is convinced that they are so recent, that they could well have been inhabited when Koldewey visited the area during the Second German Polar Expedition in April 1870 (Thostrup 1911: 338).

Apart from the form itself (and of course the find material) there is still one more aspect in which "The house of Beads" is in line with the other recent houses, and that is its position. It is a characteristic of the houses

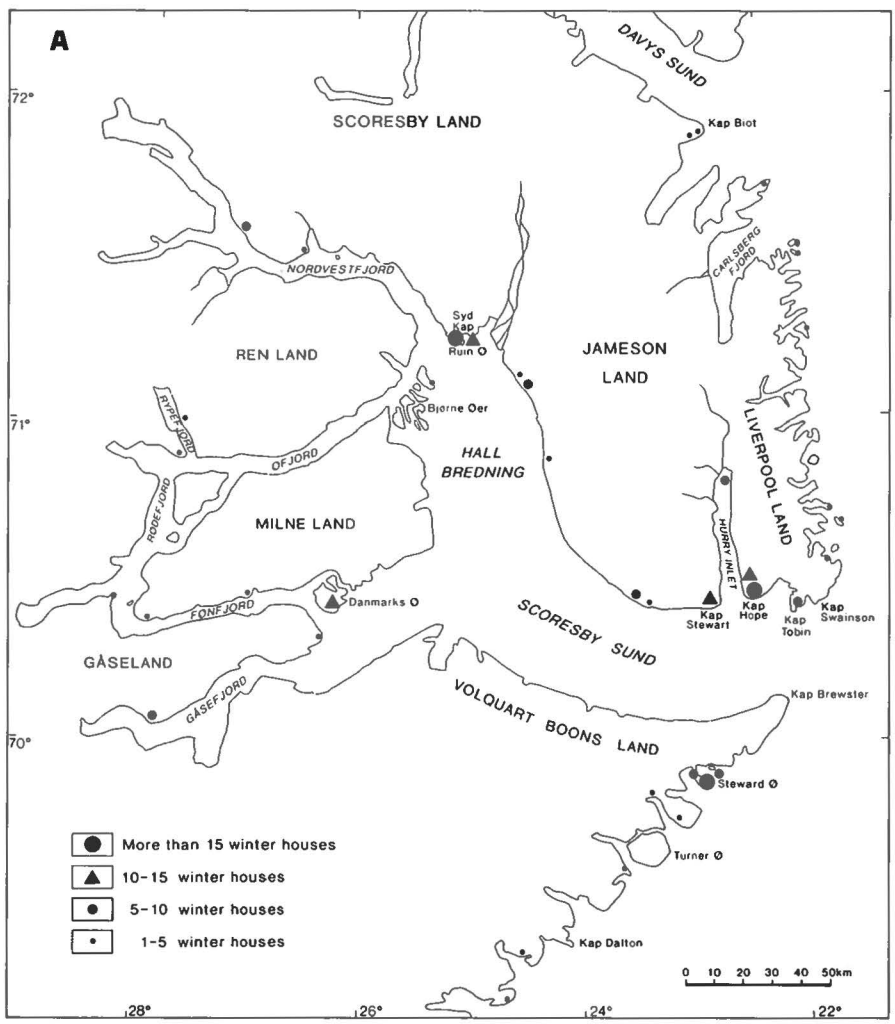


Fig. 50A. Winter dwellings, in Scoresby Sund

from the most recent period, just like the "House of Beads", that they frequently stood in isolatlon or in very small groups, in contrast to the previous period, where the houses (type 2) most commonly stood together in groups (Larsen 1934: 168).

Houses of type 3 and from the latest cultural phase, as shown in table 6, are apparently concentrated in the southern part of the area. They decrease in number towards the north up as far as the Danmarkshavn area, where the most northernly occurence so far has been recorded.

The material from the "House of Beads" most resembles the finds from the latest houses on Gauss Halvø and the two houses at Snenæs. A reason for that might be that some areas, *e.g.* Kong Oscar Fjord, apparently being avoided by the latest inhabitants could possibly be that a change in the utilization of resources was followed by a change in the settlement pattern. (Cf. the scattered occurrence mentioned above of houses from the most recent phase). Helge Larsen points out that narwhal bones are more frequent in the latest phase at Dødemandsbugten (Larsen 1934: 170), and from the "House of Beads" as well as from most other recent houses it seems that narwhal hunting was important. We will return to this question later and look at the utilization of resources in more detail.

The objects

The excavated artifact material as a whole has a very homogeneous and uniform character – which in itself is not surprising considering that it is a complete find from a single household and from a limited period of time.

It is demonstrated in the description of the artifact material that the total find is in keeping with other finds from the latest period in Northeast Greenland, and culturally it can be assigned to the second and latest phase of Northeast Greenland's mixed culture as estab-

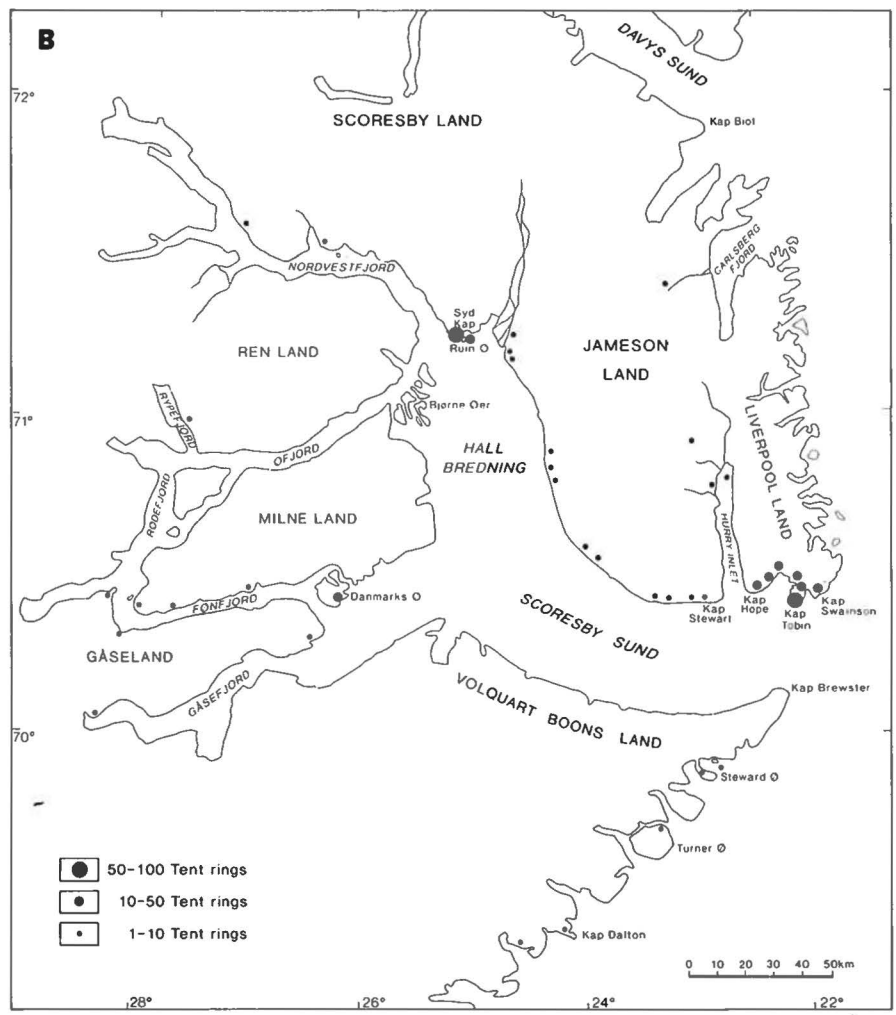


Fig. 50B. Tent sites in Scoresby Sund.

lished by Helge Larsen at Dødemandsbugten, which he roughly estimates to have existed between the early eighteenth century and the middle of the nineteenth century. However, the artifact material is not in complete agreement with the material from Dødemandsbugten, having a distinct local character. This is illustrated for instance by the characteristic single-barbed harpoon head (the Scoresby Sund type) which is known almost only from Scoresby Sund, and by the compound knife handle which is also known only from the southernmost part of Northeast Greenland. Furthermore, some of the bead types as well as the very existance of so many beads, and maybe also the squatting dolls, must also be considered as peculiar to the southern part of Northeast Greenland and to Scoresby Sund.

It has not been possible to date the material precisely, but everything indicates that it must be placed in a very recent period, possibly even after the year 1800. It was mentioned earlier that house ruins both on Gauss Halvø and at Snenæs are similar to the "House of Beads" in many ways, with regard to artifacts as well as type. The houses at Gauss are considered by Richter to be more recent than Clavering's encounter with Northeast Greenlanders in 1823 (Richter 1934: 83), and the two houses at Snenæs are estimated to date from an even more recent period (Thostrup 1911: 338).

An interesting feature which was also mentioned in connection with the house itself is that the nearest parallel finds are found as far away as the Gauss area, and not, as might be expected, in the area immediately to the north, Kong Oscar Fjord. We are discounting the Scoresby Sund area itself, since it has not been subject to sufficiently thorough modern investigations, and the older material is not good enough with regard to find conditions etc. to allow particularly far-reaching conclusions to be made. However, some of the finds from the area seem to indicate good conformity with the material from the "House of Beads".

The extensive artifact material shows us an almost complete set of household equipment and tools and

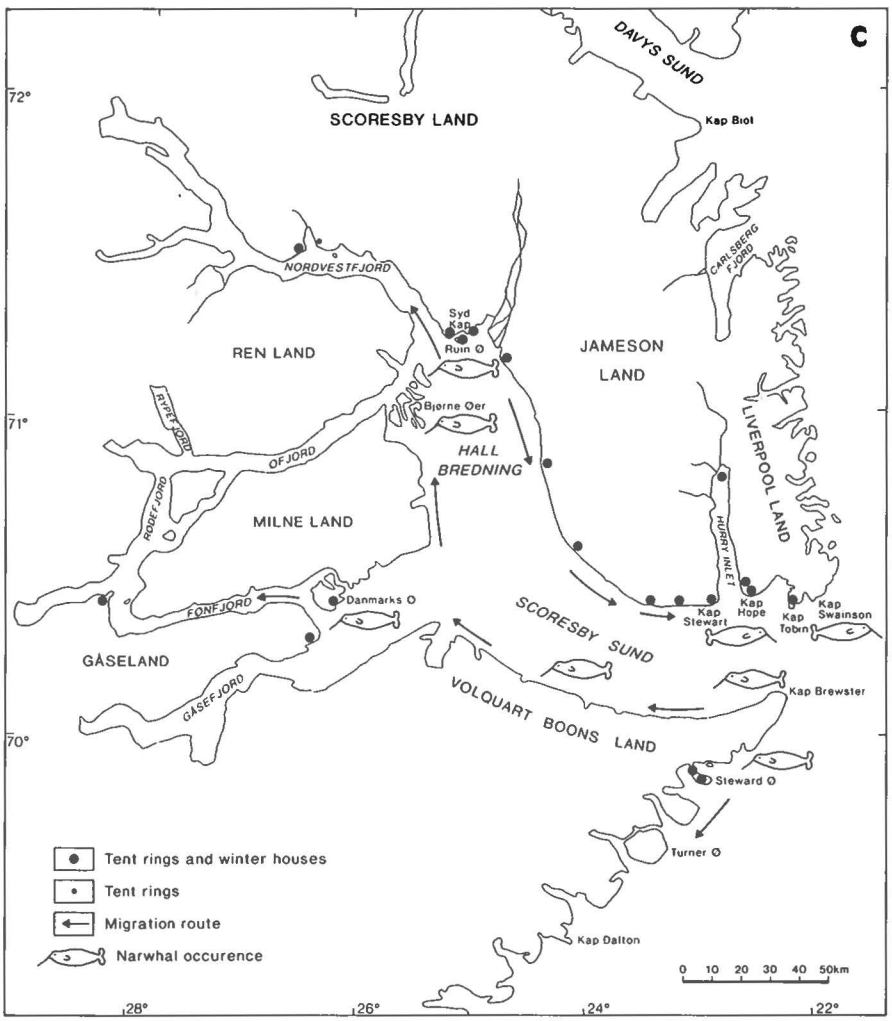


Fig. 50C. Narwhal occurence in Scoresby Sund.

Table 6. Register of the latest houses in Northeast Greenland.

Place	House identification	Source
Scoresby Sund		
Stewart Ø	Houses A, B, C & D	Sandell 1985b: 71
Renodde	4 houses	Ryder 1895: 291
Danmarks Ø	Houses 2 & 6	Ryder 1895: 294
Sydkap	Several houses	Ryder 1895: 289
Jameson Land	"The House of Beads"	Sandell 1983b
Kap Stewart	Houses 2 & 9	Ryder 1895: 287
Kap Hope	Houses I, III & VI	Rasmussen 1924/25
Kap Tobin	Houses I & IV	Rasmussen 1924/25
The Kong Oscar Fjord – Kejser Franz Joseph Fjord Area		
Suess Land	House VI	Glob 1935: 61
Kap Harry	Houses I, II, III, V & VI	Glob 1935: 61
Kap Elisabeth	House VI	Glob 1935: 61
Geographical II	Houses III & IV	Glob 1935: 61
Kjerulf Fjord	House I	Johnson 1933: 39
Eleonora Bugt	House A 1	Johnson 1933: 48
Kap Weber	Houses I & II	Nathorst 1900: 337
Kap Ovibus	House I	Richter 1934: 174
Kap Humboldt	2 houses	Richter 1934: 91
Gauss Halvø	Groups 4 & 5	Richter 1934: 100
Clavering Ø		
Dødemandsbugt	Group I, Houses 5 & 6	Larsen 1934: 19–23
	Group II, Houses 4, 5 & 7	Larsen 1934: 30–32
	Group III, Houses 7 & 22	Larsen 1934: 41–43, 50–52
Shannon Ø		
Kap David Gray	Houses 752–54 & 758	Thostrup 1911: 336 Bartlett & Bird 1931: 406
Dove Bugt		
Snenæs	Houses 406 & 407	Thostrup 1911: 336
Rypefjeld	Houses 522, 527 & 528	Thostrup 1911: 336

certain objects of particular interest should be mentioned.

Iron and glass

In the entire find there was a surprisingly large number of objects made partially of iron as well as several pieces of iron: A knife with an iron blade; an adze with an inserted iron head; a drill with an iron tip; a hand drill with an iron edge; a harpoon head with an inserted iron blade; and seven pieces of iron. There were also traces of iron in the toggle holes of the 12 miniature trace buckles together with a small iron nail in the toy lance. As far as we can see, this is the largest number of iron objects found so far in a single house ruin in Northeast Greenland.

Despite the relatively large number of iron objects, the widely used slate blades show that iron was only available in a limited quantity, and was far from sufficient to satisfy demand and replace the customary slate. Finds of iron objects are already known from a number of areas in Northeast Greenland, as shown in table 7.

As far as we know, none of the iron from our material or from the other finds has been analysed, but everything points to it being of European origin (cf. Larsen 1934: 160; Buchwald & Mosdal 1985). If we look at the table showing the distribution of iron objects found, it is evident that they are concentrated around the areas where European whaling took place off the coast from the beginning of the seventeenth century to the end of the nineteenth century (Larsen 1934: 160), and where we know that Europeans reached the coast for the first time (Scoresby 1823: 186 *et seq.*). Furthermore, a comparison with the table of the most recent houses will show that iron objects are found in largely the same places. It is in fact primarily in the more recent sites that objects of iron occur.

Nothing in the material found indicates direct contact between the inhabitants of the "House of Beads" and Europeans. The iron could come from flotsam or jetsam which at times must have reached the coast. However, not only is it possible, but also very likely that whalers were in contact with the previous population in Northeast Greenland, in addition to Clavering's encounter in 1823, even though there still exists no evidence or written reports of such contact.

One of the large whaling grounds was off the coast of Liverpool Land (Vibe 1975: 246), and there are several finds from Ittaajimmiit (Kap Hope) which indicate con-

Table 7. Finds of iron in Northeast Greenland.

Locality	Item.	Finding place	Source
Shannon Ø	Harpoon head	House ruin	Bartlett & Bird 1931: 408
Shannon Ø	Drill bit	House ruin	Bartlett & Bird 1931: 408
Ll. Pendulum Ø	Knife	?	Koldewey 1873: 605
Ll. Pendulum Ø	Lance head	Casual find	Mathiassen 1929: 141
Ll. Pendulum Ø	Harpoon head	Casual find	Mathiassen 1929; 141
Clavering Ø	Ulu (sakkeq)	House ruin	Richter 1934: 181
Clavering Ø, Eskimovig	Ulu (sakkeq)	House ruin	Bartlett & Bird 1931: 408
Clavering Ø, Eskimovig	2 knives	House ruin	Bartlett & Bird 1931: 408
Clavering Ø, Eskimovig	Nail	House ruin	Bartlett & Bird 1931: 413
Clavering Ø, Dødemandsbugten	Nail	House III, 7	Larsen 1934: 43
Clavering Ø, Dødemandsbugten	Drill	House II, 1	Larsen 1934: 25
Clavering Ø, Dødemandsbugten	Hand drill	House III, 11	Larsen 1934: 118
ca. 73°N	2 harpoons	In death walros	Scoresby 1823: 334
Myggebugten	2 knives	Grave	Richter 1934: 125
Gauss Halvø	Harpoon head	House 5, II	Richter 1934: 109
Gauss Halvø	Knife	House 5, II	Richter 1934: 109
Kap Ovibus	Harpoon head	House ruin	Richter 1934: 197
Kap Wijkander	Ulu (sakkeq)	Grave	Richter 1934: 197
Kap Harry	2 knives	House II & III	Glob 1935: 62
Kap Harry	Hand drill?	House I	Glob 1935: pl. 6, 47
Suess Land	Drill	House IV	Glob 1935: pl. 4, 31
Geographical II	2 pieces of iron	House II & III	Glob 1935: 46 & 64
Kjerulf Fjord	Harpoon head	House ruin	Mathiassen 1929: 143
Kjerulf Fjord	2 artifacts	House ruin	Nathorst 1900: 257
Kap Swainson	Arrow point	Casual find	Scoresby 1823: 322
Kap Tobin	Harpoon head	?	Thalbitzer 1909: 347
Kap Tobin	Knife	?	Thalbitzer 1909: 455
Kap Tobin	Knife	Grave 3	Rasmussen 1924/25
Kap Tobin	Drill bit	?	Thalbitzer 1909: 453
Kap Hope	Knife	House X	Rasmussen 1924/25
Kap Hope	Knife	Grave II	Rasmussen 1924/25
Kap Hope	Knife	Grave	Nat. Mus. L1 198
Kap Stewart	Hand drill	Casual find	Nat. Mus. Lc. 1483
Kap Stewart	Drill	Casual find	Nat. Mus. Lc. 1469
Kap Stewart	Knife	House ruin	Nathorst 1900: 347
Danmarks Ø	Knife	House 2	Ryder 1895: 322
"House of Beads"	Knife	House A	Sandell 1983b
"House of Beads"	Adze	House A	Sandell 1983b
"House of Beads"	Drill	House A	Sandell 1983b
"House of Beads"	Hand drill	House A	Sandell 1983b
"House of Beads"	Harpoon head	House A	Sandell 1983b
"House of Beads"	7 pieces of iron	House A	Sandell 1983b

nection with whalers. Their character makes it unlikely that they should have arrived as flotsam. For instance, in a grave, twelve pewter beads, two silver pendants, eleven complete grey or brown glass beads and ten fragments were found (Nat. Mus. L1 190 a–e; Petersen 1957: 147). In house ruin VI there lay: "a piece of broken glass, apparently from the neck of a beer bottle. It is inconceivable that it should have got there after the Eskimos left the place, since it was lying deeply among the bones which were covered with a layer of soil which in turn was covered with fallen stones" (Rasmussen 1924/25, authors' translation).

People in Scoresby Sund maintain that human bones, including a cranium containing a bullet hole *(sic)*, were found in one of the house ruins at Ittikoortaajik on Stewart Ø. (Jacob Sanimuinaq, pers. comm.). In the same house ruin a lead bullet was apparently also found in the wall (Åge Hammeken, pers. comm.). Local people are convinced that the inhabitants of this house were killed by whalers (Sandell, field notes 1975–80).

Ejnar Mikkelsen also believed there had been direct contact between whalers and Northeast Greenlanders, and mentions in that context some pieces of glass from broken bottles which he found in three house ruins on the southern tip of Shannon Ø (Mikkelsen 1934: 30). Bottles could of course have come as flotsam, thrown overboard from a ship, but he considered this unlikely so far north and was convinced that the bottles were brought on shore by whalers (Ibid., p. 31).

Pieces of glass and bottles have also been found on Clavering Ø. Pieces of a porcelain cup dating from the first half of the eighteenth century were found in house III, 7 at Dødemandsbugten (Larsen 1934: 160) and in house III, 22 there were four pieces of a green bottle (Ibid.). In the same locality a piece of glass which was made into a scraper was found (Bandi & Meldgaard

1952: 55). Pieces of broken bottles have also been found in two house ruins at nearby Eskimovig. In one of these houses there was also an ulu (sakkeq) with an iron blade (Bartlett & Bird 1931: 413, 414).

The pieces of broken glass are primarily found in connection with the latest sites and are often found with iron objects. For instance, an iron nail was found in the same house in Dødemandsbugten as the porcelain fragment mentioned above (House III, 7), and the other house (House III, 22) which contained bottle fragments was from a late period.

While we are discussing possible European contact and influence, we must finally mention some very interesting finds from Dunholm, just south of Scoresby Sund, even though they are unlikely to have been connected with the whaling period. The objects in question are a comb and a needle-case, both decorated with crosses (Thalbitzer 1909: 469, 476). Both objects are characteristic of the Eskimo, but the ornamentation, particularly of the comb, is not, being partly made up of four Maltese crosses. This ornamentation could hardly be due to the influence of the eighteenth century whalers, but must come from the Norse settlers in Greenland. It has yet to be explained how these objects with European-influenced ornamentation came to be found so far from the places where the Norsemen are known to have been.

Harpoons

The artifact material dates from one period, as mentioned earlier, and comes from a single household. There are no signs of other contemporary buildings on the site and the investigation of the "House of Beads" clearly demonstrated that it was only inhabited for a short time in a single continuous period. Therefore it seems surprising that so many harpoon heads were found. The most obvious explanation for the presence of a total of 17 harpoon heads (including two miniature tools) is that the hunting technology was highly developed, and a number of special harpoons were used, each with its own application. The material shows that an ice-hunting harpoon with a fixed foreshaft, and apparently with a special type of harpoon head – "the Northeast Greenland type" – was used (Fig. 13, 2, 3 & 4). Furthermore, there were several types of throwing harpoons with loose foreshafts. One type was perhaps a winged harpoon and another was a type of heavy bladder dart with a loose harpoon head. The single-spurred harpoon head (Fig. 13, 17 and Fig. 14) belonged to this last mentioned tool, as it was found sitting on the very long foreshaft which had a conical base. This special foreshaft (Fig. 14) may, as mentioned earlier, come from such a tool. If this is the case it is moreover an element in Northeast Greenland which has so far been disregarded. The different harpoon heads were used for these throwing harpoons depending on which catch they were intended for. The large harpoon heads of the "Scoresby Sund type" were presumably used for narwhal and the others for seals.

The many harpoon heads are all of closely related types, but still different in their form, which serves to demonstrate how cautious we have to be not to consider the various harpoon heads as solely representing stages of development. In the classification of harpoon heads criteria such as the choice of material and usage must also be considered. These factors are of great importance to the shape the tool takes, and sometimes different types can be seen as contemporary tools of different application rather than being stages in a development process.

Snow knives

The two large snow knives in the find tempt us to make the assumption that earlier in the late winter period some time was spent in a snow house on the sea ice. The annual cycle could have been divided into three periods, with the summer being spent in a tent while hunting in the open water and, later, caribou hunting took place. In the autumn the people moved into a winter dwelling where they stayed until provisions from the summer and the resources of the surrounding area had been exhausted. Then the winter dwelling was abandoned and the remaining period during which the sea was frozen was spent in a snow house, while hunting took place at breathing holes or at places kept open by currents, and along the ice edge at the fjord mouth.

With the annual cycle divided into three, the siting of several winter dwellings can be explained (*e.g.* on Fame Øerne and to some extent also some of the ruins in Jameson Land), even though they are sited at places where it is difficult to imagine that hunting opportunities lasted throughout the winter.

Beads

As mentioned, a total of 623 beads, ornaments and figurines were found during the excavation. It is the largest collection of beads found in Northeast Greenland so far. Apart from one bead which was found in front of the house, they all lay in the house itself, and they were particularly concentrated on that part of the platform where the remains of human bones were found (a lower jaw and a fragment of an upper jaw).

These beads may have been worn as jewellery in various ways, *e.g.* necklace, earrings or bracelets, but it is also possible that some of the beads were sewn on to clothes, either as decoration or as amulets. If some of the beads were sewn on to clothes it could explain why

some of the threading holes are vertical rather than going from side to side. Figure beads on clothes are ethnographically described from, for example the Iglulik area (Mathiassen 1928a: 234).

The so-called "ornamental plates" are often found together with beads, both rhomboid ones and those we have called "sinew twisters". It is assumed that these formed part of the bead chains or fixed to the clothing with the beads. Particularly interesting are the two "sinew twisters" (Fig. 48, 1 & 2) which may have had a practical application. However, based on the circumstances of the finds of the relatively few known specimens, it is more likely that they too are pieces of jewellery used together vith beads. Apart from those found here, they are only known from a grave on Gauss Halvø (Richter 1934: 151) and from a very recent house on Clavering Ø (Larsen 1934, pl. 15, 4). This type of ornamental plate with two rings is apparently from a very late period.

During the excavation of house 2 on Danmarks Ø, Lieutenant Vedel found 25 small beads lying in a small pot. The beads were of slate and lignite and presumably came from a necklace. Since a human lower jaw was also found in the house and since the roof had not been removed, the house was presumably a death-house (Ryder 1895: 294).

Several beads have been found in Uunarteq (Kap Tobin). For instance, J. K. Rasmussen found some in a possible death-house (Rasmussen 1924/25) and colony manager Johan Petersen brought about 30 pendants and figure beads home, which are now at the National Museum in Copenhagen (Nat. Mus. L1 140–68). The circumstances of the finds are unfortunately not known, but what we do know is that the 38 tooth beads brought home from Ittaajimmiit (Kap Hope) by Johan Petersen were found together in the same grave which contained the European jewellery mentioned earlier (12 pewter beads, 2 silver trinkets and 21 glass beads) (Nat. Mus. L1 190 a–e).

Glob found a few bone beads in some house ruins in the Kong Oscar Fjord – Kjempe Fjord area, and in two houses, which also contained human remains, a substantial number of beads and ornaments were found (Glob 1935: 11, 38).

Helge Larsen mentions finding 110 figure beads in a house ruin on Strindberg Land (Larsen 1934: 132), but unfortunately the information about this house and its finds is very scanty. However, the find and the find circumstances are compared with a house ruin on Shannon Ø, where a woman's lower jaw and a lot of objects were found, including 60 small bone beads depicting animals (Bartlett & Bird 1931: 409).

Two graves on Gauss Halvø contained 84 and 10 beads respectively and a ornamental plate, and there is a find of about 150 items from a strange grave in Myggebugten. The majority of these were figure beads and ornaments (Richter 1934: 151). The Nathorst expedition brought home a number of beads and a ornamental plate from a woman's grave at Kap Franklin (Nathorst 1900: 364). Helge Larsen did not find many beads (ornaments) at Dødemandsbugten, but 12 beads and the "ornamental plate" with two rings mentioned above, similar to that found in the "House of Beads", were found in a single house (House III, 7).

Bead and ornament finds from the area around Danmarkshavn include finds in death-houses a Snenæs and in graves at Stormbugt and Rypefjeld.

When considering where beads, ornaments and ornamental plates are found, it is evident that they most often come from graves and from house ruins which also contain human bones. This in itself is perhaps not so surprising, but it is remarkable how rarely beads are found in house ruins otherwise, and then only as single beads. One interpretation of this is that beads (ornaments) were something very personal and valuable which were well looked after and always carried on the person, either as jewellery, as decoration on clothing or as amulets.

Death-houses

As mentioned earlier the excavation showed that the occupants of the "House of Beads" had died in the house. It can be verified from the human bones found that they were an adult man of unknown age, a woman of about 35, and at least one, or possibly two, children between 10 and 18 years of age. It is not possible to determine the cause of death, but disease and starvation appear to be the most probable.

As mentioned earlier death-houses, *i.e.* house ruins which contain human bones, are not uncommon in Northeast Greenland.

The Scoresby Sund area

As early as 1822 Scoresby had noticed that several of the houses at Ittoritseq (Kap Stewart) had collapsed roofs (Scoresby 1823: 208). He also found human bones, but it is not stated whether they came from the graves investigated or if they were found in the houses.

On the East Greenland expedition in 1891–92 Lieutenant Vedel excavated three of the best preserved houses at Ittoritseq (Kap Stewart) and found a human skull on the floor of one of them (Ryder 1895: 287). Based on the other items found it must be assumed that the houses date from the latest phase of Northeast Greenland's mixed culture.

Later on, the same expedition investigated nine house ruins on Danmarks Ø and, in one of these houses (House 2), roof beams of wood and whalebone were found under the turf. In the house ruin itself a lamp stood on top of a layer of blubber on the side platform, and a human lower jaw lay there also (Ryder 1895: 294).

Jens Kai Rasmussen found during his investigations in Ittaajimmiit (Kap Hope) in 1924/25 that several of the roofs of houses which apparently were the newest had collapsed, and during the excavation he found in one of them (House 1) both a lamp and a pot, and so many tools and objects that he concludes: "Judging by the collection of ethnographical objects I found during the excavation, the ruin may well appear to have been abandoned, but why its occupants should have left the excellent tools behind is probably more difficult to decide. But the fact that all the hunting equipment for a kayak was completely missing from the house may indicate that an accident at sea had hit the occupants of the house" (Rasmussen 1924/25, authors' translation). (But the missing hunting equipment could also be due to its being kept outside the house, cf. the distribution of finds in the "House of Beads"). No human bones were found in this house ruin, but near the entrance passage of the neighbouring house lay a cranium which could originally have come from the house investigated.

No human bones were found inside the house ruins of Uunarteq (Kap Tobin), but two craniums lay in the midden a little to the east of the newest houses (Amdrup 1909: 316). House ruin I, was the best-preserved house on the site. Its roof had collapsed and remains of skins, beads and a ornamental plate lay on the platform (Rasmussen 1924/25). Whether the two craniums had any connection with house ruin I cannot be said with certainty, but the state of preservation of the house and the items found in it make it probable that this is a death-house (cf. the "House of Beads" where part of a skull lay 25 metres from the house itself).

During the investigations of Grønlands Landsmuseum and Ilisimatusarfik at Kangersuttuaq (Sydkap) in the summer of 1986, remains of human skeletons were found in the entrance passage of one of the houses investigated. However, judging from preliminary information this house is not from the most recent period. (A C-14 test carried out in 1987 puts the date to approximately 1650 A.D. (Møbjerg 1988)).

As mentioned earlier human bones including several craniums were found on Stewart Ø, south of Kangikajik (Kap Brewster), in some of the most recent houses on Ittikoortaajik. When the bones were found in the early 1970s these house ruins were still very well preserved, with the entrance passages intact and the roof structures more or less in position (Jacob Sanimuinaq, pers. comm.). These are the houses whose occupants, according to people in Ittoqqortoormiit (Scoresbysund) were killed by whalers.

The Kong Oscar Fjord – Kejser Franz Joseph Fjord area

Søren Richter describes a late settlement on Gauss Halvø consisting of five houses (Gauss 5) where human bones were found in two of the house ruins. In one house (House II) there are three lower jaws and in the other house (House III) there is a small piece of an upper jaw and a lower jaw from two different individuals (Richter 1934: 99). He writes about these two houses that "some of the huts are so well preserved that a tolerable correct picture can be formed of them as once they were and of the manner in which the natives installed themselves therein" (Ibid.). In addition to the bones a large number of items were found in the houses, all belonging to the latest phase of the mixed culture.

During his excavations a little further south in this area, P. V. Glob found a total of five house ruins which contained human bones (Glob 1935: 83). He believes that three of these houses are from the first phase of the mixed culture and two from the second phase. Glob is not prepared to conclude that these bones come from people who died in the houses, but points out that it might be a case of re-burials, since lower jaws in particular are often found in houses together with beads and trinkets (Glob 1935: 84).

Clavering Ø

Helge Larsen found human bones in three of the house ruins investigated in Dødemandsbugten. All three houses are from the first phase of the mixed culture (Larsen 1934: 17, 19 & 34). In one of these houses (House I, 3) there are remains of bones from seven individuals, and the possibility that the occupants have died from starvation cannot be excluded, as the house contained a large number of dog bones, but only a few bones from hunted animals (Larsen 1934: 18). In the same house a cranium was found in the entrance passage behind a stone, along with a few artifacts which were presumably grave gifts. Helge Larsen himself suggests the possibility that the entrance passage, was used as a grave after the house was abandoned (Ibid.). Graves in abandoned houses are known from *e.g.* Ittoritseq (Kap Stewart) (Scoresby 1823: 211).

Shannon Ø

In a house at Kap David Gray, which contained over 100 beads and miniature articles, as well as some tools, *e.g.* a complete paddle, a human skull was found. It is uncertain whether this was a death-house or a house which was used as a grave: "The outfit in the house would indicate that there were survivors who made off with the most necessary items of their equipment" (Bartlett & Bird 1931: 406).

Danmarkshavn area

On the basis of bone finds and a wide variety of hunting tools and items of an ornamental nature there are indications that the occupants of Houses 406 and 407 on Snenæs died in the houses (Thostrup 1911: 278). A single human lower jawbone was found just above the

high tide mark 30–40 metres north of these two houses (Thostrup 1911: 280).

General conclusion

Not all houses containing human bones are necessarily death-houses. In some instances it must be expected that abandoned houses were later used as graves (Larsen 1934: 17; Scoresby 1823: 211). However, most of them give the distinct impression of being houses where either the occupants for one reason or another died in the house or the house was abandoned in haste after a death and the dead left behind. The latter seems to be the case at the death-house mentioned on Shannon Ø. In most of the cases where it is possible to determine the age and sex of the human remains in the houses, they have often proved to be women and children. In the latest period the population was sparse and apparently lived isolated in small groups, sometimes even a single family living alone. Under such circumstances, an accident on a hunting trip, in which the family provider died, would almost certainly have meant that the remaining family members had little chance of survival.

Frequently only skulls, skull fragments or lower jaws are found in house ruins, and then the impression that a reburial or partial burial took place is a recurring one. Helge Lasen cites an example from Dødemandsbugten which could be interpreted as a partial burial (Larsen 1934: 18). Glob, who is of the same opinion, goes as far as to suggest that the frequent occurrence of human lower jaws is not coincidental, but is more likely to indicate special burial rituals than people dying in the houses (Glob 1935: 84). While not totally rejecting the hypothesis about reburials or partial burials, we believe that there is a more likely explanation for the fact that it is so often craniums and lower jaws which are found. First, the human cranium is very characteristic and, unlike most other bones, cannot be mistaken for animal bones by anybody. Secondly, it appears that cranium fragments, and in particular lower jaws, last longer than other bones. Even where animals have access to the corpses, as must have been the case in the death-houses, experience from, for instance, Africa shows that it is precisely the lower jaw-bone that is often one of the last bones to disappear (Capstick 1977: 37).

Just as all house ruins with human bones cannot be considered to be death-houses, so all death-houses are not from the most recent period. Nevertheless, we do believe that from the distribution of houses containing human bones together with the distribution of recorded ruins and artifacts from the most recent period, it is possible to form a picture of how the Northeast Greenland culture met its fate and passed into history.

In the latest period the sparse population lived scattered in the area between Scoresby Sund and Dove Bugt. The longest surviving inhabitants were those in Scoresby Sund, some small groups around Kejser Franz Joseph Fjord, on Shannon Ø and possibly in the northern end of Dove Bugt. Rather than supporting the hypothesis put forward by Johnson (Johnson 1933: 69) and supported by Larsen (Larsen 1934: 172), that a group migration northwards of the last Northeast Greenlanders occurred, we believe that the material shows instead that the last inhabitants of Northeast Greenland survived longest in the areas mentioned and died out there. A few, scattered and very recent traces of people outside these areas could have come from a few very small groups which moved away from the last "centres" and perished in the attempt. If we try to say when the Northeast Greenlanders became extinct, we would suggest that there were probably people still surviving around 1850.

As far as the reasons for the dying out of the population is concerned the available material tells us nothing, but we will examine the question in terms of the utilization of resources.

To summarize the investigation very briefly: the house excavated is a relatively late winter dwelling, of so-called type 3. Its occupants, two adults (a man and a woman) and one or possibly two children, died in the house, and consequently their tools, equipment and possessions were found in and around the house. The house lay in an isolated position far away from other contemporary houses. The house was only inhabited for a short period, possibly for less than a whole winter.

With regard to hunting, the house lay in a reasonably good position for catching sea mammals, although the sea froze over relatively early, giving a relatively short period of open water, the conditions for breathing hole hunting were good, both because the smooth sea ice and a long period of firm ice. Regarding hunting on land, on the other hand, the conditions were good: the hinterland was once a good area for caribou and in the autumn, during the moulting period, there are plenty of geese. A lake with a permanent population of arctic char lies a couple of kilometres from the house ruin (the only known lake containing char in this part of Jameson Land).

We can judge from the bone material found, that hunting sea mammals (seal and narwhal) was essential, with the ringed seal being the most important quarry. Hunting on land, for caribou especially, was also of great importance, and the more seasonal or randomly occurring resources, such as bear, walrus and birds, were also exploited. The presence of bones from animals and birds which are usually only found around the mouth of fjords (walrus, hooded seal, guillemot and king eider) seems to indicate that before wintering the family spent a period nearer the open sea, while the remains of goose bones could perhaps date their arrival at the house, since geese usually leave the district at the beginnng of September.

The rich artifact material shows that the family living in the house were well equipped materially and pos-

sessed a highly developed technology, which was suited to exploiting the local resources. The many harpoon heads and the various forms of harpoons, lances and throwing weapons must be seen as indicating a diverse technology in the hunting of sea mammals with the use of specialized tools (ordinary throwing harpoons with different harpoon heads, harpoons for hunting on ice, a bladder dart with a removable head together with a selection of thrusting lances). Other than confirming their use, the remains of the sledge and the kayak are too fragmentary to yield any information. However, one remarkable item is the long paddle which seems to be peculiar to Northeast Greenland.

The majority of the cutting implements are made of slate, but iron was used surprisingly often and particularly in the tools used most commonly: the adze, knife, drill and harpoon head.

Strangely enough only a few objects from the woman's domain were found, and certain distinctive women's tools such as *sakkeq* (woman's knife) and sewing materials were not present at all. In fact it could have been assumed that there was no woman in the house, if some of the human bones had not definitely proved the contrary. We are unable to give any satisfactory explanation for the absence of distinctive tools for women.

Beads, figurines and ornaments are by sheer number the dominant element in the entire find, and they give an idea of the technical and artistic abilities of the inhabitants. They also emphasize the general impression of a culture which was materially well developed and which possessed sufficient reserves to produce other and more than what was required by daily life.

The position and grouping of some of the finds gave information about features of everyday life. Outside the house, at the access to the entrance passage, lay a quantity of hunting equipment (harpoon, thrusting lance, harpoon heads) which would presumably have been kept there when not in use. In an area to the west of the entrance passage and near the roof of the house lay among other things some tools (knife and axe), and it must be assumed that the hunter of the house had his outdoor work place here. Inside the house, the position of the lamp near the east side of the platform and the many beads found in that area indicate that the woman had her work place here. Under the side bench at the west side of the house lay some cutting chips, and "tools for men" (drill, whetstone etc.) were found here, leading to the conclusion that the man's indoor work place was here. A little box whose contents we have interpreted as amulets, was placed in the innermost part of

Table 8. Register of houses with human bones.

Locality	Type	Period*	Source
The Scoresby Sund area			
"The House of Beads"	4 people	Late	Sandell 1983b
Kap Hope, house III	Cranium	Late	Rasmussen 1924/25
Kap Tobin, house I	2 craniums	Late	Amdrup 1909: 316
Kap Stewart, house 1	Cranium	Late	Ryder 1895: 287
Danmarks Ø, house 2	Lower jaw	Late	Ryder 1895: 294
Sydkap	Bones	A.D. 1650	Møbjerg 1988: 210
Stewart Ø	Bones, craniums	Late	Sanimuinaq, pers. comm.
The Kong Oscar Fjord – Kejser Franz Joseph Fjord area			
Gauss, house 5, II	3 jawbones	Late	Richter 1934: 99
Gauss, house 5, III	Upper & lower jaw	Late	Richter 1934: 99
Kap Harry, house I	Lower jaw	Early?	Glob 1935: 83
Kap Elisabeth, V	Lower jaw	Early	Glob 1935: 83
Geographical II, house IV	2 lower jaws	Late	Glob 1935: 83
Geographical II, house II	3 bones	Early	Glob 1935: 83
Kap Hedlund, house I	Lower jaw	Late	Glob 1935: 83
Clavering Island			
Dødemandsbugten I, 3	3 adults, 4 children	Early	Larsen 1934: 17
Dødemandsbugten I, 4	Lower jaw	Early	Larsen 1934: 19
Dødemandsbugten II, 10	1 woman, 1 child	Early	Larsen 1934: 34
Shannon Island			
Kap David Gray	Lower jaw, top of skull	Late	Bartlett & Bird 1931: 406
Dove Bugt area			
Snenæs 406	Lower jaw	Late?	Thostrup 1911: 278
Snenæs 407	Many bones	Late?	Thostrup 1911: 278

* The classifications *early* or *late* refer only to the relative age within the period of Northeast Greenland's mixed culture (ca. A.D. 1500–1850).

the entrance passage just beside the access to the house. In order to prevent evil spirits from entering the house it would have been a sensible measure to place amulets in that position.

The objects found generally comply well with what has previously been known from Northeast Greenland. Chronologically the house ruin and its finds are estimated to be very recent – possibly after A.D. 1800 – and culturally the material belongs to the most recent phase of Northeast Greenland's mixed culture, but with a distinct local character, *e.g.* the special barbed harpoon head (the Scoresby Sund type), the composite knife handles and some of the decorated beads.

The nearest parallel find so far is from Gauss Halvø in the area north of Scoresby Sund, and until now only a few finds of objects similar to those found in the "House of Beads" have been made in the Scoresby Sund district itself.

Only continued exploration can show whether this excavated house ruin with its special character is an isolated case in the area, or if more examples of this local development exist.

III. Ethnographical section

The founding of Ittoqqortoormiit (Scoresbysund)

A first attempt to re-populate Scoresby Sund was made in 1911 by Harald Olrik, at that time an assistant in Grønlands Styrelse (Mikkelsen 1934: 115; Olrik 1916). The original suggestion, based on colonization with West Greeenland hunters despite a positive reception, was never set in motion. The main aim of the plan was to provide some form of relief from the poor economic prospects in West Greenland by moving a section of the surplus population, and probably one of the reasons why Olrik's carefully planned and well-motivated attempt was never set in motion was its timing. It was put forward at precisely the time an offical programme was underway, designed to encourage employment including fishing and sheep rearing as the main occupations, and therefore the authorities did not want to engage in such an expensive and apparently risky project as Olrik's (Mikkelsen 1934: 114; Olrik 1916: VII).

From the middle of the last century the Norwegians began to step up their seal hunting in the ice off East Greenland. The hunting activity which took place both in the Denmark Straits and in the "Vestisen" off Northeast Greenland increased sharply towards the end of the nineteenth century. Around the turn of the century some of the seal hunters, when they couldn't fill a cargo load in the ice, started to venture into the Northeast Greenland fjords. There they would hunt walruses, narwhals, musk oxen and bears. As a natural consequence of this so-called "supplementary hunting" some of the sealing vessels gradually started to stay on during the winter. The first time this happened was in the years 1908/09 and 1909/10 on Clavering Island, and thereafter on a greater scale from 1922 (Mikkelsen & Sveistrup 1944: 125).

In 1919 the newly established East Greenland Company sent out hunters to Northeast Greenland to hunt commercially in the area between Cape Broer Ruys and Germania Land (Mikkelsen & Sveistrup 1944: 125). When, as a result of Norwegian hunting activity Denmark extended its area of monopoly in 1921 to include the whole of Greenland, the Norwegians felt their interests in Northeast Greenland threatened (Mikkelsen & Sveistrup 1944: 122).

In 1922 Olrik together with Ejnar Mikkelsen resurrected plans for colonizing Scoresby Sund (Mikkelsen 1934: 120). That summer an attempt was made by the East Greenland Company to erect a few huts in Scoresby Sund and to reconnoitre the area with a view to later colonization. However, the attempt failed as the company's ship *Teddy* was not able to force its way through the ice to Scoresby Sund either in the summer of 1922 or in the following year (Lauritsen 1984: 59). *Teddy* was wrecked on the ice outside Liverpool Land in the autumn of 1923 (Dahl 1924).

The conflict of interests between Denmark and Norway over the jurisdiction of Northeast Greenland resulted in a settlement between the two countries in 1924, in which the projected colonization of Scoresby Sund is mentioned officially for the first time (Lauritsen 1984: 20).

The struggle between Norway and Denmark over East Greenland continued, and was brought to a head in 1931 by a Norwegian occupation first of the area between 71°30′ and 75°40′, the so-called "Eirik Raudes Land", and in the following year of the area between 60°30′ and 63°40′. The case was taken to the International Court at the Hague, and in 1933 judgement was passed giving Denmark sovereignty over all Greenland. Undoubtedly the result of the case was influenced by the fact that the plans to colonize Scoresby Sund had at last become a reality in 1925 (Blom 1973).

Even before the settlement in 1924 between Norway and Denmark over East Greenland had been officially announced, a Scoresby Sund Committee had been founded on 26 March 1924, with the aim of colonizing Scoresby Sund using private funds (Mikkelsen 1965). The necessary funds were raised amazingly quickly, and as the Kryolite Company had put the former coaster *Fox II* at their disposal free of charge, by the spring the committee was able to present the government with their plans for re-populating Scoresby Sund (Mikkelsen 1925: 14). These plans were, briefly, that by the summer an expedition should be sent to Scoresby Sund where a colony would be established during the following winter. The colonists would be transferred there the follow-

ing summer, and at the same time the colony would be handed over to the state. No expenses should be due to the Danish government in connection with the establishment of the colony, and supplies to the colony in the first instance were to be taken care of by the Scoresby Sund Committee (Mikkelsen 1925: 13).

After the government's acceptance of the plans, *Fox II*, now re-named *Greenland*, was able to leave on 10 July 1924, heading for Scoresby Sund. She carried with her supplies and house building materials for the future colony, together with a crew of seven men who were to winter there and get the colony ready. After an eventful journey the *Greenland* reached Scoresby Sund on the 24 July, cast her anchor in Rosenvinges Bugt and managed to land supplies and materials for the future colony (Mikkelsen 1925: 39).

During the winter period the men managed to erect storage sheds and accommodation for the administration in Rosenvinges Bugt (Scoresby Sund), and dwellings were also erected for the colonists in different localities in the area beside the ruins of previous Eskimo settlements, as they seemed to indicate good hunting grounds (Mikkelsen & Sveistrup 1944: 105). As well as two dwellings in Ittoqqortoormiit (Scoresbysund), two were erected at Ittoritseq (Kap Stewart), two at Ittaajimiit (Kap Hope) and two at Uunarteq (Kap Tobin) (Bengtsson 1927).

On 4 September 1925 the *Gustav Holm* arrived at Ittoqqortoormiit (Scoresbysund) with the new population for the colony. As Olrik's original idea of repopulating the area with West Greenlanders had been abandoned, it was decided instead to transfer families from the Ammassalik district which lay towards the south. During the winter Johan Pedersen, who had been the colonial manager there for many years, had selected a number of hunter families to be the colonists (Mikkelsen 1934: 142).

Of the total of 85 colonists, 70 came from the Ammassalik district, chiefly from the northern part of the area *i.e.* Sermiligaaq, Kulusuk and Kuummiut (Robert-Lamblin 1971: 23 & 25). The remaining 15, comprising the administrative personnel such as a priest, colonial manager, midwife etc. with their families, were all of West Greenland origin (Mikkelsen 1934: 144).

Of the 70 emigrants from Ammassalik, 13 were married couples, 2 were single women, 38 were children under 15 years, and there were three girls and a boy over 15 years giving a total of 15 families (Robert 1970: 12–19). Fourteen men over 15 years of age were to support this group *i.e.* one hunter should support five people. This producer-consumer ratio was relatively high, presumably higher than in the society they had left.

On arrival, the colonists spent the first period in tents in Ittoqqortoormiit (Scoresbysund) before being settled in the localities where dwellings had been erected for them. Five families settled at Ittoritseq (Kap Stewart), three at Uunarteq (Kap Tobin) and three at Ittaajimmiit (Kap Hope), while the rest remained in Ittoqqortoormiit (Scoresbysund). However, the families destined for Ittaajimmiit (Kap Hope) did not move out to the village until March 1926 (Indberetning fra Sco. 1925–40) (Robert-Lamblin 1971: 27).

The first weeks were very difficult for the new arrivals as almost all of them became ill. During the journey from Ammassalik they had called at Iceland so that the West Greenland catechist Sejer Abelsen could be ordained before beginning his duties in the new colony (Mikkelsen 1934: 144). The colonists caught a form of influenza/common cold in Iceland and shortly after their arrival in Ittoqqortoormiit (Scoresbysund) this developed into an epidemic that soon claimed the first human life. During the first winter four more people died, all of them presumably as a result of the epidemic (Indberetning fra Sco. 1925–40). At one stage all the adults were ill and for over a month none of them were capable of going hunting (Petersen 1957: 138). The first period for the colonists was therefore anything but encouraging; sickness, the dismal and barren surroundings (the area around Ittoqqortoormiit (Scoresbysund) can be really very dreary), uncertainty and lack of knowledge of the new country, all contributed to a feeling of depression. However, after the first difficulties had been overcome, it transpired that hunting conditions were far better than had been imagined, and as they became accustomed to their new surroundings, the people were glad that they had moved (Josva Barselajsen, pers. comm.). In the first year over a 1000 seals were killed, 115 bears, 8 narwhals and 71 foxes (Mikkelsen 1965: 8).

As already mentioned the colonists were settled in areas near the mouth of the fjord where since there had been previous settlements it was assumed that hunting conditions would be good, and in addition to the actual trading post of Ittoqqortoormiit (Scoresbysund), three smaller settlements were established at Uunarteq (Kap Tobin), Ittaajimmiit (Kap Hope) and Ittoritseq (Kap Stewart).

But by 1931, Ittoritseq (Kap Stewart) had already been abandoned (Mikkelsen & Sveistrup 1944: 105). The position of the settlement at the mouth of Hurry Inlet was good from a hunting point of view, but the place is very exposed to the weather, particularly in the summer when spells of bad weather – storms and fog – prevent hunting. (There are no traces of earlier summer hunting settlements such as tent rings (Sandell 1982: 39)). According to hearsay, a contributory reason for the settlement being disbanded was that it was haunted, and thus people preferred to live closer to the church and the priest (Josva Barselajsen 1971, pers. comm.). However, because of the good hunting conditions, the settlement was later occupied for various periods, *e.g.* from 1940 to 1944, and in the passage of time the original houses were replaced by newer ones. It is mostly people from Ittaajimmiit (Kap Hope) who have used Ittoritseq (Kap Stewart) as an alternative hunting ground (Sandell, field notes 1971/72).

In addition to the establishment of the original settlements, over the years hunting huts have been erected and settlements founded in many places within the area. In 1934 and again in 1936 some families wintered at Kangersuttuaq (Sydkap), in 1946 a settlement was founded with a shop, and later trials were started to fish for Greenland halibut. However, the experiment proved a total failure and both the fishing and the shop were abandoned after a short period. Wintering at Kangersuttuaq (Sydkap) stopped in 1954 (correspondance between the colonial manager Borchersen and Ejnar Mikkelsen). According to hearsay one of the reasons for Kangersuttuaq (Sydkap) being disbanded in spite of the customary good hunting conditions was the enormous amount of snow which in winter could make both hunting and travelling impossible in periods (Josva Barselajsen 1971, pers. comm.).

However, Kangersuttuaq (Sydkap) is still important today because the area has one of the most favourable fishing grounds for arctic char in Scoresby Sund, and therefore a large section of the population count it as their favourite summer residence.

On the south side of the mouth of Scoresby Sund lies Kangikajik (Kap Brewster). From a hunting point of view it is well sited because of the polynya at the mouth of the fjord. Here seals can be hunted all year round in open water and the area is also good for hunting bears and narwhals. Moreover the colonies of guillemots and little auks at Kangikajik (Kap Brewster) provide good opportunities for collecting eggs and a rich supply of birds to hunt. Families wintered here for the first time in 1944, and in the beginning of the 1950s a small shop was established where skins could be traded and the most essential supplies bought. The area was officially disbanded as a permanent settlement at the end of the 1950's, but even so it was in use for part of almost every year until the houses became so dilapidated that it was impossible to live in them permanently during the winter (Sandell, field notes 1982). In 1985 a new hunting hut was erected there. Apart from its value as a hunting

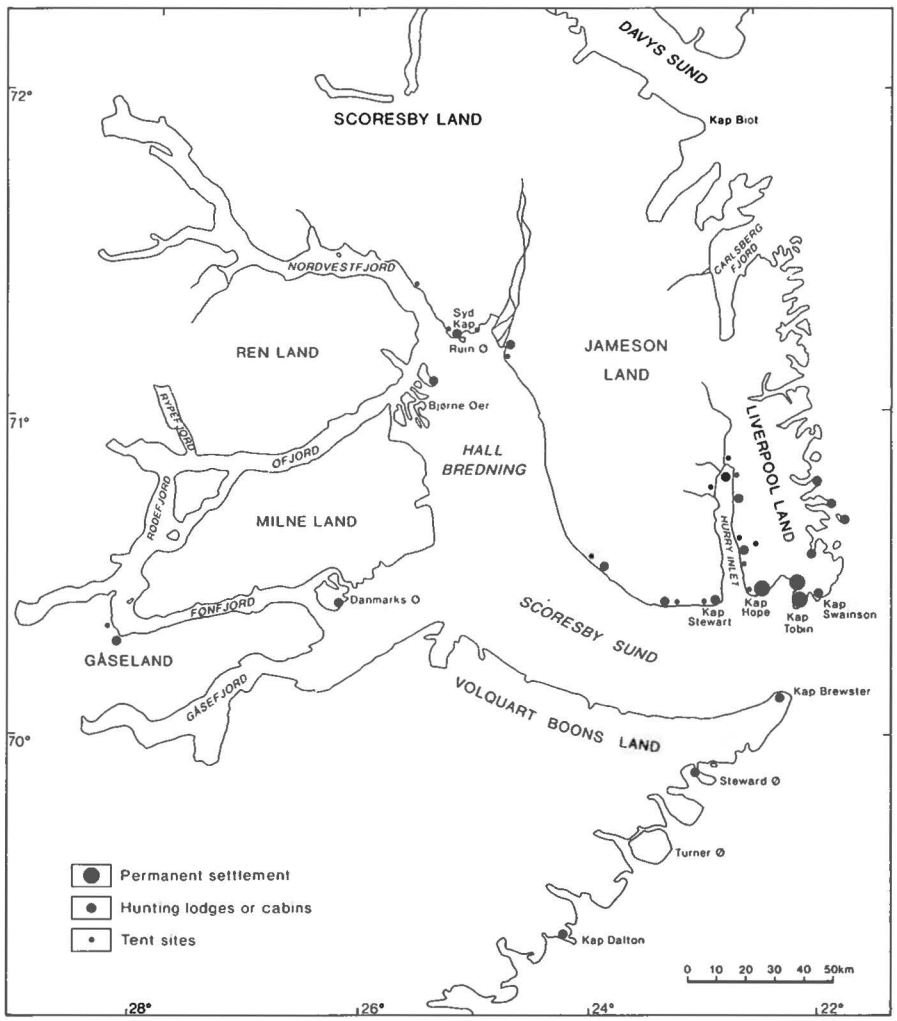


Fig. 51. Localities in use today in Scoresby Sund.

ground, Kangikajik (Kap Brewster) is also important as a base both for the people on Sulussugutikajik (Stewart Ø) and for the bear hunters during their journies down the Blosseville Coast.

In 1971–72 the first houses were built on Sulussugutikajik (Stewart Ø) and almost every year since there have been families who have wintered there. Because of this evident desire to spend the winter on Sulussugutikajik (Stewart Ø) more houses have been gradually erected – the last one in 1985 – and there are now four in all, of which two are semi-detached. Apart from generally being a good hunting ground, Sulussugutikajik (Stewart Ø) is an excellent starting-point for bear hunting further south.

On the coast of Liverpool Land, in Kangersaajua (Hurry Inlet), a few places along the coast of Jameson Land, and in several other spots in the district, hunting huts and cabins have been erected for overnight accommodation or as periodic bases for hunting activity in the area. Similarily, Napparuutilikajik (Kap Swainson) just east of Uunarteq (Kap Tobin) has for many years been a permanent hunting base for a few families, and in 1984 the settlement was extended by the building of yet another hunting hut, giving a total of three in all.

In Kangersaajua (Hurry Inlet), the Dombrava hut and the house at Nerterit Inaat (Kalkdalen) are particularly used during the char fishing season and as a support base for the bear hunters heading north. Kalkdalen is moreover occasionally used as a permanent autumn dwelling for one or two families from Ittaajimmiit (Kap Hope) who hunt seals in Kangersaajua (Hurry Inlet) at that time of year (Sandell, field notes 1975–80). The hunting house at Ukaleqarteq (Kap Høegh) on the coast of Liverpool Land has served as a winter dwelling for one year (1931; Kristian Kunak, pers. comm.), but is mainly used for shorter stays.

As well as having erected and maintained the various hunting huts in the district (some of them incidentally donated by the Scoresby Sund Committee), the municipal council assists those who either wish to move to outlying areas, or who want to spend the winter there. It does so partly by providing loans for equipment and also by arranging free transport for this and all the other supplies such as dogs, sledges, provisions and fuel that are necessary to get through the winter. Furthermore a radio link has been established with Sulussugutikajik (Stewart Ø) so that people there can get in contact with the hospital in case of sickness or accident.

Since the area was colonized in 1925, a small amount of immigration to the district has occurred through the years. In 1927 a family of six persons moved from West Greenland (Indberetning fra Sco. 1925–40) and in 1935 a larger immigration occurred of 29 persons from the Ammassalik area. This wave of immigrants, who were all related to the first group of immigrants in 1925 settled in Ittaajimmiit (Kap Hope) (Sandell, field notes 1971/72). (All of the original immigrant families were closely related; brothers, sisters, cousins etc. (Robert-Lamblin 1971: 24)). In the following years additional small groups and single persons moved up from Ammassalik and have remained in Ittoqqortoormiit (Scoresbysund). However, five persons who moved in 1976 could not settle down and by the following year had already returned to Ammassalik (Sandell, field notes 1975–80). Apart from two single men all the cases mentioned were persons with relatives in Ittoqqortoormiit (Scoresbysund) (Robert-Lamblin 1971: 28).

The total population of the district today, including about 50 people sent out from Denmark, has grown to 516 in all, (Folkeregisteret in Ittoqqortoormiit (Scoresbysund) 1.7.84), and as mentioned, the permanently populated settlements have been reduced to three. The majority of the population of the district now lives in Ittoqqortoormiit (Scoresbysund) itself (427) where the community's service and administration centres such as the hospital, work-shops, school, shop etc. are to be found. Most of the facilities are located here and opportunities for finding paid work are best.

Today 51 persons live in Uunarteq (Kap Tobin) (Folkeregisteret in Ittoqqortoormiit (Scoresbysund) 1.7.84). After the Second World War, the American weather station established at Qinngaajiva (Hvalrosbugten) during the war was moved to Uunarteq (Kap Tobin), and for many years operated as a tele-communications centre and weather station under ICAO, staffed mainly by Danes. For several years while Uunarteq (Kap Tobin) functioned as a weather station, it actually prevented the extension of one of the best hunting grounds in the district as many of the locals thought they were no longer permitted to live out there (Uloro Tuko and others, pers. comm.). Towards the end of the 1970's, to satisfy the hunter's need for places to live around Uunarteq (Kap Tobin), hunting lodges were built on the adjacent area of Noorajiva (Vardepynt). In 1981 the tele-communications centre was moved to Ittoqqortoormiit (Scoresbysund) and today Uunarteq (Kap Tobin) is mostly inhabited by young hunting families from Ittoqqortoormiit (Scoresbysund). The tele-communications buildings, destined for burning, were saved at the last minute, and are now used as dwellings.

During the time that Ittaajimmiit (Kap Hope) has existed, it has been an exclusively hunting society, and is the only permanent settlement in the district that has been completely dependant on hunting since its foundation in 1925 up to the present day. Furthermore, in the period from 1934 to about 1950, Ittaajimmiit (Kap Hope) was the largest settlement in the district, and its population peaked in 1945, when there were 123 inhabitants. Since 1970 the population of Ittaajimmiit (Kap Hope) has fallen gradually and today only 38 persons are registered as living in the village (Folkeregisteret i Ittoqqortoormiit (Scoresbysund) 1.7.84).

This picture of a settlement rigidly divided into three locations must, however, be drawn with some reservation, as a large part of the population is still extremely mobile, and many who have a permanent residence in

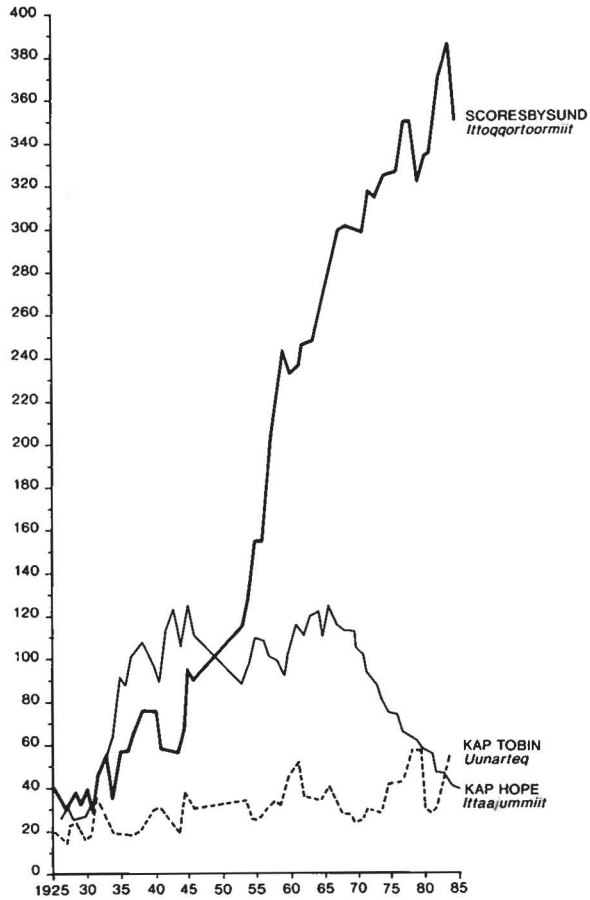


Fig. 52. Population graph for Ittoqqortoormiit (Scoresbysund).

one place often spend part of the year at one of the other settlements or out at various hunting grounds.

Hunting

From the founding of Ittoqqortoormiit (Scoresbysund) in 1925 up until today hunting, particularly of marine mammals, has been the staple and only productive occupation in the district. Even though hunting is no longer the only means of earning a living, it is still a very important part of life for the majority of the population, both as an occupation and as a recreational pursuit.

We will use the hunting conditions at Ittaajimmiit (Kap Hope) as a starting point for our discussion. This is partly because Ittaajimmiit (Kap Hope) has existed entirely as a hunting society throughout the period, and partly because the village, due to its size, comprises an entity that is easier to grasp, and finally because the most exhaustive material and most reliable data comes from here. The material was collected during two sojourns in the village, both of a year's duration, the first time in 1971/72 and the second in 1975/76, and has been continually supplemented and brought up to date during shorter stays in the village up until 1985.

Although the account has a particular relation to conditions at Ittaajimmiit (Kap Hope), it will apply to the whole district for all the key points. Even though the population of the district is small and the distances between the permanently populated places are not large, small "regional" variations can still be found as regards hunting methods and technology, how the area is utilized, social norms etc. Even the language apparently reflects these differences (Kristian Kunak, pers. comm.).

During the 60 years since the establishment of Ittaajimmiit (Kap Hope), the village has undergone several changes. The original two houses have been replaced by several more dwellings that are bigger and better, and there is now a shop, a schoolhouse/church, a large community hall and finally installed towards the end of the 1970s, an electricity generator.

Apart from the two positions of shop manager and combined catechist/generator supervisor, and a little temporary work at the school and shop, there are no opportunities for paid work in the village. Most of the population's income and almost all their nutritional supplies still come from hunting. Even though considerable changes have taken place both on the social and material level over the last 60 years, it is still the natural resources of the area that provide a means of existence for the population.

Seals *(puilit)*

The relatively constant occurrence of seals, especially ringed seals, throughout the year form the hunter's mainstay, and most of the population's needs are supplied from seal hunting. Apart from providing meat for their own consumption and for the dogs, selling the skins brings in the necessary cash. For the different animals that can be hunted, their distribution and their living habits, see the introductory passage on fauna.

As mentioned in the section on fauna, the occurrence of seals in Scoresby Sund is closely related to ice conditions. The presence or absence of solid ice, the type of ice cover, the existence of leads and polynyas etc., all play a vital role in deciding where and in what quantity the seals will appear, and what species will occur. It will therefore be appropriate to divide sealing in the district into three main groups according to ice conditions: sealing at the edge of the ice; sealing on solid ice; and sealing in open water. (See Usher 1971, II: 52.)

Apart from netting, a rifle is used for all forms of sealing. The preferred and in fact the most common type now in use is a Finish .222 Rem. rifle manufactured by Sako. This has now become the epitome of a sealing rifle, and the name "Sako" is used locally to refer to all

Fig. 53. Ittaajimmiit (Kap Hope). September 1976.

rifles of that calibre. The rifle was introduced in the district by a Dane from Uunarteq (Kap Tobin) in about 1967 and within a short time (one or two years) it completely supplanted the types and calibres previously used for sealing (Lorentzen, pers. comm.). The reason for this type of rifle being such a success was, first and foremost, that unlike the military rifles previously used, it had an excellent degree of precision which together with a reasonably moderate power made it an ideal weapon for sealing. At the same time the rifle was sufficiently robust to be able to withstand the often very severe conditions under which it was used. As hunters nowadays generally only use telescopic sights and furthermore nearly always shoot with the rifle supported by a shooting sledge, they have ensured an optimal degree of precision and are capable of killing seals up to 200 metres away.

In the winter, sledges are used for transport to and from the hunting areas and for carrying back the carcasses, and dinghies with outboard engines are used in the periods of open water. The sledge which is large and strong to suit local conditions, is between 250–300 cm long with vertical stanchions and is drawn by a team of 5–14 dogs. In accordance with municipal council resolutions, snow scooters may only be used within the inhabited areas and on the sledge routes between them, and therefore they have no importance with regard to hunting. Kayaks and the implements associated with them have been out of use for about the last ten years, and are now replaced by motor boats and a small locally constructed dinghy known as an ice-edge dinghy.

Ice edge hunting

Throughout the entire winter, even if the sea is otherwise covered by ice, there is usually open water across the fjord mouth of Scoresby Sund from Uunarteq (Kap Tobin) to Kangikajik (Kap Brewster). As mentioned, this polynya offers particularly favourable conditions for marine mammals and as it also lies close to the inhabited areas much of the winter's hunting activity takes place here. This ice-edge hunting, which is very characteristic of the district, is carried out here to a greater degree and with bigger yields than in any other area in Greenland.

Usually at the end of October, after the edge of the ice has become stabilized across the mouth of the fjord, hunting starts where the ice borders the open water. The method of hunting is to reconnoitre along the ice edge, stopping every now and then either when a seal is

Fig. 54. Hunter at the ice-edge using rifle with telescope sights and shooting sledge. September 1975.

sighted or when one is suspected of being in the area. The seal is shot with a rifle from the firm ice and is retrieved in the ice dinghy. The telescopic sights and shooting sledges enable the hunters to kill seals from a great distance. However, if the hunter decides that the seal is too far away after all, he can usually lure it a little closer either by whistling or by scraping the ice.

In the dark period from November to the end of January, hunting activity is greatly reduced due to the lack of light, the cold and the frequent storms, and often the hunters will only remain at the ice edge for a short space of time. The distance out to the ice edge at this time of year is also another factor that influences the level of hunting activity. Even though the ice edge usually lies close to the inhabited areas, severe cold can push it so far out that in practice it is almost imposible to reach the open water and return within a day. This can be a problem particularly for the hunters at Ittaajimmiit (Kap Hope), and previously for the people at Ittoritseq (Kap Stewart) (Petersen 1957: 153; Mikkelsen 1934: 152). On the other hand there are some years when due to fierce storms and heavy swells there is open water right into Ittoritseq (Kap Stewart) (Sandell, field notes 1985).

After the re-appearance of the sun in February, hunting activity increases at the ice edge and, as the spring approaches, the hunters remain there for several days at a time in camps. At this time of year, the whole ice edge from Uunarteq (Kap Tobin) to Kangikajik (Kap Brewster) is used for hunting and as sledge paths. Throughout the winter mostly ringed seals are shot, many of them young seals, but later on in the spring bears can also be found all along the ice edge, an occasional walrus can be seen around Napparuutilikajik (Kap Swainson), and down at Kangikajik (Kap Brewster) there is even a chance of getting narwhals. The various types of sea birds start to appear later in May and from then until the break up of the ice at the end of June, the ice edge offers an incomparable richness and variety of hunting animals.

The ice edge at this time of year is therefore a tempting destination for both full-time and part time hunters and anyone else who has a chance to get out there. The

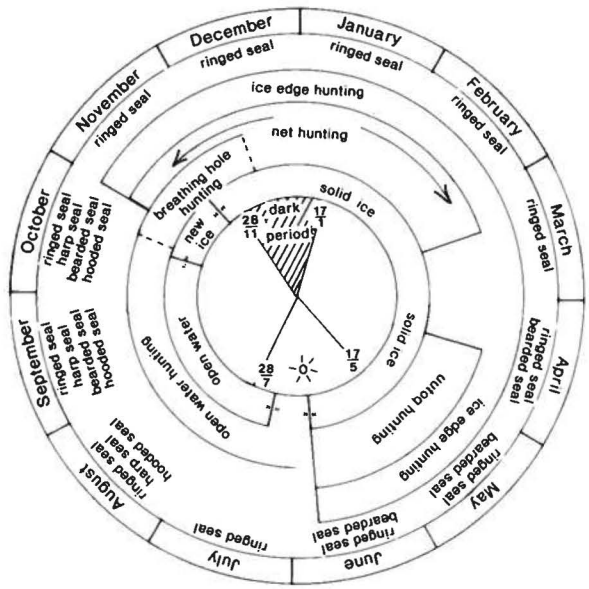


Fig. 55. Hunting cycle for seals.

Fig. 56. Sledge with ice-edge dinghy. December 1971.

people often congregate in groups and while they are waiting pass the time pass by swapping experiences, eating together or playing cards. The impression is gained that the social life is sometimes just as important as the hunting. When several hunters are together, the one who arrives first has a sort of "first pick", and he is the one who is seen to scout most attentively for any seals emerging, but otherwise the established rule applies that whoever sights the seal first, has the right to the first shot. If he misses then the others may try. The seal belongs to whoever shoots it. In practice, conflicts in this sort of situation are nearly unknown.

To provide an example of the yields from this type of hunting only, the number of ringed seals shot during March and November by one man at Ittaajimmiit (Kap Hope) are shown in table 9. In the month of November, when he shot 34 seals, the hunter had been out 16 times in all, spending an average of four hours each time. In March, when 42 seals were caught, he had been out 14 times in all, and had caught something on 12 occasions. The average time he spent is hard to work out precisely, but there were several occasions when he was out for eight to ten hours at a time, and at no time was he out for less than four.

Sealing on solid ice

Hunting on solid ice is based on the fact that some of the seals which stay permanently in the area (mainly ringed seals but to a lesser degree bearded seals), keep breathing holes open in the solid ice, and can therefore spend the winter under the ice. The methods of hunting vary, depending on the time of year and the snow and ice conditions.

Netting is the second most important form of winter hunting in the district, measured in terms of yield. In the autumn, as soon as the ice layer has formed, the first nets are put out. At the beginning of the season the nets are put near the land, either directly off the coast or from stranded ice hummocks near the shore. Later, when the ice has become thicker and cracks have formed, the nets are set across them and around icebergs that have frozen into the ice. Around New Year the nets should be moved further out, as seals are no

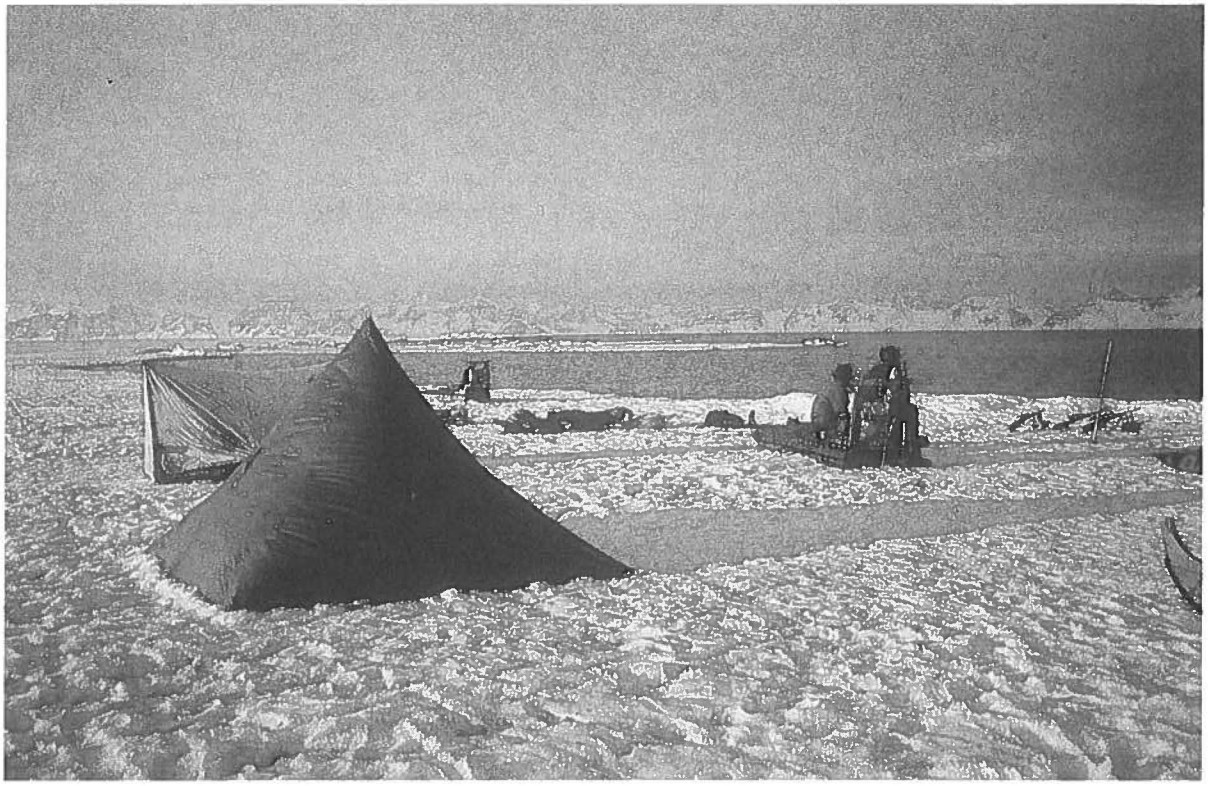


Fig. 57. Camping at the ice–edge. April 1972.

longer found along the coast (Josva Barselajsen 1972, pers. comm.).

Many hunters have permanent places for their nets at the shore and these cannot be used by others without permission. However, a pre-condition for staking such a claim is either that the site must be used, or that at the beginning of the season the hunter indicates, by placing a piece of wood or a chunk of ice, that he intends to use it later on (Jonas Brønlund 1976, pers. comm.). Netting sites like these can be inherited, but also only on condition that they are used.

There are municipal council regulations concerning the placing of nets according to which, for example, it is forbidden to set the net less then 25 metres away from a neighbouring one, a rule that is not always observed. Even so, quarrels over net sites are apparently infrequent.

Usually, it is the older hunters and youths in particular who use the netting method. One hunter can usually tend four to six nets throughout the season. Seal nets need to be looked at almost daily, because after a seal is caught its skin is quickly spoiled by amphipods, and the nets tend to freeze solid in the ice.

At the beginning of the season while the ice is still thin, many hunters put out a lot of nets and gradually abandon them as they become frozen into the ice or otherwise ruined. This means that the number of nets in use is gradually reduced throughout the winter. (During the latter stages of the *"islæg"* period which is the part of the year when the sea is covered by ice, the ice becomes too thick in most places to make it worthwhile putting out new nets). Usually, to reduce the risk of the nets freezing into the ice the end lines of the nets are replaced with monofil nylon lines. Yields are particularly good after the ice starts to form to the end of the dark period. When the light begins to re-appear, people prefer to hunt out at the ice edge, partly because the yields from the nets are lower and working with them in the thick ice is difficult, and also because people find hunting at the ice edge at this time of year more exciting.

For the individual hunter, the importance of netting varies greatly. Some hunters never normally put out nets, most put them out in certain periods and combine them with other forms of hunting and a very few hunt using nets only. Some of the bear hunters, while out on longish trips, set nets at places they will pass through on their way home and in this way ensure dog food for the return journey (Kristian Barselajsen 1971, pers. comm.).

As an example of the yields from netting, a hunter's results from catching ringed seals in November 1971 at

Table 9. A hunters catch of ringed seals in November and March. Ittaajimmiit (Kap Hope) 1971/72.

Date	Yield November	Yield March
1		1
2		
3		
4		
5	1	3
6	3	
7	1	1
8	1	1
9		
10		
11	1	
12	2	5
13		5
14	2	
15		3
16	1	
17	7	
18		7
19	2	7
20	1	2
21	3	2
22	1	5
23		
24		
25	1	
26		
27	2	
28		
29	5	
30		
31		
Total	34	42

Ittaajimmiit (Kap Hope) are given in table 11. The hunter used a combination of net hunting with four nets, and breathing hole hunting. Of the 32 seals caught, six were caught at breathing holes. This took him about two hours almost every day; in other words he used a total of 60 hours. In comparison, the hunter working along the ice edge (compare table 9) had used about 64 hours to catch the same number of seals.

Netting usually plays a more important role at Ittaajimmiit (Kap Hope) than at the other settlements as it is further away from the ice edge. Of the total of 300 seals caught at Ittaajimmiit (Kap Hope) in November 1971, 130 were caught using nets. The information quoted by Born, where he states that yields from net hunting can be up to 50 seals per month per net, is, in our opinion, wildly exaggerated (Born 1983: 48).

The importance of netting depends to a large on the opportunities for other forms of hunting. In this context it functions as an excellent alternative, and is very important in those periods when the ice-edge cannot be used for hunting, either because it lies too far out, or because it is inacessible due to storms or heavy swells. Equally, it plays a lesser role in the periods when good hunting is available at the ice edge. When Joëlle Robert, comparing the number of seal nets and the number of kayaks, states that: "It is practical to use nets during a large part of the year and as this gives better results, it has been developed at the expense of kayak hunting with harpoon or rifle" (Robert 1970: 81, authors' translation), she overestimates the importance of net hunting, and furthermore draws a conclusion from incorrect premises.

She writes further: "in 1925 every hunter had his kayak but didn't use nets. In 1935 there was at least one net per kayak, in 1946 two nets per kayak and in 1957 three. Today the proportion is more than ten to one" (Ibid.). Of course hunting with nets has not replaced kayak hunting. The kayak was used in the early days after colonization for hunting in open water, but gradually it became important mainly for hunting at the ice edge, while net hunting became a method restricted to solid ice conditions. The change in the number of kayaks and seal nets only shows that over the years the use of kayaks has decreased as they were replaced by ice-edge dinghies. In the same period hunting with nets became more common. The comparison can tell us nothing about whether it is possible to catch more seals with nets as opposed to other methods.

The situation is best illustrated using the information from our own investigations at Ittaajimmiit (Kap Hope) in 1971/72. There were then six kayaks in use in the village, and during the winter 35 nets were used for netting. In addition, there were 10 ice-edge dinghies (Sandell, field notes 1971/72). This gives a kayak/net

Table 10. Number of seal nets per household. Ittaajimmiit (Kap Hope) 1971/72.

Household	Nets
I	1*
II	4
III	0
IV	10
V	6
VI	0
VII	2
VIII	0
IX	4
X	1
XI	3*
XII	0
XIII	1*
XIV	0
XV	0
XVII	0
XVIII	0
XIX	3

* I: used nets for a month. XI: put out 3 nets until January. XIII: used nets for 14 days. IV: used 6 nets at the start of the season and the remaining nets were used as replacements for those that were spoiled. Finished the season in April with 4 nets.

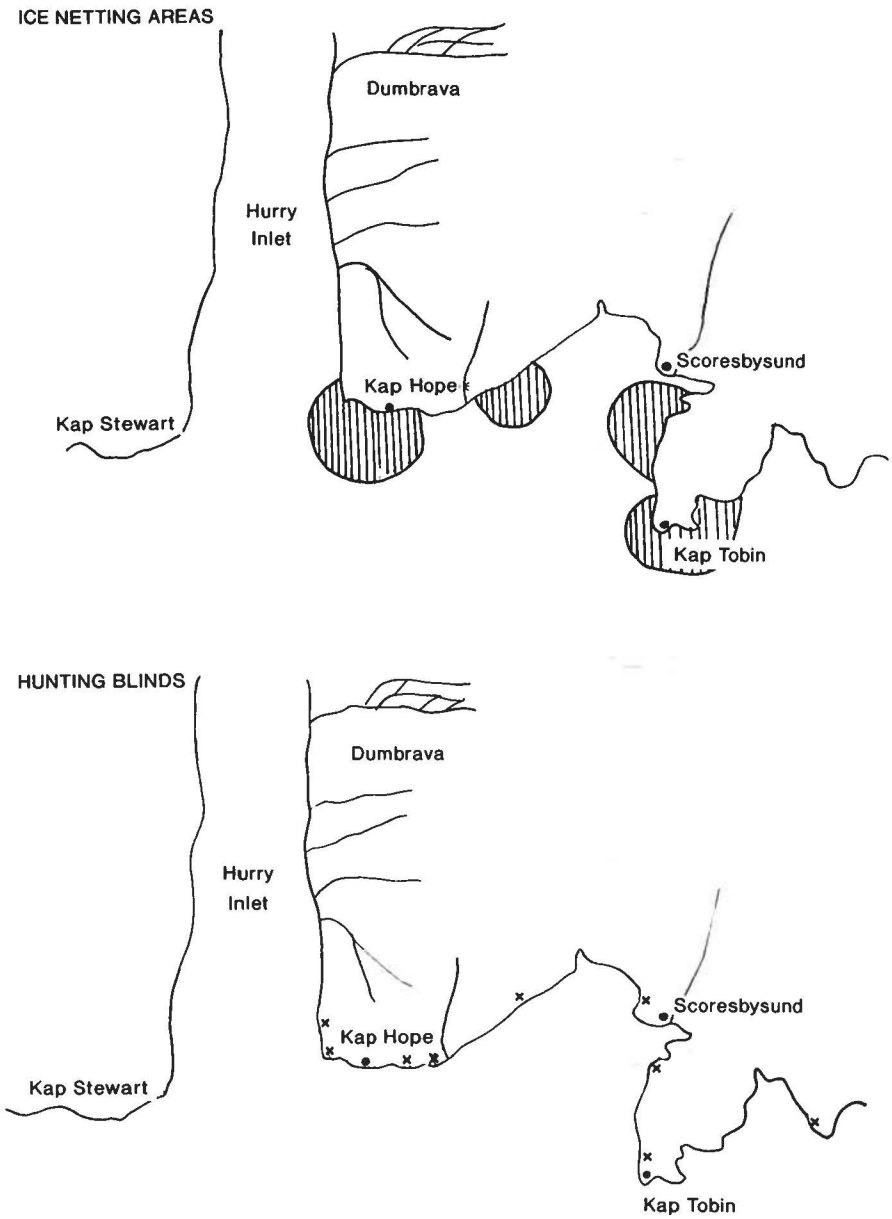


Fig. 58. Netting areas and hunting blinds.

ratio of 5.8, which although it lies slightly under Robert's observations from 1968, is still in keeping with them. If the ice-edge dinghies are included in the comparison, and we feel that it is relevant to do so as they have replaced the kayak, then we now have a ratio of 16 boats to 35 nets. This corresponds to two nets per boat, in other words the same figure that Robert reports for 1946 (Robert 1970: 81). The issue concerning kayaks and ice-edge dinghies will be gone into more deeply in a later chapter on technological development.

When the ice cover starts to form over the fjord from the middle of October to about the middle of December, breathing hole hunting becomes worthwhile. Breathing hole hunting is a favourite sport and can give a good yield in the short period when it is possible. Theoretically, this form of hunting can be carried on all through the winter but in practice the method is only used when the snow on the ice is fairly thin – no thicker than 20–25 cm – and the breathing holes can therefore be easily found. If new ice forms at the ice edge during the winter, then of course the opportunity for breathing hole hunting will be taken up, but normally it is a form of hunting that belongs to the autumn and early winter. The length of the season varies greatly from year to year, depending on how early the ice becomes covered by snow.

Table 11. A hunter's catch of ringed seals using nets and breathing hole hunting. Ittaajimmiit (Kap Hope) November 1971.

Date	Yield
1	
2	1
3	2
4	
5	
6	1
7	
8	2
9	
10	1
11	
12	
13	1
14	1
15	
16	4
17	
18	
19	2
20	2
21	4
22	2
23	1
24	
25	
26	1
27	1
28	4
29	2
30	
Total	32

Breathing hole hunting is usually carried out by two men together, who comb the area by sledge looking for breathing holes. When a breathing hole is found one of the men takes up position beside the breathing hole while the other moves away again with the sledge and dogs. Each seal has a system of breathing holes, so the hunter with the dogs will usually drive round in a circle trying to create a disturbance at the other breathing holes in order to make the seal come up where his partner is waiting. When the seal appears at the breathing hole it is shot with a rifle. Most of the hunters find a Sako rifle with solid bullets to be adequate for breathing hole hunting, but a few prefer a bigger rifle (.30–06), as a heavier bullets have a better effect shooting through ice. After the seal has been shot the breathing hole is enlarged with an ice chisel and the quarry is landed with the aid of a gaff. Naturally, the time spent at the breathing hole waiting for the seal to appear varies. In our experience it is seldom more than half an hour.

If the man is good at driving his dogs, he can manage to hunt along: He does this by commanding the dogs to run round the area in a circle while he waits by the breathing hole. However, as mentioned previously, usually two people do it together and often the helper is a boy or someone from one's own household. If two hunters go out together then they usually take it in turns to shoot. If a hunter finds a breathing hole he can reserve it for later use by marking it (Mathias Bajare, pers. comm.).

When the sun begins to give out some warmth in the spring the seals enlarge their breathing holes and climb up on to the ice to sun themselves. These basking seals known as *qasimallit*, sing. *qassimaleq* can be hunted from the beginning of May until the ice breaks up towards the end of June. This method of hunting can give very large yields but since the seals have started to moult their skins are worthless, so it is only done to a limited extent as a means of providing food both for humans and dogs.

The method entails the hunter hiding behind a shooting screen and trying to creep up within range of the seal, which is basking beside its enlarged breathing hole. The seal always stays close to the hole so that at the least sign of danger it can return to the water; it is important, therefore, to be able both to get within shooting range and to kill the seal immediately. If the seal is not instantly killed it will almost certainly slide back into the water and be lost. For the same reason it is also important to get to the quarry and remove it from the hole the moment the shot has been fired, in case the animal is only stunned. To be certain that the seal is killed instantly it must be hit in the head or neck, but since the rifle is equipped with telescopic sights and is steadied on a shooting sledge, it is possible to hit this comparatively small spot from fairly far away. Even a distance of 100–150 metres is considered a safe shot.

Previously, a few of the older hunters used to "peep hunt". This form of hunting from Ammassalik is described in detail by Gustav Holm among others (Holm rep. 1972: 87). This method, which cannot have been very important, was probably given up around 1940, although the few who engaged in it considered it both interesting and entertaining (Josva Barselajsen 1971, pers. comm.).

As the number of wintering seals within an area is limited there is a risk that by engaging in solid ice hunting, in particular the special winter methods such as netting and breathing hole hunting, the seals in the area will be depleted at some stage during the season, and the hunters will be forced to move to new territories. Mostly ringed seals are caught in this way, but occasionally one or two bearded seals are caught in nets or by breathing hole hunting.

Open water hunting

At the beginning of July the sea ice starts to break up and puts a complete stop to hunting on solid ice and ice-edge hunting. There are times when it is impossible to go out because of the storms and the pack ice, but when it is possible, hunting in open water takes place throughout the short period from when the ice breaks

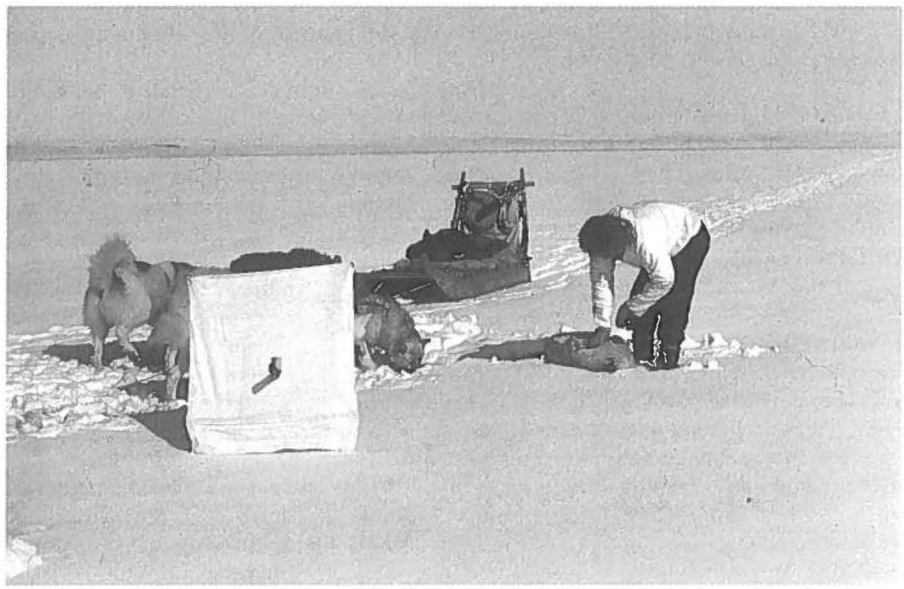


Fig. 59. *Qassimaleq*-hunting. May 1980.

up in the middle of July to when it starts to freeze over again at the end of October.

Hunting from ice floes is the most important method of hunting in the summer. The hunter goes out into the pack ice by motor boat and shoots the seals from the ice floes. This is done mostly within the area lying between Napparuutilikajik (Kap Swainson) and Ittoritseq (Kap Stewart) and southwards to about the middle of the mouth of the fjord. When an area is reached where there is good hunting potential, the boat is tied up to a suitable ice floe and the hunter waits for the seals to appear. If a seal appears within a suitable distance it is shot with a rifle. If it appears outside the shooting range, then it can be enticed to come closer by the same methods that were used at the ice edge, such as scraping the ice with an ice chisel or splashing in the water with an oar. If, after a short while, no seals have appeared in the area, then usually the hunters move off in search of a new ice floe, as during the summer the seals are usually found in small groups, unevenly distributed.

Today only motor boats (usually 16 foot dinghies with a 20–40 hp. engine) are used for open water hunting, and kayaks and the implements that go with them have fallen out of use completely.

The use of motorboats steadily gained ground towards the end of the 1960's as dinghies with outboard engines gradually began to replace the kayaks traditionally used for open water hunting.

As can be seen from table 12 there were 14 kayaks and nine dinghies with outboard engines in Ittaajimmiit (Kap Hope) in 1972, most of them with an engine size of 9½ hp. Of the 14 kayaks only six were in daily use, two had no covering, one was being built and the remainder were used only occasionally. It is interesting to note that four kayaks covered in skin and two in plywood were in daily use, while the four covered in canvas were hardly ever used.

At first, the older hunters were against the introduction of motor boats for hunting as they thought it would frighten the game, and even though most of them were financially able to buy a boat, they refused to do so. But the process had begun and the motorboat had come to stay. In 1975 the last protester surrendered and bought

Table 12. Vessels in Ittaajimmiit (Kap Hope) 1971/72.

Household no.	Kayaks no./covering	Motorboats no./engine size	Ice edge dinghies no.
I		1/9½ hp.	1
II	1/canvas 1/frame	1/9½ hp.	1
III	1/plywood		
IV	2/skin	2/9½ hp.	
V	1/skin		1
VI	1/skin		
VII	1/canvas		1
VII			1
IX			2
X	1/plywood		
XI	1/skin	1/18 hp.	
XII	1/skin	1/18 hp.	
XIII	1/canvas	1/9½ hp.	1
XIV			
XV	1/frame	1/4½ hp.	
XVI			
XVII	1/canvas		
XVIII			1
XIX		1/9½ hp.	1

Total of 19 households: 14 kayaks, 9 dinghies with outboard motors and 10 ice edge dinghies.

a boat, giving as the reason that as he now had to travel so far from the village to catch seals, he could no longer manage with just a kayak (Uloro Tuko 1975, pers. comm.).

In 1985 there were 13 households in Ittaajimmiit (Kap Hope). There were no kayaks, but the village had 15 ice-edge dinghies and 8 dinghies with outboard engines. The actual number of motor boats is more or less the same as ten years ago but since the number of households has been reduced, there is a proportional increase. Furthermore, the size of the engines has increased to 20–40 hp. (Sandell, field notes 1985).

The introduction of the motorboat and the growing size of the engines has meant a steady expansion in the hunter's radius of activity and the potential hunting areas have been greatly enlarged. On the other hand, it has become increasingly expensive to buy and maintain these larger boats, so that today it can be an economic liability for a hunter without any other source of income to keep a motorboat. For full-time hunters this has mainly meant that they have had to re-organize hunting in open water to be able to hold their own against the part-time hunters, who with their higher incomes can afford to keep the larger boats. Unfortunately this is not the place to elaborate further on this interesting question.

Mostly ringed seals and a few bearded seals are caught in open water hunting, but occasionally it is possible to catch a number of harp and hooded seals as well, when they migrate in the summer months.

Hunting from blinds

During the summer when weather conditions make going out in boats impossible either because of the wind or the ice becoming packed, seals can be shot on land from blinds. This form of hunting can also be carried out by non-boat owners. The blinds are positioned where experience has shown that the seals pass close to land, and are used year after year. The remains of old tent rings lying near many of the blinds show that a number of these hunting grounds must have also been used by the earlier inhabitants. The blinds are often found on points surrounded by low water so that the seals can be fished up from the water after they have been shot. (In the summer dead seals are liable to sink, partly because

Fig. 60. Kayak and ice-edge dinghy. Ittaajimmiit (Kap Hope) June 1972.

they are thin and partly because of the low salt content of the water at this time of year. As only rifles are used, many seals are thus lost at the start of the period of open water).

The blinds are usually built from bits of rock to provide shelter for the hunter and prevent him from being seen by his quarry. It is not unusual to find five or six hunters at the same blind, each with his rifle mounted on a shooting sledge in front of him. The best results are obtained at high water, and this form of hunting is often carried out at night when there is least disturbance from motorboat traffic and the chances are thus highest. It is not unusual for the hunter to live in a tent beside the blind in order to get the most out of these optimal periods. The map (Fig. 58) shows the hunting areas and the positions of the different blinds.

Yields and seasonal variations in sealing

The graphs showing the yields from seal hunting at Ittaajimmiit (Kap Hope) in 1971/72, have been compiled from hunting lists kept daily by individual hunters throughout the year during our first stay in the village. As the population lives more or less exclusively from hunting, they give a realistic picture of both the individual and seasonal variations in seal huntig to which a hunting society is subject.

From the diagram (Fig. 62) showing the total seal catch from the village, it can be seen that during the 12-month period 1971/72, 2051 seals in all were caught, of which the large majority were ringed seals, and that the yield varied greatly throughout the year. There were 19 active hunters in the village.

As can be seen from the diagram, the hunting curve rises during September and October. This increase in hunting is due to several factors:

1. The young ringed seals who do not winter under the ice collect together just before icing over occurs at the mouth of Scoresby Sund, and form an easy prey.
2. After the seal is killed it no longer sink.
3. When the *"islæg"* begins, netting starts and this gives a very good yield at the beginning.
4. After the ice is formed and as long as the new ice remains free from snow, the hunters take part in breathing hole hunting.

Fig. 61. Hunters at a shooting blind. Ittaajimmiit (Kap Hope) July 1972.

The fall in yields in December and January is mostly due to the dark period and the cold, storms and darkness that are associated with it, and which place a narrow limit on hunting activity at this time of year. Hunting activity increases with the return of daylight, especially at the ice edge, and the number of seals caught rises again. The peak is reached during April, and starts to fall during June when the ice begins to be waterlogged and is therefore difficult to move around on. Also, at this time of year the seals start to moult and their skins are therefore basically valueless. The bottom of the curve is reached in the months of July and August, the two worst months for hunting. Then the ice is often tightly packed for long periods making the use of boats impossible and the seals are also likely to sink after they are shot. Furthermore, according to Born, there are apparently not many seals around in the mouth of Scoresby Sund at this time because many of the herd of ringed seals move out to the pack ice during July and August to forage (Born 1983: 43).

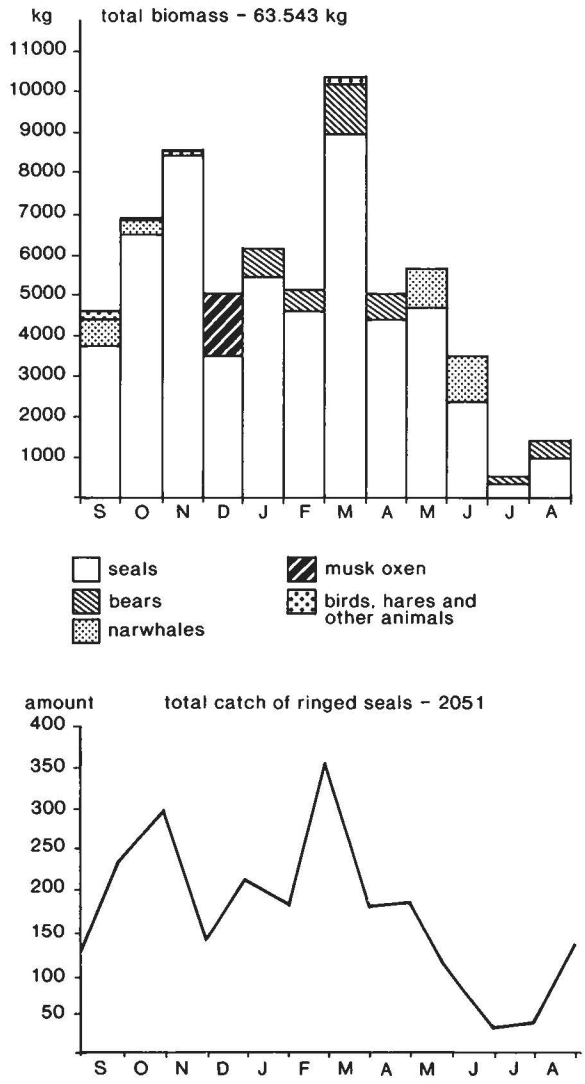


Fig. 62. Number of ringed seals caught at Ittaajimmiit (Kap Hope) and meat quantities in kgs. for 17 household. 1971/72.

If the population were solely dependant on sealing, with present-day hunting technology there would be two critical periods in the year, namely during the dark period and in the first part of the open water period. However, as will be discussed later, this is overcome partly because the hunters engage in other forms of hunting activity, and partly because the variations between yields from individual hunters act as a levelling factor.

The hunting curves for the individual households show considerable deviations in some cases from the total hunting yield for the village. Apart from differences in ability and effort, these deviations are accounted for to a large extent by individual preferences as regards methods, technology and the animal hunted. At times, some hunters prefer to drop seal hunting and to engage in other forms of hunting activity, some only hunt seals by one method, and others hunt seals all the year round by varying methods. The fluctuations of the supply of seals within individual households is thus counter-balanced by supplements from other forms of hunting and also by the exchange of meat between them.

Walrus

Most walruses are caught at the ice edge from February to the end of June. At this time of year they are usually found along the ice edge between Napparuutilikajik (Kap Swainson) and Uunarteq (Kap Tobin), and also around Sulussugutikajik (Stewart Ø). Later on, when the ice has broken up, occasional animals can be found in the drift ice around the mouth of the fjord as far in as Ittoritseq (Kap Stewart), and a walrus has even been shot at Kangersuttuaq (Sydkap) (Josva Barselajsen, pers. comm.). As only rifles are used, the hunters try to kill the animal outright by shooting it in the head and preferably at a very short range, to prevent escape. Often, several hunters will shoot at the animal at the same time for this reason. A heavier type of rifle (.30–06) will normally be used for shooting walrus, together with solid bullets, but a few animals have been shot using the small .222 Rem. (Janus Mathæussen 1977, pers. comm.).

A large walrus was seen in September 1975, lying on an ice floe in the drift ice off Ittaajimmiit (Kap Hope). It was killed by a communal hunting party in several boats, and all the participants shot at the animal simultaneously. After the animal had been shot all the boats cooperated in towing it to the village, where it was divided up. In this case, the hunter who first had sighted

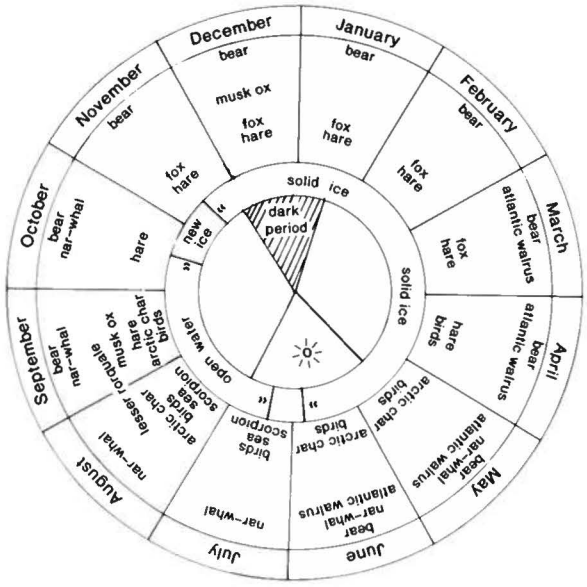


Fig. 63. Hunting cycle (except seals).

the walrus took the first portion, but otherwise it was divided up according to the usual rules (Sandell, field notes 1975).

On this occasion the animal was shot while lying on an ice floe, but it often happens that animals shot in the water sink. However, as the walrus prefers relatively shallow waters, such animals can on many occasions be retrieved with a hook.

The hunters have great respect for walruses, who are seen as both aggressive and unpredictable. As mentioned previously, there have been occasions when walruses have attacked ice-edge dinghies towing seals, and therefore if there is a walrus in the neighbourhood, the hunters are extremely careful when retrieving seals. Usually, one man is posted as a look-out while the seal is fetched, and in situations like these the towing rope is not fastened to the boat, but held loosely so that the seal can easily be freed if necessary (Sandell, field notes 1980).

In the first few years after colonization in 1925, a fair number of walruses were shot, but after some years the numbers decreased sharply, probably because the permanent herd in the area had been killed. About 70 were shot in 1925/26 but in the years following the numbers fell to 10, 6 and 2 (Mikkelsen & Sveistrup 1944: 107). The annual hunting figures over the last 20 years have varied from 5 to 15, apparently showing a slight upward tendency in the last five years (Sandell, field notes 1975–85). Although not many walruses are shot, they do have a certain importance as their carcasses contrib-

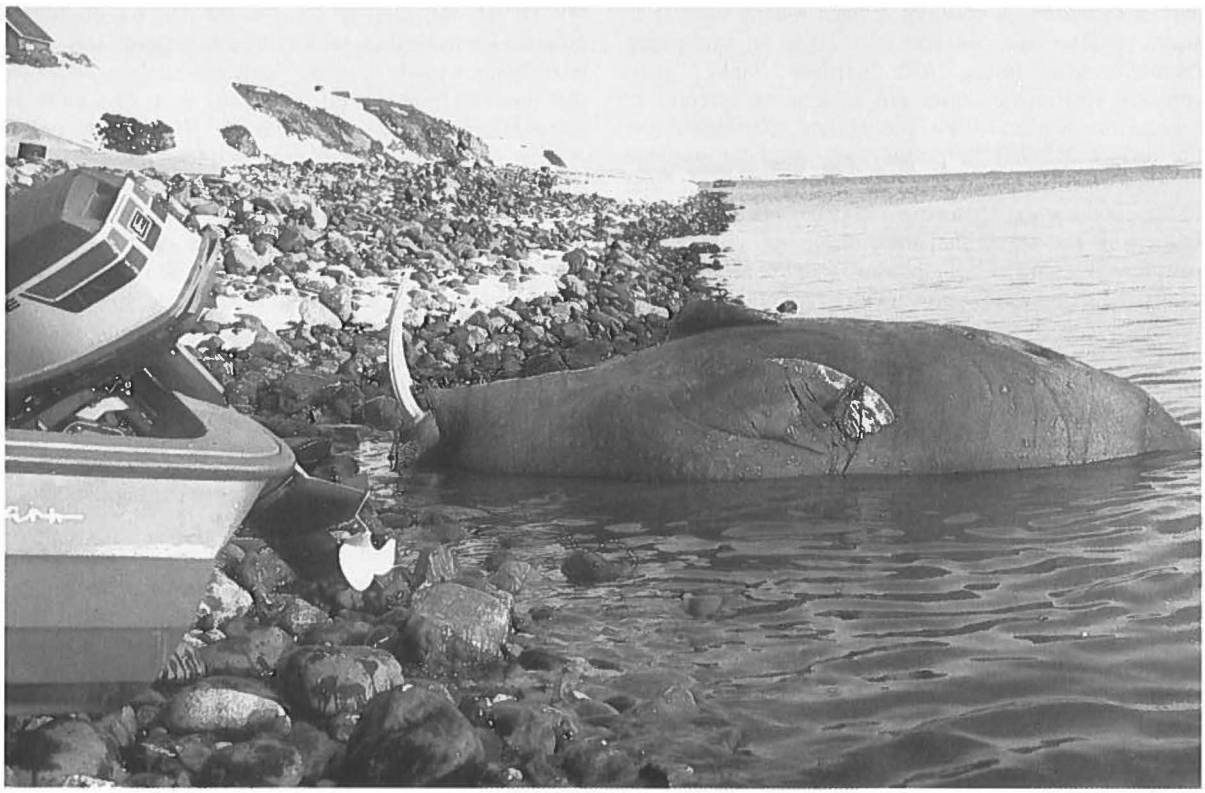


Fig. 64. Walrus caught off Ittaajimmiit (Kap Hope). September 1976.

ute a great deal of meat. Some of the walrus meat is used for human consumption, but most of the meat, blubber, skin and intestines are used for dog food. Walrus is considered the best dog food possible (Bent Barselajsen, pers. comm.).

Narwhal

During the spring from April to June narwhals begin to migrate along the edge of the solid ice on their way into the fjord and they can be caught from the ice edge at Sulussugutikajik (Stewart Ø) and around Kangikajik (Kap Brewster). In August there are narwhals in the area at Kangersuttuaq (Sydkap) and Danmarks Ø. Later in the autumn they can be caught from boats as they leave the fjord at Sulussugutikajik (Stewart Ø), Kangikajik (Kap Brewster) and at the stretch between Ittoritseq (Kap Stewart) and Napparuutilikajik (Kap Swainson) (cf. Larsen 1983).

At the ice edge the narwhal is hunted when it comes close enough and the hunter attempts to kill it instantaneously by shooting it in the neck. A heavy (.30–06) rifle with solid bullets is more or less the only type used. (Previously, when it was still possible to buy shotgun cartridges with cardboard cases, a cut could be made around the middle of the case so that it had the same effect as a bullet and this could be used very effectively with a shotgun). A shotgun is occasionally used with slugs. A Sako rifle can also be used in an emergency (Sandell, field notes 1972; Kristian Anike, pers. comm.). Retrieving hooks are used in an attempt to salvage the dead narwhals, but as they often sink many are lost. Previously harpoons were used for narwhal hunting, but the use of these declined towards the end of the 1960's when retrieving hooks became more common, with the result that the number of animals lost rose sharply. (In 1972 one hunter resumed hunting narwhals from a kayak using a harpoon and had good results, but as his son was killed in a kayak the year after, he gave up the attempt and it has not been taken up by others (Sandell, field notes 1975)).

A hunter in the spring of 1972 obtained a harpoon rifle for the hunting of narwhal. It was used at Kangikajik (Kap Brewster) in June but although a few narwhals were successfully harpooned, none were retrieved, one of the reasons being that the line broke (Sandell, field notes 1972). Later, one narwhal was caught with the harpoon rifle, but even so the idea was abandoned because the hunters considered it too expensive to use, and because there were too many problems connected with its use (Josef Madsen, pers. comm.).

When hunting walrus with rifles, it is important to kill the animal as quickly as possible and the same applies to narwhal hunting. Therefore hunting is often organized on a collective basis and the quarry is divided up according to accepted rules. However, even though the sharing of the bag seldom causes trouble, the organization of the actual hunt can create difficulties, as the following example illustrates. Towards the end of June 1972, four narwhals appeared in a hole in the ice just off Ittaajimmiit (Kap Hope). All the hunters who were home ran out on to the ice, and after the whales had dived they positioned themselves around the various holes. The eldest participant, who had assumed the role of leader, thought that everyone should hold their fire until he gave the order. When the whales appeared at a hole where there were five men standing around, they all waited for the leader to give the signal. No signal was given and the whales dived again. There followed a heated argument among the hunters, who accused the self-appointed leader of being incapable of assessing the situation. While they were in the midst of their quarrel the whales again appeared at a nearby hole, dived again and disappeared (Sandell, field notes 1972).

As mentioned before, narwhals can be caught in many places in the fjord in the open water period in August during fishing trips for arctic char. Narwhal hunting was important when there were still families living permanently at Kangersuttuaq (Sydkap).

In September and October, during the narwhal's autumn migration out of Scoresby Sund, hunting mainly takes place in the area between Ittoritseq (Kap Stewart) and Napparuutilikajik (Kap Swainson), at Kangikajik (Kap Brewster) and around Sulussugutikajik (Stewart Ø). During the hunt in open water, the narwhals are pursued from dinghies with outboard engines and often an attempt is made to chase them into shallow water so that they can be retrieved after being shot. This method was successfully used at Ittaajimmiit (Kap Hope) on 25 August 1976 when hunters managed to catch seven narwhals out of a large school that had been driven in, (all of them, incidentally, shot with .222 Rem.). The actual number of animals killed on this occasion was much larger, but as they all sank after being shot, only seven could be retrieved (Sandell, field notes 1976). That autumn, 19 narwhals were caught at Sulussugutikajik (Stewart Ø) using the same technique (Sandell, field notes 1976). Over the last few autumns, narwhals have even begun to appear near Ittoqqortoormiit (Scoresbysund) itself, and the method of chasing them into shallow water has been used several times in Hartz Vig and Amdrup Havn. (Josef Madsen 1982 and Ewald Brønlund 1985, pers. comm.).

In 1984 narwhals began to be caught in open water by setting nets. (Although there had been previous attempts in the district with nets in open water, the method never really caught on). The initiative was taken by the same person who had previously tried to use a harpoon rifle and was a success from the start; at the first attempt he caught a narwhal in a net by the oil storage plant at Ittoqqortoormiit (Scoresbysund), and the next person who tried caught six narwhals in nets at

Sulussugutikajik (Stewart Ø) in the autumn (Josef Madsen, Hjalmar Hammeken 1985, pers. comm.).

In the same year as they began setting nets in open water, some of the hunters who wintered at Sulussugutikajik (Stewart Ø) resumed the use of harpoons to catch narwhals. The re-introduction of the harpoon, which in the long run will probably be of more importance than netting, produced good results from the start (with the help of a harpoon, one hunter alone killed three narwhals) (Hjalmar Hammeken 1985, pers. comm.) and now several hunters have started to use it again.

Narwhal hunting can be an inducement to people to move further afield in the district. Thus every spring Kangikajik (Kap Brewster), is a sought-after destination, and since the beginning of the 1970's, Sulussugutikajik (Stewart Ø) has been a favoured area for narwhal hunting in the autumn. Kangersuttuaq (Sydkap), however, which is known as one of the best hunting grounds for narwhals in the summer, has not been used as such for many years, probably because of the type of hunting technology now in use. (Without a harpoon, hunting narwhals in the area does not give good results, one reason being that ice conditions often mean that wounded animals disappear and are lost because they cannot be pursued). Narwhals are also caught at Uunarteq (Kap Tobin), Ittaajimmiit (Kap Hope) and Ittoqqortoormiit (Scoresbysund), but the general opinion is that here the hunting fails at times because the narwhals are frightened off by the noise from the many boats (Uloro Tuko, pers. comm.). Fig. 50C shows the known narwhal localities in the district.

According to our information the annual catch of narwhals is between 10 and 20 animals, and has apparently been rising within the last few years (see Born 1983: 76). The hunting lists report considerably lower results, but are not correct in this instance; for example, they state that in 1976 one narwhal was killed in Ittoqqortoormiit (Scoresbysund), when in fact in the autumn seven were caught at Ittaajimmiit (Kap Hope), 19 at Sulussugutikajik (Stewart Ø), and four at Kangikajik (Kap Brewster) in the spring (Sandell, field notes 1976).

Narwhal hunting is important, among other things, as a supplement to the meat supply in periods when seal hunting is poor, and because of the rules governing the division of hunting bags, many benefit from it. Narwhal mattak is highly prized and an important source of vitamins; the heart, intestines and some of the dried meat is eaten and the remainder of the meat and the blubber are used for dog food. The tusk is sold.

Lesser Rorqual

The lesser rorqual is found in Scoresby Sund during the summer, from about the middle of June to when the new ice forms in October, and is caught in August and September. Hunting take place in an area within the mouth of the fjord, stretching 10 kilometres southwards from Uunarteq (Kap Tobin) towards Kangikajik (Kap Brewster). The hunt is an official cooperative effort and many boats take part (16 foot dinghies with outboard engines between 40 and 50 hp.). There are usually many participants, and often between 15 and 20 boats, each with at least two men on board. When a whale has been located, and the boats are in place, the animal is shot at with rifles every time it surfaces. When the whale starts to tire it is harpooned. The harpoons have "hunting floats" fixed to them – usually square pieces of "Flamingo" foam measuring about 70 cm and wrapped in plastic tarpaulin. In most cases the dead animal is towed in to Uunarteq (Kap Tobin) where it is flensed, although occasionally the flensing takes place in Ittoqqortoormiit (Scoresbysund). Everyone can take part in the flensing and all the meat is shared out, but when the flensing takes place in Uunarteq (Kap Tobin), not everyone has a chance to take part. That is why people especially from Ittaajimmiit (Kap Hope), often complain that they do not get the opportunity to share in the meat. A small portion of the meat is eaten, but most of it, together with the blubber and the entrails, is used for dog food.

The hunting of lesser rorquals is comparatively recent, in spite of the fact that they are a usual occurrence in the summer (Pedersen 1930: 416). It was not until 1981 that a lesser rorqual was caught, even though a quota for catching the animals had been assigned and the methods to be used had been under discussion for many years (Sandell, field notes 1975–80). No traditions existed for catching the larger whales, and it was not known how to set about hunting them, and therefore as long as the other sources of food were sufficient, the people hung back. (Sealing satisfied the acute need for meat, and the money from the skins provided a reasonable income). However, after the economic depression caused by the anti-sealskin campaign at the end of the 1970s, there was often a lack of dog food especially in the poor hunting months of August and September because the people were no longer able to buy imported dog food. The lesser rorquals therefore began to be hunted as a means of remedying the meat deficiency. (On average a lesser rorqual provides 1500 kilos of meat and 500 kilos of blubber (Born 1983: 78)).

One lesser rorqual was caught in 1981, three in 1982, nine in 1983 and from 1984 to 1986 about eight were caught annually. Although the first lesser rorqual was killed in 1981, a few years were to pass before the hunt became organized and built up its own special technology and tradition. Today, although the technological side of the hunt is fully under control due to the reintroduction of the harpoon, both the organization of the hunt and the subsequent distribution of the meat are still somewhat haphazard and not fully developed.

Polar Bear

Apart from sealing, the most important form of hunting activity is bear hunting. This is because it provides a good source of income (locally, at the present time, bearskins fetch between D.kr. 5.000 and 10.000 (1984)), but also, just as important, because it is considered both exciting and prestigious.

Bears can be found all the year round in the whole Scoresby Sund area, along the coast of Liverpool Land and the Blosseville Coast, but since 1976 there has been a closed season from July to August (Anon. 1976), when they can no longer be hunted.

Bears are shot with a rifle, and although there is general agreement that a heavy rifle (.30–06) is preferable, many bears are shot using the small "Sako". If a sledge is used in hunting a bear, or if it is otherwise possible, an attempt is made to stop it by loosing some of the dogs on to it so that the hunter can come within shooting distance. Good bear dogs, *i.e.* dogs that are willing to tackle a bear, and have learnt to stop it without getting hurt themselves are much in demand and the pride of every dog owner. Previously, she-bears and cubs were hunted at their lairs and there was a limited amount of hunting with gun-traps (Kristian Barselajsen, pers. comm.), but both these methods were stopped in 1976 by the bear preservation laws.

A number of bears are shot when they are found close to inhabited areas, and quite a few are killed when they are spotted accidently during a hunting trip along the ice edge. As mentioned in connection with sealing, there is a lot of activity on the ice edge at the mouth of the fjord in the spring, and at this time of year the chance of meeting a bear is as much a temptation as the seals or birds. However, the majority of bears are shot when bear hunting is the sole purpose of the trip. Often these can last a month or more, and bears are hunted along the Blosseville Coast, in the areas between Kong Oscars Fjord and Daneborg or in the inner part of Scoresby Sund fjord.

During the autumn, when the closed season for bears is over, some of the hunters go down to the area around Kangikajik (Kap Brewster) and Sulussugutikajik (Stewart Ø) to hunt them there. Often for the people who take these trips it is their only chance to go bear hunting because they have steady jobs or they have no dog team, and although as a rule not many animals are shot, it is the only opportunity these people have.

When the ice has formed, some of the hunters sledge down along the Blosseville Coast in November to hunt the bears that are heading inland to hibernate, but real bear hunting does not start until the dark period is over. As early as January the first hunters set off on the long sledge journey along the Blosseville Coast or head northwards, but bear hunting on a larger scale only takes place from the middle of February to well into June. The hunting trips can last for a month or longer, and most of them take place in the period from March until May.

The hunters who choose to hunt bears along the Blosseville Coast often follow the edge of the solid ice which is usually only a few kilometres off the coast, and they generally make diversions into the various fjord arms as they go. During bear hunting along the Blosseville Coast, a few sledge parties went as far south as Kap Tupinier, about 250 kilometres south of Ittoqqortoormiit (Scoresbysund) (Janus Mathæussen 1976, pers. comm.).

Bear hunters who choose to go northwards follow the route through Kangersaajua (Hurry Inlet), across land to Carlsberg fjord and then over land again to Nathorst fjord, from where they can choose either to follow Kong Oscar fjord to Ella Ø and from there northwards through Kejser Franz Josephs fjord (Thomas Barselajsen 1976, pers. comm.), or to follow the route eastwards past Traill Ø and then northwards towards Daneborg (Kristian Anike 1972, pers. comm.).

Very few hunters take the route northwards along the outer coast of Liverpool Land, because here the ice is often difficult to travel on and the chances of sighting a bear are slight, but if ice conditions are good the route can be used for the journey home (Hjalmar Hammeken 1985, pers. comm.).

In May and June a few people go bear hunting in the area around Gåsefjord and Hall Bredning. Previously, when it was still permitted to shoot female bears with their cubs, hunting in the inner arms of the fjord was more intensive. Today, as conditions for sledging in this area can be tricky because of deep snow and hummocks that have frozen together, only a few people hunt here. However, hunting still takes place sporadically and an occasional bear is shot in Fønfjord, Røde fjord, Ø fjord (Isak Danielsen 1980, pers. comm.) and in Rypefjord (Thomas Barselajsen 1976, pers. comm.).

In the first year after the founding of Ittoqqortoormiit (Scoresbysund), 99 bearskins were traded, and in the period from 1926 to 1939, 761 skins were traded in all (Mikkelsen & Sveistrup 1944: 111). The yearly sales of bearskins can vary enormously; the 99 skins were traded in 1926 compare to only 12 bearskins in 1934 (Ibid.), but the average for that period is about 50 skins a year. The latest trading figures for bearskins are shown in Table 13.

It is difficult to state exactly just how many bears are killed each year as the statistical information is based on KGH's trading figures. (The available hunting statistics from Ittoqqortoormiit (Scoresbysund) are not reliable, as until now hunting lists have been filled in very casually). As many skins are sold privately, the true figures are somewhat higher, but in any case the trading figures do give a picture of the annual variations.

The fluctuations from year to year in the number of traded skins are very marked. Born is undoubtedly right when he states that this is partly due to climatic conditions; for example, whether there are any bears there to

Table 13. Bear skins traded at Ittoqqortoormiit (Scoresbysund) 1955–1983.

1955	21	1965	35	1975	26
1956	54	1966	25	1976	64
1957	23	1967	31	1977	4 (40)*
1958	61	1968	62	1978	3 (22)*
1959	18	1969	31	1979	12
1960	23	1970	45	1980	41
1961	19	1971	39	1981	60
1962	15	1972	69	1982	52
1963	15	1973	40	1983	39
1964	15	1974	36		

Source: A summary based on Grønlands Fangstlister, Ministeriet for Grønland (Anonym. 1953–1984). Those figures marked by * indicate our own figures based on local information. In 1977 and 1978 KGH's bearskin trading facilities were boycotted!

be shot will depend on the local ice conditions, which vary from year to year (Born 1983: 91; Vibe 1967). The variations in climatic conditions are, however, only one of several factors that affect yields from bear hunting. Other factors such as settlement patterns, mobility, technology and profitability will also exert an influence on the annual result.

In the winter of 1955/56 and again in 1957/58 a large group wintered at Kangikajik (Kap Brewster) (Bartoline Arqe 1982, pers. comm.), which is known to be a good bear hunting locality, and it can be seen from the table that the trading figures for these two years rose to 54 and 61 skins respectively. In the following years Kangikajik (Kap Brewster) was only sporadically in use as a winter residence for a few families or as a base for the bear hunters, but again in the winter of 1967/68 several families moved out there (Josva Barselajsen 1972, pers. comm.), and the number of skins traded rose sharply to 62 in 1968, compared to 31 the year before. Part of the increase that year was probably because the trading price for skins rose by 300% in 1967, which sharpened the interest in bear hunting in general (Robert 1970: 92). Wintering on Sulussugutikajik (Stewart Ø) started in 1971/72, and in 1972, 69 bearskins were traded. In the winter of 1975/76 a very large group wintered there, among them several bear hunters from Ittaajimmiit (Kap Hope) (Sandell, field notes 1975–80), and the trading figures for that year (1976) rose again to 64 bearskins.

In the first year after the settlement of Ittoqqortoormiit (Scoresbysund) about 100 bears were caught but the number of animals shot in the following years fell somewhat. The high figures for the first year are undoubtedly due to the exploitation of the permanent population, and when this had either moved off or been

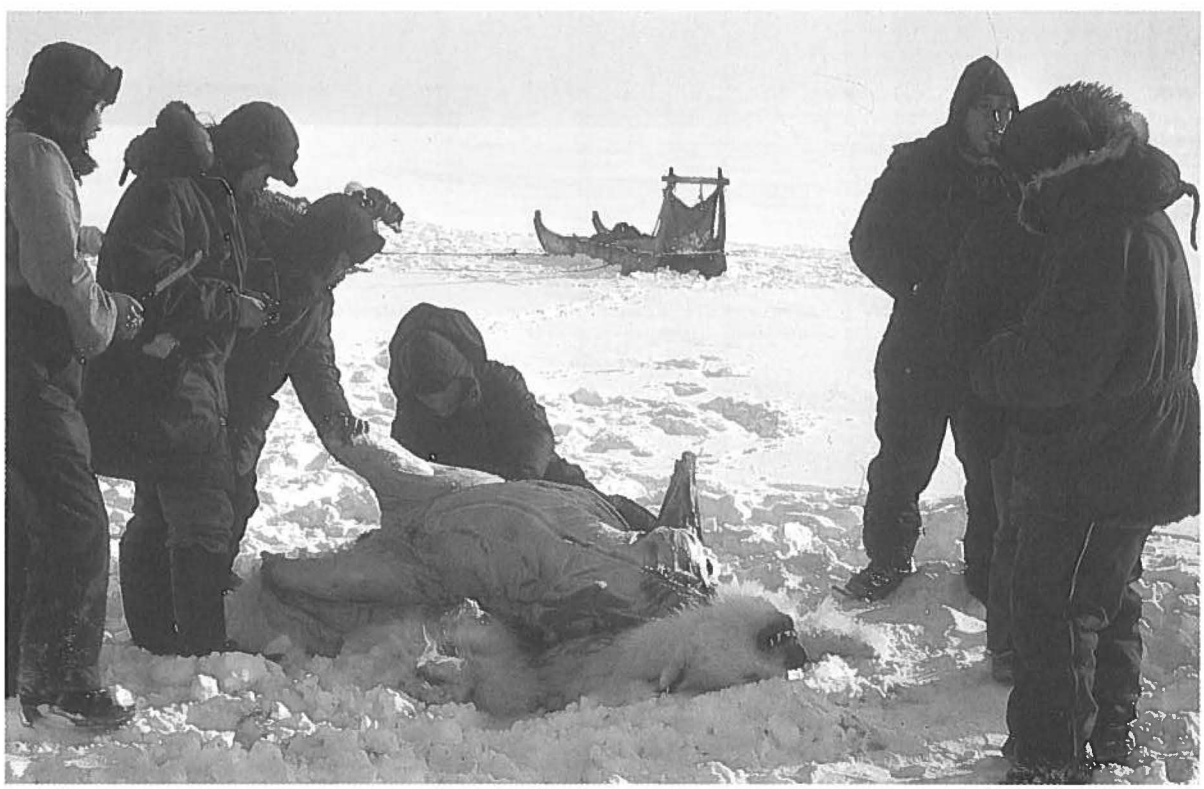


Fig. 65. Hunters flensing and sharing a bear. March 1976.

killed, the yields fell. The same thing happens when a new area is settled that lies outside the district. In the beginning, high yields can be expected but later the yields from hunting fall to lower levels, once the advantages from shooting the permanent population have been exploited. (This rule applies to all the animals hunted, but is perhaps seen most clearly with bears).

As mentioned before, the dividends from bear hunting depend partly on the individual hunter's mobility; *i.e.* his opportunities for going on longer hunting trips. About half the bears that are shot each year are from the Scoresby Sund area itself (some which have strayed near the inhabited areas and some which are found by chance at the ice edge), while the rest are shot on hunting trips when the sole object is to shoot bears. The typical bear hunter setting out on a reasonably long hunting trip is usually young and without family obligations. He is better able to be absent for long periods than the head of a family, who must provide for the daily needs of the household through the steadier and more regular method of sealing.

In table 14, showing the yields from sealing and bear hunting at Ittaaiimmiit (Kap Hope) according to the various age groups, it can be seen that the hunters in the age group 25–29 shoot relatively few seals, but they are the best at catching bears. That age group is characterized by being composed of unmarried men whose main occupation is bear hunting.

Out of the 24 bears that were shot in 1971/72, 3 were "caught" by women, and of the remaining 21 bears, 8 were killed by hunters engaged in other forms of hunting at the ice edge, while 13 were shot on purely bear hunting expeditions.

Surprisingly, in 1982 it turned out that it was the same people in Ittaajimmiit (Kap Hope) who were the inveterate bear hunters, and not the younger generation of 25–30 year olds as would have been expected. This is partly explained by the fact that the men were still unmarried (and without family obligations), while the new group of 25–30 year olds all had dependents, and could therefore not permit themselves to go on the long hunting trips. Although the yields from these trips can be substantial, there is also a risk that weeks will be spent on a trip and the whole effort will be in vain (Sandell 1984b: 276).

Moreover, a noticeable change in the pattern of bear

Table 14. Seal and bear hunting according to age groups. Ittaajimmiit (Kap Hope) 1971/72.

Age group, year	Number of active hunters	Number of seals shot per active hunter (average)**	Number of bears shot per age group (total)
15–19	1	56	1
20–24	0	0	0
25–29	4	52	10
30–34	2*	37*	3
35–39	3	196	4
40–44	1	240	3
45–49	3	134	0
50–54	2	119	0
55–59	1	115	0
60–69	0	0	0
> 70	1	104	0

* The low average for seals in this age group was due to one of the hunters leaving the district in the month of February.
** 26 seals are not included in the list as they were caught by a 14-year-old boy.
Source: Sandell, field notes 1971/72.

Table 15. "Bear hunters", Ittaajimmiit (Kap Hope) 1971/72.

Household	Civil status	Age	Number of bears	Area
IV, 3	Bachelor	29	4	Blosseville Coast
IV, 4	Bachelor	27	3	Blosseville Coast
V, 3	Bachelor	26	1	Ice edge
V, 4	Bachelor	18	1	Ice edge
VI	Widower	37	1	Scoresbysund/Kap Hope
VIII	Bachelor	25	2	Ice edge
IX, 1	Married male	40	3	Scoresbysund/Kap Hope
IX, 8	Bachelor	33	3	Blosseville Coast
XI	Married male	36	3	Blosseville Coast
X, 2	Woman		1	Ittaajimmiit (Kap Hope)
XIV	Woman		1	Ittaajimmiit (Kap Hope)
XV, 2	Woman		1	Ittaajimmiit (Kap Hope)

hunting over the last ten years has been the increase in the number of hunting trips northwards, both as regards the number of hunters taking part and the length of the journey. Now more and more people go bear hunting north of Kong Oscars Fjord to search out the larger areas further northwards. The number of bears that are shot in the area between Kong Oscars Fjord and Daneborg has more than doubled since the middle of the 1970's, thus increasing the overall total of bears killed.

This change can partly be attributed to the falling price of sealskins over the last few years which has stimulated an increased interest in bear hunting among the younger hunters from Ittoqqortoormiit (Scoresbysund) and Uunarteq (Kap Tobin). Another equally important reason has probably been that several of the younger hunters have had the financial means to go on these longer trips. At present, for example, among the young bear hunters there are two brothers who both have families but who have a financial safety net in their wealthy parents, who see to it that the families are provided for while they are away hunting, and who can give help should the trips prove fruitless. There are other young bear hunters from Ittoqqortoormiit (Scoresbysund) and Uunarteq (Kap Tobin) who have working wives who provide an additional source of income, and who can therefore allow themselves to be away from home for longish periods. It is mostly these young people who have been the driving force behind the long hunting trips in the past years, and who have taken part in reviving an interest in them. Apart from increasing the chances of making a kill, there is also a lot of prestige tied up in going on a bear hunting trip far away from the inhabited areas. In the last few years it has almost been like a competition to see who can reach furthest north, cover the largest area or be out the longest.

From the technological point of view, the development of boats with increasingly powerful motors has meant a change in patterns of bear hunting in the period of open water. Previously in the summer, the only bears that were shot were those that were seen by chance at the mouth of the fjord. Today, however, the use of 16 foot dinghies with 50 hp. engines has meant an extension of the hunting area, and now the hunters engage in summer bear hunting trips with boats both around Sulussugutikajik (Stewart Ø) and up along the coasts of Liverpool Land. In 1984, five hunters in two boats left Ittoqqortoormiit (Scoresbysund) on 3 September, and by the time they reached Mestersvig on 7 September the had shot six bears (three of them by the same man) (Sandell, field notes 1984). Roughly, these summer hunting trips take less time than the winter ones, and this means that part-time hunters, those with dependents and others who cannot be away from home for long periods now all have a chance of going bear hunting. Technological developments have therefore meant the opening up of new opportunities, and the increase in the number of bears shot within the last few years is in part due to this.

As mentioned previously, as far as we can estimate, about a third of the bearskins are sold privately to Danes, tourists etc. and the remainder are sold to KGH (now KNI). Most of the meat from bears shot on hunting trips is used for dog food, while the meat from bears shot near inhabited areas is used for human consumption.

Musk Ox

Because of weight alone, the musk ox belongs to the group of animals that are important for hunting, and although in principal it is completely protected, it nevertheless has a role to play. This is partly because each year two official communal hunts are held, the meat from which is shared among all those who live in the district, and partly because quite a few musk oxen are shot illegally when for one reason or another people feel that they need meat, for example when out hunting or in periods when other kinds of hunting have failed.

When Ittoqqortoormiit (Scoresbysund) was founded, it was feared that the musk ox population would not be able to withstand the hunting pressure put on it by the newly established colony, and hunting musk oxen was prohibited from the start (Mikkelsen & Sveistrup 1944: 112). When the new arrivals came up from Ammassalik in 1925, they only knew of the musk ox by name and had no experience of hunting these animals. In spite of the animals being protected, they soon developed a taste for the meat which was seen as a pleasant variation from the daily seal meat.

Shooting the musk oxen was then only allowed in self-defence, but as the animals often came to the inhabited areas where the foraging was good, *e.g.* at Ittoritseq (Kap Stewart) and Ittaajimmiit (Kap Hope), it was often difficult to observe this rule. However, by and large, protection of the animals was respected in those first few years, even though the hunters had difficulty in understanding the need for it. For instance, in June 1926 the colonial manager Johan Petersen (Ujuat) wrote in his diary: "I have not quite been able to prevent myself from threatening a man who has several times admitted that if he met the animals, then he could not resist shooting them" (Petersen 1957: 146, authors' translation).

Later, however, the protection of the musk ox started to cause problems, and in 1934 Ujuat mentions animals being shot both at Ittaajimmiit (Kap Hope) and at Uunarteq (Kap Tobin). The ostensible reason was that the musk oxen, who would not be frightened away but formed themselves into a phalange, prevented the hunters from seeing to their fox traps. In order to save the dogs from being butted to death, it was necessary to

shoot the musk oxen (Petersen 1957: 149); and he continued: "For the hunters it was a mystery why the musk oxen should be so strictly protected here in Scoresbysund, as they state that Europeans shot away at them both when they came here and in other places in East Greenland. For instance, they think that when *Godthåb* was here last year, musk oxen were shot in their closed season. The hunters claimed that in most of the cases when they did shoot musk oxen it was in self-defence or because they needed meat" (Ibid.).

In the winter of 1934/35 sealing failed, mainly because in that year no ice edge was formed, and the whole fjord was full of large ice hummocks frozen together. In December, a hunter shot a musk ox at Ittaajimmiit (Kap Hope) "because he needed meat for himself and his considerable family" (Petersen 1957: 151). Later, in the same month, "permission is given to the resident Greenlanders to shoot one musk ox as both humans and dogs are suffering seriously from lack of meat" (Petersen 1957: 152). In spite of the general prohibition against shooting musk oxen the population felt forced to violate the protection rules, and several animals were shot throughout the winter. One family alone wintering at Kangersuttuaq (Sydkap), shot ten musk oxen there because sealing had failed (Petersen 1957: 155).

Ejnar Mikkelsen estimates that up until 1944 between 40 and 50 animals were shot each year in the district (Mikkelsen & Sveistrup 1944: 113), and presumably these figures rose only gradually over the next ten years. In the official protection provisions of 19 February 1937, replacing the original colony regulations drawn up to protect the musk ox (Mikkelsen & Sveistrup 1944: 113), permission was given to shoot musk oxen in cases of indigence. Over the years, this permission has become a set rule, and following from it about 40 animals were shot every December in the yearly communal hunt (Sandell, field notes 1971/72). In the middle of the 1970's this was extended to two annual hunts (September and December), and the number of animals shot legally rose to about 80 per annum.

During the communal hunt organized by the municipal council in September the participants go in boats into Kangersaajua (Hurry Inlet) or up along the coast of Jameson Land, where in the last few years they have reached as far as Kangersuttuaq (Sydkap). Each settlement – Ittoqqortoormiit (Scoresbysund), Ittaajimmiit (Kap Hope) and Uunarteq (Kap Tobin) – is given a quota beforehand and usually each place arranges its own hunt. The municipal council pays for expenses such as petrol, and the animal's skin belongs to the man who shot it. Privately sold, the skin can fetch between D.kr. 1.000 and 1.500. The meat from the animal killed is handed over and then divided equally between all those living in the borough.

For the communal hunt in winter sledges are used, and usually the hunt takes place inland on Jameson Land and Klitdalen at the bottom of Kangersaajua (Hurry Inlet).

These communal hunts play quite an important role in the subsistence economy as the amount of meat in question is relatively large (between 10 and 15 kilograms per person per annnum). In addition, a fairly large number of animals are shot each year illegally. Lately, to compensate for the price of sealskins which has been markedly stagnant, other resources in the area are being exploited and a change in attitude to hunting musk ox has occurred. As mentioned before, although there always has been a certain amount of illegal hunting in the past when meat was needed while out hunting or when other forms of hunting had failed, it has increased very rapidly over the past ten years and is now done fairly openly.

The increase in illegal hunting has meant that there is less interest in the official communal hunts and it has often been a problem getting enough hunters to participate. For the same reason, it has also happened that the allotted number of animals have not been shot. (It should be noted here, that during the last few years it has become the custom at the communal hunts for the hunter to take a whole animal for himself, apart from the one that is handed over to be shared communally. If only one animal is shot, there is therefore nothing to hand over (Sandell, field notes 1975–80; 1982–85)).

The greatly increased hunting activity over the last few years has meant that musk oxen are no longer to be found near inhabited areas, and that it is necessary to travel further and further away to find them. In 1929 Alwin Pedersen estimated that there was a herd of between 1000 and 2000 animals on Liverpool Land, and about 2000 on Jameson Land (Pedersen 1934: 27), and in the first accounts from Ittoqqortoormiit (Scoresbysund), musk oxen are often mentioned as being found near inhabited spots. When we first lived in Ittaajimmiit (Kap Hope) in 1971/72 it was still quite usual to see musk oxen all along the east coast of Kangersaajua (Hurry Inlet), and one could normally count on finding them round Dombrava and Ulveodden. When we returned in 1975, it was a rarity to find musk oxen on Liverpool Land. Apart from the areas around Ittoritseq (Kap Stewart) and Constable Pynt, there were not many animals around Kangersaajua (Hurry Inlet) and eventually it became necessary to go further and further into the fjord to find them. At the beginning of the 1980's one had to go approximately halfway up the southwest coast of Jameson Land, and today hunting takes place in the area around Gurreholm-Kangersuttuaq (Sydkap) (Sandell, field notes 1985). In spite of the fact that the population of musk oxen is apparently not depleted – it is now estimated to be about 4000 animals (Thing 1985: 32) – the increase in hunting activity has necessitated a considerable expansion of the hunting areas.

Fig. 66. Musk ox hunting. Nerterit Inaat (Constable Pynt). August 1976.

Foxes

Although both the blue and the white fox are a common occurrence in many places in the district, interest in fox hunting has never been very great. Because the people have no use for the skins and there is little meat on the animal, hunting foxes has always been conditioned by economic factors. As long as sealskin prices were reasonably high, people preferred to hunt seals because as well as the skins they also got the meat. Up until now, the fox hunting which has taken place has seldom been done systematically and would, moreover, be difficult to fit into the existing hunting patterns which are both definitely sea-oriented, and very much based on self-sufficiency as regards meat.

Foxes are basically only caught in traps and the almost universal type is a dead fall made from a wooden frame and loaded with stones. The stone built chamber trap is not used, and the many traps of this type found in the district all date from the time before colonization. Previously, steel traps, the so-called "sakse", were used to a limited extent and one or two of the older hunters had used a type of dead fall stemming from the Norwegian hunters (Sandell, field notes 1971/72). Foxes were hunted relatively close to inhabited areas on Hurry Inlet, especially around Ittoritseq (Kap Stewart) and along the stretch between Uunarteq (Kap Tobin) and Ittoqqortoormiit (Scoresbysund). Earlier on, people engaged in fox hunting when they wintered at Kangersuttuaq (Sydkap), Kangikajik (Kap Brewster) and Ukaleqarteq (Kap Høegh).

When the colony was founded, the hunters were encouraged to engage in fox hunting (Josva Barselajsen 1972, pers. comm.), and as long as skin prices remained reasonably high up to the middle of the 1950s a certain number of foxes were caught. In the period from 1926 to 1936 an average of about 139 foxes were caught each year (Mikkelsen & Sveistrup 1944: 112), and in the following years the figures rose slightly to reach their peak in 1954/55, when a maximum of 249 fox skins were traded (Sammendrag af Grønlands fangstlister). An important factor contributing to this increase in fox hunting was the new settlements at Kangersuttuaq (Sydkap), Kangikajik (Kap Brewster) and Ukaleqarteq (Kap Høegh), where fox hunting was done in a more systematic manner. (Josva Barselajsen 1971, pers. comm.). To illustrate the importance of these new winter settlements in connection with fox hunting, it should be noted that out of a total of 249 fox skins traded in 1954/55, 118 were caught at Kangersuttuaq (Sydkap). In 1955/56 out

Fig. 67. Fox trap. Ittoritseq (Kap Stewart). July 1984.

of a total of 133 fox skins traded, 71 were caught at Kangikajik (Kap Brewster) (Sammendrag af Grønlands fangstlister). When the settlement at Kangersuttuaq (Sydkap) was disbanded, among other reasons because of the uncertainty of being able to shoot enough game to provide a supply of meat (Josva Barselajsen 1972, pers. comm.), the number of fox skins traded in dropped. When prices for sealskins started to rise in about 1960, interest in fox hunting dropped further. In the period from 1960 up to today, between 20 and 40 foxes have been caught each year.

Because of the drastic fall in the prices of sealskins over the last ten years, it would be expected that interest in fox hunting would increase again, but this does not seem to be the case. In the ten-year period 1971–1981, the average yearly figure for traded skins has been about 24 (trade manager in Ittoqqortoormiit (Scoresbysund), pers. comm.). As mentioned before, the main reason for this lack of interest in fox hunting is that hunting is primarily meat orientated, and the price of fox skins has not been high enough to replace the yield from sealing which gives both meat and cash. Also, the younger generation of hunters have lacked the necessary experience both in trapping the foxes and in preparing the skins. They have tended to supplement their falling income from sealing by making niches for themselves in musk ox or bear hunting (Sandell, field notes 1975–80; 1982–85). Both these animals provide a substantial amount of meat over and above the good prices paid for their skins.

Hares

Of the remaining land mammals – the wolf, the hare, the ermine and the lemming – only the hare has direct importance for hunting. Although hares are found nearly everywhere in the area and often in great numbers, they are not hunted in any particular way. They are shot if seen while out hunting for other animals and are considered a pleasant variation to the daily diet.

Birds

As mentioned earlier under the description of the fauna found in the area, the presence of the polynya at the mouth of Scoresby Sund creates particularly favourable conditions for a range of sea birds. The largest bird cliffs in East Greenland are found around the mouth of the fjord where breeding colonies of Brunnich's guillemots are found at Kangikajik (Kap Brewster) and on Raffles Ø, and millions of little auks are found on Volquart Boons Kyst and along the coast of Liverpool Land (Kampp *et al.* 1986: 4).

In the spring, in May and June, thousands of sea birds gather along the ice edge at the mouth of the fjord and at Sulussugutikajik (Stewart Ø). Apart from guillemots and little auks, the birds that are hunted are mainly long-tailed ducks, black guillemots, eiders, king eiders and kittiwakes, but barnacle geese and pink-footed geese are also shot when they pass along the ice edge. In

the spring, bird hunting often occurs in connection with sealing along the ice edge, but guillemots and little auks are specifically hunted at their breeding grounds.

At the end of May, migrating geese are shot when they fly over on their way to the breeding grounds. As the geese migrate along the same route year after year, and furthermore appear at more or less the same time, there are fixed hunting localities at Sulussugutikajik (Stewart Ø), Gule Fjeld, Uunarteq (Kap Tobin), behind Ittaajimmiit (Kap Hope) and at a few places in Kangersaajua (Hurry Inlet) *e.g.* on Constable Pynt. Apart from this, migrating geese are of course shot elsewhere if they fly past the hunters at other times.

Guillemots are shot from boats in the period of open water when out sealing, and in August and September young glaucous gulls are shot at the mouth of the fjord. Ptarmigans are shot throughout the winter, but as with hares this usually happens in connection with another form of hunting. Ptarmigan hunting is of little importance.

Apart from their value as food, many of the birds are also important because of their eggs which can be collected and used. This applies to guillemots, little auks, common eider, arctic terns and pink-footed geese. Egg collecting occurs during the last part of June. Guillemot eggs are collected at the bird cliffs at Kangikajik (Kap Brewster), on Raffles Ø and at Sulussugutikajik (Stewart Ø).

Eggs from the little auk are collected at Kangikajik (Kap Brewster) and at several places along the outer coast of Liverpool Land, *e.g.* at Kap Hodgson, Ukaleqarteq (Kap Høegh) and Kap Greg. Eider eggs can be collected from Dunholm and some of the small islands south of Sulussugutikajik (Stewart Ø), from the islands off Kangersuttuaq (Sydkap), Bjørneøerne and from Fame Øerne. The eggs from arctic terns are collected at Dunholm and on the islands south of Sulussugutikajik (Stewart Ø), and goose eggs can be collected at Sulussugutikajik (Stewart Ø), Kangersuttuaq (Sydkap) and formerly also from Constable Pynt.

Not all the egg collecting places mentioned are used each year. For instance, the collection of eggs around Sulussugutikajik (Stewart Ø) was first started after winter settlements were established there, and over the last few years egg collecting at Kangersuttuaq (Sydkap) and on Fame Øerne has more or less ceased. Egg collecting at some of the other of the localities mentioned takes place infrequently. However, spots such as Kangikajik (Kap Brewster), Ukaleqarteq (Kap Høegh) and Raffles Ø are visited each year.

It is difficult to be precise about the importance of bird hunting and egg collecting, but as far as the value of spring bird hunting and egg collecting is concerned, they do take place in a period when hunting conditions are usually good, and their value lies mostly in providing a variation in diet. On the other hand, the hunt for young

Fig. 68. Guillemots on a sledge. April 1972.

gulls at the time of open water in August is important because it occurs during a period when hunting is otherwise poor.

Fish

Generally, fishing in the Scoresby Sund area is of little economic importance; on the other hand, it is of considerable value for social and recreational purposes.

Towards the end of May, people go down to the lakes at Dombrava and Sødalen to fish for arctic char through the ice. Fishing is also done on a smaller scale in the lakes behind Rosenvinges Bugt near Ittoqqortoormiit (Scoresbysund). People going out to the lakes in Kangersaajua (Hurry Inlet) like to spend a week camping out there fishing for arctic char. As mostly non-migratory fish are caught, the arctic char are not very big and the yield is often small – probably no more than about 100 arctic char are caught each year. Even so, this spring fishing is looked forward to each year because it is the first tent trip of the season when whole families set off together, and it creates a pleasant variation from the daily routine.

Fishing for arctic char with nets off the coast starts at the beginning of August. Net fishing is only done in the sea, with the nets set at right-angles to the coast; barrier nets across rivers are not used. There has always been a small amount of net fishing in Hvalrosbugten, but up to now Kangersaajua (Hurry Inlet) has been the favourite fishing area. Here the nets are mostly placed along the east coast on the stretch between Dombrava and Ulveodden, between Fame Øerne and along the coast near Constable Pynt (Abaratip Nunaa).

In the last few years with the acquisition of bigger boats with their 40–50 hp. engines, some people have started to go to Kangersuttuaq (Sydkap) to spend about a week fishing for arctic char. Nets are put out in the area around Kangersuttuaq (Sydkap), particularly along the coastline stretching from the bottom of Nordøstbugten to Kangersuttuaq (Sydkap) and up around Stormpynt. The arctic char caught at Kangersuttuaq (Sydkap) are known to be both bigger and more numerous than those from Kangersaajua (Hurry Inlet). It is not unusual for 100–200 arctic char over 50 cm long to

Fig. 69. Jigging for arctic char in Sødalen. May 1972.

be caught from one boat, but on the other hand expenses for a trip up here are considerably higher than those for Kangersaajua (Hurry Inlet). A boat uses about 200 litres of petrol for one of these trips to Kangersuttuaq (Sydkap.)

Other good places for arctic char include Hjørnedal in Fønfjord and around some of the islands *e.g.* Røde Ø, Sorte Ø and Storø in Røde fjord, but as they lie a great distance away and the sailing trip up there is often difficult, they are not used much. Only a few fish up there at yearly intervals.

After the establishment of the settlement at Sulussugutikajik (Stewart Ø) at the beginning of the 1970's, people started to fish here along the Blosseville Coast. Fishing takes place particularly around the river just south of Sulussugutikajik (Stewart Ø) and in a bay lying to the east of Henry Land, although several localities are known where arctic char can be caught (Josef Madsen 1975; Nathan Arqe 1985, pers. comm.).

Several more fishing spots both down the northernmost part of the Blosseville Coast and in the fjord arms of Scoresby Sund than are mentioned here are known of, but they are almost never used, either because they are too remote or because the fish are too few and too small. Today Kangersaajua (Hurry Inlet) Kangersuttuaq (Sydkap) and the Blosseville Coast are the most used localities for catching arctic char with nets. As the stock apparently seems to vary from year to year and the individual grounds are relatively easy to over-fish, the importance of each locality can change over a period. Although the fishing at Kangersuttuaq (Sydkap) and periodically along the Blosseville Coast has in recent years accounted for most of the district's annual catch, transport expenses are considerably higher than for fishing in Kangersaajua (Hurry Inlet). Thus it is the people living in Ittoqqortoormiit (Scoresbysund) and particularly those who have other forms of employment than hunting, who possess the economic potential to go there on holiday to fish. Kangersaajua (Hurry Inlet) is the favourite fishing ground for the people from Ittaajimmiit (Kap Hope) in particular, and all through the month of August several families can be found there fishing and living in camps. Also, the proximity of the fjord to inhabited areas means that many of those permanently employed in Ittoqqortoormiit (Scoresbysund) are able to engage in fishing by going up there on week-end trips.

It is difficult to estimate the entire annual fishing yield from arctic char as it varies considerably, but Erik Born's estimate of an annual yield of between 1500 and 3000 arctic char weighing from 300 to 500 grams (Born 1983: 97) is, according to our view, reasonable. Probably about two thirds (1000–2000 fish) are caught at Kangersuttuaq (Sydkap) while the remainder come more or less equally from Kangersaajua (Hurry Inlet) and Sulussugutikajik (Stewart Ø).

Other species of fish that are exploited include Greenland halibut, wolf fish, sculpin, polar cod, and Greenland shark is fished for dog food. In the summer, sculpins and occasionally polar cod are caught near the inhabited areas using fishing jigs. In July and August, when sealing is often very poor, fishing for sculpins is of some importance, particularly for those at Ittaajimmiit (Kap Hope). Here it is more than just a pleasant variation in diet. In some periods women and older children fish for sculpin every day simply to get something else to eat apart from shop food, so even though the total yields measured in kilos are not very great, they are of real importance from a nutritional point of view and should not be underestimated.

In May and June a few of the hunters engage in long-line fishing from the ice edge to catch Greenland halibut or wolf-fish and occasionally a few hunters try to fish through the ice off Ittoqqortoormiit (Scoresbysund) or Kangersaajua (Hurry Inlet), although this type of fishing is of no importance. Previously, halibut was caught off Kangersuttuaq (Sydkap) where it was supposed to be found in great quantities, and a pilot fishing project was started there in the middle of the 1950s. However, the yields were not particulary large nor the fish particularly big (Josva Barselajsen 1972, pers. comm.), so the experiment was abandoned after a few years. In the spring of 1986 a new pilot fishing project to catch Greenland halibut was started, but the results up to now have apparently been limited.

Every spring quite a few Greenland sharks are caught with a hook and line through the ice off Ittoqqortoormiit (Scoresbysund) and Ittaajimmiit (Kap Hope). The shark meat when dried is considered excellent and substantial dog food. Yields vary considerably from year to year, one of the reasons being that in some years a great deal of effort is put into shark fishing while in other years there is almost none. On average about 75 sharks are caught each year.

As a matter of interest it should be mentioned that occasionally a few capelin *Mallotus villosus* are caught around Kangersuttuaq (Sydkap) (Sofie Barselajsen 1972, pers. comm.).

Plants

From a nutritional point of view the plants that grow locally cannot be said to play an important role. However, they provide a valuable vitamin supplement and therefore their importance cannot be overlooked. Women and children especially collect plants and berries, although seldom in a systematic manner. If during spring and summer trips they pass a place where there are many plants, they will happily stop and collect a basketful to take home.

Today, around the inhabited area (Ittoqqortoormiit (Scoresbysund), Ittaajimmiit (Kap Hope) and Uunarteq (Kap Tobin)) the vegetation is very sparse, but by going out into the fjords it is possible to gather various

Fig. 70. Sledge equipped with tackle for halibut fishing. Ittaajimmiit (Kap Hope). September 1971.

plants in some of the more fertile places. The former settlement at Ittoritseq (Kap Stewart) is noted for its rich flora and here it is possible to gather dandelions (*Taraxacum sp.* Scoresby Sund dialect *naasoq sungaartoq*), the leaves of which can be eaten as salad, often together with blubber. At the same place a lot of lousewort (*Pedicularis sp.* Sco.: *ulinniitak*) can also be found. Lousewort is very sought-after and tastes a bit like raw mushroom. All the parts of the plant that grow above the ground are eaten. Another much sought-after plant is rose root (*Sedum rosea* Sco.: *sortak*). This is collected within the fjord during summer fishing for Artic char. Both the root and the leaves are eaten, the leaves often as salad together with blubber. Most of the plants are eaten on the spot but some of them are collected for use later on.

Other plants that can be utilized include purple saxifraga *(Saxifraga oppositifolia* Sco.: *aappalaartuarqat)* of which the flowers can be eaten. Other edible plants are the inflorescence from the willow *(Salix sp.)*, the root from moss campion (*Silene acaulis* Sco.: *aappalaartuarqat)* and the leaves from mountain sorrel *(Oxyria digyna* Sco.: *seernaq* or *nutsukkat)*.

In August and September crowberries are collected

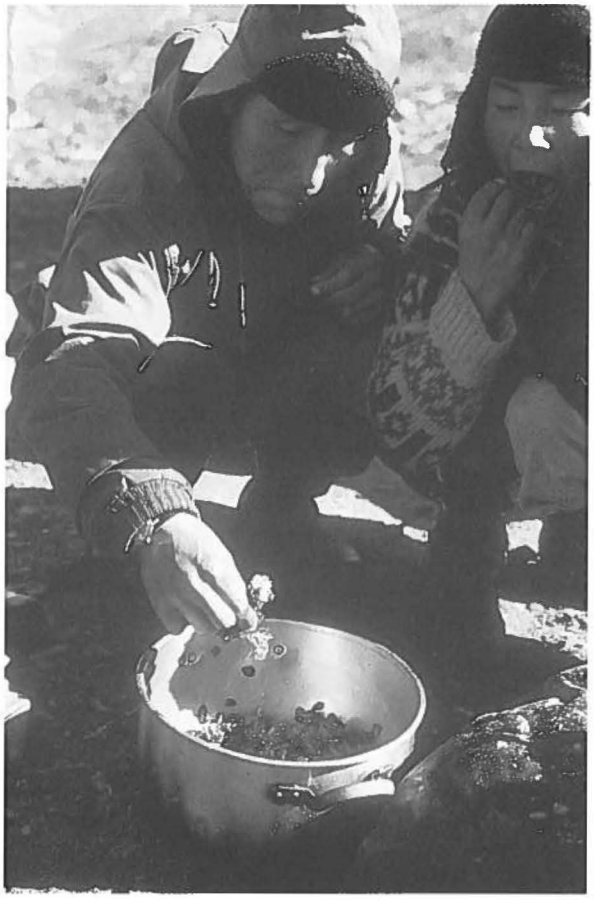


Fig. 71. Rose root pickled in blubber. August 1976.

Fig. 72. Girl digging for roots of moss campion. August 1977.

(Empetrum nigrum Sco.: *pugukkat)* and also bog whortleberries *(Vaccinium uliginosum)* to a lesser extent. The berries are either eaten fresh or conserved in blubber for use later on.

Many common plants are in use today that have no specific name but are just lumped together under the common term *naassut*, plants, perhaps with an added description as to colour. For example *naassut akisittut* (white flowers), or *naassut sungaartut* (yellow flowers).

During the summer when people are out fishing for sculpin they occasionally collect a little sea weed *(Laminaria sp.* Sco.: *misarqat)* and kelp *(Alaria sp.* Sco.: *kipilissat)* which is boiled in fish soup and eaten with the fish.

Hunting shares

It has been mentioned several times that when the larger animals are caught they are divided up according to certain well-established rules. Among other reasons this division of the bag ensures that some of the meat that would otherwise belong to an individual hunter is distributed to many more households than those he otherwise has an association with. To understand the significance of hunting both for the individual and for the society as a whole it is therefore important to understand how the bag from the hunt is divided. A large portion is divided up partly according to the accepted rules for division, but is also given as presents of meat and in this way the periodic swings in the individual hunter's yields are partially levelled out.

The rules for the division of proceeds from hunting that are in use in Scoresby Sund today are more or less the same as were originally valid in Ammassalik.

The distribution of the slain animal can be considered under three headings:

(1) Ownership of the bagged animal.
(2) Accepted rules for sharing the bag.
(3) General rules for the distribution of food on a more or less voluntary basis, such as gifts of meat etc. (Compare Petersen 1972: 282).

In all cases, animals that have been bagged belong to an individual – its "owner" (there can perhaps be exceptions to this rule with musk oxen and lesser rorquals shot during the communal hunts). In more individual forms of hunting for smaller animals such as seals, birds etc. the dead animal always, without exception, belongs to the man who bagged it. Even on those occasions when several hunters join together to go sealing, the rule is that whoever sees the animal first has a kind of "first right" to it, and the seal will belong to him totally if he kills it.

When bigger animals are being hunted and where there are several participants in on the kill, the animal also belongs to one person, but here the "owner" has only limited rights over his quarry. A large portion is divided up among the other participants according to the accepted rules for sharing (Sandell, field notes 1971/72, 1975–80).

Smaller seals (ringed seals and harp seals)

As mentioned, seal hunting is carried out individually and the slain animal belongs to the person who killed it. Previously, when harpoons were used for hunting, the seal belonged to the person who first stuck the harpoon in the animal and therefore established ownership. This rule has been adapted for the present and although guns are universally used, it still applies that whoever hits the seal first has the right to it.

In Scoresby Sund where much of the seal hunting takes place along the ice edge, and where it is not unusual for several hunters to congregate, seeing the seal first is not enough to be allowed the first shot and therefore the quarry. It is also necessary to be the first to warn the others by shouting "*puili*". This gives the right to take the first shot, and if the seal is hit, establishes the hunter's ownership. If the shot misses, then the other hunters are allowed to shoot and the one who hits the seal first "owns" it.

As hunting along the ice edge is considered open to everyone, it is not possible to stake a claim to a particular spot just by occupying it. However, it is considered good form to refrain from shooting into another hunter's section, in the same way as the hunters that arrived first are often the most alert.

In hunting seals from shooting blinds on land, when there are nearly always several hunters congregated together, the same rule applies – whoever shouts "*puili*" first has the right to take the first shot.

According to municipal rules (Anonym. 1970), seals must not be shot from motor boats when these are in use in the summer. The hunt itself usually takes place from an ice floe and the rules are the same as those that apply on the ice edge or from a blind.

Breathing hole hunting and "*qassimaleq*" or *uuttoq* hunting are quite often carried out by two men in partnership, in which case the men will usually take it in turns to shoot and in this way share the proceeds. Moreover, to avoid the sharing problems that can arise from these forms of hunting, members of the same household work together. Should only one of the participants have shot anything then meat presents from the slain seal(s) can be given to the other participant. This is not obligatory but is considered good form (Kristian Anike 1971 pers. comm.). In the case of netted seals, they belong to the person who owns and has put out the net.

When larger animals are killed the quarry still belongs to a single person, its "owner", but the animal will be shared out among those present according to the particular rules of division. These rules apply to narwhals, walruses, bearded seals, hooded seals and bears.

Hooded seals are only shared out in the period from 1 April to 30 June. The division rules only apply to animals that have been shot or harpooned. Narwhals and bearded seals that have been netted belong entirely to the person who owns and has put out the net. A claim to a hunting share can be made either by taking part in the hunt or by arriving at the spot before the animal has been prepared for towing or loaded on a sledge. Only four people apart from the "owner" have a right to claim a part of the animal, and in addition the following restrictions apply: married children have the right to claim a share on an equal footing with the others, while unmarried children and spouses have no claims on their parents'/spouses' share of the hunting spoils. Neither have parents any right to a share in animals killed by their unmarried children if there are other qualified participants present. The order in which the quarry is hit or touched determines who has a right to share in the division of the animal, and here no distinction is made between taking an active part in the hunting process by shooting at the animal, or just touching the slain animal with a hand.

Sharing rules applying to the narwhal (walrus, bearded seal and hooded seal)

1) If the bag is to be divided between two people, the "owner" of the animal takes half the carcass plus the head and the tooth if there is one, together with the back and breast sections from the other half; the remainder belongs to the other person.

2) If the bag is to be divided among three people, then the "owner" still takes the head, breast and back sections, the intestines, plus one of the front flippers and shoulder section, and the side section of the animal where it has been shot. The first hunting portion is composed of the lumbar section and half of the hindquarters. The second hunting portion comprises the remainder of the animal, in other words one of the shoulders and a side section together with the other half of the hindquarters.

3) If the bag is to be divided between the hunter and

three other people, then the hunter takes the head and tooth, the breast and back sections, one flipper and shoulder section, a side section, and the intestines. The first hunting portion comprises the lumbar section and half of the tail, while the second hunting portion is given the other half of the tail, and the third hunting portion receives a shoulder and side section.

4) If the quarry is to be divided between the hunter (the "owner") and four other people, then the hunter takes the head, breast and back sections together with the intestines; the first hunting portion comprises the lumbar section and half of the tail section; the second portion comprises the other half of the hindquarters; the third portion comprises a shoulder and side section; and the fourth portion comprises the other shoulder and side section.

Sharing rules applying to bears

Unlike other animals, to which specific hunting rules of division apply, the bear belongs to whoever sees it first, irrespective of whether the person has taken part in killing the animal or not. If the tracks of a bear in hibernation are seen, then whoever has seen these "owns" the bear, provided he or she informs others about the find.

If a slain bear is to be divided up among fewer than five people then the division follows the accepted rules applying to all large animals, except that the skin belongs to the "owner".

If the bear is to be divided up between its "owner" and five other people then the following rules apply: The bear's "owner" (whoever saw it first) takes the skin, the head, the back and breast sections, together with the heart and the intestines.

1st portion: one of the back legs.
2nd portion: the other back leg.
3rd portion: one foreleg plus shoulder section, together with half the rib section.
4th portion: as for the third portion.
5th portion: lumbar section.

If more than six people are present then it is not obligatory to divide the animal into more parts, but it is considered good form for the "owner" to divide up some of his portion among those who are present if they have not taken part in the sharing out process.

When shooting bears with young cubs was allowed, these too became part of the sharing out process. If a bear was shot with one cub, then the bear was divided up as described above, and whoever had the first portion also got the cub. If the bear had two cubs, then it was divided as described, and the largest cub went with the first portion and the other one with the second portion. If several grown bears are shot at the same time then each is divided up singly.

To have the right to a share in a bear, apart from the "owner", it is necessary for the others either to have hit or touched it, and the sequence of events in which the animal has been touched or hit decides the order of division. As soon as the quarry has been divided up, made ready for transport or loaded undivided on to the sledge any obligation to share the animal ceases.

If the bear has been killed and transported home single-handedly then of course the owner has complete rights over the whole animal and it is up to him how he disposes of it. Previously, however, it was considered good form and a sign of generosity to offer parts of the animal to other people.

In February 1972 one of the hunters from Ittaajimmiit (Kap Hope) arrived home with a whole bear. After he had unloaded the bear from the sledge he began to flense it. During the flensing he offered the knife in turn to some of the hunters standing around, so that they could each make a few symbolic cuts. This "help" during the flensing entitled them to a hunting share (Sandell, field notes 1971/72).

On another occasion in Ittaajimmiit (Kap Hope) in the spring of 1976, a bear was sighted close to the settlement and so many people were involved in the actual hunt. The bear was divided up where it was shot, but the number of hunting portions was increased to include more than the six obligatory parts. The bear's "owner" (who in this case both saw the bear and fired the first shot) had the skin, head, neck, back and breastbone.

1st portion: back leg.
2nd portion: back leg.
3rd portion: foreleg.
4th portion: foreleg.
5th portion: lumbar section.
6th portion: ¼ of the rib section.
7th portion: ¼ of the rib section.
8th portion: ¼ of the rib section.
9th portion: ¼ of the rib section.

The third portion was allotted to two brothers who were driving together on a sledge, and the eighth portion went to a hunter and his daughter who were also together on a sledge (Sandell, field notes 1975–80).

Some of the hunting rules mentioned here for dividing the quarry, which are based partly on our own experiences and partly on information given by the hunters, are collected in a municipal guide (Anonym. 1968). However, our impression is that in practice there is little need for this code, just as arguments very rarely occur in connection with dividing the quarry.

As mentioned, the rules for hunting shares came with the immigrants from Ammassalik. Through the years in Ittoqqortoormiit (Scoresbysund) these have been adjusted to cope with new hunting conditions (*e.g.* ice-edge hunting) and new types of animals (*e.g.* musk ox).

Fig. 73. Women scraping bear skin. Ittaajimmiit (Kap Hope) April 1972.

Musk ox

In principle the musk ox is completely protected, but even so it is hunted on a fairly considerable scale, both legally and illegally. The official hunts, which are subject to stringent restrictions, are conducted as communal hunts. The number of animals that are permitted to be killed each year (about 75 head) are shot during two annual hunts. During these two hunts the stipulated number of animals are shot by the appointed hunters (usually one for each ox). The skin and intestines of the dead animal belongs to the hunter, while the meat is handed over to be divided later among all those resident in the borough. The yearly portion of musk ox meat amounts to about 10 to 15 kg per person.

The division of musk ox meat should in theory follow the traditional rules that apply, for example, to walrus (Uloro Tuko 1971/72, pers. comm.) but because of the nature of the case, it is very hard to determine if this happens each time in practice.

Lesser rorqal or mink whale

Lesser rorquals first began to be caught in the district in 1981. The municipal council organizes a communal hunt in which a large number of motor boats are used together to kill the whale. The slain animal is dragged up on land, after which everyone present is allowed to parcticipate in the free flensing.

There has been some local disatisfaction because frequently the slain whales have been landed so far away from the inhabited areas that not everyone has been able to take part in the free flensing.

Hunting lesser rorquals is still such a relatively new activity that as yet no permanent traditions have evolved around the hunt. However, time will tell whether in this case also, permanent rules will develop around the hunting and the sharing of the animal.

Production and consumption

Today in the Scoresby Sund area, the meat from most of the animals killed is consumed or eaten by dogs. Previously, the skins from seals, bears and foxes were used for clothing etc., but now they are sold to KNI (formerly KGH) and the hunter uses the cash to buy imported consumer goods. The blubber from these animals which was previously used for lighting and heating is now mainly given to the dogs as food. (After colonization, however, blubber was traded in the district for a period (Mikkelsen & Sveistrup 1944: 110)).

Fig. 74. Flensing a lesser rorqual. Ittoqqortoormiit (Scoresbysund) September 1983.

To show the importance of hunting in the context of a subsistence economy, we shall concentrate here on the yields of meat and blubber. This is the biomass production which includes the total yield of meat from hunted animals useable by people and dogs, and includes meat, blubber and intestines. The monetary yields from hunting will not be discussed. We have therefore chosen to use our data from field work done in Ittaajimmiit (Kap Hope) in 1971/72, because at that time more or less the entire population lived off the proceeds of hunting, and the cash economy was still in a relatively underdeveloped state compared with other areas in the district. Money earned from hunting went mainly on consumer goods such as coffee, tea, tobacco and alcohol; hunting implements, clothing and fuel. The nutritional requirements of the inhabitants and their dogs were almost entirely met from the proceeds of hunting. (For example, a few, mostly young, hunters never touched imported food products, not even bread or ships biscuits but ate meat at all meals. However, nearly all the adults smoked and all drank tea or coffee).

As it is the household that forms the collective production unit, and as the individual households differ greatly from each other, both as to composition and production, we have included 17 out of the total of 19 households that make up the settlement (the two households that are not included only lived in the settlement for a short period). These households illustrate both the great individual variations and how, with the help of

Table 16. Total hunting production for Ittaajimmiit (Kap Hope) 1971/72.

Animal	Number	Biomass	Total biomass
Ringed seals	2051	26 kg	53,326 kg
Harp seals	5	101 kg	505 kg
Bearded seals	9	128 kg	1152 kg
Hooded seals	1	150 kg	150 kg
Bears	24	160 kg	3840 kg
Narwhals	8	380 kg	3040 kg
Musk oxen	20–21	75 kg	ca. 1530 kg*
Total biomass			63,543 kg

Source: Sandell, field notes 1971/72. * The 20–21 musk oxen include the 11 animals shot legally which were given to the settlement plus the others that were shot illegally.
Apart from this a number of birds, hares, and foxes were killed, birds' eggs were collected and arctic char and sculpin were caught, but as these amount to very little and moreover the recording of them is doubtful, they have not been included in the calculation of the total biomass.
The weights given for the individual animals are mainly based on recordings made by Born and Usher (see Appendix A).

various hunting strategies, each household tries to satisfy its demands. In addition, the information illustrates how a levelling-off occurs in the settlement to alleviate each household's surplus/deficit.

Fig. 62 shows the total catch of ringed seals at Ittaajimmiit (Kap Hope) from September 1971 to August 1972. The ringed seal is by far the most important animal hunted, as a source of both income and food for humans as well as dogs. It accounts for the majority of the total hunting yield for the district in both weight and quantity. At the top of Fig. 62 and in table 16, the proceeds from hunting are converted into meat/edible tissue (biomass) and, as can be seen, the total biomass production from all other animals hunted is also recorded. (See Appendix A for the basis on which the biomass for the various animals hunted has been calculated). If one looks at the total biomass production it can be seen that other forms of hunting only provide a partial stabilizer for the swings in seal hunting. In December, which is a bad month for seal hunting, the proceeds from musk ox hunting help to raise the total amount of meat, and in the spring months of May and June narwhal hunting is quite important. July and August, which from a hunting point of view are the worst months of the year, are improved a little by bear hunting, and although this is not shown by the statistics, by some seagull hunting and catching sculpin and arctic char.

If we compare the individual households meat production (table 17), it shows large variations in both total production and distribution throughout the year. In parcticular, the yields from seal hunting for some households are entirely different from the graphs which show total hunting production in village. Apart from variations in diligence and ability, the differences in yield can also reflect factors such as variations in choice of hunting methods and strategies. A hunter such as IV.1, who only hunted by netting seals, for example, caught nothing during the entire period with open water. In the same way, hunters who only hunt along the ice edge have their yields spread over different periods from those who use a combination of methods.

In some households, for example IV, IX and XI, the hunters have chosen to concentrate on bear hunting as opposed to seal hunting. In these cases it can be seen that in some periods bear meat comprises a very large part of the total biomass production while seal meat contributes correspondingly less.

For some families, narwhal hunting was very productive and important. This can be clearly seen in the cases of households IV and XII. Here narwhal meat in June and September respectively accounted for by far and away the largest portion of the biomass produced by the household. At the same time it shows how, in periods producing high meat yields from, for example, hunting narwhals, bears or musk oxen, less weight is put on sealing. This serves as an example to prove that it is the need for meat rather than an income from selling the skin which determines the size of the hunt.

In Fig. 75 and table 17 the individual household's total biomass production on a yearly basis is shown, and it can be seen that this varies between a maximum production of 7556 kg for one household (VI) down to only 54 kg in the case of household XVI. (It should be noted that three households – XIV, XV and XVI – which had the lowest production were all without active hunters. Households XV and XVI were supported by wage earners, the manager of the trading post and the catechist respectively. Household XIV consisted of a single person – a widow). On average, each household

Table 17. Total meat production for Ittaajimmiit (Kap Hope) 1971/72 according to household.

Household	Seal	Bear	Musk ox	Narwhal	Total
I	2886 kg	0 kg	198 kg	76 kg	3160 kg
II	3246 kg	0 kg	36 kg	76 kg	3358 kg
III	4730 kg	0 kg	36 kg	76 kg	4842 kg
IV	5094 kg	1120 kg	162 kg	608 kg	6984 kg
V	6526 kg	320 kg	108 kg	76 kg	7030 kg
VI	7176 kg	160 kg	144 kg	76 kg	7556 kg
VII	4464 kg	0 kg	72 kg	76 kg	4612 kg
VIII	2026 kg	320 kg	36 kg	76 kg	2458 kg
IX	4392 kg	960 kg	144 kg	456 kg	5952 kg
X	2254 kg	160 kg	108 kg	76 kg	2598 kg
XI	4149 kg	480 kg	54 kg	456 kg	5139 kg
XII	6240 kg	0 kg	144 kg	836 kg	7220 kg
XIII	1690 kg	0 kg	36 kg	0 kg	1726 kg
XIV	0 kg	160 kg	18 kg	0 kg	178 kg
XV	0 kg	160 kg	90 kg	0 kg	250 kg
XVI	0 kg	0 kg	54 kg	0 kg	54 kg
XVII	260 kg	0 kg	90 kg	76 kg	426 kg
Total:	55133 kg	3840 kg	1530 kg	3040 kg	63543 kg

Source: Sandell, field notes 1971/72.

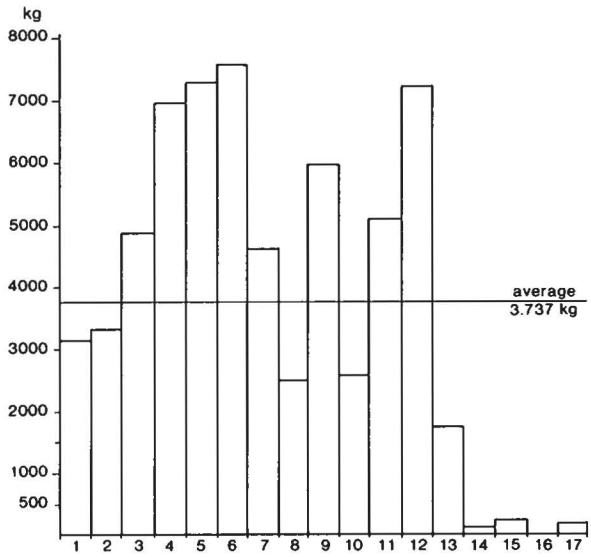


Fig. 75. Biomass in kgs. per household. Ittaajimmiit (Kap Hope) 1971/72.

in the settlement has 3737 kg of biomass at their disposal per annum.

However, since the households vary in size and composition, these figures do not show how much is available for the individual, until they are seen in relation to the number of consumers. Table 18 and Fig. 76 shows how the production is distributed in relation to the number of consumers (humans and dogs) for each household. If the numbers in Fig. 75 and 76 are compared it can be seen that a levelling process has occurred whereby the majority of households tend towards the average while a few households deviate from the average even more than before.

A further levelling factor is the exchange of meat that occurs between households in the village. This distribution, which ensures the individual household against periods of bad hunting, is in theory based on a reciprocal arrangement. In good periods the surplus is given away in exchange for receiving meat when hunting has proved unlucky. However, in practice, the arrangement is rather one-sided and merely serves to eliminate any differences in supplies available to the individual households. In Fig. 77 this distribution within the village is shown qualitatively.

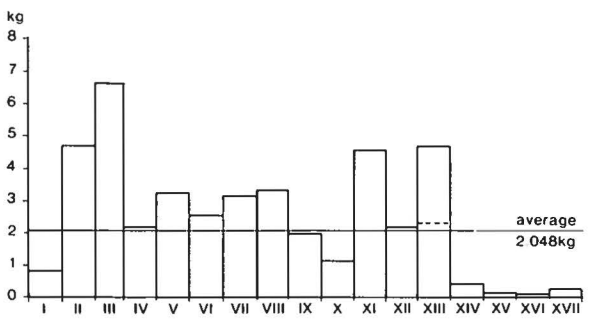


Fig. 76. Biomass per person/day. Ittaajimmiit (Kap Hope) 1971/72.

The distribution of meat among the different households usually only takes place between close relatives and usually happens without any cash being paid in return. Against this background of a distribution system which is principally designed to help the immediate family, the division of hunting shares gains further importance, and, independent of family relationships, ensures the distribution of meat from larger animals. (No account has been taken in the various calculations of the division of meat from larger animals as it would probably have only a slight effect on the results and would not influence the overall picture). A schematic presentation of the meat distribution pattern is shown in table 19, (compare Fig. 77).

Up until now we have disregarded the largest consumer group – the dogs. (According to our estimates about two thirds of the available biomass was used as dog food). Based on our evaluations of meat consumption in Ittaajimmiit (Kap Hope), the amount that was consumed daily was put at about 1 kg meat per adult inhabitant (half for children under seven), while on average a dog was given about 0.5 kg meat and blubber daily (Sandell, field notes 1971/72; 1975–80).

With regard to the dogs' consumption there was a very great difference in the amount used, both within the individual teams and between the various feedings, as this depended to a great extent on how much meat was available, how often the dogs were used and so on. There was, however, general agreement between the hunters as to how one should feed one's dogs. In the driving periods from November to June a team should have between one-third and one-half a seal per feed, depending on the size of the team, and they should be fed every other day. In the summer periods between July and October when the dogs were not in use, it was possible to feed them less and more infrequently, roughly about half of their winter rations (Sandell, field notes 1971/72). Converted into edible tissue (*i.e.* meat, blubber and intestines, but not bones) this works out that during the driving period (about 8 months), approximately 1 kg of biomass per dog per day is necessary, and in the summer period (about four months), approximately ½ kg per dog per day. The yearly average for a dog works out at 0.830 kg edible tissue daily, and is based on information given by the hunters as to how a dog *ought* to be fed. This figure is somewhat higher than Erik Born's calculations of 0.580 kg edible tissue per dog per day (Born 1983: 60).

If it is calculated that each adult eats on average 1 kg meat daily, and children under seven years about ½ kg, then the population of the village (69 adults and 16 children under seven years = 77 adults × 1 kg × 365 days) consumes 28,105 kg meat out of the total biomass

Table 18. Meat production at Ittaajimmiit (Kap Hope) distributed according to households and consumers (minus dogs) 1971/72.

Household	Persons (men over 15 years)	Total	Dogs	Biomass kg	kg/ person/ year	kg/ person/ day
I	1	11	9	3160	287	0.786
II	1	2	10	3358	1679	4.600
III	1	2	12	4842	2421	6.632
IV	4	9	30	6984	776	2.126
V	3	6	18	7030	1172	3.210
VI	1	8	9	7556	945	2.587
VII	1	4	10	4612	1153	3.158
VIII	1	2	10	2458	1229	3.367
IX	2	8	14	5952	744	2.083
X	1	6	10	2598	433	1.186
XI	1	3	12	5139	1713	4.693
XII	1	9	6	7220	802	2.198
XIII	1	2	16	1726	863	2.364
XIV	0	1	0	178	178	0.487
XV	1	5	6	250	50	0.137
XVI	1	3	0	54	18	0.049
XVII	1	4	7	426	107	0.292
Total	22*	85	179	63543	748	2.048

* Out of the 22 men over 15, 18 were active hunters. The heads of households XV, XVI and XVII are wage earners: the manager of the trading post, the catechist and the midwife respectively. Two young men are unemployed.
Source: Sandell, field notes 1971/72.

produced of 63,543 kg. This leaves 35,438 kg for the village's 179 dogs which gives a daily average of 0.542 kg biomass per dog. This figure fits our evaluation of the actual feeding conditions far better than the idealized statements made by the hunters, and it also correlates well with Born's calculated food consumption.

If this is compared with information on the food consumption of dogs in other places in the arctic, it is seen that the figures reported by Knud Rasmussen are far higher. According to him, each dog in use needs 2.5 to 3.0 kg meat every other day.

Usher states about Banks Island: "Basically dogs are fed every night except from mid June to mid October when they are fed every second night. There are approximately 300 feeding nights per year. A team of nine dogs (which is the average at Sachs harbour) requires half a ringed seal at every feeding (about two pounds per dog) or 150 per year, if the dogs are fed solely on seal meat" (Usher 1970 II: 57). In other words Usher calculates 300 feedings of about 1 kg meat (0.908 kg) per dog per year = 0.746 kg biomass per dog per day. In his specification of a hunter's typical meat production, he calculates a total of 4.627 lb biomass necessary to feed nine dogs which gives a slightly lower daily consumption, *i.e.* 0.639 kg per dog per day (Usher 1970 II: 85).

On the other hand Freeman calculates a considerably lower food consumption in his investigations from Southampton Island, as here he reckons on a yearly average of only 0.416 kg per dog per day. "Dogs receive

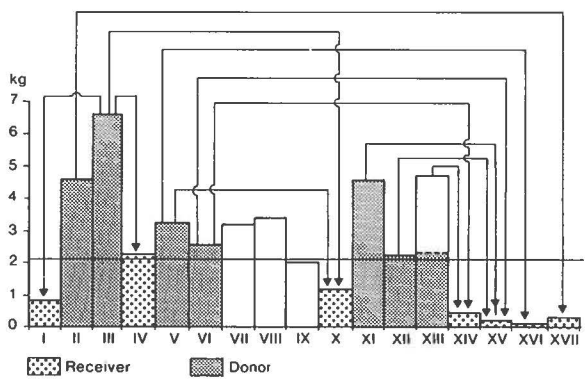


Fig. 77. Distribution of meat in Ittaajimmiit (Kap Hope).

Table 19. Distribution of meat between the different households at Ittaajimmiit (Kap Hope).

Household	Relations	Remarks
II → XVII	Sister → sister (widow)	
III → I	Brother → sister	
III → IV	Daughter → father	
III → X	Brother → sister	
V → X	Brother → brother	
V → XVI	Brother → sister	
VI → XIV	Brother → sister (widow)	
VI → XV	No relations	Payment
XI → XV	Sister → sister	Occasional payment
XII → XV	Brother → brother	Occasional payment
XIII → XIV	Brother → sister (widow)	

about one kilogram of carcass every two days for an eight month interval, and then during the summer are retired on half rations while not working. Such a regime requires about 152 kg/yr of food per dog, and as can be seen from table 5 this requirement is easily met". (Freeman 1969/70: 168). (In the table referred to he shows that there is 236.9 kg available biomass per dog per annum, which should indicate that in reality there is 0.649 kg per dog per day).

As can be seen there is some variation in the different estimates of what a dog eats. These variations can probably be explained by the differing methods of calculation, the size of the dogs and how often they are used, regional differences and last, but not least, the difference between theory and practice. As mentioned, it was thought in Ittaajimmiit (Kap Hope) that a dog needed about 0.8 kg of biomass daily, but this ideal was very seldom lived up to. In reality, they were fed much less, so that a daily food consumption of 0.5 to 0.6 kg meat and blubber is much more in agreement with what actually happens.

There are, therefore, big differences between the ideal food consumption and the actual quantities of food, which depends on the amount of meat available in each household. The number of dogs each household can allow itself to keep is obviously primarily dependant on the size of the hunt, but also the number of people living in the household has an influence. Often there is an inverse ratio of dogs to people (table 18). One of the household (XII) with the largest production consists thus of six dogs and nine people, whereas household XIII, which has a much lower production, has 16 dogs but only comprises two people.

Thus the dog team can be considered as an independent consumer factor, the size of which fits in with the amount of surplus biomass. As the size of the team can be relatively quickly adjusted, it forms a buffer zone or security margin for the household. During periods of low production the size of the team can be reduced and the consumption of biomass limited, whereas during longer periods of good hunting the opposite is true and the team can be expanded.

This tendency is seen in a larger context by the following examples from developments in Ittoqqortoormiit (Scoresbysund) and Ammassalik. When Ittoqqortoormiit (Scoresbysund) was founded in 1925 each hunter had between five and six dogs, in 1940 the size of the dog teams had grown to seven or eight dogs per team, and in 1967 Joëlle Robert estimated that there was a total of 650 dogs with an average team size of 10 (Robert 1970: 103). In Ittaajimmiit (Kap Hope) in 1972 there were just under ten dogs per team giving a total of 179 dogs. In 1983 Born reckoned the district's total dog population to be about 1000 with an average of ten dogs per team (Born 1983: 54). (In our opinion the total figure for the number of dogs in the district is set too high – a more realistic number is probably 750–800). (A 1985 census shows that there were 673 dogs and 65 sledges owned by East Greenlanders. Source: Ilisimatusarfik/University of Greenland).

From table 20 it can be seen how an increase in meat production per inhabitant forms the basis for a larger dog team.

On the other hand the opposite tendency can be seen in Ammassalik, where falling meat production has meant a reduction in the dog team. Here meat production has fallen from about 247,000 kg in 1925 to 236,000 kg in 1940, and furthermore as the population has increased from 659 to 830 within the same period, this has caused a reduction in the number of dogs from about 450 in 1925 (0.68 dogs per inhabitant) to about 350 in 1940 (0.42 dogs per inhabitant) (Mikkelsen & Sveistrup 1944: 48, 100, 165).

As to the consumption of meat per person, we have, on the basis of our own estimates calculated for Ittaajimmiit (Kap Hope) a daily average of about 1 kg biomass per adult, which we consider a realistic estimate but which is hard to calculate precisely. Weyer refers to quotations about the enormous quantities of meat the various Eskimo groups traditionally get through, but also refers to the fact that the most correct information about central Eskimos mentions a biomass consumption (half of which is blubber) of between 1.5 and 3.5 kg daily in times of abundance (Weyer 1969: 58).

What is of vital importance in calculating the amount of biomass necessary to meet the daily need is the

Table 20. Ittoqqortoormiit (Scoresbysund). Dog teams in relation to the population and meat production.

Year	Meat production	Inhabitants	Dogs	Dog per inhabitant	Size of dog team
1925	23,000 kg	85	56	0.65	5–6
1940	56,000 kg	211	239	1.13	7–8
1967	167,000 kg	410	650	1.59	10
1972	120,000 kg (Sco.) 63,543 kg (kho.)	85	179	2.11	10
1983	121,000 kg	457	1000	2.19	10

Sources: Mikkelsen & Sveistrup 1944: 165; Statistical information from Grønlands Styrelse (Anonym. 1953); Robert 1970: 103; Born 1983: 54.

Fig. 78. Feeding the dogs. Ittaajimmiit (Kap Hope). October 1975.

amount of calories contained in the edible tissue. As pure meat only contains about 1000 calories per kg compared to fat which has 9000 calories per kg, the proportion of meat and fat in the available biomass is quite important. Spiess calculates that in order to ensure calorie and protein needs are met, it would be necessary to eat 3.250 kg pure meat per day (Spiess 1979: 27). He gives as an example of the importance of a high fat content in the biomass, that a caribou bull weighing 110 kg (of which 22 kg was fat) shot in September would provide food for 76 man-days. The same animal shot in December without the fat would weigh only 90 kg, providing food for only 15 man-days (Spiess 1979: 29). While the time of year in which land animals are killed will be important in determining the amount of fat in their biomass and therefore their calorific value, it is not so important in the case of sea mammals as these usually contain a sufficient layer of blubber to cover their calorific needs.

In the case of Ittaajimmiit (Kap Hope), where by far the largest part of the hunt is composed of sea mammals, the available biomass is of high calorific value. The daily consumption of about 1 kg edible tissue (supplemented with some imported foodstuffs) per person must be considered sufficient to cover their needs and in fact is high when compared to other good hunting areas in the artic. Thus Freeman reckoned that among walrus hunters on Southampton Island 136.6 kg biomass is available per person per annum, *i.e.* 0.375 kg daily. Including the dogs' consumption, this gives an available biomass of 373 kg per person per year as against the 748 kg for Ittaajimmiit (Kap Hope) (Freeman 1969/70: 169).

Hunting conditions and adaption to technological change

As has been stated several times, yields from hunting are not evenly spread out throughout the year. This is partly because the hunt is subject to seasonal variations and partly because of the more spontaneous fluctuations of varying duration as regards both the individual hunter's yields and the total yields.

To combat the recurring seasonal variations in yields, which to a certain extent are anticipated, the hunter can try and store a surplus from the good periods for use in the bad periods (but this only happens to a limited extent). The other alternative when one source fails is to increase activity in exploiting other resources.

Fluctuations in hunting of differing duration are very often the result of climatic variations, and in practice, the hunting cycle is never the same each year because shifting weather and wind conditions cause variations in hunting conditions. Frequent storms in the winter will especially limit hunting activities along the ice edge, and storms that cause the ice to break up will totally put a stop to both ice-edge and net hunting at certain times. (On the other hand, when the new ice forms again, good conditions are created for breathing hole hunting). On one occasion in 1984 the ice broke up in January and stopped all seal hunting for nearly a month (Jonas Danielsen 1984, pers. comm.).

Johan Petersen wrote in December 1934 that "the settlements both at Cap Tobin and here in the colony itself are now starting to complain about the lack of meat and particularly meat for the dogs is a problem. There has been no hunting worth mentioning during the previous summer because of the unfortunate ice and weather conditions, so the population, in spite of a few periods with good hunting, now possess no winter stores of importance" (Petersen 1957: 151, Authors' translation). Later in the year he states that "on (April) 29th we had a visit from the hunter Niels, who has had a difficult journey from Kangersuttuaq (Sydkap) across Jameson Land and Kangersaajua (Hurry Inlet). Since his visit to us last year in November he and his son have caught practically no seals because there have been no places with open water in the fjord, and they have been prevented from setting nets because of the calving of the icebergs. They were therefore forced to shoot 10 musk oxen, among other reasons because of their dogs" (Petersen 1957: 155). (The previous year the same family, in addition to many ringed seals, had also caught 13 narwhals, one walrus and several bearded seals in the same area (Ibid., 150)).

When Kangersuttuaq (Sydkap) was finally abandoned as a wintering place in the 1950s it happened after a year when an unusually heavy snow layer made practically all hunting in the area impossible (Josva Barselajsen 1972, pers. comm.). In the winter of 1984/85 unusual wind conditions caused the snow to gather in such large quantities on Jameson Land that it almost wrecked musk ox hunting for the year (Uloro Tuko 1985, pers. comm.).

In the shorter periods when hunting fails for the individual hunter, the household can usually count on managing from the system of mutual exchange of meat between those living in the same settlement. However, if the bad period lasts for a long time or becomes permanent, they can only count on limited help and then only from their very closest family. The provider's death often means that the rest of the household is forced to move or split up, as such a small society cannot cope both with the extra strain of an unproductive household and with a general decrease in the total hunting yields. With the loss of a highly productive hunter it is not only the family who loses a provider, but because of the sharing system the whole society is affected. The significance of this can be illustrated by the following example.

In Ittaajimmiit (Kap Hope) four hunters and one hunter's wife died during the period 1973–75, all of whom were extremely competent and in their best years, and this meant that five out of a total of 17 households were affected directly. These five households had between them produced almost half of the total seal catch in 1972 (920 out of a total of 2051 ringed seals, or 45% of both skins traded in and total biomass production). It is evident that the remainder of the settlement's hunters could not cover this decrease in production, and the trading figures for Ittaajimmiit (Kap Hope) show a sharp decline during these three years. Meanwhile the internal consequences within the settlement were far greater as the five families hit by the accidents had had exchange agreements with six households with a low productivity who were therefore also affected. The households who had formerly enjoyed privileges as regards meat exchange were not in a position to help, and were themselves dependant on receiving meat from other households, and having to rely on previously unexploited exchange relationships. The five families affected by the disaster could not be absorbed in the little society and had to move to Ittoqqortoormiit (Scoresbysund), where three of them were completely dissolved and the members allocated to other households. (Sandell, field notes 1975–80).

If the periods when hunting is bad last longer or if hunting fails generally within an area, then new methods can be tested or other resources and areas can be tried out. In the autumn of 1975 seal hunting at Ittaajimmiit (Kap Hope) was for a long time very poor, and several families left the settlement during that period to go and hunt elsewhere. One family moved to the bottom of Kangersaajua (Hurry Inlet) where they stayed until Christmas, a few families lived at Noorajiva (Vardepynten) near Uunarteq (Kap Tobin), and one household together with some of the unmarried hunters decided to winter at Sulussugutikajik (Stewart Ø) and try out bear hunting (Sandell, field notes 1975).

By moving to a "new" area which has not been hunted for a time, it is usually possible to count on getting good yields to begin with, as long as there are permanent stocks to exploit; in other words, harvesting the surplus in the area. After this, hunting yields will fall to a more constant level. Thus in the first few years after the founding of Scoresbysund, a number of bears and several walruses were caught, after which the numbers of bears shot stabilized to about the present level, while the walrus more or less disappeared for a long period.

When wintering began at Kangersuttuaq (Sydkap), Ukaleqarteq (Kap Høegh) and Kangikajik (Kap Brewster) it meant that apart from increased seal hunting, there were also optimal conditions for fox hunting and also, in the case of Kangikajik (Kap Brewster), for bear hunting. Therefore, in the first few years following

these moves, a sharp rise in the hunting figures for these animals occured.

By moving out to Kangersuttuaq (Sydkap) and Kangikajik (Kap Brewster), a new possibility arose for exploiting yet another resource: the narwhal, and this happened again later when wintering began at Sulussugutikajik (Stewart Ø). By seeking out new hunting areas both during the seasonal hunting trips and for permanent wintering, the hunter increases his chances and at the same time is able to exploit as many resources as possible. Mobility within a hunting society can therefore be regarded as essential for a successful life, as it is one of the conditions for a rational exploitation of the available hunting animals, and on some occasins it can be the only way to make use of certain resources.

So although the population of Ittoqqortoormiit (Scoresbysund) today are resident and live either in Ittoqqortoormiit (Scoresbysund), Uunarteq (Kap Tobin) or Ittaajimmiit (Kap Hope), among many people mobility is still great. During bear hunts and while on hunting trips, people travel for miles, and some families prefer, for shorter or longer periods, to live out in the district in order to exploit local hunting opportunities. For example, at Sulussugutikajik (Stewart Ø) where, apart from a good stock of seals there is also narwhal and bear. At Kangikajik (Kap Brewster) narwhals, birds and eggs can be found in the spring and seal and bear hunting are good throughout the year. Noorajiva (Vardepynten) and Napparuutilikajik (Kap Swainson) are good localities for seals and walrus and Ittoritseq (Kap Stewart) is a good seal locality in the autumn and has a large stock of musk ox in the hinterland.

Moving to a new area which probably has new resources entails adaptation to the local climatic and geographical conditions, which again can mean changes or adjustments to the hunting methods and technologies previously used.

During the colonization of Ittoqqortoormiit (Scoresbysund) a migration to completely new and unknown surroundings occurred where the resources were not entirely similar, so the new arrivals were forced first to try and adapt their usual methods to the new conditions, and later to try and develop new techniques when necessary. Since its foundation in 1925 the developments which have taken place in the technological field have been explosive, and generally in Ittoqqortoormiit (Scoresbysund) people are very open to new possibilities. Apart from adaptations necessary for the new environment, changes have also occurred through a normal development process and in the same way that changes in resources have brought with them further adaptations and adjustments. (In this connection it is immaterial whether these changes are due to a fall in animal stocks or are caused by failing market prices).

Some of the more noticeable changes are mentioned below. New arrivals from Ammassalik brought with them by and large traditional technology that had developed and was adapted for that area where open water hunting played a vital role. Even though European tools such as guns and ice nets were part of their equipment, the gun was primarily used only in connection with a kayak, and seal nets were not used to any extent (Petersen 1957: 142). In the new surroundings in Scoresby Sund with an ice cover most of the year round, and with a permanent polynya throughout the winter lying relatively close to the settlements, open water hunting became of secondary importance while methods connected with solid ice and ice-edge hunting became important. Therefore developments occured in winter hunting and sledging methods at the expense of traditional open water hunting methods from a kayak. Kayaks and the associated weapons gradually fell out of use completely.

In Ammassalik ice-edge hunting was not of great importance, and traditionally, ice-edge hunting has been, by and large (apart from in the spring) of much less importance than solid ice or open water hunting, as mentioned by Nelson in connection with Alaska (Nelson 1969: 305). Not until the introduction of the gun did the hunter possess the technological equipment that enables him to hunt at the ice edge efficiently, and only since then has this form of hunting become really important. However, this is not to say that hunting along the ice edge and at polynyas has not played a role in the past, but traditionally polynyas have been principally important as spring hunting grounds. Throughout the winter it has probably been possible to ensure just as large yields from solid ice hunting, but later in the spring when the snow cover makes breathing hole hunting difficult, and the seals near the winter settlement have been caught, then the ice edge with its rich animal life of migrating birds, seals, walruses and whales found at this time of the year has proved very valuable.

In 1925 the new arrivals brought with them 15 kayaks, 2 umiat, 10 sledges and 56 dogs to Scoresby Sund (Indberetning fra Scoresby Sund 1925–40). Among the 85 people there were 14 men over 15 years which means that each hunter possessed his own kayak (Indberetning fra Scoresby Sund 1925–40). But as mentioned before, ice-edge hunting became the dominant hunting form, and the role of the kayak was correspondingly reduced. Technologies grew up around ice-edge hunting centred on the rifle. For example, shooting sledges began to be used as permanent equipment, and later, through the addition of telescopic sights and a particular type of rifle, a very advanced and efficient hunting system developed. The sledge was invaluable for transport throughout the long winter season, and as the traditional sledge type from Ammassalik could not live up to the new demands, the large, solid sledge type characteristic of Scoresby Sund was fairly quickly developed. This was well suited to both the daily trips to the ice edge and to the long bear hunting expeditions. Throughout the entire winter period the kayak was only used to retrieve seals at the ice edge, and when it was found that ice-edge techniques could be used with ad-

vantage for hunting from ice floes in open water, the kayak's role was further reduced. Tools and weapons associated with kayak hunting fell gradually out of use, but right up to 1975 the kayak was still used at the ice edge, and for transport during open water hunting.

Nevertheless, the kayak was not the ideal craft for use at the ice edge; it was difficult to transport on a sledge, too easily damaged when driving over rough ice and it could be difficult to launch or land alone, if, for example, the ice edge was high. Round about 1940 a hunter who suffered from "kayak sickness", tried out a small home-made dinghy at the ice edge (Klaus Reindel, pers. comm.), but the idea never really caught on at that stage for one reason or another. It was not until 1957 at Uunarteq (Kap Tobin), when a Dane (Hans Erik Friis) built himself a quite simple dinghy from plywood, that the present day ice-edge dinghy was created and found a footing (Ib Lorentzen, pers. comm.). The ice-edge dinghy proved to have many advantages; it was easy to build and to use, and unlike the kayak, no previous experience was needed neither to construct it nor to sail in it. It was well suited for transportation by sledge and across the ice, and it possessed an added advantage that if the ice was wet or unsafe, the driver could sit in it and thereby keep himself and his equipment dry. It could also function as a "lifeboat" if an accident should happen. As in an emergency an ice-edge dinghy can hold more than one person, it can also be used to rescue people, dogs and equipment should they drift off while engaged in ice-edge hunting. Luckily, these incidents rarely occur, but in June 1972 in Ittaajimmiit (Kap Hope) two hunters did drift out to sea on an ice floe that had broken away, and in spite of heavy winds and strong currents, the two men, together with 18 dogs, sledges and all their equipment were rescued with the aid of three ice-edge dinghies (Sandell, field notes 1971/72).

Gradually, as the ice-edge dinghy came to be accepted, experiments were made using new designs and materials, and the type of ice edge dinghy that is mainly used today is usually either plywood sheathed with glass fibre, or entirely constructed of glass fibre. The first plywood dinghies had square ends both fore and aft, then for a short period these were replaced by a short model with a pointed stern, but now, probably for construction reasons, the original form has been adopted once again. During the 1970s when motorized dinghies began to be used in the summer, the days of the kayak were numbered and now only the ice-edge dinghy and the motorboat are in use.

Fig. 79. Kayak. Ittaajimmiit (Kap Hope). August 1971.

The other branch of winter hunting, netting, came to play a dominant role, while the other methods used for solid ice hunting such as "peep-hunting", breathing hole hunting, smooth ice hunting and *qasimaleq* hunting either disappeared completely (*e.g.* peep hunting), or are only used when conditions are optimal. Hunting with seal nets was introduced during the colonization of Ammassalik, but the method had apparently not caught on sufficiently when the migration to Ittoqqortoormiit (Scoresbysund) occurred. At any rate, Johan Petersen complained about the lack of interest in using seal nets during the first few years, in spite of the extremely good conditions for netting (Petersen 1957: 142). As mentioned above, and also by Joëlle Robert among others (Robert 1970: 78), the method has, however, later become more widely used and today is employed by most people at times. Probably one of the reasons why netting took a little time to be accepted was that people had not become sufficiently familiar with the method nor gained the necessary expertise. Therefore, when Joëlle Robert states that netting does not need any particular qualifications (Robert 1970: 79), this statement is only true as regards the equipment. Clearly, netting, just like any other form of hunting, depends on the possession of considerable acumen and expertise without which it is impossible to get a sufficient yield, and where losses in the form of nets freezing solid become too big. Gradually, as more and more people mastered the techniques of netting, it began to yield larger catches and in this way became accepted as a possible alternative to the other forms of solid ice hunting. Because many nets were lost in the ice a market for ready-made nets opened up and they began to be sold. Thus people were saved the time-consuming process of having to knot the nets themselves and this acted as a further incentive to set nets.

As described, ice-edge hunting came to play a dominant role with the rifle as the most widely used piece of equipment, and this happened at the expense of the kayak and the related kayak technology. But it did not occur without some loss, since in abandoning the harpoon the hunter no longer had an efficient tool to prevent dead animals from sinking, or wounded animals from escaping. The problem was not so great during seal hunting, partly because for most of the year dead seals float. Also, the yields from using only a rifle are usually so large that they are considered enough to compensate for losses of up to 50% during some parts of the year. However, this has meant that it is now the summer months with their low catches of seals that are considered poor hunting periods. The problem was greatest during narwhal hunting, because narwhals usually get away if they are only wounded, or sink immediately after they have been killed. Kayak harpoons were last used only in connection with narwhal hunting before they were completely abandoned, and later on trials using harpoon rifles were only used in narwhal hunting. Even though throwing hooks were used to retrieve the animal after it had been shot with a rifle, far too many narwhals were lost with the result that yields fell and with them the interest in narwhal hunting. However, when the fall in sealskin prices started to be felt towards the end of the 1970s, the need to utilize other resources to provide meat grew. One of the reasons for this was that the fall in incomes made the hunters once again more dependant on the subsistence economy, and this revived an interest in narwhal hunting. People had also started to hunt lesser rorquals for the same reasons, and as a special thrust harpoon had been developed to hunt these with, the same harpoon was also tried on narwhals. The first users of the new narwhal harpoons were some of the young hunters who tried them out at Sulussugutikajik (Stewart Ø), which is good for narwhal in the summer (Nuka Danielsen, pers. comm.). The results of the first trials re-using harpoons proved so convincing that it was not long before the new weapon was in common use, and today it is a permanent fixture in many hunters' boats. The harpoons in use today are thrust harpoons with an iron bar as the fixed foreshaft and the head usually made of metal (the aluminium frames from discarded snow-scooters are very suitable), but harpoon heads made from musk ox horns can also be seen (Sandell, field notes 1984). The re-introduction of the harpoon has also meant, apart from an increase in narwhal hunting, that the hunting periods have changed. During the "harpoonless" days from the beginning of the 1960s to the beginning of 1980s, spring hunting gave the biggest yields. Now autumn hunting in open water accounts for by far the largest share of the total catch of narwhals.

Yet another initiative was taken in 1984 when a part-time hunter started to re-use open water nets to catch narwhal. At one stage in the history of the district, an attempt had been made to use open water nets, but without great success (Kristian Kunak 1976, pers. comm.). This time, however, the method proved so successful right from the start that many others also tried. It is now accepted as being effective, but because the nets are so expensive, it will probably be confined to the few that can afford it.

The introduction of the motor boat from the end of the 1960s had widespread repercussions for the hunters in Scoresby Sund, and is probably the single factor that has been most important, both technologically, socially and economically. With the motor boat the hunter's radius of activity was increased, and the summer hunting area enormously expanded. Now it is possible to reach Kangersuttuaq (Sydkap) and far down the Blosseville Coast, or up along the coasts of Liverpool Land in the period of open water. This has meant new possibilities for exploiting the resources in the areas; for example, the arctic char fishing grounds at Kangersuttuaq (Sydkap) and along the Blosseville Coast, the autumn hunting for bears on the outer coast of Liverpool Land, narwhal hunting at Sulussugutikajik (Stewart Ø), musk ox hunting on Jameson Land, and generally better op-

portunities for summer sealing. Finally, the motor boat provided the hunters with a suitable vessel for lesser rorqual hunting when people felt a need for this. But at the same time a motor boat demands a heavier economic commitment, and an increased income to cover the cost of purchasing and running it, with the resultant social and economic consequences. When some hunters obtained a motor boat and started using it, the others had really no option left open to them; if they wanted to compete they were forced to buy one. For wage earners and those with good incomes this was not a great problem, but for many of the hunters, particularly those who were less well off, it was and is a great burden. Today, because the tendency has been towards even larger boats, it has meant in general that it is the part-time hunters who, as a result of better economic opportunities, are best able to buy and maintain a boat. They are also in a better position to go on more frequent and longer hunting trips than the full-time hunter can afford to, and thus they are in a position to utilize a far larger resource area.

A general tendency in the development of hunting over the last 60 years since the colonization of Scoresby Sund has been, as well as a high degree of adaptation to their surroundings and to changing opportunities, a great receptiveness to new methods and technologies. The hunters have skilfully introduced and adapted new ideas in technology, and to a certain extent have been able to switch between the different resources according to what is practicable at any time (cf. Nooter 1973). The latest example can be seen in the early 1980s, when because of falling sealskin prices more emphasis was put on animals with a high meat content such as narwhals, musk oxen and lesser rorquals. As these new initiatives often arise from the need for new opportunities, one can also see in connection with the change in the resource base in the 1980s, the latest in a long line of innovations originating in Scoresby Sund, such as hunting lesser rorqual, open water netting, and hunting narwhals with motor-boats.

IV. Conclusions

Finally, by analysing the archaeological material from the excavation in relation to our present-day knowledge of the area, we will try to draw some conclusions and formulate theories. These will have particular relevance to the "House of Beads", but will also have general application to the process of development in the latest phase of Northeast Greenland's mixed culture.

Even though the period between when the "House of Beads" was last inhabited and when Scoresby Sund was re-populated is not particularly long, perhaps about a hundred years, the cultural gap between the two communities is still to large to make a direct material and cultural comparison possible. On the other hand the surroundings, the natural resource base and the demands made on the population who are forced to live of hunting have hardly changed in any important respect throughout the period. A comparison can therefore be made between these areas, and this can help to throw light on some of the archaeological question for which the excavation material provides no direct information.

An estimate of the number of animals hunted based on the bones collected around the site, will only be relevant to those periods when the winter dwelling was used (there were no tent rings around to indicate summer sojourns in the vicinity), so we are only in a position to give a qualitative picture of the hunt during one period of the annual cycle. On their own, the bones can only indicate to a limited extent the hunting activity carried on in that part of the year when the winter dwelling was not inhabited, but if they are related to the artifacts and present-day opportunities, we can probably gain an impression of the annual hunting cycle and the hunting methods used. If, however, and as previously stated, we are convinced that this dwelling was only inhabited for one season, then the bones will provide quantative information about that period of the year in which the dwelling was lived in. Here of course there must be certain reservations, as not all the bones have been found or preserved. Because the slope down towards the stream was apparently used as a midden, it can be assumed that some of the bones will have been washed away into the sea. If the larger animals had been stored in a depot, they will be under-represented as some of the bones would already have been removed. Dogs would have eaten or removed some of the smaller bones, and finally we must assume that some evidence is missing simply because the conditions for preserving them have been poor. In spite of these obvious sources of error, we still believe that the evidence must be considered sufficiently representative for it to be used with caution.

In the section on bone material we saw that the majority of bones brought home (377 out of a total of 593), not surprisingly were from seals. Of these 377 seal bones, 21 could be positively identified as belonging to ringed seals, and the majority of the remainder were in all likelihood also from this species of seal. Only a single bone, from a hooded seal, could be positively identified as belonging to a species other than the ringed seal.

Based on the classification of the individual seal bones it can be determined that they must stem from at least ten ringed seals and one hooded seal. Without doubt the ringed seals must all have been caught in the area around the winter dwelling. Judging from the hunting possibilities around the wintering place, where no appreciable autumn hunting opportunities exist, but where there are good opportunities for early breathing hole hunting, it must furthermore be assumed that most of them were caught after the sea had freezed over. This assumption is further strengthened by the objects found in the excavation, as several of the tool parts are con-

nected with winter hunting, such as harpoon heads, fixed foreshafts etc., which all show clearly the importance of solid ice hunting.

On the other hand the hooded seal is unlikely to have been caught near the "House of Beads". Based on knowledge of the present-day occurrence of the hooded seal, which is found around the mouth of Scoresby Sund from the middle of May to the middle of October (until freeze up, *"islæg"*), and which is seldom found further down the fjord, it was in all probability caught out towards the fjord mouth, presumably no later than the middle of September. This assumption is strengthened further by only one bone from the hooded seal being positively identified, which can be interpreted as resulting from only part of the slain animal being taken to the wintering place, or that the slain animal was cut up before being transported.

As mentioned before, bones were found from other sea mammals, such as a large whale, narwhal and walrus and from bear. In addition to four smaller bones which were brought home, several larger bones were found in the locality; for instance, a shoulder blade, ribs and part of the lower jaw from a large whale, probably a Greenland whale; and five narwhal ribs which all formed part of the roof construction or lay in the material cache in front of the house. There is nothing in the excavation material or in other evidence of the same period to indicate that large whales were hunted in the last phase of the mixed culture, so it is therefore likely that these bones are from stranded whales (see Freeman 1979).

On the other hand there can be no doubt that narwhal hunting was far more important than the few bones in the material indicate. Among the bones, only two were from narwhal, together with the five ribs which were left behind, but narwhal teeth were frequently used for making tools with as the seven bodkin-like objects made from the narwhal's rudimentary teeth show, and which must come from at least as many animals. Also, the tools show which were especially designed for narwhal hunting, such as some of the harpoon heads and presumably also the heavy bladder spear, prove that this animal had a not unimportant role to play. One explanation for the under-representation of narwhal bones in the material may be that since the narwhal is such a large animal it will often be cut up near where it was caught and the largest bones removed and perhaps divided into hunting shares, before being transported home or stored in the cache. Because of its size, the narwhal is a definitely "cache" animal, in other words it is an animal with so much meat that most of it would probably be stored in the cache for later use in the winter period. The animals are therefore important in the winter even if they were not necessarily killed in the area. As an abundant supply of stored meat is an important prerequisite for getting through the winter successfully, which fact we shall return to later, an animal such as the narwhal must have been an important hunting object.

Today the narwhal is found migrating through the area from May to June, when it appears near the ice edge along the southern part of the fjord mouth. Later, when the ice starts to break up, the narwhals migrate into the fjord, and spend the summer in the innermost parts of the fjord complex. Good summer localities for narwhal include the inner part of the Nordvestfjord, the area around Kangersuttuaq (Sydkap) and Bjørneøerne, around Danmarks Ø, in Gåsefjord and Rypefjord and around Renodden. When the new ice starts to form at the beginning of September, the narwhals start to leave the inner fjord complex and migrate out of the fjord. Unlike the spring migration, the autumn migration is concentrated along the north side of the fjord. From September until *"islæg"* in October, migrating narwhals can therefore be caught along the southern coast of Jameson Land, around Ittoritseq (Kap Stewart) and in the area between Ittaajimmiit (Kap Hope) and Napparuutilikajik (Kap Swainson). The narwhal or narwhals (according to the bones) caught by the inhabitants of the "House of Beads" must therefore have been killed during the period of open water, most probably during the autumn migration in September. They could well have been killed near the dwelling, and this could be the reason why it was chosen for wintering at. However, it is also possible that the narwhals were killed during the summer, and the meat was stored in caches. In that case the most likely place for them to have been killed would be around Kangersuttuaq (Sydkap).

With regard to walrus, the bone evidence is also very modest (two pieces), so it is not possible to decide whether they were caught within the relevant annual cycle – the only thing that is certain is that they were hunted, and this is also borne out by the tool material. If the same observations made about the narwhal are also applied to the walrus – that it is a definitely a "cache" animal – then the absence of bones does not necessarily imply that they were not hunted. However, the bone find of walrus, unlike that of the narwhal which included the ribs, is of a nature that makes it more doubtful that the walrus did form part of the meat supply of "The House of Beads".

Hunting walrus must have taken place near the mouth of the fjord, where today, parcticularly in the spring, a few animals can be found along the ice edge near Napparuutilikajik (Kap Swainson). Previously, when there was still a permanent herd of walrus in existence, they could be caught in the summer around Ittoritseq (Kap Stewart), at Fame Øerne in Hurry Inlet and in Hvalrosbugten near the present-day Ittoqqortoormiit (Scoresbysund). According to the numerous remains near Napparuutilikajik (Kap Swainson), spring hunting for walrus must once have been an important activity for a large section of the population over many years. According to finds made in the area, the locality was already in use by the time of the paleo-Eskimos.

Bears can be found all the year round within the fjord system, but when the sea freezes over the bears which

spent the summer within the fjord move out towards the open sea, and in this period it is not unusual to find them along the south coast of Jameson Land or in Hurry Inlet. We have seen bears ourselves at Nerterit Inaat (Constable Pynt) in the middle of September, and in 1982 found the skeleton of a bear near the coast, not far from "Røde Hytte" on the south coast of Jameson Land. (Sandell, field notes 1976 & 1982). The bear bones in the excavated material may well originate from an animal killed in the neighbourhood of the "The House of Beads" and although only a few bones were found (two pieces), we still think it probable that bears were eaten there. Whether it was a whole bear killed in the vicinity, or a hunting share transported from another place, must remain a matter for speculation.

The caribou is the land mammal best represented. In addition to the 67 bones that were brought home, odd antlers in the remains of the roof construction and in the material cache were also found. These caribou bones could be determined to having originated from at least three grown caribou, varying in size from small to medium. Caribou died out in Northeast Greenland around the year 1900, but the fact that they were previously found in the area, for example on Jameson Land, as is proved by the many shed antlers and corroborated by earlier descriptions, for example Ryder's. There is no doubt therefore, that animals were killed near the winter dwelling. Apparently caribou could be hunted relatively close to the coast in the autumn, and according to the available evidence, hunting further inland was only carried out to a very limited extent. In spite of extensive reconnoitring inland on Jameson Land over a period of many years, up to date only two caribou hunting localities have been established outside the coastal area (Sandell 1982–1986). With reference to the caribous periodic appearances near the coast, Ryder has observed that "the caribou, who evidently enjoyed a little promenade along the beach to lick the salt, appeared in great numbers, particularly on the western part of the coast (Jameson Land)" (Ryder 1895: 38, Authors' translation).

Today it is musk oxen instead of caribou which can frequently be seen near the coast in the autumn, and which are hunted at this time of the year. The autumn musk ox hunts of today are motivated from a desire partly for a variation in diet, and partly for an additional supplement, as hunting is often poor in the period before freeze up. Formerly, however, caribou hunting, apart from having to satisfy these same needs, was also undoubtedly motivated by a desire to procure skins for use as clothing. Skins from caribou shot in the autumn while still in their summer coat are best suited for winter clothing (Burch 1972: 362).

Apart from caribou, there were bones from other land mammals such as the fox, hare, dog and lemming. Fox and hare bones do not indicate anything particular, as they clearly originate from animals caught in the locality. A fox trap was found not far from the winter dwelling, so it is reasonable to assume that it was used to trap foxes either for their skins or to keep them away from the caches. Because some of the fox bones were found inside the house does not necessarily indicate that foxes were eaten, although this cannot be discounted. The bones could just as easily have originated from a fox brought into the house to thaw or to be skinned. Fox bones found outside the house confirm this supposition; they were found concentrated in a small area and in such a way as to indicate that a complete fox cadaver had been thrown out.

The 22 dog bones found in the house ruin indicate the presence of at least one dog. Whether it was killed and eaten by the inhabitants, or whether it only died after they did is not possible to ascertain.

As regards birds, bones were found from at least three barnacle geese, one guillemot and a king eider. Although the birds are poorly represented, both as regards number and species, which of course is because of the material being from a winter settlement, the evidence is nonetheless interesting as it can help to fix the time at which the inhabitants arrived and when they moved into the winter dwelling. Barnacle geese are numerous in the autumn at many places on Jameson Land, for instance in the near vicinity of "The House of Beads". They begin to congregate here in large flocks at the beginning of September, before leaving the area for the winter. It is therefore probable that they were killed on the spot and in the middle of September at the latest.

The guillemot is not found in the neighbourhood, but only occurs around the mouth of the fjord, where it can be found throughout the summer from May to the beginning of September. The nearest place it could have been killed is around Ittoritseq (Kap Stewart), but probably even further away, and it also must have been caught in the middle of September at the latest. The same applies to the king eider – it must have been caught in September at the latest – but the possibility that it was killed locally cannot be excluded.

On the basis of the above, there is reason to suppose that the people arrived at the locality to live in the winter dwelling on a date between the beginning and middle of September, and that they came from the fjord mouth. The few bones from the walrus and hooded seal also indicate a stay around the mouth, and in the case of the hooded seal, confirm the latest date.

No fish bones were found, but since remains were found in the excavation material that could be from fishing tools (a prong from a fishing spear and two miniature harpoon heads which could have been used as fishing harpoons) it must be assumed that fishing has taken place. During the excavation, even though sieves were not used, large numbers of small objects, beads etc. were found, and so if there were fishbones present they would have been discovered. As they were not found, the reasons for their absence must either be because of preservation conditions or because the dogs ate them, or simply because fishing played only a sub-

ordinate role during the summer and that fish were not stored for winter use.

This should be compared to the hunting cycle of today, where fish are not important either, and where the yields are often eaten immediately. It is only within the last few years, because of trout nets and faster boats, that fishing has become more efficient and has produced sufficient yields for the surplus to be put aside. One of the reasons for this is that the deep-freezer has become common in many households.

If, on the basis of the bone material, we decide to make an estimate of how much meat the household had available during the period they lived in the locality, with the above mentioned reservations and uncertainty factors, we can conclude that, at an absolute minimum they must have had available the amounts shown in table 21.

Obviously, a fair criticism is that in the case of the larger animals, such as the hooded seal, the narwhal and the bear, it is not possible to judge solely from the bone material whether we are dealing with one complete animal or just part of it. For instance, it might have been a hunting share from a collective hunt that took place before wintering. However, as the estimated number of animals comprise an absolute minimum, and because bones from the larger animals will be under-represented, we think this is ample compensaton for any possible mistakes.

As stated in the description of the bone material from the dwelling, skeletal remains of two adult individuals and presumably two children aged between 10 and 18 years were found, and so we must assume that the household comprised four persons in all. Although the bone material only supports the presence of a single dog, other factors such as the remains of a fairly heavy sledge lead us to assume that there must have been more, and we shall therefore suppose that there were at least four dogs.

Based on these suppositions, the four persons who comprised the household and their four dogs have had a minimum of about 1120 kg biomass available. In the section on production and consumption where the meat consumption for humans and dogs was discussed, we estimated that the daily meat consumption per adult individual in Ittaajimmiit (Kap Hope) in 1972 amounted to about 1 kg, and that a dog needed about 0.5 kg daily. With regard to the population's consumption, it must also be taken into consideration that although most of their nutritional requirements were met by meat, imported foodstuffs such as sugar and bread do play a minor role. It is therefore probably more realistic to calculate that a person needs on average about 2 kg meat daily if they are completely dependant on hunting. With a daily meat consumption for the total household of about 10 kg, plus an estimated blubber consumption of about 1 kg daily for heating (Bjerregaard 1985: 5), this means that the estimated biomass of 1120 kg would be sufficient to cover their needs for about 100 days or nearly three months.

Table 21. Estimated hunting yields according to bone material.

Animal	Weight per animal	Total weight biomass
10 ringed seals	26.0 kg	260.0 kg
1 hooded seal	150.0 kg	150.0 kg
1 bear	160.0 kg	160.0 kg
1 narwhal	380.0 kg	380.0 kg
3 caribou	50.0 kg	150.0 kg
1 hare	2.5 kg	2.5 kg
2 foxes	3.4 kg	6.8 kg
3 barnacle geese	1.8 kg	5.3 kg
1 guillemot	0.8 kg	0.8 kg
1 king eider	1.3 kg	1.3 kg
Total		1,116.7 kg

If we assume, as we feel able to on the basis of the bone material, that the household arrived at the locality to occupy the winter dwelling from the middle of September, this would correspond to their supplies lasting until the end of December. The possibility that they may have died from hunger because of unsuccessfull hunting, illness or accidents can therefore not be discounted (cf. Meldorf 1907).

If we look at the hunting possibilities in the vicinity over the winter, according to the general annual cycle shown in Fig. 55 and 63 (although taken from the present day), during the winter period from the end of September up until March the opportunity exists to catch bears, caribou (now musk oxen), hares and foxes, as well as ringed seals.

The location of the "House of Beads" does not give any opportunity for more than occasional bear hunting throughout the winter, as the majority of the animals in the district inhabit other areas of the fjord during the winter period. Foxes and hares would be of little importance because of their size, and also because they seldom occur in large numbers. That leaves only the ringed seal and the caribou to provide a solid resource base for day-to-day-hunting, while living here during the winter.

We know nothing about the caribous' winter biotopes on Jameson Land but from his experience at Hekla Havn on Danmarks Ø in the winter of 1891/92 Ryder writes: "Towards the end of October a few caribou were shot on the island, and later on tracks were occasionally seen of others, but apart from this we had none during the winter period. Even the bears, which we had shot several of during the autumn, did not show themselves before March" (Ryder 1895: 79, Authors' translation). Caribou were not seen again until April, and the only fresh meat they had during the winter was from about 20 ringed seals that were caught with nets (ibid.). This could indicate that during the winter the caribou stayed inland far from the coastal areas in the same way that the musk oxen do today. Thus a large yield from winter hunting would hardly be expected, nor would a winter

stay be based on substantial contributions from this source.

Simply as a result of geographical factors, by the beginning of October the people from the "House of Beads" would probably already be reduced to catching seals by breathing hole hunting because the sea in the area freezes over early on, and this would continue throughout the winter right up to the end of March. If we look at Fig. 62 showing yields from the present-day hunting cycle for seals, it can be seen that even today with the use of modern technology such as seal nets and rifles, seal catches fall during the winter period from November to February. This is also in spite of a settlement that gives optimal conditions for using the most appropriate methods such as ice-edge hunting, breathing hole hunting and netting. One of the main reasons for the reduction in seal hunting during this period is the weather, as the frequent storms together with severe cold and the dark period all combine to limit hunting activities. Apart from this, the snow conditions within the fjord will also restrict hunting as the deep, soft drift snow makes it difficult both to travel in the area and to find the breathing holes, as happened for instance to the inhabitants of Kangersuttuaq (Sydkap) in 1935 (Petersen 1957: 155), and again at the beginning of the 1950s (Josva Barselajsen 1972, pers. comm.; cf. also Petersen & Rix 1982).

During a winter sojourn, as in this case, when throughout the winter it would only be possible to engage in solid ice hunting, then an additional factor would be that the area that could be hunted around the house would at some stage be emptied of seals, because the permanent population had been caught and no new seals had appeared (Uloro Tuko 1972 pers. comm.). (One reason for the isolated position of the "House of Beads" could have been that the inhabitants chose to live alone in order to get the best possible results from breathing hole hunting).

In order to get through the critical winter period when the intake of new resources is limited, and when, moreover, failing hunting yields could be expected, it is a vital necessity to have sufficient stores to fall back on when hunting has failed for shorter or longer periods. Not only are plentiful caches a prerequisite to ensure a stable and sufficient supply of meat for both humans and dogs during a wintering period, but it is also necessary to have a cache of blubber to use for heating and light. To ensure a sufficient supply of meat and blubber for the winter period, stores must be laid down when the hunting is good and gives a surplus. This would mainly be during the spring and summer hunting of walruses, narwhals and large seals. In this context, the sort of animal which the winter storage is based on is not unimportant. For instance, a narwhal is the equivalent in biomass to approximately 15 ringed seals and a walrus to just under 20, so these two animals together would provide a great deal of meat for storage. Smaller animals are much more likely to be used to cover the daily need for meat, and are literally eaten up. One must therefore assume that walrus and particularly narwhal hunting were extremely important to ensure a sufficient supply of meat for the winter. As mentioned before, large whales, which would have been even better in this connection, are not likely to have been caught at this time.

Judging from our knowledge of present–day hunting conditions, the occurrence of walruses and narwhals and the situation of the ruined settlements, walruses have been hunted in particular during the spring along the ice edge near Napparuutilikajik (Kap Swainson) and Ittoritseq (Kap Stewart), and in the summer around Kangersaajua (Hurry Inlet), Ittaajimmiit (Kap Hope) and Sulussugutikajik (Stewart Ø). Narwhals would mostly have been caught in the summer within the fjord, or when they migrated from it during the autumn. As the caches must have lain fairly close to the winter dwelling their location, to a certain extent, determined where the people chose to winter.

One must assume that those people, who had assured a sufficient supply of walrus meat, would spend the winter out around the mouth of the fjord, where the sea ice is smooth and suitable for breathing hole hunting and the ice edge within reach. On the other hand, those who were dependant on caches of narwhal meat would spend the winter further down the fjord system, near their caches and where they thought there would be sufficient seal hunting, perhaps supplemented with a little caribou hunting, to get through the winter. If for one reason or another, summer hunting failed and they were not able to put by sufficient stores to get through the winter, they faced a very uncertain time ahead with a likelihood of starvation. Lacking the security of the caches, they were forced to depend for survival completely on what the daily hunting could yield.

Since colonization, hunting failures are no longer a matter of life and death, but can still be serious as quoted above for the year 1934 (Petersen 1957: 151).

A general description of the annual cycle for the prevous inhabitants in Scoresby Sund during the latest stage of Northeast Greenland's mixed culture can be attempted, using our knowledge of the "House of Beads" and other recorded settlements, and comparing this with the present–day resources in the area. It would probably have taken the following course:

Through the winter, the people lived spread throughout the fjord system, preferably choosing localities where opportunities for breathing hole hunting were good, and were there were alternatives to the solid ice hunting. This could take the form of other methods of sealing such as ice-edge hunting, or hunting other animals such as bears and caribous. With the technology available at that time, breathing hole hunting probably was a safer and more stable winter hunting activity than ice-edge hunting, and so sites were chosen near smooth sea ice rather than out by the ice-edge. Today, Uunarteq (Kap Tobin) is considered one of the best hunting

areas, but apparently large winter settlements were never previously established there. On the other hand there were a comparatively large number of winter dwellings at Ittoritseq (Kap Stewart), Ittaajimiit (Kap Hope) and Ittaajik, which lie far from the ice-edge, but have much better conditions for breathing hole hunting. Probably because breathing hole hunting was the most important winter hunting activity, the people wintered in very small groups of sometimes just one household. This can have been done so that the area was utilized in the best possibly way and to prevent the resources in each area from being depleted too quickly. Meat caches from the summer hunting of narwhal and walrus in particular, of hooded seal and harp seal to a lesser degree and occasionally also of caribou, were a prerequisite for surviving the winter, and formed a vital supplement to the winter's sealing.

Early in the spring, depending on the food situation and the local opportunities for hunting, the people left the winter dwelling and either sought out new areas or moved into tents nearby. If wintering took place near an area of open water, then it was because they wished to engage in spring hunting along the ice edge, possibly even in March. If they spent the winter within the fjord where it is a long way to the ice edge they would have to rely on "*qassimattiit*", which appear in the middle of April (Josva Barselajsen, pers. comm.). According to Ryder: "in the summer the Eskimos in Scoresby Sund leave their winter dwellings and move into tents. The tent sites are found at several places, for example, at Renodden or Hekla Havn close to the winter dwellings, but they are also found at many other places, scattered witin the fjords. Tent sites are usually on low points or tongues of land, where because of the currents the ice breaks up first and therefore spring hunting can begin" (Ryder 1895: 301, Authors' translation).

In the spring and early summer, a large part of the population probably gathered in certain localities where hunting was particularly good. Although it is difficult to date tent rings on the spot in the same way as winter dwellings, and therefore a picture of just one summer's habitation cannot be obtained, the concentrations of tent rings do give a clear picture of the preferred spring and summer sites in the fjord. The biggest concentrations are found around Kangersuttuaq (Sydkap), on Danmarks Ø, in the area between Napparuutilikajik (Kap Swainson) and Ittaajimmiit (Kap Hope), and around the other polynyas where spring hunting in particular has been especially good. It is worth noting that only a few tent rings are found in the area around Sulussugutikajik (Stewart Ø) and at Ittoritseq (Kap Stewart), although there are many winter dwellings at both places. Presumably, people from these places moved into the area between Uunarteq (Kap Tobin) and Napparuutilikajik (Kap Swainson) in the spring, (see Fig. 50).

After the break up of the ice, the population dispersed again and followed the narwhal into the fjord. Here they spent the summer hunting seals, caribou and narwhal for their winter meat caches. Tent rings and meat caches from these summer sojourns are usually found near localities known for good narwhal hunting.

Later on in the autumn, before ice formation occurred, the people would have chosen their winter site and made arrangements for getting through the winter. As stated, the choice of site was dictated both by the opportunities for winter hunting and the size and placement of the caches. This is probably one of the reasons why most of the winter dwellings from the latest period, either stand alone like the "House of Beads", or in small groups. If breathing hole hunting was the staple winter activity, and the opportunities for obtaining winter supplies of food were poor, people would winter in as small a group as possible to increase the chances of survival, even though by doing so they cut themselves off from receiving mutual aid. (Compare the situation in Ittaajimmiit (Kap Hope) today).

Thus to summarize the annual cycle during the latest period in the Northeast Greenland mixed culture in the Ittoqqortoormiit (Scoresbysund) area: over the winter the people lived far apart and based their survival on breathing hole hunting and depots of meat. Early in the spring, they gathered around the polynyas to engage in ice-edge hunting for seals, walrus and narwhal. After the break up of the ice, they moved into the fjord system, dividing off into small groups to engage in open water hunting for seals and narwhals, and to hunt caribou. Summer hunting for the larger animals such as walrus and especially the narwhal was of great importance in obtaining sufficient supplies for the winter.

Outside Scoresby Sund itself and towards the north in the rest of the area where the latest phase of Northeast Greenland's mixed culture is found, we see the same concentrations of settlements around polynyas and known narwhal localities. In particular, the latest houses are nearly all situated near places that can be assumed to have been good narwhal biotopes (Dietz *et al.* 1985: 127; see Fig. 80).

Søren Richter describes conditions around Gauss Halvø, which he considers to be one of the last inhabited areas: "Gauss Peninsular also offers excellent locomotion conditions, but it was perhaps rather the track of the narwhal following the line of this coast during the summer which attracted the Eskimo to these parts; of the bone remnants found here, those of the narwhal form the predominating part" (Richter 1934: 83). Later on, in the description of the most recent houses on Gauss 5, he writes: "A considerable amount of bone remnants, particularly of narwhal, lay scattered in the vicinity of the settlement; also here, narwhal skulls had been used for the walls of many of the huts and, as at the previous settlement, several intact narwhal teeth were strewn about the ground, mostly in front of the entrances" (Richter 1934: 102).

Nathorst's general impression, based on the settlements found by the expedition in the Kejser Franz

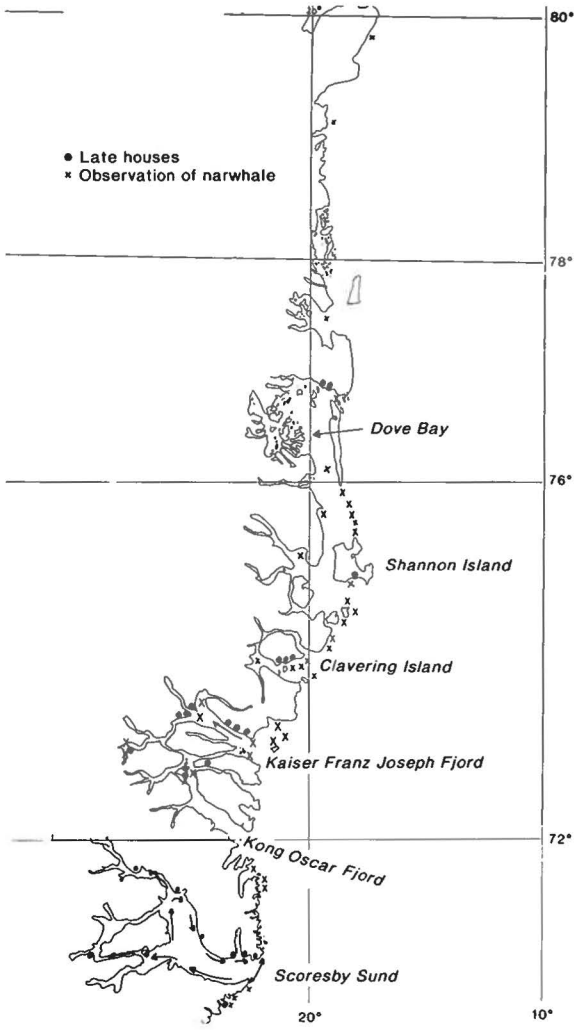


Fig. 80. Distribution of the latest Thule culture houses and narwhal occurence in Northeast Greenland.

Joseph Fjord area was: "the number of narwhal teeth which can be found near their old dwellings and refuse heaps, and which were used for all sorts of things such as harpoon heads and sledge runners etc., proves that the narwhals were frequently hunted in Northeast Greenland by the tribes of Eskimos that previously inhabited the area" (Nathorst 1900: 191, Authors' translation). In particular the list made by the expedition of finds from a late dwelling at Kap Weber supports this theory: "Near the beach in a brook, more or less buried in moss, lay five spears made of narwhal teeth and a sixth was found later, lying in the sea, 10 paces from the beach" (List of finds, Dr. J. Hammars collection, Ethnographical Museum, Stockholm). From Clavering Ø, Helge Larsen writes: "The narwhal *(Monodon monoceros)* must have been common. Numbers of bones are found in most of the ruins, and narwhal tusk was a much-used material for implements" (Larsen 1934: 12). He later concludes, on the basis of his investigations, that the narwhal tooth was used more in the late stage of Northeast Greenland's mixed culture, than in the earlier phase (Larsen 1934: 170).

As well as the narwhal, the walrus played an important role in some areas, for instance in the vicinity around Sabine Ø, where Walrus Island was apparently an important summer hunting area (Johnson 1933: 19). The same is true of the northern part of Dove Bugt, whereas only a few narwhal bones were found in the most recent dwellings (Thostrup 1911: 279).

The importance of caribou hunting is difficult to estimate. Apparently, caribou were hunted throughout the neo-Eskimo era, although evidently only near the coast. Even in those inland areas that have been most thoroughly investigated, remains from neo-Eskimo caribou hunting camps are very few. In Scoresby Sund, apart from a few meat caches on Gåseland (Vibe 1967: 159), only two localities with tent sites are recorded on Jameson Land (Sandell 1985b: 59 & 1986c: 31), and none at all, as far as is known, in the rest of Northeast Greenland up to Dove Bugt.

Richter wrote about the area between Kong Oscar Fjord and Clavering Ø that: "the Eskimo presumably pursued the narwhal into the great fjords and during the latter part of the summer they were certainly engaged in deer-hunting, but I have never seen traces of tents farther than 100 metres from the shore" (Richter 1934: 85). Bendix Thostrup has this to say about the stretch further north from Clavering Ø to Danmarkshavn: "the later tent-rings were mostly found on the coast and on the shores of the fjords, which shows that the later Eskimos have been closely bound to the sea as their hunting ground. Yet they have also captured reindeer and a few musk-ox, as can be seen from the contents of the refuse-heaps" (Thostrup 1911: 336).

Seals, and in particular ringed seals, were of course caught all year round, and formed the stable resource base that is a prerequisite for a hunting society. Apart from this, local resources were periodically exploited, such as birds, fish, hares, foxes, bears and other animals, to a greater or lesser degree. In this connection, it is difficult to say that one source of food is the most important. The yields from hunting one animal may have no importance in the total annual cycle, but may occur at a critical time of year to tide the group over and ensure its continued survival (see Spiess 1979: 244).

Even so, on the basis of the available archaeological material, and from our own present-day knowledge of when the resources occur and how they are exploited in Northeast Greenland, we are of the opinion that narwhal hunting in particular was a characteristic feature of and an important element in the most recent period of Northeast Greenland's mixed culture. Based on this observation of the narwhal as an important factor, it can be imagined that the people lived within a high-arctic annual cycle, sharply divided into three periods.

Breathing hole hunting for seals took place in the winter, ice-edge hunting for seals, walruses and narwhals in the spring, and in the summer open water hunting for seals and narwhals was supplemented by caribou hunting. Therefore, it must be assumed that relics from this epoch will be found in areas best able to support such a hunting cycle, that is especially near polynyas and/or good narwhal localities.

As the Scoresby Sund area is perhaps the best narwhal locality in the whole of Northeast Greenland (Born 1983: 73), it could be imagined that narwhal hunting became important here during the late stage in the development of the mixed culture. This could be because hunting for larger whales, which apparently occurred in earlier periods stopped for one reason or another and therefore the people needed to exploit the new resource more intensively, as a substitute for the Greenland whale. Scoresby Sund, apart from being the area where the most recent developments took place, must also have been one of the areas where the population of Northeast Greenland survived longest. The information gained from the archaeological material seems to point to Scoresby Sund, parts of Kejser Franz Joseph Fjord, Shannon Ø and possibly the northernmost part of the Dove Bugt area as having been the places where the few remaining population centres survived longest and which became extinct towards the middle of the last century. Maybe the many tools and objects found in the "House of Beads", rather than just being an expression of wealth and profusion, can be viewed in the light of this alteration in the resource pattern, as an attempt to cope with a changing situation. On the technological level by developing and improving tools and weapons, and on the spiritual level by placing increasing reliance on magic aids, as, for instance, the many small animal figures may bear withness to.

For the time being nothing can be said about this, but future investigations in the Scoresby Sund area might help to answer both this and the questions in connection with the disappearence of the last Thule Eskimos from Northeast Greenland.

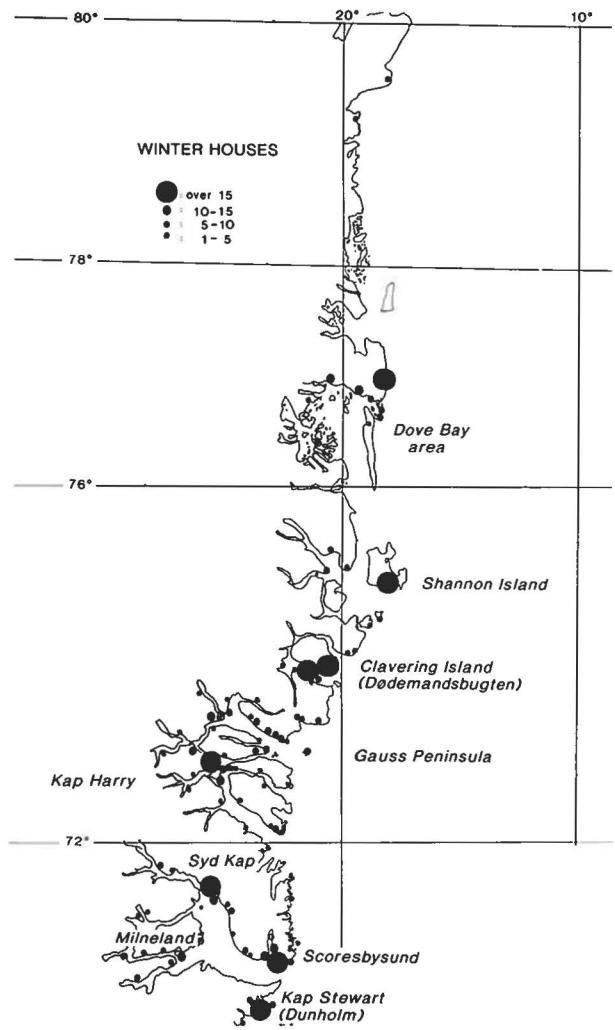


Fig. 81. Distribution of neo-eskimo winter settlements in Northeast Greenland.

Appendix A

Estimated body weight and weight of edible tissue from the most important animals hunted in the Scoresby Sund area. The edible tissue (biomass) includes the total estimated quantity of meat, blubber, blood and intestines that can be eaten by dogs and humans. Bones are not included.

Ringed seal *(puili; Phoca hispida)*
average total weight 32.0 kg
edible tissue 26.0 kg

Born states that apparently ringed seals are larger in Scoresby Sund than in other parts of Greenland (Born 1983: 56). As this is our experience too, we consider it reasonable to take his weight measurements, which are somewhat higher than normal (Born 1983: 58).

Bearded seal *(anneq; Erignathus barbatus)*
average total weight 200.0 kg
edible tissue 128.0 kg
Source: Born 1983: 55.

Harp seal *(nalanginaq; Pagophilus groenlandicus)*
average total weight 135.0 kg
edible tissue 101.0 kg
Source: Born 1983: 55.

Hooded seal *(niiniarteq; Cystophora cristata)*
average total weight 200.0 kg
edible tissue 150.0 kg
Source: Born 1983: 55.

Walrus *(aaveq; Odobenus rosmarus)*
average total weight 600.0 kg
edible tissue 498.0 kg
Source: Born 1983: 55.

Narwhal *(qilaluaq; Monodon monoceros)*
average total weight 540.0 kg
edible tissue 380.0 kg
Source: Born 1983: 55.

Bear *(nanu; Ursus maritimus)*
average total weight 200.0 kg
edible tissue 160.0 kg
Source: Born 1983: 55.

Musk ox *(umimmak; Ovibus moschatus)*
average total weight 150.0 kg
edible *meat* 75.0 kg

These are estimated averages from information on musk ox weights based on unpublished data from H. Thing. In our opinion the estimates are much too low, and other sources give a considerably higher meat weight. For example, White mentions a total weight of 600 lb (272 kg) and a meat weight of 300 lb (136 kg) (White 1953: 397), and (Mikkelsen & Sveistrup 1944: 11) calculate a meat weight of 100 kg.

Caribou *(tuttu; Rangifer tarandus eogroenlandicus)*
average total weight 115.0 kg
edible tissue 50.0 kg

Weight estimates are uncertain as the population of caribou in Northeast Greenland is extinct. The weights quoted are partly based on information found in White.

Lesser rorqual *(tikaavuttik; Balaenoptera acutorostrata)*
calculated average weight of edible tissue
minus intestines 2,000.0 kg
Source: Born, pers. comm.

Greenland shark *(niialiaq; Somniosus microcephalus)*
average total weight 300.0 kg
edible tissue 120.0 kg

Weight estimates are uncertain. The average weights mentioned here are partly based on our own judgement and on information from Ittoqqortoormiit (Scoresbysund) (Ole Nielsen, pers. comm.). From Uummannaq an estimated usable weight is given of between 60 and 100 kg (Born, pers. comm.).

Estimated average weight for smaller animals, fish and birds

Goose (barnacle goose and pink-footed goose).
Estimated average for both species
approximately 2.5 kg

The figures are based on our own experience with a limited number of birds, (Sandell, field notes 1975–80). Usher provides fairly similar average weights for snow geese (Usher 1970 II: 145). As the amount of edible tissue, which is mostly meat, comprises about 70% of the total weight for geese and other wild birds (White 1953: 398), the meat weight for a goose will amount to about 1.75 kg.

Eider duck
edible tissue 1.25 kg
Source: Usher 1970 II: 145.

Guillemot
estimated weight of edible tissue 0.75 kg

Ptarmigan and seagulls
estimated weight of edible tissue for both groups 0.5 kg
Source: Usher 1970 II: 145.

Fox
estimated weight of edible tissue 3.4 kg
Source: Usher 1970 II: 145.

Hare
estimated weight of edible tissue 2.5 kg
Source: Usher 1970 II: 145.

Arctic char
estimated average weight of edible tissue 1.0 kg

Little auks, sculpins and polar cod are not included, as from a weight point of view they form a diminishing part of the total meat consumption.

Appendix B

Register of artifacts with museum registration number and field location.

Field-location	Museum reg. no. KNK	Number	Artifact
A/I	566 × 1	1	Bow, middle section
a/I	566 × 1	3	Bow, fragments
a/I	566 × 2	6	Arrowhead with shaft, fragments
a/I	566 × 3	1	Bow, fragment
A/II	566 × 4	4	Bones, worked
A/II	566 × 5	1	Arrowhead, antler
A/II	566 × 6	2	Snow knife, whale bone (A/B)
A/II	566 × 7	1	Arrowhead, antler
a/II	566 × 8	1	Unidentified item
a/II	566 × 9	1	Slate point, unfinished
a/II	566 × 10	1	Arrowhead? antler
a/II	566 × 11	1	Harpoon blade, slate
a/II	566 × 12	1	Harpoon blade, slate
a/II	566 × 13	1	Harpoon head
a/II	566 × 14	1	seal figurine, (bead)
A/III	566 × 15	1	Harpoon head, barbed
A/III	566 × 16	1	Knife blade, slate
A/III	566 × 17	1	Harpoon head, NE type
A/III	566 × 18	1	Harpoon/lance blade, slate
A/III	566 × 19	1	Bear canine w. hole
A/III	566 × 20	1	"Double ball"
A/III	566 × 21	1	Lance blade, slate
A/III	566 × 22	1	Lance blade, slate, unfin.
A/III	566 × 23	1	Slate fragment
A/III	566 × 24	1	Knife blade, slate
A/III	566 × 25	1	Harpoon head, NE type
A/III	566 × 26	1	Harpoon head w. iron blade
A/III	566 × 27	1	Lance blade, slate
A/III	566 × 28	1	Lance blade, slate
A/III	566 × 29	1	Caribou antler, worked
A/III	566 × 30	1	Arrowhead, bone
A/III	566 × 31	1	Trace buckle, bone
A/III	566 × 32	1	Gorge, bone
A/III	566 × 33	1	Harpoon head w. 2 spurs
A/III	566 × 34	1	Slate blade, unfinished
A/III	566 × 35	1	Lance blade, bone
A/III	566 × 36	1	Unidentified item
A/III	566 × 37	1	Do.
A/III	566 × 38	1	Harpoon head w. 2 spurs
A/III	566 × 39	1	Antler w. drill marks
A/III	566 × 40	1	Slate fragment
A/III	566 × 41	1	Lance blade, slate
A/III	566 × 42	1	Lance blade, slate
A/III	566 × 43	1	Knife blade, slate
A/III	566 × 44	1	Slate fragment
A/III	566 × 45	1	Slate fragment
A/III	566 × 46 A	1	Lance blade, slate
A/III	566 × 46 B	1	Slate fragment
a/III	566 × 47	1	Rud. narwhal tooth, worked
a/III	566 × 48	1	Harpoon head w. 2 spurs
a/III	566 × 49	1	Harpoon head w. 2 spurs
a/III	566 × 50	1	Float mouthpiece
a/III	566 × 51	1	Mending disc
a/III	566 × 52	1	"Double ball"
a/III	566 × 53	1	Rud. narwhal tooth, worked
a/III	566 × 54	1	Lance blade, slate
a/III	566 × 55	1	Slate fragment
a/III	566 × 56	1	Harpoon blade, bone
a/III	566 × 57	1	Slate blade w. 2 holes
a/III	566 × 58	1	Lance blade, slate
a/III	566 × 59 A/B	2	Knife, slate/wooden handle
a/III	566 × 60	1	Lance blade, slate
a/III	566 × 61	1	Knife blade, slate
a/III	566 × 62 A/B	1	Lance blade
a/III	566 × 63	1	Knife blade, slate
a/III	566 × 64	1	Harpoon blade, slate
a/III	566 × 65	1	Slate fragment
a/III	566 × 66	1	Knife blade, slate
a/III	566 × 67	1	Cross strap fitting, bone
A/IV	566 × 68	1	Slate fragment
A/IV	566 × 69 A/B	1	Toggle/seal rib
A/IV	566 × 70	1	Harpoon blade, slate
A/IV	566 × 71	1	Lance blade, slate
A/IV	566 × 72	1	Slate fragment
A/IV	566 × 73	1	Slate fragment
A/IV	566 × 74	1	Harpoon blade, slate
A/IV	566 × 75	1	Lance blade, slate
A/IV	566 × 76	1	Lance blade, slate
A/IV	566 × 77	1	Lance blade, bone
A/IV	566 × 78 A	1	Fragment of wood
A/IV	566 × 78 B	1	Lance blade, bone
A/IV	566 × 79	1	Fragment of wood, worked

Field-location	Museum reg. no. KNK	Number	Artifact
A/IV	566 × 80	1	Lance blade, slate
A/IV	566 × 81	1	Lance blade, slate
A/IV	566 × 82	4	Bones, A/B/C/D
A/a/IV	566 × 83 A/B/C	3	Paddle, fragments
B/II	566 × 84	1	Arrowhead, bone 8 cm
B/II	566 × 85	1	Arrowhead, bone 19 cm
B/II	566 × 86	1	Arrowhead, bone 25 cm
B/II	566 × 87	1	Arrowhead, bone 36 cm
B/II	566 × 88	1	Arrowhead, bone 38 cm
B/II	566 × 89	1	Arrowhead, bone 19 cm
B/II	566 × 90	1	Arrowhead, bone 24 cm
B/III	566 × 91	1	Leister prong, bone
B/III	566 × 92	1	Bear figurine, bone
B/III	566 × 93	3	Knife, slate, wooden handle
B/III	566 × 94	1	Harpoon head w. 1 spur
B/III	566 × 95	1	Foreshaft for 94
B/III	566 × 95 B	1	Narwhal tooth, fragment 47 cm
B/III	566 × 96	4	Slate lance blade, 3 pieces of wood
B/III	566 × 97	1	Arrowhead, bone 10 cm
B/III	566 × 98	1	Arrowhead, bone w. 2 barbs
B/III	566 × 99	1	Slate bead
B/III	566 × 100	1	Antler w. drilled holes
b/III	566 × 101 A	1	Harpoon head w. 2 spurs
b/III	566 × 101 B	1	Slate blade for 101 A
B/V	566 × 102	1	Sledge shoe, bone, fragment
B/V	566 × 102 A	1	Antler w. drilled holes
B/V	566 × 102 B	1	Sledge shoe, bone, fragment
B/V	566 × 103	1	Lamp fragment, sandstone
B/V	566 × 104	1	Seal figurine (Bead)
C/I	566 × 105	9	Bones
o	566 × 106	1	(Soil sample)
C/I	566 × 107	1	Arrowhead, bone
C/II	566 × 108	1	Arrowhead, bone 19 cm
C/II	566 × 109	1	Arrowhead, bone 14 cm
C/II	566 × 110	1	Arrowhead, bone 14 cm
C/II	566 × 111	1	Arrowhead, bone 23 cm
c/II	566 × 112 A	1	Marlin spike, bone
c/II	566 × 112 B	1	Sinew twister
C/V	566 × 113	3	Bone points (Bird arrow?)
C/VI	566 × 114	2	Wooden ladle (containing 28 bone pins!)
C/VI	566 × 115	1	Sledge shoe, bone, fragment
C/VI	566 × 116 A	1	Paddle end mounting, bone
C/VI	566 × 116 B	1	Block for winged harpoon
C/VI	566 × 117 A	9	Wooden box
C/VI	566 × 117 B	1	Gorge, bone
C/V	566 × 118	1	Harpoon wing, bone
C/V	566 × 119	1	Lance blade, slate
C/V	566 × 120	1	Lance blade, slate
C/V	566 × 121	1	Miniature harpoon head
C/VI	566 × 122 B	3	Mouthpiece for float/swivel/ fingerrest
C/VI	566 × 122 C	5	"Double ball"/pot fragment/ 3 flintchips
C/VI	566 × 122 D	14	6 pcs. of iron/7 bird bones/ 1 seal bone
C/VI	566 × 122 E	1	Whetstone, fragment
C/VI	566 × 122 F	1	Slate blade, fragment
C/VI	566 × 122 G	1	Slate blade
C/VI	566 × 122 H	64	Beads of slate and bone
C/VII	566 × 123	1	Sledge shoe, bone
D/VI	566 × 124	1	Toy pot, sandstone
D/VI	566 × 125	1	Lamp, sandstone
D/VI	566 × 126	49	Beads, bone
D/VI	566 × 127	1	Rud. narwhal tooth
D/VI	566 × 128	1	Ice chisel, antler 23 cm
D/VI	566 × 129	2	Worked bone
D/VI	566 × 130	2	Slate plates A/B
D/VI	566 × 130 C	1	Hand drill w. iron tip
D/VI	566 × 131	1	Stone w. hole
D/VI	566 × 132	1	Cross strap fitting (bear)
D/VI	566 × 132	1	Small lance w. blade
D/VII	566 × 133	1	Rud. narwhal tooth
D/VII	566 × 134	1	Rud. narwhal tooth
D/VII	566 × 135	1	Rud. narwhal tooth
D/VII	566 × 136	1	Bone bead (Bird figurine)
D/VII	566 × 137	1	Birch bark roll
D/VII	566 × 138	1	Whetstone
D/VII	566 × 139	1	Sucking tube, narwhal tooth
D/VII	566 × 140	1	Lance blade, slate
D/VII	566 × 141	1	Whetstone
D/VII	566 × 142	1	Bone buckle
D/VII	566 × 143	1	Toggle
D/VII	566 × 144	18	Beads, bone & slate
D/VII	566 × 145	2	Bone fragments A/B
D/VII	566 × 146	1	Bone bead
D/VII	566 × 147	1	Wooden stick w. hole
D/VII	566 × 148	8	Bone beads
D/VIII	566 × 149 A	1	Bear figurine, bone
D/VIII	566 × 149 B	1	Tooth bead
D/VIII	566 × 149 C	1	Bone bead
D/VIII	566 × 149 D	1	Bone bead
D/VIII	566 × 149 E	1	Human figurine, bone
D/VIII	566 × 149 F	1	Slate fragment
D/VIII	566 × 149 G	1	Bone bead
D/VIII	566 × 150	5	Bones
D/VIII	566 × 151 A	1	Toy lamp, sandstone
D/VIII	566 × 151 B	1	Miniature harpoon head
D/VIII	566 × 152	1	Whetstone w. hole
D/VIII	566 × 153	1	Bone mounting w. 5 holes
D/VIII	566 × 154	40	Bone beads
E/V	566 × 155	1	Knife w. iron blade
E/V	566 × 156 A	1	Adze head w. iron blade
E/V	566 × 156 B	1	Snow knife, whalebone
E/V	566 × 156 C	1	Narwhal tooth, fragment
E/V	566 × 156 D	1	Harpoon foreshaft, 30 cm
E/V	566 × 156 E	1	Whip handle, fragment?
E/VI	566 × 157 A	1	Harpoon head, bone
E/VI	566 × 157 B	1	Harpoon head w. 1 spur
E/VI	566 × 157 C	1	Object w. 2 holes, bone
E/VI	566 × 157 D	1	Sinew twister, fragment
E/VI	566 × 157 E	1	Socket piece
E/VI	566 × 157 F	1	Bone bead
E/VI	566 × 157 G	1	Whetstone
E/VI	566 × 157 H	1	Arrowhead, bone
E/VI	566 × 157	1	Bone w. drilled holes
E/VII	566 × 158	1	Drill shank w. iron bit
E/VII	566 × 159	1	Sinew twister, fragment
E/VII	566 × 160	1	Ice hunting foreshaft
E/VII	566 × 162	1	Socket piece, bone
E/VII	566 × 163	4	Bone beads
E/VII	566 × 164	1	Comb, bone
E/VII	566 × 165	1	Knife handle, bone
E/VII	566 × 166	1	Bear figurine, bone
E/VII	566 × 167	1	Rud. narwhal tooth
E/VII	566 × 168 A	1	Harpoon head, NE type
E/VII	566 × 168 B	1	Worked bone
E/VII	566 × 169	1	Knife handle, bone
E/VII	566 × 170	1	Cross strap fitting, bone
E/VII	566 × 171	1	Harpoon head, fragment
E/VIII	566 × 172	1	Human mandible w. 5 loose teeth

Field-location	Museum reg. no. KNK	Number	Artifact
E/VIII	566 × 173	14	Beads, bone & slate
E/VIII	566 × 174	1	Ornamental plate
E/VIII	566 × 175	20	Beads, bone & slate
E/VIII	566 × 176	2	Knife handle, bone A/B
E/VIII	566 × 177	21	Beads, bone & slate
E/VIII	566 × 178	1	Miniature snow knife
E/VIII	566 × 179	18	Beads, bone & slate
E/VIII	566 × 180	2	Bone beads
E/VIII	566 × 180 A	1	Flint core
F/V	566 × 181 A	1	Lance foreshaft
F/V	566 × 181 B	1	Peg, bone
F/VIII	566 × 182	1	Socket piece
F/VIII	566 × 183	1	Bone bead
F/VIII	566 × 184	11	Bone beads
F/VIII	566 × 185 C	1	Whetstone
F/VIII	566 × 185 A	1	Worked antler
a/I	566 × 186	1	Bow, fragment, wood
C/VII	566 × 187	1	Cooking pot, sandstone
Casual find			
	566 × 188	1	Blade fragment, slate
Ruin B	566 × 189	1	Blade fragment, slate
Casual finds			
1982	566 × 190	1	Drip bowl, sandstone
1982	566 × 191	1	Slate blade w. hole
1982	566 × 192	1	Bodkin, bone
1982	566 × 193	1	Bone buckle
E/VIII	566 × 195 A	1	Doll, bone
E/VIII	566 × 195 B	1	Harpoon head
D/VIII	566 × 196	1	Charcoal pieces (C^{14}-test)
D/VIII	566 × 197 A	1	Human upper jaw, fragment
E/VIII	566 × 200	21	Beads, slate & bone
E/VIII	566 × 201 A	1	Bone bead
E/VIII	566 × 201 B	1	Piece of bone
E/VIII	566 × 202	64	Beads, bone & slate
E/VIII	566 × 203	11	Bone beads
E/VIII	566 × 204	15	Bone beads
Casual finds			
1982	566 × 205	1	Wooden object
1982	566 × 206	1	Wooden object
1982	566 × 207	1	Sledge shoe, bone
1982	566 × 208	1	Sledge shoe, bone
1982	566 × 209	1	Sledge shoe, bone
1982	566 × 210	1	Sledge shoe, bone
1982	566 × 197 B	210	Bone beads

Literature

Amdrup, G. 1902. Carlsbergfondets Expedition til Øst-Grønland udført i Aarene 1898–1900. – Meddr Grønland 27: 372 pp.

– 1909. The former Eskimo Settlements on the East Coast of Greenland between Scoresby Sund and the Angmagssalik District. – Meddr Grønland 28 (6): 285–328.

Andersen, J. 1981. Kaptajn Ejnar Mikkelsens Mindeekspedition 1980. – Private Print. Copenhagen.

Anonym. 1953. Sammendrag af statistiske oplysninger om Grønland. – Beretninger vedrørende Grønlands Styrelse.

– 1953–1984. Sammendrag af Grønlands fangstlister. – Ministeriet for Grønland.

– 1968. Fangstdeling for Scoresby Sund kommune 1968. – Kommunalvedtægt for Scoresby Sund af 23. februar 1968.

– 1970. Kommunalvedtægt for Scoresby Sund kommune af 23. februar 1970.

– 1976. Bekendtgørelse om ændring af bekendtgørelse om fredning af isbjørne i Grønland. – Grønlands Lovsamling Serie A nr. 1 (1976). Bek. nr. 182: 109.

Bandi, H. G. & Meldgaard, J. 1952. Archaeological Investigations on Clavering Ø. North East Greenland. – Meddr Grønland 126 (4): 85 pp.

Bartlett, R. A. & Bird, J. 1931. The Bartlett East Greenland Expedition. – Geographical Review 21: 398–414.

Bay, Chr. & Holt, S. 1986. Vegetationskortlægning af Jameson Land 1982–86. – Grønlands Fiskeri- og Miljøundersøgelser. Copenhagen.

Bengtsson, M. 1927. Ene med Dyr og Mennesker. – Hasselbach, Copenhagen: 229 pp.

Binford, L. R. 1978. Nunamiut Ethnoarchaeology – Studies in Archaeology. – Academic Press, New York: 509 pp.

Birket-Smith, K. 1918. The Greenland Bow. – Meddr Grønland 56 (1): 1–28.

Bjerregaard, B. & M. 1985. Disease pattern in Upernavik in relation to housing conditions and social group. – Meddr Grønland, Man & Soc. 8.

Blom, I. 1973. Kampen om Eirik Raudes land. – Gyldendal, Oslo: 438 pp.

Boas, F. 1964. The Central Eskimo (1888). – University Press, Lincoln: 261 pp.

Born, E. W. 1983. Havpattedyr og havfugle i Scoresby Sund. Fangst og Forekomst 1983. – Rapport til Råstofforvaltningen for Grønland. – Danbiu Aps. Copenhagen: 112 pp.

– 1984. Et polynie i mundningen af Scoresby Sund. – Grønland 8–9: 259–268.

Buchwald, V. F. & Mosdal, G. 1985. Meteoric iron, telluric iron and wrought iron in Greenland. – Meddr Grønland, Man & Soc. 9: 49 pp.

Burch, E. S. Jr. 1972. The Caribou/wild reindeer as a Human Resource. – American Antiquity 37 (3): 339–368.

Capstick, P. H. 1977. Death in the long Grass. – Cassell, London: 297 pp.

Clavering, D. C. 1830. Journal of a Voyage to Spitzbergen, and the East Coast of Greenland in H.M.S. Griper. – Edingburgh New Philos. Journal IX. July 1830.

Dahl, K. R. 1924. Paa isflage langs Østgrønland. (Motorskonnerten Teddys forlis i Ishavet og besætningens vidunderlige frelse). – Hage & Clausen, København: 213 pp.

Dawes, P. R. 1978. Ulve i Nordgrønland. – Grønland 10: 289–303.

Degerbøl, M. 1957. The extinct reindeer of East-Greenland. – Acta Arctica 10: 57 pp.

Dietz, R., Heide-Jørgensen & Born. 1985. Havpattedyr i Østgrønland. – Rapport til Råstofforvaltningen for Grønland. – Danbiu Aps. Copenhagen: 277 pp.

Egede, H. 1925. Relationer fra Grønland 1721–36 og Det gamle Grønlands ny Perlustration 1741. – Bobé, L. (ed.) Meddr Grønland 54: 442 pp.

Farvandsdirektoratet. 1978. Tidevandstabeller for Grønland 1978. – Farvandsdirektoratets nautiske afdeling. Copenhagen.
Freemann, M. R. 1969/70. Studies in Maritime Hunting. Ecologic and Technologic Restraints on Walrus Hunting, Southampton Island N.W.T. – Folk 11–12: 155–172.
– 1979. A Critical view of Thule Culture and ecologic adaptation. – McCartney, A. P. (ed.) Thule Eskimo Culture: An Anthropological Retrospective. National Museum of Man. Mercury Series 88: 278–285.
Giddings, L. J. 1968. Ancient Men of the Arctic. Secher & Warburg, London: 383 pp.
Glob, P. V. 1935. Eskimo Settlements in Kempe Fjord and King Oscar Fjord. – Meddr Grønland 102 (2): 97 pp.
– 1946. Eskimo Settlements in Northeast Greenland. – Meddr Grønland 144 (6): 39 pp.
Gould, R. A. (ed.) 1978. Explorations in Ethnoarchaeology. – University of New Mexico Press, Albuquerque, N.M.: 329 pp.
Hartz, N. 1902. Beretning om Skibsexpeditionen til Grønlands Østkyst 1900. – Meddr Grønland 27 (3): 153–181.
Hjarnø, J., Balslev Jørgensen & Vesely. 1974. Archaeological and Anthropological Investigations of late Heathen Graves in Upernavik District. – Meddr Grønland 202 (1): 1–35.
Holm, G. 1972. Konebådsekspeditionen (Ethnologisk Skizze af Angmagsalikerne 1887). – Rhodos, Copenhagen: 284 pp.
Holtved, E. 1944. Archaeological Investigations in the Thule District I–II. – Meddr Grønland 141 (1 & 2): 308 & 184 pp.
– 1967. Contributions to Polar Eskimo Ethnography. – Meddr Grønland 182 (2): 180 pp.
Isachsen, G. & F. 1932. Norske fangstmenns og fiskeres ferder til Grønland 1922–1931. – Norsk Geografisk Tidsskrift 1933 (4): 21–74.
Johnson, D. Mcl. 1933. Observations on the Eskimo Remains on the East Coast of Greenland between 72° and 75° North Latitude. – Meddr Grønland 92 (6): 69 pp.
Kampp, K., Meltofte, H. & Mortensen, E. 1986. Søkonger i Scoresby Sund 1985. – Rapport for Grønlands Fiskeri- og Miljøundersøgelser. Copenhagen: 60 pp.
Kapel, H. 1986. Sydkap – Undersøgelserne 1986. – Report on file. Grønlands Landsmuseum. Nuuk: 23 pp.
Knuth, E. 1952. An Outline of the Archeology of Peary Land, Arctic 5(1): 17–33.
Knuth, E. 1966/67. The Ruins of the Musk-ox Way. – Folk 8–9: 191–220.
– 1968. Independence II. Bone Artifacts and the Dorset evidence in North Greenland. – Folk 10: 61–80.
– 1983. The Northernmost Ruins of the Globe. – Folk 25: 5–22.
Koch, I. P. 1902. Bemærkninger vedrørende de paa Skibsexpeditionen til Grønlands Østkyst 1900 opmaalte Kyststrækninger mellem 69°20′ nb og 72°20′ nb. – Meddr Grønland 27 (5): 273–303.
Koch, L. 1930. The Danish Expedition to East Greenland in 1929. – Meddr Grønland 74 (10): 173–205.
Koldewey, K. 1873. Die zweite deutsche Nordpolarfahrt unter Führung des Kapitän Karl Koldeway. – Leipzig: 672 pp.
Kolthoff, G. 1901. Till Spetsbergen och nordöstra Grönland år 1900. – Fr. Skaglunds Forlag, Stockholm: 277 pp.
Kristoffersen, F. 1969. Jæger og Fangstmand. – Nyt Nordisk Forlag, Copenhagen: 185 pp.
Larsen, F. 1983. Distribution and Abundance of Narwhals in the Scoresby Sund Area, off Liverpool Land and Kong Oscar Fjord in September 1983. – Rapport for Grønlands Fiskeri- og Miljøundersøgelser. Copenhagen: 7 pp.
Larsen, H. 1934. Dødemandsbugten. An Eskimo Settlement on Clavering Island. – Meddr Grønland 102 (1): 186 pp.
– 1938. Archaeological Investigations in Knud Rasmussens Land. – Meddr Grønland 119 (8): 78 pp.
Lauritsen, B. 1984. Fangstmandsliv og de danske fangstkompagnier i Nordøstgrønland 1919–1952. – Komma, Copenhagen: 176 pp.
Lubbock, B. 1968. The Arctic Whalers. – Brown, Son & Ferguson, Glasgow: 483 pp.
Madsen, J., Mortensen, C. E. & Boertmann, D. 1985. Gæssene i Jameson Land. Resultater af undersøgelser 1982–1984. – Rapport for Grønlands Fiskeri- og Miljøundersøgelser. Copenhagen: 76 pp.
Mathiassen, Th. 1928. Eskimo Relics from Washington Land and Hall Land. – Meddr Grønland 71 (3): 181–216.
– 1928a. Material Culture of the Iglulik Eskimos. – Report of the Fifth Thule Expedition 6 (1). Copenhagen: 249 pp.
– 1929. The Archaeological Collection of the Cambridge East Greenland Expedition 1926. – Meddr Grønland 74 (9): 137–166.
– 1930. Inugsuk – a mediaeval Eskimo Settlement in Upernavik District, West Greenland. – Meddr Grønland 77 (4): 145–340.
– 1933. Prehistory of the Angmagssalik Eskimos. – Meddr Grønland 92 (4): 158 pp.
– 1934. Eskimo Finds from the Kangerdlugssuaq Region. – Meddr Grønland 104 (9): 26 pp.
Meldgaard, M. 1986. The Greenland Caribou – zoogeography, taxonomy and populations dynamics. – Meddr Grønland, Biosc. 20: 88 pp.
Meldorf, G. 1907. Forgiftninger i Grønland. – Bibliotek for Læger. 8 rk. – 8: 46–68.
Meltofte, H. 1976. Ornitologiske observationer i Scoresby Sund området, Østgrønland, 1974. – Dansk ornitologisk Forenings Tidsskrift 70: 107–122.
Mikkelsen, E. 1922. Alabama-Expeditionen til Grønlands Nordøstkyst 1909–1912 under Ledelse af Ejnar Mikkelsen. Report on the Expedition. – Meddr Grønland 52 (1): 1–142.
– 1925. Med "Grønland" til Scoresby Sund. – Gyldendal, Copenhagen: 125 pp.
– 1934. De Østgrønlandske Eskimoers Historie. – Gyldendal, Copenhagen: 202 pp.
– 1965. Scoresby Sund – kolonien. – Grønland 7: 369–390.
– & Sveistrup, P. P. 1944. The East Greenlanders Possibilities of Existence, their Production and Consumption. – Meddr Grønland 134 (2): 1–244.
Møbjerg, T. 1988. A "Deathhouse" at Sydkap, Scoresby Sund. – Folk 30: 201–214.
Nathorst, A. G. 1900. Två Somrar i Norra Ishafvet II. – Stockholm: 414 pp.
Nelson, R. K. 1969. Hunters of the Northern Ice. – University of Chicago Press, Chicago: 429 pp.
Nooter, G. 1973. Change in a Hunting Community of East Greenland. – Folk 14–15: 163–204.
Olrik, A. 1916. Forslag om at bebygge Scoresby Sund – Egnen i Østgrønland ved Vestgrønlandske Sælfangere. – Grønlandske Selskabs Skrifter 3: 135 pp.
Orleans, L. P. R, Duc d'. 1907. Croissiere océanographique accomplié à bord de la Belgica dans la Mer du Grönland, 1905. – Bruxelles: 570 pp.
Orwin, A. K. 1931. Ekspedisjonen til Østgrønland med "Veslekari", sommeren 1929. Norges Svalbard og Ishavsundersøkelser 11. – Norsk Geografisk Tidsskrift 1930, 2 (3).
Pedersen, A. 1930. Fortgesetzte beiträge zur kenntnis der Saugetier-und Vogelfauna der Ostküste Grönlands. – Meddr Grønland 77 (5): 341–507.
– 1934. Polardyr. – Gyldendal, Copenhagen: 150 pp.
Petersen, H. C. 1986. Skinboats in Greenland. – Ships and Boats of the North 1: 215 pp.
Petersen J. 1957. Ujuat's dagbøger. – Grønlandske Selskabs Skrifter 19: 168 pp.
Petersen, R. 1972. Aquisition and Sharing of the Bag in East Greenland. – Inter-Nord 12: 282–286.
– & Rix, L. 1982. Klimasvingninger og grønlændernes forhistorie. – Grønland 3: 82–100.
Porsild, M. 1915. Studies of the Materiel Culture of the Eskimo in West Greenland. – Meddr Grønland 51 (5): 111–250.
Rasmussen, J. K. 1924/25. Etnografi fra Scoresby Sund

1924/25. – Report on file. National Museum. Copenhagen. (Unpubl.).
Rasmussen, K. 1912. Report of the First Thule Expedition. – Meddr Grønland 51 (8): 283–340.
Richter, S. 1934. A Contribution to the Archaeology of North East Greenland. – Oslo Etnografiske Museums Skrifter 5 (3): 65–213.
Robert, J. 1970. Anthropologie Démographique et Socio-Économique de la Population du Scoresby Sund. – Centre de Recherches Anthropologiques. Musée de Homme. Paris: 147 pp.
Robert-Lamblin, J. 1971. Les Ammassalimiut émigrés au Scoresby Sund. Études démographique et socio – économique de leur adaptation. (Côte oriental du Groenland, 1968). – Bulletins et mémoires de la Société d'Anthropologie de Paris. Tome huitième – XII série: 194 pp.
Ryder, C. 1895. Beretning om den østgrønlandske Expedition 1891–92. – Meddr Grønland 17 (1): 1–159.
– 1895. Om den tidligere eskimoiske Bebyggelse af Scoresby Sund. – Meddr Grønland 17 (6): 281–343.
Sandell, H. & B. 1982. Rapport over Grønlands Landsmuseums arkæologiske rekognoscering i Jameson Land, Scoresby Sund distrikt, i sommeren 1982. – Report on file. Grønlands Landsmuseum, Nuuk. (Unpubl.).
– 1983a. Rapport over Grønlands Landsmuseums arkæologiske rekognoscering i Scoresby Sund distrikt, NØ, sommeren 1983. – Report on file. Grønlands Landsmuseum, Nuuk. (Unpubl.).
– 1983b. Rapport over udgravningen af to vinterhusruiner, FM 70 Ø1–IV–1, A & B. (29°09′ vl, 70°46¼′ nb) på Jameson Land, Scoresby Sund Kommune, NØ. – Report on file. Grønlands Landsmuseum, Nuuk. (Unpubl.).
– 1984a. Rapport over Grønlands Landsmuseums arkæologiske rekognoscering i Scoresby Sund distrikt, Nordøstgrønland, sommeren 1984. – Report on file. Grønlands Landsmuseum, Nuuk. (Unpubl.).
– 1984b. Kap Hope – En fangerbygd. – Grønland 8–9: 269–280.
– 1985a. Perlehuset på Jameson Land. – Forskning i Grønland/Tusaat 1/85: 10–23.
– 1985b. Rapport over KNK/Grønlands Landsmuseums arkæologiske rekognoscering i Scoresby Sund distrikt, Nordøstgrønland, sommeren 1985. – Report on file. Grønlands Landsmuseum, Nuuk. (Unpubl.).
– 1985c. Kortlægning af kulturhistoriske interesser i Jameson Land og Scoresby Sund 1982–84. – Grønlands Landsmuseum. Nuuk: 74 pp.
– 1986a. Kap Hope – A Settlement and its Resources. – Arctic Anthropology 23 (1–2): 281–298.
– 1986b. Kortlægning af kulturhistoriske interesser på Jameson Land, 1986. – Grønlands Landsmuseum, Nuuk: 14 pp.
– 1986c. Arkæologisk rekognoscering i Jameson Land, Nordøstgrønland. Sommeren 1986. – Grønlands Landsmuseum, Nuuk: 64 pp.
Schledermann, P. 1980. Polynyas and prehistoric Settlement Patterns. – Arctic 33 (2): 292–302.
Scoresby, W. Jr. 1823. Journal of a Voyage to the Northern Whale – Fishery. – A. Constable & Co, Edinburgh: 472 pp.
Spiess, A. E. 1979. Reindeer and Caribou Hunters. An Archaeological Study. – Studies in Archaeology. Academic Press, New York: 312 pp.
Stolpe, H. 1906. Uber die Forschungsergebnisse der schwedischen Grönland – Expedition vom Jahre 1899. – Internationaler Amerikanisten Kongress, vierzehnte Tagung. Stuttgart 1904: 101–105.
Sølberg, F. 1980. Jagten i Scoresby Sund. – Borgen, København: 291 pp.
Thalbitzer, W. 1909. Ethnological description of the Amdrup Collection from East Greenland. – Meddr Grønland 28 (7): 329–542.
– 1914. The Ammassalik Eskimo I. – Meddr Grønland 39: 755 pp.
Thing, H. 1985. Moskusokse-undersøgelser på Jameson Land 1984–85, samt bestandens økologi 1982–85. – Rapport for Grønlands Fiskeri- og Miljøundersøgelser, Copenhagen: 82 pp.
Thomsen, Th. 1917. Implements and Artifacts of the North East Greenlanders. – Meddr Grønland 44 (5): 357–496.
Thostrup, C.B. 1911. Ethnographic Description of Eskimo Settlements and Stone Remains in North East Greenland. – Meddr Grønland 44 (4): 177–355.
Usher, P. J. 1971. The Bankslanders: Economy and Ecology of a Frontier Trapping Community I–III. – Northern Science Research Group; Department of Indian Affairs and Northern Development. NRSG 71: 124, 169 & 88 pp.
Weyer, E. M. 1969. The Eskimos. – Yale University Press, New Haven: 491 pp.
White, Th. E. 1953. A method of calculating the dietary percentage of various food animals utilized by aboriginal peoples. – American Antiquity 18 (4): 396–398.
Vibe, Chr. 1950. The Marine Mammals and the Marine fauna in the Thule District. – Meddr Grønland 150 (6): 115 pp.
– 1965. Det historiske møde på Clavering Øen 1823. – Grønland 1: 17–26.
– 1967. Arctic Animals in Relation to Climatic Fluctuations. – Meddr Grønland 170 (5): 227 pp.
– 1975. Grønlandske Pattedyr. – In: Danmarks Natur 10: 400–419.

Instructions to authors

Two copies of the manuscript, each complete with illustrations, tables, captions, etc. should be sent to the Secretary, Kommissionen for videnskabelige Undersøgelser i Grønland. Manuscripts will be forwarded to referees for evaluation. Authors will be notified as quickly as possible of acceptance, rejection, or desired alterations. The final decision on these matters rests with the editor.

Manuscripts corresponding to less than 16 printed pages (of 6100 type units) including illustrations are not accepted, unless they are part of a special theme issue. Manuscripts that are long in relation to their content will not be accepted without abridgement.

Manuscript

Language. – Manuscripts should be in English (preferred language), French, or German. Authors who are not writing in their native language must have the language of their manuscript corrected before submission.

Place names. – All Greenland place names used in the text and in illustrations must be names authorised by The Greenlandic Language Committee. Authors are advised to submit sketch-maps with all required names to the Secretary for checking before the manuscript is submitted. Names of Greenland localities outside the area with which the paper is concerned should be accompanied by co-ordinates (longitude and latitude).

Title. – Titles should be as short as possible, with emphasis on words useful for indexing and information retrieval.

Abstract. – An abstract in English must accompany all papers. It should be short (no longer than 250 words), factual, and stress new information and conclusions.

Typescript. – Typescripts must be clean and free of handwritten corrections. Use double spacing throughout, and leave a 4 cm wide margin on the left hand side. Avoid as far as possible dividing words at the right-hand end of a line. Consult a recent issue for general lay-out.

Page 1 should contain 1) title, 2) name(s) of author(s), 3) abstract, 4) key words (max. 10), 5) author's full postal address(es). Manuscripts should be accompanied by a table of contents, typed on separate sheet(s).

Underlining should *only* be used in generic and species names. The use of italics in other connections can be indicated by a wavy line in pencil under the appropriate words.

Use at most three grades of headings, but do not underline. The grade of heading can be indicated in soft pencil in the left hand margin of one copy of the typescript. Avoid long headings.

References. – References to figures and tables in the text should have the form: Fig. 1, Figs 2–4, Table 3. Bibliographic references in the text are given thus: Shergold (1975: 16) ... (Jago & Daily 1974b).

In the list of references the following style is used:

Boucot, A. J. 1975. Evolution and extinction rate controls. – Elsevier, Amsterdam: 427 pp.

Sweet, W. C. & Bergström, S. M. 1976. Conodont biostratigraphy of the Middle and Upper Ordovician of the United States midcontinent. – In: Bassett, M. G. (ed.). The Ordovician System: Proceedings of a Palaeontological Association symposium, Birmingham, September 1974: 121–151. Univ. Wales Press.

Tarling, D. H. 1967. The palaeomagnetic properties of some Tertiary lavas from East Greenland. – Earth planet. Sci. Lett. 3: 81–88.

Titles of journals should be abbreviated according to the latest (4th) edition of the World List of Scientific Periodicals and supplementary lists issued by BUCOP (British Union-Catalogue of Publications). If in doubt, give the title in full.

Meddelelser om Grønland, Man & Society (Bioscience, Geoscience) should be abbreviated thus: *Meddr Grønland, Man & Soc. (Biosci., Geosci.)*

Illustrations

General. – Submit two copies of all diagrams, maps, photographs, etc., all marked with number and author's name. Normally all illustrations will be placed in the text.

All figures (including line drawings) must be submitted as glossy photographic prints suitable for direct reproduction, and preferably have the dimensions of the final figure. Do not submit original artwork. Where appropriate the scale should be indicated on the illustration or in the caption.

The size of the smallest letters in illustrations should not be less than 1.3 mm. Intricate tables are often more easily reproduced as text figures than by type-setting; when lettering such tables use "Letraset" or a typewriter with carbon ribbon.

Colour plates may be included at the author's expense, but the editor must be consulted before such illustrations are submitted.

Size. – The width of figures must be that of a column (76.5 mm), 1½ columns (117 mm) or a page (157 mm). The maximum height of a figure (including caption) is 217 mm. Horizontal figures are preferred. If at all possible, fold-out figures and tables should be avoided.

Caption. – Captions to figures must be typed on a separate sheet and submitted, like everything else, in duplicate.

Proofs

Authors receive two page proofs. Promt return to the editor is requested. Only typographic errors should be corrected in proof; the cost of making alterations to the text and figures at this stage will be charged to the author(s).

Fifty copies of the publication are supplied free, seventy-five if there are two or more authors. Additional copies can be supplied at 55% of the retail price. Manuscripts (including illustrations) are not returned to the author after printing unless specifically requested.

Copyright

Meddelelser om Grønland

Bioscience
Geoscience
Man & Society

Published by
The Commission
for Scientific
Research
in Greenland

AiO Print Ltd., Odense, Denmark