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LEADER: Mr. J. M. WORDIE

OBSERVATIONS ON THE ESKIMO REMAINS ON THE EAST COAST OF GREENLAND BETWEEN 72° AND 75° NORTH LATITUDE

BY

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WITH 28 FIGURES IN THE TEXT AND 4 PLATES

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PREFACE

This paper is written on the results of the investigations made by the Cambridge East Greenland Expedition in the summer of 1926. I was accompanying the expedition as Medical Officer and was asked by Mr. Wordie before we set out to take charge of the archaeological work for which it was hoped there would be some opportunity.

The region it was intended to explore extended from Sabine and Little Pendulum Islands (Lat. 74°40′ N.) southwards as far as Traill Island (Lat. 72°00′). Previous explorers, notably Scoresby (1822) in the Traill Island Region, Nathorst (1899) in Franz Josef Fjord, and Koldewey with the Germania Expedition (1869—70) in the Sabine and Little Pendulum Islands Region, had mentioned the existence of Eskimo remains, but no complete report had yet been made; it was hoped with good fortune that this would be possible.

I had not the advantage of having had previous experience in work of this nature, but agreed to undertake it to the best of my ability. We had, however, the publication of the investigations of the Danmark Expedition of 1906—1908 ("Meddelelser om Grønland", Vol. 44) as a guide, and so possessed a fair idea of what to expect in the way of Eskimo remains. I decided to make my observations on similar lines to those of the observer and author of that article, Bendix Thostrup, in order that as far as possible the results of the two expeditions could be correlated; those of the Cambridge expedition were starting at almost the exact point where the Danish expedition left off. With that idea I have made all measurements in the metric scale and have used terms for the structures similar to those employed in Thostrup's paper.

The expedition was exceedingly fortunate both as regards the weather and in finding a large amount of material available for research. Being a summer expedition, it was natural that time was very limited, so that observations were cursory in certain places, especially in the southern part of the area. The amount of time spent on the coast was six weeks in all, and as the archaeological work had to be fitted in with the other activities of the expedition there was not always

the opportunity for the fullest research. Sufficient information was, however, obtained to give a general idea of the position and nature of former Eskimo settlements in this part of East Greenland; in certain places we were able to excavate winter-huts; many articles and implements were found; and I was able to make careful notes of several unusual formations.

In all we discovered 68 winter-huts, over 200 tent borders, 12 graves, and many other structures. We hope that our researches will throw a certain amount of light on such problems as the origin and line of immigration of the Eskimo in North East Greenland, the possibility of separate immigrations, the reason for their disappearance, and so on; I leave these matters for discussion in the Conclusion.

In my account of the survey I divide the whole district into five subdivisions:

I. The Region of Sabine and Little Pendulum Islands, including the Bass Rock, Walrus Island and the mainland opposite Sabine Island.

II. The Clavering Island Region, i. e. the whole of the district investigated inside Gael Hamkes Bay, together with the land each side of the mouth of the bay at Cape Borlase Warren and Jackson Island respectively.

III. The Hold-with-Hope Region, including Holland Island and the shores of Mackenzie Bay as far as Cape Franklin.

IV. The Franz Josef Fjord Region: the main fjord together with its branches.

V. The Traill Island Region, comprising the sea-coasts of Traill Island and Geographical Society Island. (The fjords inside these islands were not visited.)

Region I was that most thoroughly investigated; the survey of Region V was the least complete owing to the necessity of a hurried departure at the end of the open season.

I intend in my article first to give a short description of the general nature of the structures found, then proceed with the details of the survey, and lastly attempt to draw conclusions from our observations.

I must thank the other members of the expedition for the assistance given me in the work, particularly Mr. J. H. Bell, Capt. P. F. White, R. E., and Mr. J. M. Wordie whose interest equalled my own; and in addition Dr. Therkel Mathiassen who has very kindly read the manuscript and made many valuable suggestions for its improvement[1]).

[1]) I am still further indebted to Dr. Mathiassen for the trouble he has also taken in visiting the Museum of Archaelogy and Ethnology at Cambridge in order to examine and describe the objects collected by our expedition: his paper describing the collection has already appeared in "Meddelelser om Grønland" Vol. 74, and should be consulted in connection with the present article.

GENERAL DESCRIPTION OF REMAINS

The remains which we found were in general similar to those discovered by the Danmark Expedition further north and described in "Meddelelser om Grønland", Vol. 44; it will be clearer however if I set down my own descriptions.

Winter-huts.

These were seen as pits excavated in the ground, the appearance being similar to that of old Eskimo houses in other districts. In the best preserved houses the side walls of stone were still standing, the passage way was open, and only the floor of the hut was overgrown with turf; the oldest huts on the other hand were merely represented by mounds enclosing a depressed area, and with a gap representing the passage way in front. Every gradation between these two conditions seemed to be present.

Even in the most recent and best preserved huts there was never any sign of a roof in place. A number of flat stones and wooden beams were usually met with in the first stage of excavation, and were no doubt the roof remains which had collapsed inwards into the hut. Where these were not found, it is possible that the roof had already been removed by the former inhabitants at their last departure. The side walls were entirely of stone. Wooden beams seem to have been used to a large extent in the roof construction, driftwood being plentiful on this part of the coast; the roof was therefore of wood, turf and flat stones; whales' bones did not appear to have been used. No trace of window formation was found.

The better preserved huts were with few variations rectangular in outline and were small in size, 2.5—3.0 m long × 1.5 m broad. There was frequently a recess in one of the side walls towards the front, usually to the right on entering. In one hut (Cape Simpson) a double recess was seen in the same side wall, but in no case were there actually two recesses one in each side wall and facing each other, though a tendency to pear-shaped outline was occasionally observed.

As regards the interior, there was in every hut excavated only a single platform at the back. Except in one case (Cape Weber), where there was a narrow ledge, there was no indication of a side platform. Generally the front part of the floor was paved with flat stones, while the platform was raised and formed of gravel. In the front of the platform as a rule there was a square recess in which wooden debris was found on excavation, no doubt the remains of wood used to cover in the recess; in hut I, Kjerulf Fjord, however, this was replaced by a large space and the whole of the front part of the platform floor seemed to



Fig. 1. Hut Colony, Eskimo Bay, Clavering Island.

have been of wood supported by large stones. The fireplace was in one of the front corners. In hut I at Kjerulf Fjord a lamp place was discovered, but this was the only discovery of its kind.

The passage way was usually 3 m long and entered the hut below the level of the floor, forming a well at the entrance. Its sides and roof were formed by flat stones and wood; in one hut (Eleonoren Bay) a piece of a whale bone was used to form the roof at the exit of the passage; this was the only example we found of a whale bone being used in hut-building. The passage way was always straight and at the entrance to the hut was invariably roofed in by a large flat lintel stone.

As already mentioned, huts of all gradations of age between the oldest and newest were found, and we could make out the different stages of collapse of a hut. The front wall and roof of the passage way seems the first to fall in, filling the passage with debris; later the side walls also collapse inwards and become overgrown, the final result being that shown in fig. 3. It seems impossible, however, that the traces of a hut could be obscured so completely in this manner without some other factor

coming into play, and it is probable that when a hut was deserted many of its stones were taken away and used in the construction of a new one.

We unfortunately had no time to excavate the oldest sites; on one



Fig. 2. Winter-hut, viewed from front, Eskimo Bay.

occasion I started to do so, and dug for a considerable time without coming on any trace of side-walls.

There was usually a small pit near each house, lying just outside

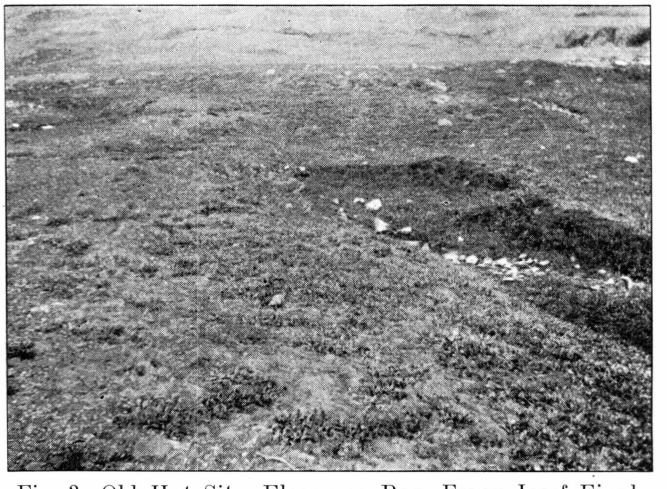


Fig. 3. Old Hut Site, Eleonoren Bay, Franz Josef Fjord.

the passage exit; it evidently served as a store place. In three localities (Little Pendulum Island, Sabine Island, Cape Simpson) instead of this pit outside the individual house there was a larger excavated well common to a group of two or three huts; all these three places were on the

sea coast. In the neighbourhood of every colony bones of animals and fragments of deer antlers were scattered in profusion over the ground (fig. 4).

In our experience the huts were always found on ground sloping gently down to the sea or fjord; they were seldom more than 30 m from the beach or 5 m above sea level. The two largest colonies were found inside the fjords (Eskimo Bay on Clavering Island and Eleonoren Bay in Franz Josef Fjord).

The entrance to the huts usually faced south, the huts being built



Fig. 4. Hut Colony, Cape Weber, showing the profusion of bones scattered all round.

in situations sheltered from the north and northeast; thus they were always found on the north shores of the fjords. This may have been due partly to gain shelter from the north wind, partly in order to catch the sun.

Tent-borders.

These are the stone formations, generally spoken of as tent-rings, which mark the site of the Eskimo tent and summer dwelling-places. They are thought to have been the stones which weighted down the flaps of the tent on the outside. This view however is difficult to reconcile with their regular arrangement and with the fact that the size of the enclosed space is no larger than the original tent-space can have

been; it seems more natural that stones used as ballast would have been thrown aside in an irregular manner. It is, however, possible that a wall of stones has been built inside the tent cover and left in situ on departure.

Tent-borders varied in size, but averaged 3 m in diameter. They were usually circular in outline, occasionally oval, but not infrequently square; it is noteworthy that the square formations were most common towards the south part of the district surveyed e. g. Cape Mackenzie and Cape Simpson. The size of the stones forming the borders varied considerably; they were always of the same rock type as those found on the surrounding beach, but there was sometimes a tendency to pick

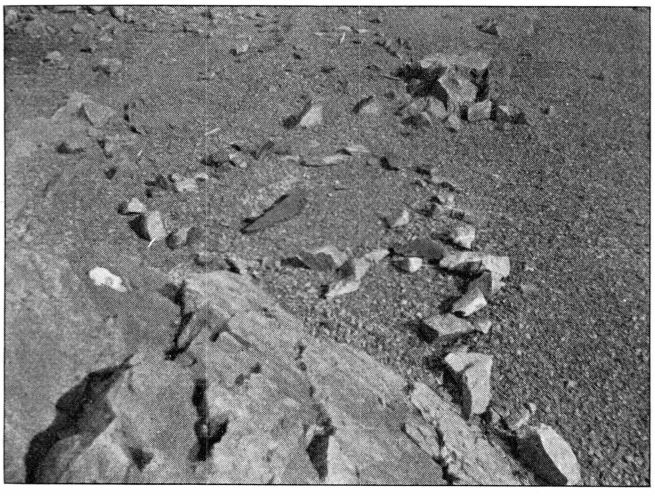


Fig. 5. Tent-border, Falsche Bay, Wollaston Foreland.

out bright pieces of stone even where these were uncommon and difficult to find.

There was frequently, but not invariably, both in circular and square borders, a platform edge of stones running across the tent; a double platform edge was never seen. A gap in the border for the entrance-way was seldom observed; a passageway was also rare. In the case of square tent-borders it was common to find paving over half of the floor space, no doubt the platform. A paved lamp-place was occasionally present. In most cases the floor space was clear of stones in contrast to the surrounding beach.

Variations, such as annexes inside or outside the main tent-border and internal passage-ways, were occasionally present; I have made notes with diagrams (see Plate III) of several instances which I have observed. An excellent example of an exterior annex was seen at Falsche Bay (fig. 5).

At Cape Franklin a number of borders were found some of them

paved and all with depressed floor spaces; these were associated moreover with other formations unlike any seen elsewhere.

Both at the Bass Rock and on Walrus and Sabine Islands square formations with side-walls, compactly built of two or three layers of stones, were seen singly or paired; the floor space was sunk below ground level. These, with the exception of Walrus Island, where the stones are large and the formations resemble more closely large meat stores, seem almost certainly to be some kind of tent or shelter formation.

At Cape Broer Ruys there was a double width of stones in some of the borders; this I have thought due to the fact that the same site was occupied time after time and so more stones gradually became incorporated.

Tent-borders were found mainly on the sea-coast and occurred in large numbers on the stony beaches close to the sea. The largest colonies were at Bass Rock, Walrus Island and Cape Broer Ruys. As well as the large groups, isolated examples were found at suitable landing places all along the coast, situated either on ledges a little above the sea or in sheltered inlets between the rocks. Occasionally small isolated complete colonies with meat-depots were met with, e. g. at Cape Neumayer on Sabine Island.

The following factors appeared the most useful in judging the degree of permanency of the occupation of a tent-site: (1) size of the stones, (2) the number of animal bones found, and (3) the presence of a platform edge. A site occupied for a long time should be expected to shew a border of large stones with well-marked platform edge and many animal bones scattered around.

As regards the age of tent-borders, this was hard to determine even from a comparative point of view; the appearance in each case depended on local conditions; in general it may be said that the older ones were overgrown with lichen and moss, and any animal bones there might have been near them had disappeared with the course of time.

Shelters.

I use this term in the same sense as Thostrup in Meddelelser Vol. 44 as "a small place surrounded by stones, often not larger than to give room for one person in a lying position." The definition is an arbitrary one and there are in many cases formations which might equally well be termed either tent-borders or shelters, there being every transitional stage between the two.

There were many cases in which the "shelters" were merely diminutive tent-borders, but there was also a far more distinctive type, namely a small oval of large rough stones, frequently with one side formed by a boulder or rock, e. g. at Eleonoren Bay.

Shelters were found in two associations: (1) solitary in more or less isolated places (e. g. Cape Stosch), evidently used by a single hunter, or (2) in some special situation e.g. near graves (Cape Simpson), or near mosaic formations (Eleonoren Bay and Cape Weber).

One must also mention in this connection the built-up walls such as were found at the larger colonies on Walrus Island and on the Bass Rock.

Variations of the form of the shelter were noticed in several places, and these are recorded as accurately as possible in the detailed description of the separate localities.

Mosaic Formations.

I have already mentioned the tendency to include brightly coloured pieces of stone in tent-borders, but at several places we also found regular and carefully constructed formations containing such stones exclusively. These were invariably found in connection with hut colonies (e. g. Cape Borlase Warren; Cape Mary; Eleonoren Bay; Cape Weber): and a striking feature was their almost exact similarity in arrangement in widely separated localities. I propose to call them mosaics.

I give full details of these formations in my description below and a few generalisations will here be sufficient. The stones of the outline were compact and embedded in the ground, and the plan of the enclosed space was carefully arranged. The mosaics could roughly be said to be of two sizes; the larger were fairly constant in size (average 2.5 m × 1.5 m), varied somewhat in details of internal arrangement, and occurred in pairs lying side by side; the smaller varied in size though they were very similar in arrangement. The arrangement of both large and small followed the same general plan. I include here a diagram of a small formation found at Cape Weber (fig. 6), which gives a fair idea of the general design.

As well as these common forms of mosaic I would also draw attention to other less common forms e. g. the small mosaic squares found near graves at Eleonoren Bay (see below fig. 24), and the square with coloured stones in one corner at Cape Wynn (see below fig. 10). In other places also varying arrangements of coloured stones associated with shelters were occasionally noticed.

Thostrup mentions in his article (p. 197) the tendency in many places to arrange brightly coloured stones in shelters but he does not describe definite mosaic formations. I imagine however that at least one of his photographs, at Rypefjeldet (fig. 46, Shelter 563), represents a mosaic similar in arrangement to those which we so frequently found.

I hold the opinion that these mosaics have invariably some definite superstitious significance and are not merely children's playthings.

The following considerations have led me to this view: — (1) They are carefully and compactly built and their regularity both in size and in design when found at places so widely (as much as 200 kilom.) apart is very striking; (2) They are found in places where it is unlikely for children to play, e. g. the regular mosaic 50 m above the sea at Eleonoren Bay, and the small square simple mosaic in front of one of the shelters at Cape Stosch.

Their exact significance is difficult to determine. I would emphasize

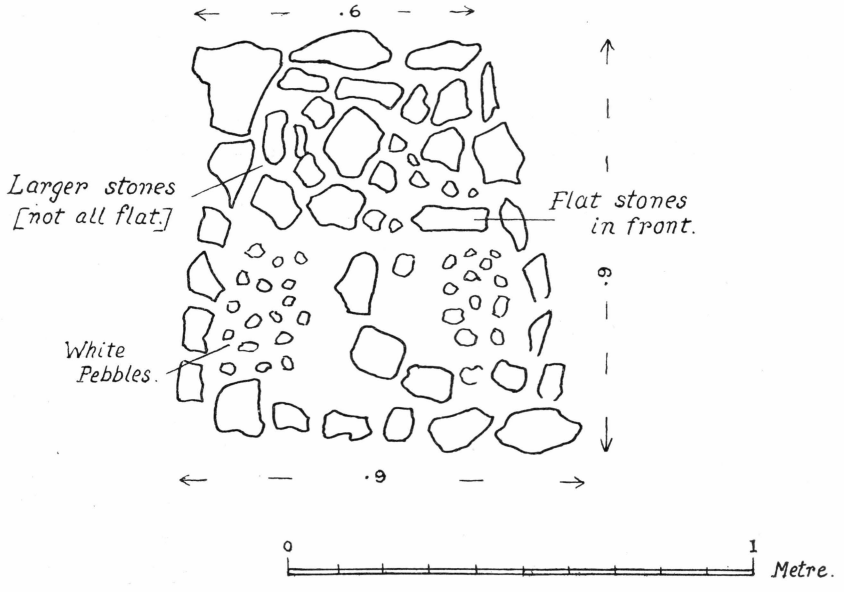


Fig. 6. Mosaic Formation, Cape Weber.

facts such as the following: (1) the resemblance of the design roughly to the floor plan of winter-huts; (2) the presence of other features in connection with them, e. g. trodden-down paths (Mosaics I, Eleonoren Bay; and Cape Weber), shelters (Mosaics III, Eleonoren Bay; and Cape Weber), and graves (small square mosaics, Eleonoren Bay); also the arrangement of shelter path and line of stones in connection with Mosaics III, Eleonoren Bay.

Graves.

We found 12 graves in all; 6 only were undisturbed, the others having been investigated by previous visitors and the only traces of the remains left being quite useless for observation. These graves were found in association with the colonies of winter-huts and were usually on rising ground behind and above the huts and some height above the sea.

The grave is generally a somewhat oval and hollow cairn of stones



Fig. 7. Unopened Grave, Eleonoren Bay.

raised above the ground, measuring roughly 2 m long by 1 m in width and under 1 m in height. The roof of stones was supported by beams of wood, and on removing it the interior could be seen to be carefully and compactly built at its foundations, enclosing the space for the body. The internal measurements averaged 1.5 m in length by 0.7 m in width,

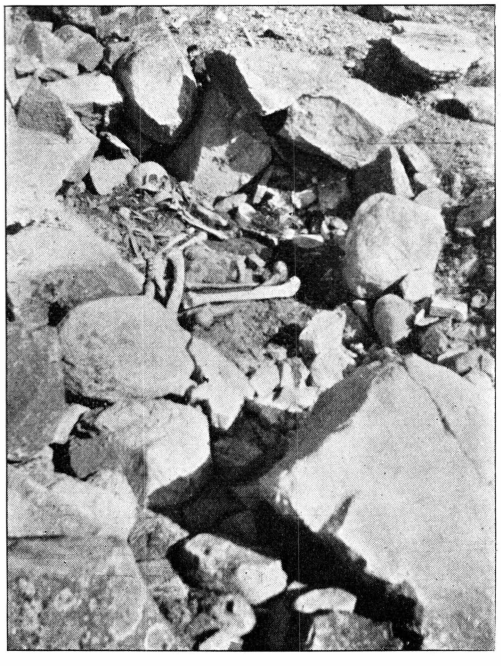


Fig. 8. Same grave, opened up, Eleonoren Bay.

and the space narrowed towards one end where there was a definite and well-formed square space for the head; in two instances (both at Cape Simpson) a large rock boulder formed part of the side wall at the head end. The direction of the main axis of the grave varied.

In four of the six undisturbed graves the skeleton was found, but in the other two, in spite of the fact that there was hardly a single stone of either grave displaced, there was no trace of any bones. In two of the four cases the bones of the skeleton were disarranged, whilst in the other two the skeleton was found in the position in which the body had been buried, namely doubled up with legs almost touching the chin. In one of these latter instances (Grave 1, Eleonoren Bay, figs. 7 and 8) the grave was of the ordinary type; in the other (Little Pendulum Island) there was no cairn formation in the usual way and the body must merely have been buried amongst the rocks with a ring of stones put round; had the stones been disturbed by animals it is doubtful whether we would have found the skeleton intact as we did.

We twice found receptacles (Cape Simpson), but neither contained grave articles. Articles were however found on one occasion in the grave itself beneath the chin of the skeleton (Grave 3, Eleonoren Bay).

Near the graves were sometimes found shelters (G 1, Eleonoren Bay; and Cape Simpson), and in one case (G 1 Eleonoren Bay) small square mosaics.

Meat Stores.

Meat stores were found in connection with both summer and winter dwellings; they were far too numerous even to number or to make observations on individually. All grades between temporary meat stores consisting merely of a heap of stones and large built-up permanent meat stores were found.

Of the large permanent meat stores three main types were observed:

(1) Built up with stones against crevices in the rocks (Little Pendulum Island; Cape Mackenzie).

(2) Round hollow cairns with wide base (Walrus Island; Eleonoren Bay; and many other places).

(3) Hollow cairns with small square base internally formed by four large compactly set stones, against this foundation being heaped numbers of smaller loose stones (West Eskimo Bay on Clavering Island; Mackenzie Bay; Cape Broer Ruys; Cape Simpson).

The third type seemed to be associated more with older colonies. In one instance, west of Cape Broer Ruys, what seemed to be a single store viewed from the outside turned out to have a double square chamber internally. The largest meat stores were found in connection with the big summer colonies along the sea coast such as those on Walrus

Island and near Cape Broer Ruys. Types of meat store found with winter-huts have already been mentioned in connection with the description of the latter.

Fireplaces.

These were usually square in shape, surrounded by three stones each one forming a side wall (see diagram, fig. 9 (a)). This formation, however, was usually seen only in connection with the smaller colonies. I include a diagram (fig. 9 (b)) of a more elaborate structure found at Eleonoren Bay.

I think in the case of the large tent colonies the structure of the

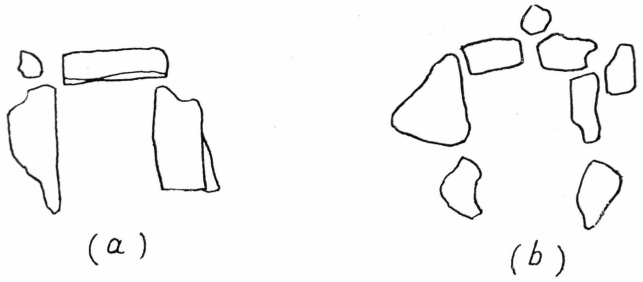


Fig. 9. Fireplaces: (*a*) Hansa Bay, Sabine Island, (*b*) Eleonoren Bay.

fireplaces was even larger and more elaborate. I am unable to point, however, to any definite case of a large fireplace in the big colonies, but would suggest a horse-shoe formation found at Observatory Peninsula, Sabine Island. It was quite remarkable that the smaller fireplaces should be only very occasionally found where the tent-borders were most numerous (e. g. Walrus Island; Bass Rock; Observatory Peninsula; Cape Broer Ruys); had they been the regular type of fireplace the opposite would have been expected.

Foxtraps.

These were occasionally found, mainly in the neighbourhood of winter-dwellings, but also in isolated places.

I can mention little of interest in connection with them, beyond stating that they were similar to those described by Thostrup, and that they consisted of long side walls, back wall with pointed stone for bait, and falling doorway.

Material Objects.

These, such as we found, have been described in a paper by Dr. Therkel Mathiassen (Medd. om Grønland, 74, pp. 139—166); it will here be sufficient to note that they were found and collected (1) in the vicinity of tent-borders or winter-huts, (2) during excavation of winter-huts, (3) in connection with graves, and (4) in odd places along the shore.

I. THE REGION OF SABINE AND LITTLE PENDULUM ISLANDS

Sabine and Little Pendulum Islands lie off the coast of the mainland in Lat. 74.30′—74.40′ N. I also include in the survey of this region the Bass Rock to the north east of Little Pendulum Island, Walrus Island to the south east of Sabine Island, and the coast of the mainland opposite Sabine Island. The islands are predominantly of igneous formation, the rock being basalt lavas and intrusions, as is also the mainland at Cape Wynn. The vegetation of the district is sparse in the extreme, some parts, such as Walrus Island, being almost completely barren.

The expedition made a land base at Germania Harbour on the south side of Sabine Island, and a fortnight in all was spent in this region. The weather in general during our stay was dull and misty and on many occasions hindered our observations. As regards game, the animal principally seen was the Arctic hare. Four bears were met with, many seals were seen on the ice, and a walrus was killed in Pendulum Strait. Eider duck were very numerous in the neighbourhood of Walrus Island, and their nests were found in many places.

The observers of the Germania expedition had reported numerous tent-borders on Sabine Island, and also winter-huts on Observatory Peninsula and on the south coast of Little Pendulum Island. The additional remains found by our party were nearly all tent-borders and other structures associated with summer dwelling places; they were most plentiful on Walrus Island and the Bass Rock, where there were very large colonies. On Sabine Island we made several excursions across the island and though no further large colonies were discovered, several small collections of borders were found in various places, so that a fair idea could be obtained of the localities most favoured for encampment.

Bass Rock.

This was the most northerly point visited by the expedition. It is a small rocky island lying to the north-east of Little Pendulum Island,

and presents moderately steep cliffs towards the sea except at the south-east and south-west corners and on the north side, where there are low-lying beaches. On all these beaches Eskimo remains were found.

The beach at the South East Corner was rocky. At least seven definite tent-borders were made out in the spaces between the rocks; and we also found several shelters built up as walls and hollow cairns to the height of 0.5 m to 1 m, similar to those described on Walrus Island (see below).

Apart from the ordinary circular tent-borders we found:

(a) A rectangular enclosure, 3.0 m × 2.0 m, enclosed by a well-built wall of two layers of stones; there was earth and gravel packed between the layers, and there were signs of there having been yet another layer of stones on top which had been disturbed.

(b) A square 2.8 m across, enclosed by large stones, there being boulders of rock at each corner; it had a well-marked platform edge running north to south.

Numerous meat stores were found, and many other tent-sites not so well defined as those mentioned.

On the North Side of the Rock there were traces of remains on a small sheltered beach; they were too disturbed however to make out clearly, the disturbance being due to there being a recent European hut here.

The South West Corner was characterised by a low lying shingle beach, triangular in shape, and rising from the south in terraced fashion. There were three terraces, and in all 14 tent-borders, most of which were on the two lower terraces, the lowest part of the beach towards the south evidently being the landing place. Most of the borders had platform edges.

There were several permanent meat stores seen as built-up rings of large stones; also an occasional built-up wall shelter and one small shelter of a single semicircular ring of stones.

There was only one unusual formation — a large square, 4.5 m across; an ordinary platform edge ran across from east to west, but there was another arm of stones which bisected the northern half of the square (see Plate III).

Animal bones, especially of bear and seal, were very numerous on this beach.

Little Pendulum Island.

Tent-borders had been reported at Cape Hartlaub by German observers, but nothing was found on a somewhat cursory inspection by one of our survey parties.

Several badly defined tent-borders were noted at Cape Desbrowe, but time did not allow of close inspection.

Winter-huts on the southern slopes of the Stufenberg were reported by the German observers; and these were probably the two found by our party on the slope which goes down directly to the sea. They were 25 m from the shore and about 6 m above sea level; they were in poor condition and seemed to have been already excavated; as far as could be seen they were of the usual type and both showed a marked recess to the right of the doorway (on entrance), this being somewhat overhung by the upper part of the wall.

Between the huts was a small excavated pit about 2 m square; it was built in with stones, but no passage way was apparent, and it was probably a meat store.

Among the rocks 400 m east of the winter-huts we found several meat stores, built up with stones in the hollows in the rocks, and also one grave, which was more closely examined.

Rock formed the back wall of the grave, the rest of the enclosure being merely a ring of stones. The skull lay half exposed with the occiput projecting; it was in excellent condition and has been preserved. After careful excavation the rest of the skeleton was found under a thin layer of earth; we attempted to remove it, but the bones were thin and papery and easily crumbled so that our efforts were not successful. It should be noted that the skeleton was in the doubled up position in which it had been buried.

Near the above grave we also found two enclosures of stone about 2 m × 1 m. The back wall was formed of rock against which was a semicircle of stones; the enclosed surface was of smooth soil with no stones. Only a cursory excavation was made; animal bones were unearthed in one, and small bones (perhaps human metacarpals) in the other. It is uncertain whether they were graves or meat stores.

Badly marked tent-borders were seen on the beach west of these rocks.

Walrus Island.

This island lies immediately south of Sabine Island, and is about 2.5 km long by 1 km across; it is formed of basalt, and is almost completely barren, the surface being covered for the most part with sharp angular stones. The western part of the island is low-lying and there is a rocky beach all along this shore; towards the east the island slopes up to end in steep cliffs about 60 m in height facing the sea. There are two small lakes about the middle of the western side of the island. Numerous nests of Eider duck were found all over the island and more particularly below the cliffs to the east. The remains on Walrus Island were more

numerous than at any other place visited by the expedition. This island may even have been the main summer camping ground for the whole district. All the settlements were found on the low-lying part of the island towards the west. Tent-borders were very numerous, as also shelters, meat stores, and some other remains, the nature of which could not be clearly defined.

The tent-borders were in three main groups, (a) towards the north-west corner of the island near the beach, (b) south-west of the lakes and about 200 m from the beach, and (c) on the south shore of the island. In addition to these there were many isolated tent sites all along the western shore.

North West Corner. Eleven tent-borders were made out, all with well-marked platform edges, and one showing a definite paved lamp-place. The stones used in their formation were of large size.

One of the sites was particularly interesting. This was due to an arrangement of eight small pits round it; each of these pits took the form of a round depression in the stony ground surrounded by a low circular mound of stones, about 1 m in diameter; and they were all at a distance of about 3 m from the tent-site (see diagram Plate III). The stones of this particular site were arranged as a square, about 3 m across, with a platform edge.

The adjoining tent-site, which was also square, had three similar pits near it. Pits were not found near any of the other sites; and we concluded that they must have been temporary meat stores.

Other structures noticed in this neighbourhood were some square enclosures 2 m across surrounded by a well-built wall about 0.7 m in height; the lowest layer of the wall was of large smooth rounded stones, with medium sized and small stones on top of these. In particular there were three well-constructed specimens near the tent-borders, two of them being adjacent, the third about 15 m away.

Bones of animals, chiefly seal, were very numerous round this colony.

Lake Colony — a group of ten or more tent-borders situated to the south-west of the lakes, and 400 m south of the preceding group. All the stones of this group were overgrown with lichen and sunk in the ground, the encampment shewing every sign of being an ancient one. Several of the borders had platform edges; but very few bones were found in the vicinity.

The only site of interest was a large oval of stones 6 m × 4.5 m; there was no platform edge. This tent site was larger than any subsequently found. At its north-west corner was a small fireplace.

South Shore — a collection of tent-borders and other remains was reported by Mr. Wordie, but I did not have an opportunity of visiting them myself. This settlement was considered as of more recent date than those elsewhere on the island.

Three stone pillars, the distance between them suggesting an umiak rather than a kayak rest, were found at this settlement.

In addition to the formations already described numerous other structures were found along the west side of the island. Especially numerous were: —

(a) Hollow cairns of circular outline and varying size, the largest being 1.0 m or more in height and 2.5 m in diameter; they were mostly dilapidated, but appeared as if they might have been the "tower traps" used in fox-hunting[1]). There were also several smaller cairns about 1 m diameter and 0.5 m high, more likely meat-stores. These latter were found chiefly along the sea beach immediately to the south of the lake encampment.

(b) Walls built of stone in crescentic or semicircular form, 0.5—1.0 m in height, the convexity being towards the south. They were no doubt shelters. One of them, towards the north west of the island, was of triradiate form (see diagram Plate III), the wall being 0.7 m high, and each arm 2 m long and pointing towards S., W. and N.E. respectively. The crescentic shelters were found chiefly near the two more recent colonies, at the north-west corner and on the south shore.

Germania Harbour, Sabine Island.

The harbour is an inlet near the south-east corner of Sabine Island, and sheltered in a peculiar manner by Walrus Island. At the head of the inlet the ground is marshy and low lying, and nothing was found there; but on either side of the mouth are stony headlands, where remains were numerous.

Cairnspitzer — the east headland. Traces of tent-sites were found, but nothing was properly recognizable owing to recent European habitation, the modern Danish hut for instance being directly on the site of an old Eskimo encampment.

Observatory Peninsula — the west headland; it is low lying and the surface stony. Sixteen definite tent-borders were made out along the beach, mostly with platform edges and chiefly situated on the southern (seaward) face.

Three winter-huts were also found in the same part, facing southwest and about 60 m from the sea; two of the huts lay side by side, and

[1]) Medd. om Grønl. Vol. 44, pp. 200, 234.

the third 20 m distant from the other two; between the two former was an excavated place, with no passage way, which had probably been the meat-store. The ground in front of the huts was even and well covered with vegetation in contrast to the barrenness of the rest of the Peninsula. Previous investigation by the German observers in 1869—70 had rendered the sites unsuitable for further research.

Tent-borders were distributed along the whole shoreline of the Peninsula, but it was noticeable that the sites on the side facing the harbour seemed of a more temporary nature than those towards the sea; e. g. only one out of six possessed a platform edge, and two were only of small size (2.0 m diam.) and formed of small stones. There were no bones found near the latter rings, though bones of seal and other animals were numerous near the others.

The only unusual formations found were: —

(a) A horse-shoe formation made by two layers of stones one on top of the other, the measurement being 0.9 m across by 1.1 m long, and open towards the east. This, as I have suggested in the Preface, was possibly a fireplace.

(b) Two incomplete stone ovals lying close together, the larger measuring 4.0 × 5.5 m, the smaller 1.2 m × 2.0 m. They were on the south-west corner of the promontory in the centre of a group of three tent-borders.

Griper Roads — An excursion was made along the shore facing Griper Roads and tent-borders were found on stony promontories respectively 3 kilom. and 7 kilom. west of Germania Harbour. Three rings were found in each place, all except two on the furthest promontory possessing platform edges; and at the nearer site there was also a foxtrap.

Hansa Bay.

The shores of Hansa Bay itself are marshy. There is a low lying rocky promontory, however, which separates the bay from Pendulum Strait, and is about 3 kilom. long by 2 kilom. across at its junction with the higher ground. Three groups of tent-borders were found on the east shore of the promontory, facing towards Pendulum Strait:

(a) At the junction of the promontory with the higher ground. Two rings lay together on a ledge 4 m above sea level, both with well-marked platform edges. Two temporary meat depots were also found in the vicinity.

(b) Half-way along the length of the promontory, by the side of a stream running down from a small lake. Three rings, a large one with a well-marked platform edge, and two smaller ones with no platform edges, were found. There were also animal bones.

(c) On a low lying gravel spit at the north end of the promontory. Five rings, three having partly disappeared owing to erosion by the sea, were found here. None of them possessed platform edges. There was also a fireplace (fig. 9 a) open towards the west and 30 cms across.

Cape Neumayer.

The cape is a double point enclosing a small bay facing north. A group of tent-borders was found on the western point (a narrow spit with a small hill at the end); the sites were close together, forming an encampment on a cleared beach on the eastern shore of the spit facing the little bay.

There were seven borders close together with several meat stores and three fireplaces. Five had no platform edge; of the other two one was a large very well-made ring, 5 m across, with a platform edge formed by a low bank of gravel and small stones; and towards one end of this were several larger flat stones.

The surrounding rock is basalt as on the rest of the island, but scattered round the spit are some pieces of more brightly coloured gneiss and red sandstone; there was a decided tendency for these to have been picked out to form parts of the tent-borders.

Lars Jakobsen Point.

The point is a rough spit of land at the extreme south-west corner of Sabine Island. Eight badly-marked tent borders were found at intervals along the point. In many cases the borders were incomplete; none had a platform edge; and they all seemed of considerable age.

Two sites, however, were of particular interest; one was circular and 2.5 m in diameter, the other square and 1.5 m across. The outline of both, instead of being merely a border of rough stones, was formed by compactly built even stones, and the floor space was sunk. They were close together and appeared much older than any of the other tent sites, being almost obliterated by the loose stones of the beach. To some degree they resembled the built up squares on Bass Rock and Walrus Island.

Falsche Bay, Wollaston Foreland.

Investigations were made on the headland on the south side of the bay; and fifteen tent-borders were found at intervals over a distance of coast southwards for 2 kilom. or more. Except for a stretch of level beach 300 m in length on which were five lying together, all the formations were found, singly or in pairs, at small coves wherever there was a convenient landing place. On account of the rocky nature of the shore there was no vegetation, and all the tent sites were clearly marked. Most

of them had no platform edge, and were of small sized stones. Few animal bones were found.

One site was of particular interest (fig. 5). It consisted of an ordinary ring of stones with a rectangular annex of which a boulder of rock formed the south side. The diameter of the ring was 3.5 m; the platform edge was formed by a single long flat stone 1 m in length with a slight banking of gravel; and the doorway faced south and away from the beach. The annex measured 1.5 × 2 m.

In addition to the tent sites, several meat stores were found amongst the rocks; and there were two fireplaces on the level stretch of beach already mentioned.

Cape Wynn.

We closely examined the coast south of Falsche Bay, but found no other sign of habitation until near Cape Wynn itself, where there were several groups of tent-borders.

On a rocky promontory 2 km north of the cape were six badly-marked rings; they were on a sloping beach facing north-east and 5 m above the sea; and two only had platform edges. A few animal bones were noticed. A meat store and a small fireplace were also found here.

The main headland at Cape Wynn comes down to the sea in a precipitous cliff, and 800 m to the north is a second and lower headland about 30 m above the sea. To the north of the latter headland there is a considerable stretch of grass-covered ground sloping down from the hillside to the sea to end in low cliffs about 8 m in height; to the south is a low lying sandy beach between the lower headland and Cape Wynn itself. Tent-borders were found on both these stretches of shore. There were six, three with platform-edges, on the grassy slope to the north. Those on the beach to the south had been disturbed owing to European habitation and the exact arrangement could not be clearly made out.

An interesting and unusual formation was found on the raised ground of the lower headland about 40 m from the sea. This was a solitary square of stones 2 m in transverse measurement. There was a platform edge of flat circular stones, and at one end of this and in the back half of the square there was a small paved area. The diagonals of this square ran E-W and N-S, the entrance space being on the south west side. At the east corner of the square was a peculiar arrangement of brightly coloured stones, which I have attempted to shew in a diagram (fig. 10). A line of four flat stones overlapped one another along the E-W diagonal, the cornermost stone having two other stones, one on either side. These stones were of gneiss, quartz, and red sandstone; there were also two pieces of gneiss in the opposite (west) corner and another piece in the formation of the paved area mentioned; the stones of the rest of the

square were of basalt. All the brightly-coloured stones had been obviously picked out specially for purposes of decoration, the rock of the neighbourhood being basalt with only occasional pieces of the more

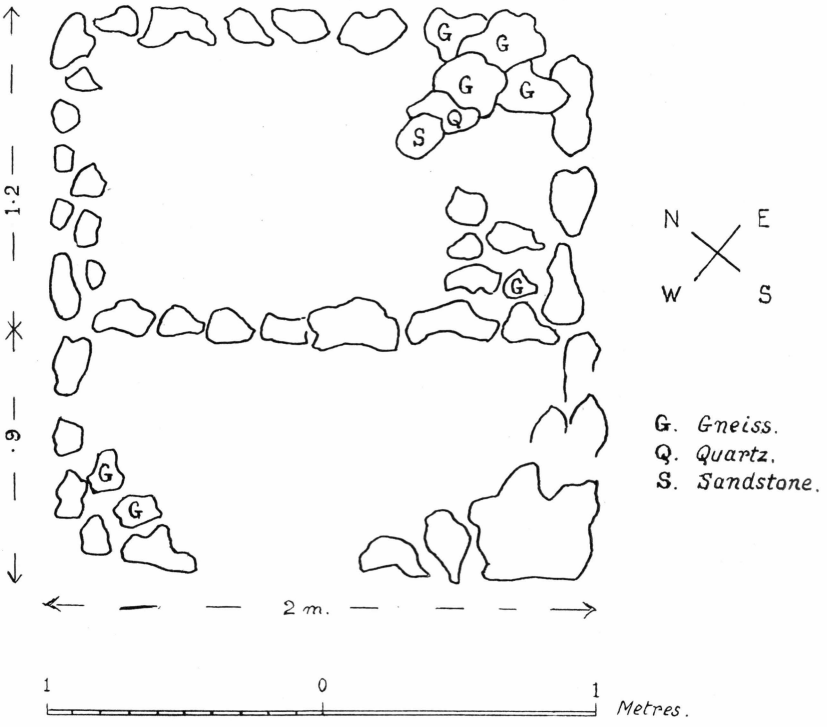


Fig. 10. Square Formation, Cape Wynn, Wollaston Foreland,

brightly coloured stones lying about. The arrangement of the stones of this square had been much more carefully made than in the ordinary tent-borders.

The above square was the only formation of this nature on the low headland itself and it lay at a considerable distance away from any tent sites. The only other remains on the headland were two meat stores, seemingly of permanent nature.

II. CLAVERING ISLAND REGION.

This region includes Clavering Island itself and all the district and shores investigated inside Gael Hamkes Bay, with Cape Borlase Warren and Jackson Island, respectively north and south of the mouth of the bay.

Gael Hamkes Bay ends in a large water space (generally referred to by our expedition as the Inner Bay)[1]), bounded to the west by Jordanhill. To the north the Inner Bay sends off an arm to meet Tiroler Fjord and so surround Clavering Island; and to the south it sends off another long narrow arm, Loch Fyne. Clavering Island itself is mountainous, as also is Jordanhill and the mainland to the west of each arm of the Inner Bay.

Ten days in all were spent in this region. A short landing was made at Cape Borlase Warren; Clavering Island was investigated at Cape Mary, and also along stretches of coast at the south point (Eskimo Bay) and at the west end (Cape Oetker); Cape Stosch and the whole of the east shore of Loch Fyne and part of the west shore were searched; a new fjord, Granta Fjord, was discovered and landings made along it; landings were also made on Jordanhill, the Finsch Islands, and on the south side of Gael Hamkes Bay; Jackson Island was completely investigated. The shores of Tiroler Fjord on the north side of Clavering Island were not visited.

The country on either side of the mouth of the bay (Cape Borlase Warren and Jackson Island) resembles that of Sabine and Little Pendulum Islands, the rock being rough basalt with very little vegetation. Within the bay, however, limestones, sandstones and shales occur, and the vegetation is more luxuriant; there are many grass-covered slopes for instance along the south coast of Clavering Island and the shores of Loch Fyne.

Herds of musk-oxen were met with on several occasions, but no bears were seen within the bay; hares were numerous, and seals were

[1]) Inner Bay was renamed Godthaab Gulf by the Danish Expedition in 1929.

plentiful on the ice-floes. Reindeer had been found by the German expedition on the south side of Clavering Island, but none were seen by us during the whole of our stay in Greenland, though their antlers were numerous in the neighbourhood of the Eskimo dwellings.

The last occasion on which Eskimo were seen alive north of Angmagssalik was by Clavering himself in 1823 on the south coast of Clavering Island. We were anxious to find this spot, and consider that it was probably at the place which we have called Eskimo Bay. We found altogether three large colonies of huts on the short strip of coast visited. The small bays here, sheltered between the smooth moss-covered rocks, make ideal sites for colonies; and I have no doubt that there are numerous other colonies along the parts of the south coast in places which we were unable to visit.

A letter from Nathorst to Mylius-Erichsen, quoted in Meddelelser om Grønland Vol. 44, p. 351, states "The fjords west of Clavering Ø: Here, probably, undisturbed Eskimo settlements will be found." This was found not to be the case. Our investigation was fairly complete, but, except for a few shelters and tent-borders on Cape Stosch, no traces of Eskimo habitation were found beyond Clavering Island.

Cape Borlase Warren.

This is a low-lying narrow rocky promontory pointing south-east; it has extensive sandy beaches on either side facing north-east and south-west respectively. A short landing was made, which allowed only a cursory inspection. All the remains found shewed signs of disturbance by previous investigators, and are regarded as of doubtful value.

On the south-west beach were two graves on a rocky ledge on the open beach; they had both been previously excavated, but in one of them some carpal bones and scattered vertebrae were found. Towards the east end of the beach and near the rocks was a recent European hut which seemed to have been built on the site of Eskimo winter houses.

Among the rocks of the promontory were two other graves, also previously excavated; in one was found part of a skull and a fibula, in the other two vertebrae, an ulna and some metacarpals. Two meat stores were also found among the rocks.

On the north-east beach were several meat stores and two mosaic formations. These latter are of considerable interest and were similar to formations found later at Eleonoren Bay and other localities. More minute accounts of these will be found elsewhere; for the two at Cape Borlase Warren a short description will be sufficient. They were found 30 m from the sea. They were adjacent and of almost exactly similar formation, their shape and measurements being shown in the diagram (Fig. 11). Especially notable features were: the passage way in

front (in one case one side being absent); the recesses in the side wall towards the front; and the presence of platform edges (in one formation there is an extra arm dividing the back space). The stones of the outlines and of the platform-edges were compactly placed (not irregular and loose as in tent-borders), and shewed every sign of careful design. These stones were of basalt, but each side of the enclosed area was paved with

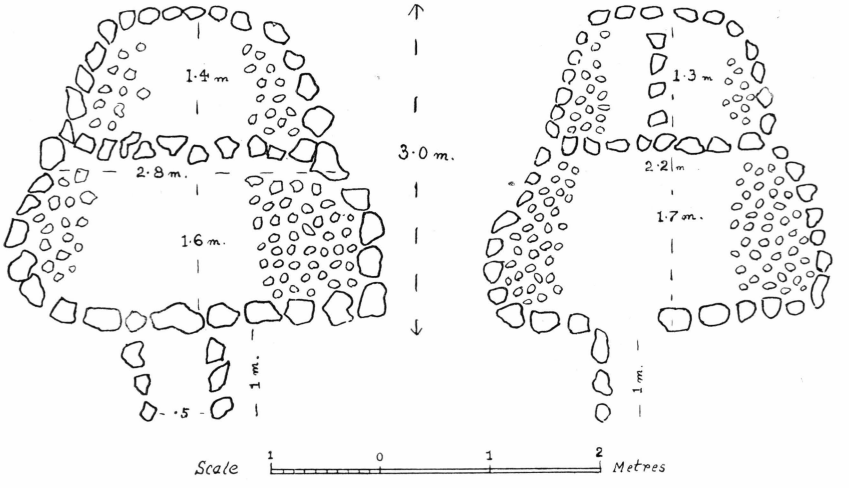


Fig. 11. Mosaic Formations, Cape Borlase Warren.

brightly-coloured small red and white stones, such as were found scattered over the beach; they were banked up slightly against the outlining stones.

Cape Mary.

A party landed here and found seven winter-huts; two of these appeared to be recent, but the other five were overgrown and were merely grassy mounds. Tent-borders were also reported, and two mosaic formations similar to those at Cape Borlase Warren.

Eskimo Bay.

The bay is situated half way along the south coast of Clavering Island and opposite Big Finsch Island. After some consideration we concluded it to be the place where Eskimo were seen by Clavering in 1823. It is a shallow bay facing south; there is a sandy beach rising up gradually to a grassy slope, where a large colony of huts was found. Both west and east of the bay the rocks go down steeply to the sea; the rocks of this part of the coast are smooth and easy to walk on with many grass-covered and moss-grown intervals of ground. The colony of huts was towards the east side of the bay; west of the grass slope on which

they stood was a stream and beyond that a stony slope on which tent-borders were found.

We found eighteen definite hut-sites of all variations in age. In the most recent the stone walls were clearly seen but the roofs had all collapsed. Generally the front wall had also collapsed inwards into the hut filling up the passage way, and in only one instance was the flat stone over the doorway still in place. The oldest huts on the other hand were merely grass-covered mounds with a gap in front representing the passage-way, there being little or no hollowing of the earth in the enclosed space. This condition was only well shewn in one instance, but the ground towards the east of the grass slope presented a broken up and moss-covered appearance as though it contained the sites of numerous other huts, definite traces of which had been obliterated. Most of the huts, however, were in a condition intermediate between these two extreme stages, appearing as rectangular sunken wells with occasional stones appearing in the grass-grown sides. Almost every gradation of age could be seen.

Three huts only, out of the whole colony, could be picked out as being in better repair than the rest, while one appeared as merely a mound. It was quite impossible to distinguish the three definite and separate periods of hut building claimed by Thostrup (Meddelelser, 44, p. 335). All stages between the most recent and the very oldest were present.

The huts were close together, the extent of the grass slope being small; they were about 20 m from the beach, and 3 m above sea-level. The entrance of every hut faced south and towards the beach. In five there was a small pit close to the entrance.

No peculiarities either in shape or in size were encountered. A recess in the side wall at the front of the hut was seen in five instances, in four cases to the right of the doorway on entrance; it was found both in the oldest hut site and in two of the most recent.

Unfortunately time did not allow of complete excavation of any of the huts or of careful drawings of the respective outlines. One was partly excavated, and a slate spear head found.

Numerous bones of animals were found in the vicinity: two musk-ox skulls were lying on the beach, and their bones were plentiful, as also were reindeer antlers.

A grave was discovered among the rocks a short way inland from the huts; and both femurs and fibulas, a humerus and clavicle and several small bones were removed in good condition.

West Eskimo Bay.

Immediately west of Eskimo Bay is a rocky point about 15 m above sea level, and west of this a second larger bay, which we have named

West Eskimo Bay. It is about one kilometre and a half distant from Eskimo Bay itself. This second bay is large and almost two kilometres across. It has a sandy beach, down to which runs a rough grassy slope; two small streams enter the bay at its head.

In addition to other remains eight winter huts were found here.

Five huts were together beside the more easterly of the two streams, and about 30 m back from the beach. Three of these lay one immediately in front of the other, and were interesting as they seemed to shew successive generations of hut building. The one to the front was the most recent, the wall stones not being overgrown and the flat stone over the doorway being still in place; the next one was in an intermediate stage; the hindermost merely a moss-covered hollow encircled by a mound. Thus it seems possible that the inhabitants, as soon as one hut became too dilapidated for habitation constructed another one in front of it. These huts were of the usual size. The most recent one had an overhung recess at the back, and its outline tapered towards the back, tending to a pear-shaped form.

The two other huts of this group were old sites appearing as depressions in the ground and lying 10 m south-east of the preceding huts; in one of them the stones of the back wall were still shewing. As in the other three cases they both faced south. In the north-east corner of each was a walled-in space, in one 1.5 m × 2 m, in the other 0.5 m square; and in the larger one we found bones of large mammals, making it probable that after the huts had fallen into disuse these parts were rebuilt and used as meat depots by the inhabitants of the more recent huts. Against the back (i. e. north) wall of one of these two latter huts was a collection of stones forming what seemed to be an open-air fireplace.

Three more huts were found on the west part of the bay. One was by the side of the westerly stream, 20 m back from the sea. Its state of preservation was intermediate, the sidewalls being practically overgrown. In front of it there were two permanent meat stores both in ruins. The two other huts on this side of the bay lay together further west and almost on the beach. One was recent and in good condition, the other merely a grass covered hollow and mound; the passage from the latter led directly on to the beach. In the more recent of the two there was a large recess to the right of the door on entrance, and to the west of this same hut was a small pit in which were found animal bones.

Three tent-borders were found in the west part of the bay, all of unusual formation. These were: (1) A large rectangle of small stones 4 × 5 m, with fireplace at south-east corner; (2) A square 3 m across, with a group of large stones at the south-west corner forming an interior passageway (Plate III); (3) A circular ring 3.8 m diameter, with a group of large stones arranged in two rows in the south part of the ring and

whose significance is unknown (Plate III). These last two borders lay together towards the west of the bay; near them was a well-built permanent meat store, square in shape internally, four large stones forming a foundation with smaller stones heaped on these.

A fourth tent-border was found on a point at the extreme west of the bay; it was square and had an arrangement of stones as an interior passage way, and at one corner also were some stones forming an enclosed space (see diagram Plate III).

The coast beyond this bay for four kilometres to the west was rocky, nothing being found except a fox-trap, a meat store, and the doubtful remains of a grave on a stony promontory about half way along.



Fig. 12. Winter-hut, Foxtrap Point, Clavering Island.

Foxtrap Point.

This point is a large bluff, about seven kilometres west of Eskimo Bay, rising about 100 m above the sea, and joined to the main island by a narrow neck of low-lying land. We named it from the fact that we found two foxtraps both in good condition, one at the summit, the other 15 m below.

There are two inlets close together on the west side; they face south-west, are sheltered by the rocks and have grass covered sloping beaches. Four hut-sites were found, two at each inlet.

At the more north-westerly inlet were two recent huts almost on the beach. Both were in good condition with the flat stone over the doorway in place. They lay at right angles to each other; the entrance of one faced south-west, the passage-way leading directly on to a ledge 1 m above the beach; while the entrance of the other faced south-east. In

each case the back of the hut lay towards rising ground. In one of them there was a square recess above the doorway, and signs also of a recess to the right. There were also traces of another very old hut site nearby.

At the south-easterly inlet there were two old huts lying side by side 15 m from the beach; they appeared as hollows with encircling mounds, occasional stones shewing through in one case. In this one also (fig. 12) there was a recess to the right of the doorway with a ring of large stones 1 m in diameter; in the enclosed space were found bones, probably seal and musk-ox. As at West Eskimo Bay, it seemed as if the old huts were later used as meat-depots by the inhabitants of the more recent huts, in this case those living in the neighbouring inlet. The second of the huts also had a recess to the right of the doorway. The ground in the neighbourhood had the pitted appearance as if containing sites of even older huts. There were also two badly-marked tent sites between the huts and the beach.

There were several meat stores among the nearby rocks, and two foxtraps as already mentioned, but no graves were reported.

Cape Stosch.

This is a stony promontory at the mouth of Loch Fyne; it has two main headlands about two kilometres apart.

On the easternmost headland were two shelters, and two permanent meat stores found on a wide ledge 20 m above the sea. One of the shelters had a square mosaic formation in front.

The west headland was formed by a grass slope going down to a stony beach. Four tent-borders, all ring shaped, were found close to each other, the arrangement being peculiar. One of the four was merely a badly formed semicircle; and on its north-west side (i. e. towards the beach) was a square area 1 m across paved with small red and white brightly coloured stones, and with three large stones forming a fireplace open to the north-west. In one of the other rings also there were two collections of these same bright stones.

Finsch Islands.

A landing was made on Big Finsch Island by a surveying party. Winter huts and other remains were found in an inlet on the north coast on a level grass stretch stated to be 30 m above the sea.

There were seven huts in all, old sites mostly, though two were in good condition. The colony was peculiar in that the passage way of many of the huts opened towards the north; there was a ridge of ground however between the huts and the beach, sheltering them from this

direction. I did not see the colony myself and so am not able to give full particulars.

Several meat stores, two tent-borders and a foxtrap were also found.

Jackson Island.

Fifteen tent-borders were found, all on the west coast, or western part of the south coast. For the most part they had the appearance of temporary settlements with no platform edges. A collection of three on the west coast were the only ones with any aspect of permanency; they were the only ones also where animal bones were found; and one had an arrangement of stones to form an internal passage way (see diagram Plate III). No meat stores or other stone remains were found on the island.

III. HOLD WITH HOPE REGION

Hold with Hope was the name given by Henry Hudson no doubt to the conspicuous and mountainous promontory of land at the southern part of the peninsula bounded on the west by Loch Fyne and Mackenzie Bay; it is connected to the mainland by a low lying strip of land between these two pieces of water. In this region I have also included Holland Island and the coast farther west as far as Cape Franklin at the mouth of Franz Josef Fjord.

My own surveys consisted of separate landings for a few hours each at Holland Island, Cape Broer Ruys, the head of Mackenzie Bay, Cape Bennet and Cape Franklin. The coast between Cape Franklin and the head of Mackenzie Bay was explored by other members of the party. The region is typical of that of the sea coast elsewhere, though perhaps not quite so barren as further north. The shores of Mackenzie Bay are low lying and grassy with sandy beaches, but the coast at Cape Broer Ruys and at Cape Franklin is rocky and mountainous.

Remains in this district had been reported by the German observers and by Nathorst. As might be expected, our chief finds were tent-borders, the largest colony being on the south coast, west of Cape Broer Ruys. At Cape Franklin some unusual formations were found. On the whole, however, the remains in this district were sparse.

Holland Island.

The only remains were a small colony of tent-borders and horseshoe shelters — 6 formations in all — on the rocky beach of an inlet at the south-east corner, sheltered from the north by cliffs. The formations were all close together, the outlines well preserved, but with the stones overgrown with lichen. There was a well-built meat store; but only a solitary seal bone was found.

Cape Broer Ruys.

West of the cape, i. e. towards Mackenzie Bay, there is a long narrow stretch of stony shore which interrupts the cliffs of the coast; it is raised

about 10 m above sea level, and faces south, being sheltered by the mountains to the north. Here, below a cliff of volcanic ash beds, there was a collection of tent-borders and other structures, situated at intervals over a distance of 800 m.

Thirteen tent-sites, as well as other formations, were found. The colony bore a resemblance to those on Walrus Island, but was smaller. Large stones were used in the formation of the borders, and nearly every one had a platform edge. The remains all seemed of considerable age (comparable to the Lake Colony on Walrus Island), but they had every aspect of a more or less permanent occupation. There were certain noticeable points in the tent sites. Two had a close-set double border of stones, and a somewhat similar condition was seen in several others. It seems perhaps that the same site has been used year after year for a tent, sometimes with the same stones, but often with new ones added to the border. Another site was of interest as being a large oval (5.2 m × 4.5 m) within which was a peculiar hook-shaped formation forming an enclosure; the arm of the hook connecting with the outer ring was of small flat stones, the other end of larger ones. There was also another horseshoe formation of large stones within this same border. In yet another tent site there was a square shaped inlet in the platform edge (Plate III), similar to that seen later in huts excavated at Kjerulf Fjord. Another, with a definite passage way, shewed a collection of several large stones projecting from the edge at the side directly opposite the entrance passage (Plate III).

There were several large built-up meat depots; these were mostly in ruins, probably due to the basalt stones which formed them being round and liable to slip out of place very easily. One in particular, with a foundation of four large stones, was of interest in that it contained a double chamber, each square of this being formed in the usual manner.

Only a few animal bones were found near this colony, chiefly of seal, with an occasional whale bone. The scarcity of bones is attributed to the colony being in all probability a very old one.

Mackenzie Bay.

The shores are low-lying and often marshy. We landed east of the head of the bay, and different parties traversed the whole coast line as far as Cape Franklin.

A colony of eight tent-borders was found on a small stretch of rocky shore at the head of the bay. The stones were irregular in arrangement; only two of the borders possessed platform edges, and both were incomplete. No bones were found; and the colony seemed an old one, the stones being overgrown with lichen.

Two meat stores, sheltered among rocks, were found to the west

of the colony; they were both in ruins, but one of them shewed well the third type of meat-depot structure (see Preface).

A solitary tent-border of widely spaced small stones was found 1 kilom. east of the above colony: and near it was a temporary meat store.

Nothing was found along the west side, between the head of the bay and Cape Bennet. The latter is a blunt rocky headland with two tent sites about 0.7 kilom. apart.

Between Cape Bennet and Cape Franklin a colony of four tent-borders was discovered half way between the two points, and some distance from the beach.

Cape Franklin.

This is a rocky headland, averaging in height 20—40 m above the sea, with steep mountains in the background. Both on the south and east sides of the cape there are numerous narrow inlets with stony beaches down to the sea. Only two of these were investigated in the short time at our disposal; a tent-border and a shelter were found in one, a tent-border and a fox trap in another. I have no doubt that in many of the other inlets remains would also be found.

Practically all our time here was taken up in the inspection of a collection of very unusual formations discovered on an open stretch of level ground on the east side of the cape. This was a raised flat gravel beach about 150 m long and 30 m in width running longitudinally north and south; it lay close to the end of the cape about 10 m above the sea and 100 m back from it, the ground sloping down gradually. The position, though surrounded by rocks, was exposed, for the latter were at no higher level than the beach itself and afforded no shelter. The remains found were entirely different from any discovered elsewhere and I have thought it worth while to describe each of them in detail. There were seven main formations lying close to each other in a line running in the longitudinal direction of the beach, that is, north and south. Starting from the north end, these were:

(1) A semicircle, 3.5 m in diameter; the arc was formed by flat stones of double width, the border so formed being 0.6 m wide and banked up, especially towards the east where the ground tends to slope away. The concavity was towards the west where a single line of stones closed it in.

(2) 15 m south of (1). A formation whose edges formed three sides of a parallelogram open towards the north; the greatest length measured 3.3 m, the greatest breadth 1.2 m. The enclosed space was hollowed out below the level of the ground, the floor sloping down from

the ground level in front (i. e. the open side) towards the back where it was 0.3 m below ground level. The sides were formed by a wall of flat stones the top of which was level with the ground; the back wall was somewhat collapsed; and at the south east corner were three large pieces of flat stone which gave additional shelter.

(3) 8 m south of (2). A badly marked ring, 3.3 m in diameter. The centre of the enclosed space was slightly hollowed out, and there was a lamp place at the west side.

(4) Adjacent to (3). A circular formation, 3 m in diameter and



Fig. 13. Formation at Cape Franklin.

paved with flat stone over almost its whole area. There was an outer ring of two or more widths of stone; and the space inside this was 1.5 m in diameter and the ground hollowed out; the north part of this enclosed space was a clear square, 1 m in diameter, but the rest of the space was paved with stone.

To the east of (4) was a small meat-depot and to the south a fireplace.

(5) 10 m south of (4) was a large ring 4.2 m in diameter, without platform edge.

(5 a) West of (5), i. e. away from the beach, was a ring of stones 2 m in diameter, the enclosed space being depressed.

In front of (5) were two other depressed circular areas about 2 m in diameter, but without rings of stones.

(6) Immediately south of (5) was a sunken many-sided space (Fig.

13). The walls were formed by a single row of flat stones, their tops level with the ground. The floor space was 0.2 m below the ground level; there were two intersecting partitions running across the centre, one formed by flat stones lying on their faces, the other by larger slabs of flat stone on their edges and projecting from the ground.

(7) 8 m south of (6) was a ring of stones 3 m in diameter, the enclosed space being hollowed out.

East of (7) was a fireplace and the ruins of a foxtrap.

(8) Further along the beach to the south was another formation resembling (6), but the condition was bad and the arrangement not so clear. The walls were similar but built up with layers of flat stones on their faces (instead of on edge as in (2) and (6)).

To sum up, the peculiarities of this colony were: the depression below the ground of the enclosed space of each of the formations; the arrangement of stones in (4); and the peculiar formations (2), (6) and (8). The only other formations found by us comparable to these are the sunken tent-sites on Walrus Island and the Bass Rock. The Cape Franklin formations however were in a much better state of preservation than these others; and perhaps they shew the original arrangement of such structures, their good preservation being due to their not having been interfered with subsequently.

IV. FRANZ JOSEF FJORD REGION

In this region I include the shores of the main fjord along its entire extent, and also such parts of its branches, Muskox Fjord, Geologist Fjord and Kjerulf Fjord, as were investigated.

The fjord is probably the longest in Greenland being almost 180 kilometres in length from Cape Franklin to its head. The shores are low lying towards the mouth and slope up to mountains of medium height; but beyond Cape Weber they are formed of steep and often vertical cliffs, and seemed unsuitable for habitation except in one or two places; the bordering mountains gradually become higher towards the head of the fjord where they are 1500—1700 m in height.

Twelve days were spent in Franz Josef Fjord. Colonies of huts had been reported by Nathorst at Cape Weber, Renbukten (Isfjord) and Kjerulf Fjord; we were unable to visit the second of these localities, but confirmed the existence of huts at the other two and also discovered a large new colony at Eleonoren Bay. Lieut. White and myself were able to spend two days excavating at Kjerulf Fjord; and huts at Eleonoren Bay and Cape Weber were also excavated.

During the whole of our stay in this region we had fine weather and uninterrupted sunshine. As regards vegetation, the conditions in the outer parts of the fjord resembled those already described for the inner Clavering region. Near the head of the fjord, in the sheltered parts of Kjerulf Fjord, the luxuriance of the vegetation was surprising, the Arctic Willow and Birch growing 0.3—0.4 m in height; grass was thick and plentiful, and there were numerous bilberries (*Vaccinium*) on the slopes.

Herds of musk-oxen were seen in considerable number in the outer parts of the fjord e. g. on our landings at Muskox Fjord and at Eleonoren Bay. We encountered no reindeer; their antlers, however, were plentiful in the vicinity of the winter-huts, and a piece of reindeer hide was found in a meat store at Eleonoren Bay. A bear was met with in Kjerulf Fjord, unexpected at such a distance from the sea; and seals were seen occasionally on the ice-floes. Along the banks of Kjerulf Fjord ptarmigan were plentiful and were comparatively easy of approach.

I begin the description of our observations in this region at the head

of the fjord, starting with the Kjerulf Fjord colony, this being most convenient for descriptive purposes, as it was here that we first undertook the excavation of winter-huts[1]).

Kjerulf Fjord.

The fjord is narrow and well sheltered, being about two kilometres in width, with mountains approaching 2000 m height on either side. The main direction of the fjord is north and south; on the east side the grass slopes lead up gradually to the mountain tops, while on the west the steep sides of Riddarborgen and other mountains come straight down to the fjord.

Nathorst had reported a colony of huts on the east bank of the fjord near its junction with Franz Josef Fjord. Four houses were found here, lying together about 20 m back from the fjord and 5 m above sea level. They were situated on the north side of a wide rough stony stretch formed by the delta of a stream. They were directly under the lee of a steep grass-covered slope, the north wall of each hut being practically built into the slope. The vegetation at this corner was even more luxuriant than that seen elsewhere in the fjord, the turf being thick and there being a profuse growth of Arctic Willow. It was an ideal situation for winter-dwellings, there being excellent shelter from both north and east; the west side faced the fjord, while from the south the rays of the sun could be received throughout most of the day.

The huts were practically adjacent in a diagonal line, one lying behind and somewhat to the side of the other; the two most southerly ones were side by side. The doorways in every case faced west towards the fjord.

I will start by a short description of each hut in turn, and then give further details of the one which was excavated.

Hut I. The most northerly hut was a large one in excellent condition. The roof had fallen in, and the well space was covered by a thick overgrowth of turf. The walls, however, were very little overgrown being, with the exception of the north wall, in good condition; the latter, which had been built against the hill, had collapsed inwards owing to the downward thrust of the ground. The hut was rectangular in shape, the front wall being slightly crescentic in outline, but none of the corners

[1]) In addition to the localities visited in 1926, mention may be made of a further hut colony found in the Franz Josef Fjord Region by the Cambridge Expedition in 1929. This was near the mouth of a small valley on the east side of Suess Land, spoken of on the expedition as Driftwood Valley, and about 3 miles S.W. across Antarctic Sound from Cape Mohn, There was a group of three huts some distance back from the beach, one of which was partly opened up; there were also mosaics, both large and small; and at least one grave on top of a gravel terrace south of the huts,

were rounded; there was no recess present. The passage was in good condition, and unblocked; at its entrance into the hut was a well below the level of the floor. The flat stone over the doorway was in place, and the front wall in good condition.

Hut. II. Behind and to the south of Hut I. Though apparently older than Hut I its condition was still moderately good; the stones of the side walls were visible, but the entrance well was much overgrown (Fig. 14). The corners of the hut were rounded off, and the back narrower



Fig, 14, Hut II, Kjerulf Fjord, from back,

than the front, both front and back walls being curved, convex outwards; there was a recess in the lower part of the side wall to the right of the doorway. The passage was obviously visible from the outside; in its outer part the roof was in place, but it had collapsed at the entrance, and the usual flat stone over the doorway was obscured by overgrowth; on looking up the passage from without only a mass of debris was seen.

The two other huts lay side by side behind and to the south east of Hut II. They looked considerably older than I and II, but they still constituted well-formed hut-sites, and the semblance of age may well have been more apparent than real, due to the thickness of the overgrowth in this locality.

Hut III. Stones of the wall still shewed in places through the overgrowth; the walls were obviously still in place and the outline well

marked; the latter was rectangular, the corners not being rounded. The front wall had fallen inwards, and no passage way was obvious.

Hut IV. The condition of the side walls was the same as in III. The outline was pear-shaped, however, narrower behind than in front and rounded. The outer walls and roof of the passage way had fallen in, so that the flat lintel stone was not seen, but the site of the passage was still obvious.

Measurements of Huts:

Hut	I	II	III	IV
Length (greatest)	3.1	2.9	2.3	2.5
Breadth (greatest)	2.1	2.0	1.4	1.6 (front)
Length of Passage	3.0	2.8	—	2.6

Excavation of Hut I — we were able to do this completely and carefully, making it our object to discover the floor of the hut as it originally existed. Our efforts were well rewarded. I append a diagram of the completed exacavation (Fig. 17) to which I refer throughout the text. The photographs (Fig. 15, 16) shew the hut after excavation.

The true floor of the hut was only reached after digging through a thick layer of turf and removing numerous stones. These stones were probably from the roof which had collapsed; it is worth noting that there were numerous flat stones on the bank alongside the hut. This, coupled with the fact that no wood was found during the first part of our excavation, tends to suggest that the roof of the hut may have been dismantled by the inhabitants before their final departure, the wood beams of the roof (which must have been present) being worth removal; in this process of dismantling some of the stones may have been thrown on the floor of the hut, others on the bank at the side. On the other hand it is more probable that the stones at the side may have been thrown there by members of Nathorst's expedition.

During the first part of the excavation small animal bones of every nature were very numerous. (This was a feature found also in all the other huts subsequently excavated). No object of interest however was found in the hut at this stage.

The north wall was in a partly collapsed condition and was supported at the back by two large stones which could not be moved; this corner could not be interfered with but the whole of the rest of the area was cleared successfully.

The passage entered below the level of the floor, and formed a well (K) in the front of the hut, 0.6 m deep at the entrance; the flat lintel stone was at the same level as the floor proper, as shown in the longitudinal section (Plate II).

The front part of the floor was paved on either side by flat stones

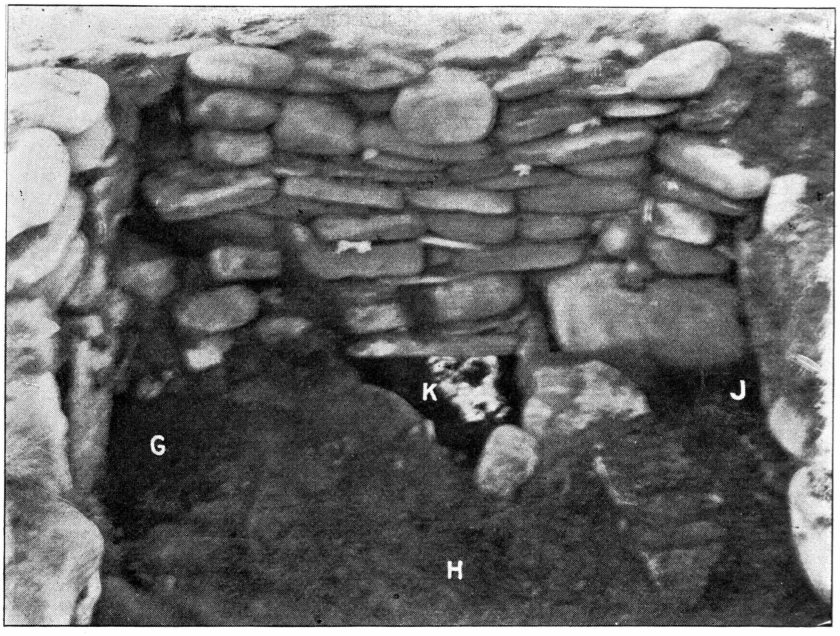


Fig. 15. Hut I, Kjerulf Fjord. View towards front after excavation.



Fig. 16. Hut I, Kjerulf Fjord. View towards back after excavation.

forming a smooth surface sloping slightly downwards to the middle, where there was a straight pathway of gravel (H) leading from the entrance well to the platform at the back.

At the south-west corner bones were very numerous during the excavation and the earth was hard and charred; finally an oval depressed

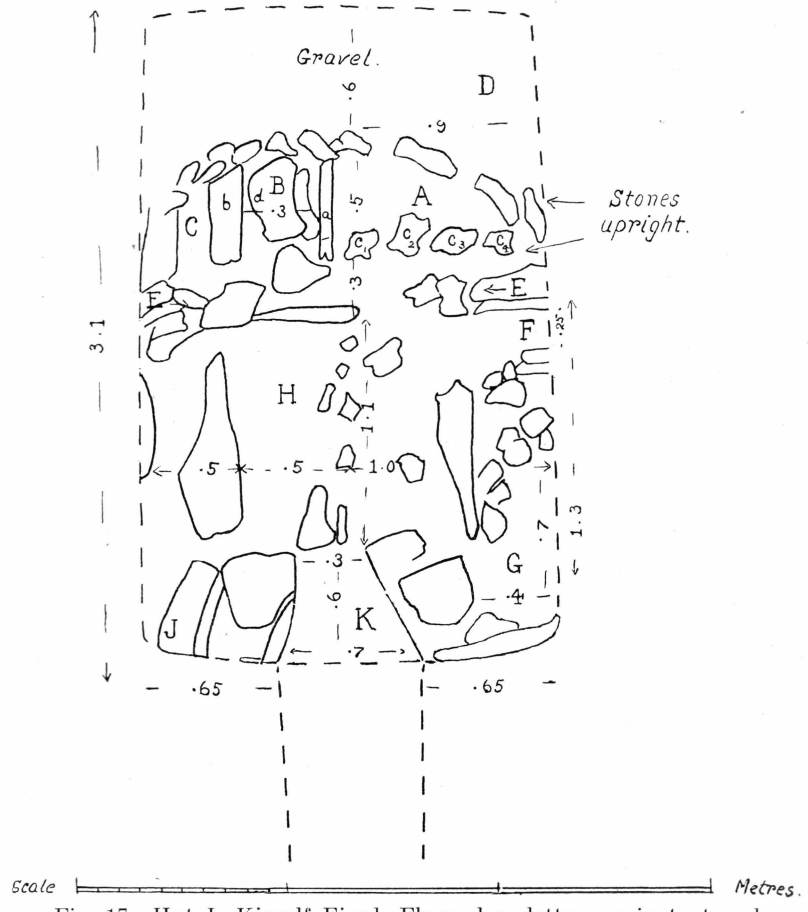


Fig. 17. Hut I, Kjerulf Fjord. Floor-plan, letters as in text and figs, 15 and 16.

space, ringed in by compact stones, was dug out; the surface was smooth, hard and hollowed out in basin fashion (G). At the other front (north-west) corner numerous bones were again found and there was a small square recess (J) at floor level; no object of interest was discovered. On the south wall was a narrow recess (F) artificially formed between the raised stones of the platform edge and another flat stone on edge jutting out from the wall; the earth here was charred, but no objects were found, and it was lampplace.

The back part of the hut was the platform, the arrangement being somewhat intricate and interesting. A compact line of stones (E→ ←E), ran across the middle of the floor, forming the platform edge; these were flat stones set on edge, sunk in the ground, and slightly raised above the level of the floor. The whole of the back of the platform was of gravel, this gravel part being bounded in front by a semicircle of stones concave towards the front and similar to those of the platform edge.

Between the concave edge of the gravel and the platform edge lay a space in which, after excavation, a regular arrangement of stones was made out (see diagram). The interstices were filled with loose earth (which could be scraped away with the finger, in contrast to the usual hard earth difficult to remove) and wooden debris to the depth of 15 cm below the gravel platform and the front part of the floor; further down frozen earth was met with.

The earth between the stones in this area was removed, and the stones themselves also removed temporarily, then replaced in position and a photograph taken (Fig. 16). Especially interesting were: two slabs of stone *a* and *b* enclosing the space B wherein were several flat stones lying one on top of the other; also the line of stones c_1—c_4, together with the gravel enclosing the space A. There was another space C on the other side, which could not, however, be completely made out, due to the partially collapsed condition of the north wall. The original level of the upper surfaces of all these stones was much the same for each one, being slightly below that of the platform.

All these spaces A, B and C and the space in front as far as the platform edge were fully excavated. The earth in the latter space was not quite so loose as in the others. Everywhere there were small regular planks of mildewed wood, mixed with the earth and often wedged in between the stones. It is interesting that here, in the loose earth and between the stones, was the only place where any material objects were found; they were most numerous towards the front of space B. The finds included: a harpoon head with iron blade; an arrow head; a bird figure; a piece of sledge shoe; a piece of fire drill; a toggle of ivory; and the forepart of a toy harpoon. The gravel part of the platform was excavated at D but nothing found. As I have described in the Preface the front part of the platform was no doubt formed by wooden planks supported by the stones. I have no doubt that the various objects found had been mislaid by the former inhabitants owing to slipping between the cracks of the wood and stones.

The passage way was in excellent condition, and it was only from near the entrance to the hut that debris had to be cleared away before one could crawl through. The sides of the passage and the roof outside were formed by broad stone slabs; further inside the roof ap-

peared to be supported by beams of wood and reindeer antlers; large pieces of wood were also found along the sides of the passage.

The actual entrance of the passage into the hut has already been described. This entrance well was excellently made, the sides being straight and formed of vertical stone slabs, with the stone flooring compactly arranged; to the left of the entrance was a beam of wood helping to support the floor of the hut from subsidence. From the well the floor of the passage dipped slightly and then ascended to its exit, which was on the same level as the floor of the hut.

There was no time for complete excavation of the passage; we made a beginning, however, and found two shallow steps where the floor of the passage ascends to its exit; each step was formed by a line of small stones.

A word may be added about the immediate surroundings of the colony. As in the case of other colonies, bones of animals and pieces of reindeer antler were very numerous in the immediate neighbourhood of the huts. There were several meat depots at varying distances from the huts and situated along the edge of the stony delta of the stream which lay to the south; these were all well-built with large stones.

On a high bank overlooking the stream 300 m inland were the ruins of a grave; other formations resembling graves were also seen in the vicinity.

On the opposite side of the stream delta were the ruins of an old foxtrap; and leading along the face of a mud cliff, which here overlooked the fjord, was a well marked footpath — our approach to the colony had been from this direction and it was this path which first gave us the indication that remains might be found here[1]).

Eleonoren Bay.

This is a wide bay on the north side of Franz Josef Fjord, with a breadth of almost 2 kilometres across its mouth. A stream enters the head

[1]) The hut colony at Kjerulf Fjord was visited a second time by the Cambridge Expedition in 1929. On this occasion Mr. Varley and Dr. Whittard made further excavations, and more particularly in Huts III and IV, Hut III was rectangular; measuring 2,3 m. by 1.4 m. At the back, where a sleeping platform would have been expected, were two polygonal pits side by side, about 0.7 m in diameter, and about 0.3 m in depth. These two pits were bounded by vertical slabs of stone, and contained bones with a matted surface of twigs at the bottom. The space between the entrance and the two pits was filled with gravel. Hut IV was oval in shape, and the passage way was better preserved than in Hut III. The platform was of gravel, and there was a well marked platform edge of stone slabs; there was also a small recess in front of the platform edge towards the side. In addition a pit was also examined lying 8 m N.W. of Hut I, and was thought by Dr. Whittard to be a refuse hole rather than a meat store,

of the bay, running down a wide low-lying valley; the slopes of the latter are grass covered, and there is a wide shingle beach around the bay. A hitherto undescribed colony, chiefly huts, was found on a narrow grass slope on the raised ground some way east of the main stream; it lay immediately under the lee of the mountains to the north and north-east. Nothing was found on the west side of the bay, or at the head.

There were ten huts in the colony, all situated near the beach, on the grass-covered raised ground already mentioned. They were all fairly near each other, but in three main groups. A small stream ran between the most easterly group and the other two (Fig. 18).

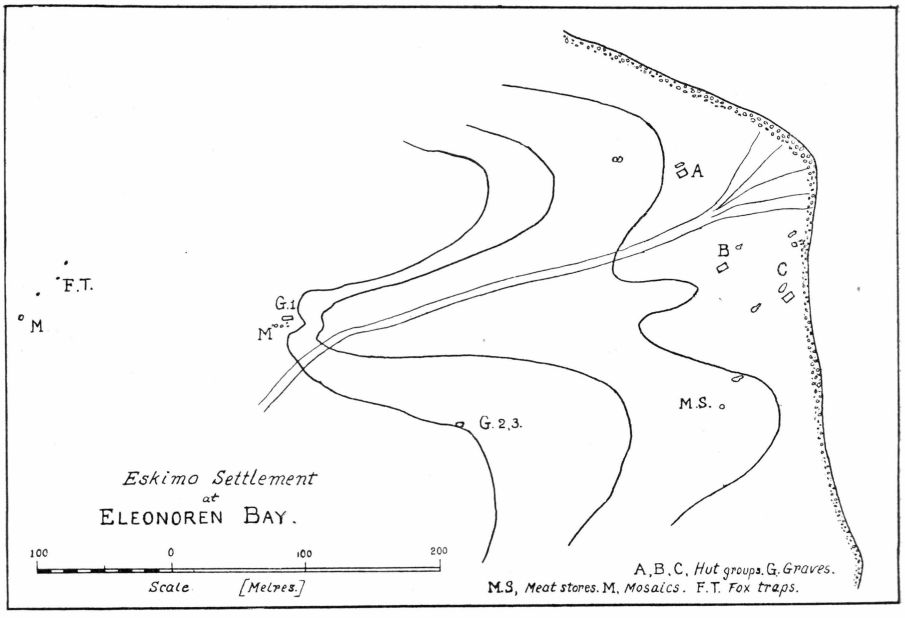


Fig. 18. Eskimo Settlement, Eleonoren Bay.

Group A. Two fairly recent huts in good condition and lying side by side; they were 50 m from the beach and about 5 m above sea level. We excavated both huts (see below).

Group B. Four huts close together and a short distance west of Group A. Three of the hut sites were old; while the fourth was in an intermediate overgrown stage, but with the stones of the walls still shewing. I include a photograph (Fig. 19) of one of the three old sites, for they were somewhat different in nature from those seen on Clavering Island; there was no sign of a mound, and the site was marked merely by an area of hollowing, where had been the well and passage way of the hut. This difference in appearance may perhaps be due more to variation in local conditions than to different hut structure, the ground

at Eleonoren Bay not being so soft as at Eskimo Bay on Clavering Island. One of these old huts must have been of unusually large size, as the hollow measured 4 m in length by 3.5 m in breadth. The side walls of the more recent hut were well-built. The outline inclined to pear-shape narrowing towards the back; the back corners were rounded, but the front wall was straight.

Group C. Another group of four houses adjacent to Group B and on the edge of the beach. Here again there were three old hut sites and one recent hut in good condition. Of the old sites, one was in the same



Fig. 19. Old Hut Site, Group B, Eleonoren Bay.

condition as that photographed in Group B; the other two were still older and were merely rectangular depressions in the ground. The recent hut was in excellent condition, though one side wall had fallen in; the well of the passage entrance was visible, and the flat stone was in place over the doorway. This hut was small in size, measuring only 2.2 m long × 1.5 broad.

There was yet another depression marking an old site, 15 m west of Group C, but without passage way.

Pits, as already described at Eskimo Bay, were seen in several cases outside the huts; there was a large one for instance between the two huts of Group A. I have no doubt these were the meat stores, as bones were found in quantity on excavation. The bones of animals and

cast-off fragments of reindeer antlers were numerous all round, and especially so in the vicinity of Group A.

There was a fireplace (Fig. 9 (b)) open to the south, 10 m west of one of the huts of Group B.

In every hut without exception the entrance faced south and towards the fjord. The outlines of the four recent huts are shown on Plate I, and conform to the usual types.

Excavation of Huts of Group A. These were both rectangular in shape and in good condition; they lay 3 m apart, and their longitudinal axes were parallel. The more easterly hut (A 1) seemed if anything more recent than the other (A 2).

A 1. The doorway was collapsed on one side, but the well of the passage entrance could still be made out. Several large wooden beams together with flat stones and numerous bones were dug out during the first stages of excavation; and it seemed almost certain that in this case the roof had collapsed into the hut. Several objects of interest were found e. g. harpoon heads, needles, and a wooden doll. It was unfortunate that in this hut, owing to our evident lack of care, the floor proper was not made out; we had in fact dug down to frozen ground before realising the position of the floor level. It was interesting to note that the stones used to form the side walls were much larger in the lower courses than those in the upper part. We partially excavated the sides of the passage way, but only bones were found.

A 2. The back and side walls of the hut were shewing signs of collapsing, but the condition of the front wall was good and the flat stone over the doorway was in place. The passage entered below the level of the floor, forming a well at the entrance as already described in Hut I at Kjerulf Fjord, but in this case the well was smaller and not so deep. The exact floor of the passage could not be made out, as it was obscured by frozen debris which we did not have time to remove. The flat stone over the doorway was well above the level of the floor.

Complete excavation revealed the hut floor; but except in general principle, it was different from that of the hut already excavated at Kjerulf Fjord. The floor sloped slightly upwards towards the back to the platform of gravel and hard grey clay; in the front part however the floor had an uneven pavement of large flat stones over its whole area, the interstices being filled in with gravel and clay.

There was a low shelf of gravel at the front of the platform, but except towards the east side there was no definite platform edge of stones. In the front of the platform and rather towards the east was a small recess; it was 0.25 m square and its floor was 0.15 m below the level of

the platform and at the same level as the paving in front of the platform; both the floor and the side walls of the recess were formed by single flat stones. The recess was filled with loose earth, bones, and much wooden debris; as found it was covered by a large flat stone.

In the south-west (front) corner of the hut the earth and bones found had the appearance of being charred or possibly blood sodden.

Many objects were discovered e. g. three harpoon heads, a slate blade, and part of a drill.

The entrance of the passage into the hut has already been described; the side walls of the passage were formed by flat slabs of stone, the roof by flat stones, and in front by a large piece of a whale bone which we removed; this was the only occasion on which we found a whale bone used in the construction of a hut.

I append the measurements of these two huts; they were both of ordinary rectangular shape, but A 2 was narrower at the back than at the front.

	Length	Breadth	Length of Passage
Hut A 1	2.0 m.	1.6	3 m.
Hut A 2	2.2 m.	1.7 m (front) 1.0 m (back)	3 m.

The Eleonoren Bay colony was also particularly interesting on account of the mosaics found there. Unlike remains at some of the other colonies, these were in an undisturbed condition, and there seemed to have been no previous European investigators.

The shore west of the huts and almost as far as the large stream at the head of the bay was formed of terraces or low banks, but in two or three places these were interrupted by narrow low-lying stretches of stony beach; on one of the latter a tent-border was found and on another two meat stores.

The main terrace ended 30 m east of the main stream; the edge turned away from the shore at a right angle and ran directly away, so that the terrace overlooked the lower lying, stony delta of the stream. The terrace or bank itself was some metres above the delta, and its surface was a level smooth stretch of gravel. On the edge of that part of the bank where it turned away from the shore and overlooked the stream delta two mosaic formations (Group I) were found similar to those at Cape Borlase Warren; behind these again were two smaller formations (Group II). Close by there was also a trodden path running up the side of the bank from the stream delta.

The two larger mosaics (Group I) were similar in main features to those at Cape Borlase Warren. The stone outline was compactly and

carefully built, the stones being embedded in the ground; there was a gap in front, apparently an entrance way. The enclosed space was paved, at the back with pieces of flat slate, in front on either side with white



Fig. 20. Mosaic Formations, Group I, Eleonoren Bay.

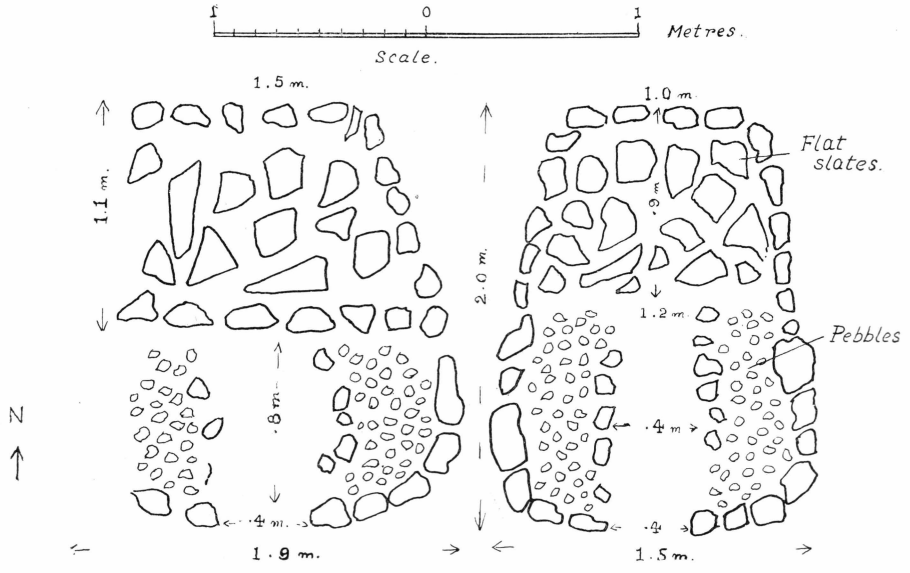


Fig. 21. Mosaic Formations, Group I, Eleonoren Bay.

rounded pebbles banked up slightly with earth; between the two groups of pebbles was a clear passage way running back as far as the slates. The two formations lay side by side, the axis of greatest length being north-south; the front faced south and towards the fjord. The more

westerly one had partly disappeared due to subsidence of the bank; and it also differed by having a roughly formed platform edge.

The two smaller formations (Group II) lay 10 m behind the larger



Fig. 22. Mosaic Formations, Group II, Eleonoren Bay.

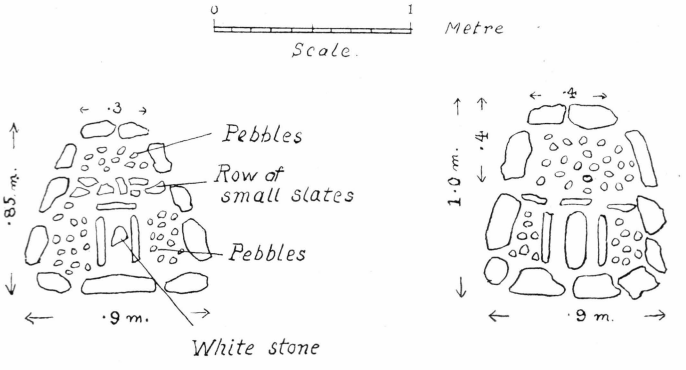


Fig. 23. Mosaic Formations, Group II, Eleonoren Bay.

pair. Like the larger ones they also lay close together and with axes parallel. They had a compact stonework and were paved with round white pebbles at the back and sides. In the front of each was a space enclosed with pieces of thin slate and containing a large white stone embedded in sand; in one case this stone was oval and smooth, in the other roughly pyramidal and pointed. Between the enclosed space and the pebbles at the back was in each case a row of small pieces of slate.

I include photographs and diagrams with measurements (Figs. 20, 21, 22, 23) of these four formations. I have described them in detail because I consider that they may be of more than incidental importance; the discussion of their possible significance, together with that of similar formations found elsewhere has been given in the Preface.

Inland from the hut colony the ground slopes up at first gently then more steeply to a mountain 600—700 m high. Up to a height of 50 m the ground is stony but even; after that it rises in an irregular series of ledges, generally 3—5 m in height.

The small stream which runs through the colony forms a depression as it descends from the mountain side; to the east it is bordered by a steep bank 10 m high. On this bank an undisturbed grave (G 1) was found, lying 400 m from the beach and about 25 m above sea level. The grave was a hollow cairn of stones built entirely above the level of the ground (Fig. 7); the stones forming the roof were supported by wooden beams



Fig. 24. Small Mosaic Formations, Eleonoren Bay.

running diagonally. We removed the roof and found a complete skeleton in a doubled-up position; the legs were slightly displaced, and a stone had fallen crushing the left arm; otherwise both skull and skeleton were in good condition (Fig. 8). The skeleton was removed, and is now in the Museum of Archaeology and Ethnology at Cambridge. This particular grave lay among loose stones, and its main axis was N. E.—S.W.

There was a well-formed semicircular shelter of large stones near the grave; it was 1.5 m across and 1 m deep and faced south. A tent-border and a foxtrap were found a little further away.

About 10 metres further along the bank numerous small mosaic formations were found. These were completely different from the mosaics already described, being much smaller and less elaborate. They consisted of small squares, bordered by thin pieces of red rock and other coloured stones; and the enclosed space was paved with small white pebbles. A peculiarity of these mosaics was their regular arrangement, one set being

formed of five small squares (0.3 m square) and two still smaller ones (0.1 m square). There were two other larger squares (0.5 m square) side by side near this formation, and also occasional solitary ones. I include a photograph (Fig. 24) from which it can be seen that they were carefully inlaid in the stony ground; they were all of them much smaller than the elaborate formations described as Group I and Group II.

The west side of the small stream rose up rather more gently and here, 150 m west of the grave already described and 20—25 m above the sea, two other graves were found (G 2 and G 3). At first only a single stone structure was noticed; it was only when the roof was removed that the two separate grave chambers were revealed. Only a few scattered bones were found in G 2. In G 3, however, most of the skeleton was found, but with the parts displaced. The skull was at the head of the grave, half buried but in good condition; all the bones were of small size; the parts of the pelvis had not yet joined; the dentition of the skull was complete, but the third molars (wisdom teeth) had not erupted. I concluded that the skeleton was that of a young girl. Embedded in the earth, just beneath the chin, three ornaments were found.

The measurements of the three graves were: —

	External		Internal		Direction
	Length	Breadth	Length	Breadth	
G 1.....	2.0 m	1.0 m	1.6 m	0.8 m	N.E—S.W.
G 2.....			1.0 m	0.7 m	N.—S.
G 3.....			1.5 m	0.8 m	N.E.—S.W.

Remains were also found on several of the ledges on the already mentioned higher ground behind the hut colony. On one ledge about 200 m inland from the first grave (G 1) and 40 m above the sea were two foxtraps. Just below were two meat stores, one of which was in excellent condition being a large roofed-in hollow cairn similar to the type seen on Walrus Island; on removing the roof we found inside a large piece of well-preserved reindeer hide.

The ledge on which the foxtraps stood overhung for several feet, and there was a sheltered recess underneath. This had been almost completely closed in by a semi-elliptical wall of stones, and it made an excellent shelter; a gap had been left as an entrance at one end next to the rock.

On a ledge at a still higher level, 20 m inland from the foxtraps and 50 m above the sea, were two large mosaic formations similar to those found further west on the bank by the river. The ledge faced south-west and commanded an excellent view of the bay. These formations (Group III) were in outline and general appearance similar to the others (Group I, II), but the arrangement in the enclosed space was slightly

different. In the front part of each the arrangement of the pebbles was the same but not so regular; as regards the back part, there was no definite pavement, but flat pieces of slate were scattered over it irregularly. In each case there were some larger stones regularly arranged, in the more easterly to enclose a square space towards the north corner, in the other to form a platform edge stretching across the enclosure. In the front of the enclosed area of both formations were several pieces of yellow limestone marked with cross grooves, due possibly to their having been used for sharpening needles. The longest axis of the mosaics lay in the direction S.W.—N.E., the broad ends being S.W. and overlooking the bay. There was no definite entrance gap in the outlines, and the two formations were 8 m apart.

A few metres north-west of these mosaic formations and on the same ledge was an oval shelter with one side formed by a rock boulder; it was compactly built, and the space was completely enclosed, measuring 1.5 m × 1.0 m.

There was also a definite trodden-down path north-east of the mosaics leading to a ledge 5 m higher. The only thing found on this ledge was a straight line of small stones 15 m long running across the ledge north and south, ending to the north against a vertical face of rock, but having a free end to the south. The surface of this particular ledge sloped slightly downwards from the rock at the back towards the edge on the south side; the ledge was broadest at the point where the line of stones stood, but it narrowed towards the western edge, where the path came up.

Cape Weber.

This is a high mountainous promontory at the junction of Geologist Fjord and Franz Josef Fjord. The mountains slope steeply down except near the end of the cape, where there is a narrow low-lying beach facing east, and about 400 m in length.

The north corner of the beach is grass covered, and here were two winter-huts. The rest of the beach is formed of low banks of mud and shingle, and towards the south end there is a small stream. The rock of this part is limestone.

The two huts were both in excellent condition, being, so it seemed, of recent construction. The side walls were visible and the passages were still open. The huts lay side by side facing east (i. e. towards the beach) 20 m from the shore and 5 m above the sea. The location was well sheltered from the north by a rocky knoll at the end of the cape, and from the north and north-west by the mountain itself. Both huts were examined in detail.

Hut I. This was in excellent condition, and the floor was covered only by a thin layer of moss with a few stones and two or three pieces of wood.

A photograph was taken (Fig. 25) which shews the condition before excavation commenced. The absence of debris and overgrowth from the wall of the hut was very unusual; it must have been due either to very recent occupation, or perhaps to excavation by the Nathorst expedition in 1899; the latter view is supported by the fact that no objects of interest were found in excavating this hut, whereas a few were present in the other one.

The floor plan (Fig. 26) was similar to that of the hut at Eleonoren Bay. The front part of the floor was paved in the usual manner and was



Fig. 25. Hut I, Cape Weber.

quite level. There was a wide platform edge with a double line of raised stones; behind this was the gravel platform, the level of which was above that of the front of the floor but lower than that of the stones of the platform edge (see diagram of longitudinal section, Plate II); the platform was covered with moss, and several small bits of wood were scattered over it.

Interrupting the platform edge (at A in diagram) was a recess similar to that in hut A 2 at Eleonoren Bay; it was 0.3 m square, and walled in by flat stones; it had another flat stone for its floor, which was on the same level as the front part of the hut. This space seemed to have been cleared out previous to our visit (probably by the Nathorst expedition).

There was another square recess (B) in the north wall of the hut towards the front, well shewn in the photograph. The whole wall of the hut deviated sharply outwards, whereas in other huts seen there was usually only a curving outwards of the lower part of the wall. The recess

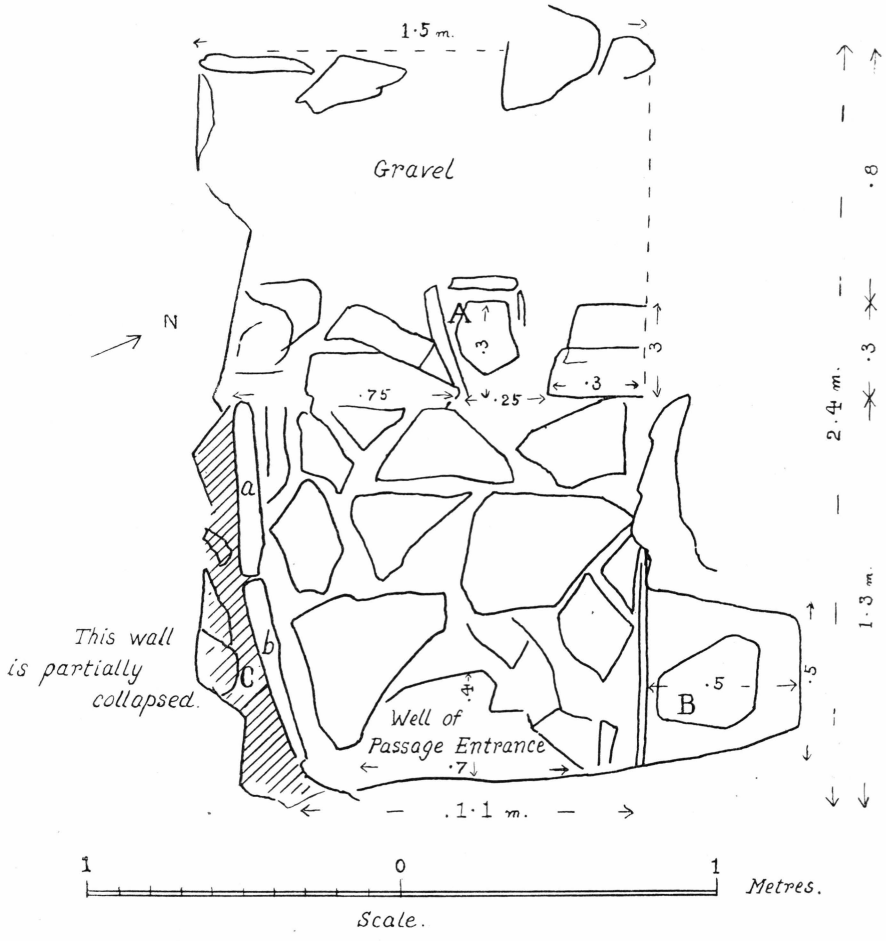


Fig. 26. Hut I, Cape Weber. Diagram of floor plan.

was separated from the main hut by a low partition of thin slate, and had a flooring of flat stone; several small pieces of wood and numerous bones were found in it, but nothing else.

On the south wall and along the front part of the floor was a raised ledge (C) between the floor and wall, it was supported by two long narrow stones and was formed by earth and gravel; it was 0.2 m wide and the same height above the floor. It could not be made out very clearly,

however, owing to the partial collapse of the side wall, but it was possibly a small side platform.

The passage entered in the usual fashion forming a well; the flat lintel stone was below the level of the floor; and the entrance well was in good condition and 0.5 m deep. The passage way was obvious throughout its extent, the side walls being built up with small stones in front and flat stones at the back; the roof of the passage was formed of flat stones supported by wooden beams.

Hut II. This was 2 m from Hut I. Its condition was similar but not so good, the walls being more collapsed and the overgrowth thicker on the floor. The flat stone over the doorway had fallen, and the well of the passage entrance was filled with debris.

The floor plan was the same as that of Hut I. There was a paving of flat stones in front with a gravel platform at the back; the platform edge, however, was formed by only a single line of thin narrow stones: it was 0.17 m above the front of the floor and the gravel platform sloped directly back from the top level of the stones forming the edge. There was a recess in the platform exactly similar to that in Hut I.

The hut narrowed in front due to the deviation inwards of the south wall; at the front corner there was an overhung recess where the earth was either charred or blood sodden. The passage entrance was accordingly displaced to the north.

Objects found in this hut on excavation were a slateblade for a woman's knife and a damaged bone harpoon head.

The ground in the neighbourhood of the huts was very thickly strewn with bones and cast off pieces of reindeer antlers (Fig. 4).

No graves were found. At the top of a gully 400 m inland and 80 m above the sea was a foxtrap.

Further along the beach, about 150 m south of the huts, several mosaics were seen at intervals on the gravel banks. There were three groups of smaller complete mosaics and one large incomplete mosaic (Fig. 6). Near one of the former there was a shelter of unusual shape. A well-trodden footpath was noticed running along the face of the gravel bank and leading from the huts past the mosaics; and there was also a meat store between the huts and the mosaics.

Geologist Fjord.

The cape on the north side opposite Bjørnøen, was visited by a surveying party, who reported four tent-borders; these were formed of small stones and were seemingly of temporary nature. An ivory sledge runner, made from narwhal tusk, was found.

Muskox Fjord.

On the south shore a surveying party discovered a foxtrap one kilom. inland on a stream delta. It is just possible there may have been a settlement here, but there was no time for further search.

Cape Graah.

Huts had been reported here by Nathorst. A hunting party landed east of the cape, on the shore of Dusén Fjord, and noticed an old hut-site merely marked as a hollow in the shaly beach, 30 m from the sea.

V. TRAILL ISLAND REGION

In this region I include such parts of the sea coast of Geographical Society Island and Traill Island as we were able to investigate. The short time at our disposal did not allow of our visiting the fjords inside these islands, and our investigation of the coast itself was often cursory, consisting as it did of isolated landings at the more prominent points.

The coast features in the northern part of the region (Geographical Society Island) are for the most part low lying, but on Traill Island they are more mountains. Towards the north the conditions are similar to those of Hold with Hope; but towards the south the inhospitable and barren nature was very striking. In the north for instance the vegetation was plentiful and, except at high altitudes, there was hardly a single snow bank visible; by contrast at the south point of Traill Island the coast was barren, and banks of snow were as numerous as those seen six weeks earlier in the season on Sabine and Little Pendulum Islands. Ptarmigan were seen on Geographical Society Island, but no land game at all on Traill Island; one bear was met with off Cape Young.

In this region remains were found by Nathorst at several places in the inner fjords (Ruth Island, Åkerblom Island, Vega Sound). The most important early record, however, was a large colony of deserted winter-huts and tent-borders reported by the Scoresbys near Cape Simpson in 1822. It is an interesting fact, which I shall discuss later, that these huts found in 1822 by the Scoresbys were deserted, whereas in the year following Clavering found living Eskimo about 120 miles farther north.

The only places where we made finds of importance were at Cape Mackenzie and at Cape Simpson. In the latter region we had had high hopes based on the Scoresby visit of finding many undisturbed remains. Owing to weather and pack-ice, however, only one single hurried landing for a few hours was possible; a colony of huts was found, but it is practically certain from the report of the Scoresbys that there must have been others more to the west, where we had no time to investigate.

Broch Islands.

Six tent borders were reported on one of the islands by a surveying party.

Cape Mackenzie, Geographical Society Island.

This is a high cape, supposed by previous voyagers to be an island; we discovered that it is in reality joined to the main island by a neck of very low lying land. The cape is 170 m in height, and the sides facing the sea consisted of steep cliffs of basalt with only a narrow strip of stony beach at the bottom. Four sets of tent-borders were found, three of them at various parts of the cape itself, and the other some distance away on a low-lying stony spit to the north-west.

A. Two tent-borders without platform edges. The site was on a moss-grown ledge 20 m above the sea on the most southerly headland of the cape, which here shelved down to the sea as a series of rocky ledges. Pieces of sledge runners and other objects were found scattered on the ground between the rocks.

B. A low lying rocky headland on the south-east side of the cape. On a cleared space on the south side we found a U-shaped shelter, two square tent-borders, and two meat stores. There were also traces of other tent sites in the vicinity, but nothing well-marked. The meat stores were small circular hollow cairns.

Diagrams of both the square tent-borders are shown on Plate III. One was 3 m across with the entrance gap towards the south west; the whole of what seemed to be the front was paved with flat stones as far back as the platform edge; this formed a definite line across the tent. It is possible that the presumed entrance gap may have been accidental and that the paved space was really the platform. The other square border lay 20 m farther west and was 2.2 m across; the platform edge ran diagonally, and was slightly banked up.

C. On the narrow beach at intervals on the eastern face of the cape, five tent-borders were found; two of these had platform edges; four were circular in shape and one square. Sledge runners were also picked up on this stretch of beach.

D. An isolated colony, found 15 m from the sea on a cleared space on the north west corner of a low lying stony spit of land. There were five tent-borders and shelters, and several meat stores; the latter were built up as hollow cairns near the colony and also among the rocks. Occasional bones were found round this colony.

The ruins of a foxtrap were found on the north side of the spit. There were also six tent-borders at intervals along the north-west shore of the spit between Colony D and the mainland; none of these had a platform-edge.

Cape McClintock.

A landing was made on this low-lying and stony point. A single tent-border, without platform edge, was found. Nearby was a small fireplace, and among the neighbouring rocks there were three small meat stores.

Cape Young.

This cape, a low-lying flat spit, lies on the south side of Mountnorris Inlet. Off the end is a small island, Cleft Island, separated from the mainland at high tide. On the south-east face of Cleft Island and 10 m above the sea were found three small tent-borders, two of them square in shape. Nearby there were also several circular areas, depressed below the ground level, about 1.0 m in diameter, and edged by stones. These latter formations bore a striking resemblance to similar depressions seen and described at Cape Franklin.

Cape Simpson.

To the north the land comes down to the sea in a precipitous cliff; south of this as the coast line curves gradually away towards Davy Sound, there is a stony low-lying beach about 400 m wide under the shelter of the mountains. Two to three kilometres from the north end of the beach there is a 400 m wide gorge in the mountains, the level of the mouth being about 40 m above the beach, to which it shelves steeply down; there was no large stream here however. Our investigations did not extend south or west of this point; apart from the remains which we found, I have no doubt there were even more further along the beach, south-west of the gorge.

There was a group of tent-borders about one kilometre from the north end of the beach on a slight rocky projection of the coast. The borders were nine in number, and all close together. One only was circular, the others being square or rectangular. Most of them were formed by large flat stones and had platform edges; in many cases also the floor space was paved with flat stones over part of its area. These borders differed considerably therefore from the tent-sites found elsewhere, with the exception of Colony B at Cape Mackenzie.

A little less than one kilometre south of the tent-borders and 500 m east of the gorge already mentioned, three winter huts were found; they lay side by side in a row facing south-east and towards the sea; they were 40 m from the beach and 5 m above sea level.

They were of different sizes, the middle one being much the largest. They were all fairly old and approximately of the same age, but their appearance was different from that of the majority of huts seen previously (Figs. 27 and 28). The wells were not so much hollowed below the ground



Fig. 27. Hut II, Colony B, Cape Simpson. View from back.

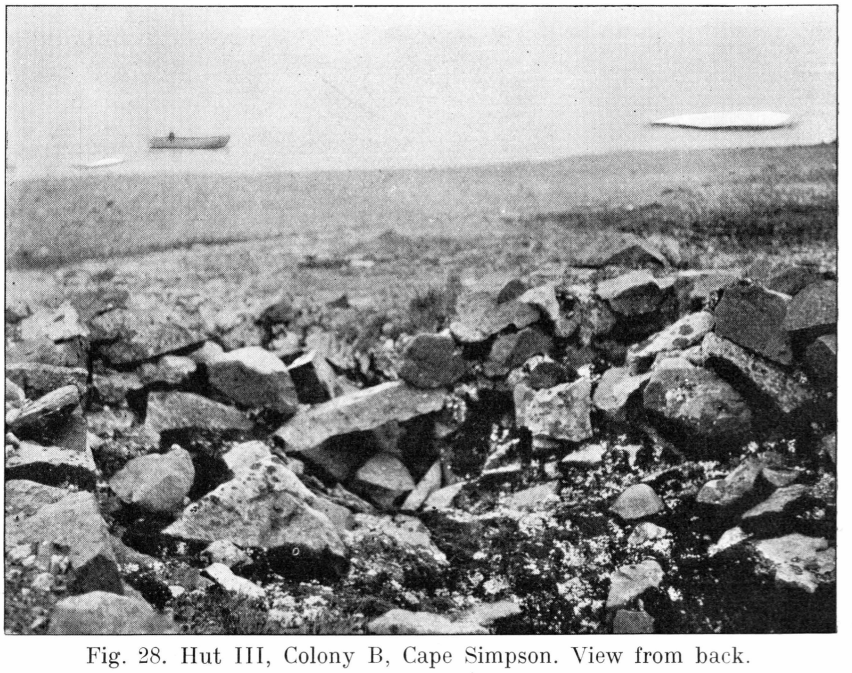


Fig. 28. Hut III, Colony B, Cape Simpson. View from back.

as elsewhere, and the walls seemed to have been more built up; these had now collapsed and were represented for the most part by mounds of irregular stones, and very little of the "built up" character was any longer visible. Perhaps the difference in appearance was mainly due to a difference in the nature of the locality and of the rock available. The well and the stones of each hut were covered with lichen and moss.

Hut I. This hut, the most north-easterly, was the smallest and seemed older than the other two. It narrowed towards the back, there being a recess in the south-west wall (to the left of the entrance).

Hut II. This was the largest, and it was perfectly rectangular in outline. The passage was seen to enter below the level of the floor, but the flat lintel stone together with others had fallen in so that it was blocked with débris.

Hut III. This hut seemed about the same age as Hut II; the flat lintel stone, though it had slipped slightly, was still in place, and the passage entrance was partly open. The hut narrowed slightly towards the back; and there was a double recess (see Plate I) in the south-west wall.

The measurements of the three huts were:

	Length	Breadth	Length of passage
Hut I	2.3 m	1.5 m (1.2 at back)	2.0 m
Hut II	3.3 m	2.5 m	2.5 m
Hut III	2.8 m	2.3 m (2.0 at back)	2.5 m

Behind Hut III was a rectangular excavation of the ground measuring 2.5 m × 2 m, and 1 m deep. There was no passage way, and the structure narrowed towards one end where there was a recess in the wall. This, although like a hut in outline, was no doubt the meat store. The only other places, where meat stores as large as this were found in connection with huts, were at Observatory Peninsula on Sabine Island and at Little Pendulum Island.

We had no time unfortunately to commence excavations on the huts. Numerous bones, bear and seal, were found round them; and this was also the only locality visited where bones of whales were found to any large extent.

Several meat stores were found among rocks about 200 m south-west of the huts. Two in particular may be detailed: the first was built as a hollow cairn against a rock with closely-set small stones (similar to some found at Cape McClintock); the second had a square foundation internally, measuring 0.3 m sq., and was of the third variety described in the Preface. On a ledge amongst the rocks an interesting find was made of a pile of several whale bones, weighted down by a large stone

on top of the bones as though they had been stored there for some purpose.

A group of several tent-borders was found on a point of land near the winter huts. Most of them were badly marked; but in the case of three definite ones, two were square with platform edges, and the other was circular.

500 m south-west of the huts is the gorge in the mountains already mentioned; in this gorge and 60 m above the sea we found two graves almost obscured among the rocks, but both in excellent condition.

In the case of the first grave (G 1) the roof was supported by beams of wood, but was partly collapsed; at the head was a boulder of rock, its flat face forming the end wall. No trace of a skeleton was found.

North east of G 1, but adjacent, was a ring of medium sized stones enclosing a hollowed area 0.5 m in diameter; it had no roof. It was evidently the grave receptacle, but contained no articles.

The second grave (G 2) was 20 m south-west of the first. It was built against a large square-cut boulder of rock, which served to form one of the side walls; the roof was supported by beams of wood and was mostly in place. Most of the skeleton was found, but it was disarranged; the skull and lower jaw were in good condition and were removed by our party.

To the west and adjacent was the receptacle, formed by a single ring of stones; it was smaller than that at G 1. Again no articles were found.

The grave measurements were:

	External			Internal		Direction	Direction of receptacle
	Length	Breadth	Height	Length	Breadth		
G 1...	1.5 m	1.0 m	0.8 m	1.0 m	0.5 m	N.W.—S.E.	N.E.
G 2...	2.0 m	0.8 m	1.0 m	1.1 m	0.4 m	N.E.—S.W.	W.

Between the graves was a ring of large stones, 1.0 m across, and evidently a shelter. Another shelter, U-shaped, was found 7 m north of Grave 2.

There was no time for the extension of our survey westward along the coast as we much desired; and the "fifty summer residences" mentioned by Scoresby (Greenland Voyage, p. 253) are therefore left for investigation by future observers.

CONCLUSION

In the Preface the characters of the various remains have already been summarised; and it is now left to see whether any conclusions can be drawn, on the basis of our observations, in regard to the past history of the Eskimos of the coast of North East Greenland[1]).

The former inhabitants of the whole of this part of Greenland, both the area investigated by our expedition and that further north surveyed by the Danmark Expedition, form as it were a unit. Whereas Eskimos have survived in South East Greenland at Angmagssalik, and the so-called Polar Eskimos are still flourishing in the Smith Sound region in the extreme north-west corner, the inhabitants of the North East coast have been extinct for perhaps a hundred years. The first and only occasion on which natives were reported was by Clavering in 1823 on the island to which his name has since been given; but it is obvious that the region had been occupied previous to this date either continuously or intermittently over a long period of years.

The most important questions therefore are: (1) the origin of the Eskimo in North East Greenland, how they arrived, and whether the coast was inhabited continuously or intermittently; and (2) the process of evolution of the culture and the reason for final extinction.

1. Origin of the North East Greenland Eskimo. The Greenland Eskimo seem to be in origin an offshoot from the people of the Thule culture, and first reached the Greenland continent at its extreme north-west corner by crossing the narrow Smith Sound from Ellesmere Land. From this point they extended throughout West Greenland by migrating southwards along the coast. So much for the West Coast; but as regards the North East it is a debated question whether the habitation has been due to the ultimate extension of a movement down the west coast, round

[1]) In this connection reference should be made to Dr. Therkel Mathiassen's paper on our finds, published in Medd. om Grønl. Vol. 74, and to the conclusions to which he was led by a study of them in the Cambridge Museum of Archaeology and Ethnology.

Cape Farewell, and up again northwards along the east coast, or whether on the other hand there has been a more direct line of migration round the extreme north. A second question is whether there were separate immigrations into the region or only one.

In Meddelelser om Grønland, Vol. 44, p. 335, Thostrup has drawn certain conclusions based on observation during the Danmark Expedition in regard to both these points. Though I am in the main in agreement with the views expressed by him, there are certain matters in which my own observations have led me to a divergent opinion.

Thostrup states for instance that there are three apparently distinct periods of hut-building, indicating intermittent habitation and three quite separate immigrations of Eskimo.

Our observations made on a series of 68 huts cannot support this view; the huts seemed to us to be of all gradations of age between older and more recent, and often every transitional stage was seen side by side in the same colony. Moreover, we found numerous old hut sites (such as Thostrup states to be due to a "first" immigration and not extending further south than Lat. 77° N.) in the more southerly latitudes visited by us, even as far south as Eleonoren Bay, Franz Josef Fjord (Lat. 73°30′ N.). Old hut sites were in fact present at all the larger colonies side by side with more recent huts.

Thus I am emphatically of the opinion that the occupation of the district was a continuous one; and that the inhabitants, even the original ones, were spread over the whole district. Occupation was not spasmodic. On the other hand more than one culture may be present.

The huts, though there are certain resemblances detailed below, are of more primitive nature than either the pear-shaped hut of the Polar Eskimo at Smith Sound or the big common huts of the Angmagssalik Eskimo. It is obvious that, from whatever direction their origin may be, the Eskimo of North East Greenland were isolated from their kindred races for a considerable period, long enough to allow the full development of these two complex types of hut elsewhere in Greenland, in the north-west and in the south respectively. Considering the formidable barriers of the north coast on the one side and the rather inhospitable central stretch of the east coast on the other, one cannot be surprised at this isolation.

No definitely separate periods of hut-building were observed; but I consider that we encountered two distinct types of hut. A glance at Plate I will demonstrate the difference between the large regular huts at Cape Simpson and the smaller irregular ones at the other sites inside the fjords. There was a distinct resemblance also between the huts at Cape Simpson and those at Observatory Peninsula on Sabine Island and at Little Pendulum Island. Unfortunately we omitted to

make accurate diagrams at both these latter places; the huts, however, were definitely similar in outline to those at Cape Simpson. A striking feature, moreover, common to all the three last named colonies, was the presence of a meat store as a large sunken well adjacent to the huts. Except at these three localities, all on the open coast, this special feature was not found in any other colony; in all the other cases (all being without exception situated within the fjords) the meat store was merely a small hollow in front of each individual hut.

Thus we trace two influences in hut-building, one apparent in three sea-coast colonies, the other in the fjord colonies. These point on the one hand to a people who in my opinion stayed on the coast over winter, and on the other to a people who spent summer on the coast and migrated in winter to the shelter of the fjords. For convenience I refer to them as of "sub-arctic" and "arctic" culture respectively.

One can conceive a resemblance of the large square Cape Simpson huts to what must have been the precursor of the Angmagssalik common-hut. On the other hand there are many points of similarity between the huts of the fjord colonies and those of the Polar Eskimo. A double recess at the front of the hut was never found, but a single one was almost invariably present; in this connection it should be noted that the actual pear-shape of the Polar Eskimo hut was according to Steensby only a local development necessary for the roof structure in a situation where driftwood was not available. There are also resemblances in the floor-plan, notably in the presence of a small square recess in the front of the platform; in one instance (Hut I, Cape Weber) traces of a side platform were also observed.

Working from these considerations, I suggest that in North-East Greenland there has been an immigration of "sub-arctic" culture from the South East Coast as well as one of "arctic" culture directly round the north coast from Smith Sound. The immigrations no doubt took place originally at different times, but ultimately they may have existed on the coast contemporaneously and even merged into each other.

These views are further supported by our observations on other remains apart from huts. Towards the southern portion of the area visited, on Traill Island and Geographical Society Island, the tent-borders were, as a rule, not round but square with paved floor spaces, and very different therefore from the tent-sites seen further north. We also noticed a different method of construction for the permanent meat depots, as distinct from those already mentioned in connection with the huts. There seems more than one line of evidence therefore of a culture coming up from the south, and different in its essentials from that which occupies most of the area.

Certain of the peculiar series of formations seen at Cape Franklin

have a similarity to formations seen at Cape Young, and both may belong to the "sub-arctic" culture. Such may also be the case in the aberrant types of tent-borders (square outline and walled-up borders) seen at Walrus Island and elsewhere.

I refer now to evidence other than our own. I find on Plate II of Thostrup's article that the hut outlines seen by him on the sea-coast and in the fjord colonies respectively, also differ much as the ones which I have myself observed. There is a tendency for instance to large regular square shapes in the sea-coast huts, and to smaller and more irregular outlines in the fjord huts; in the latter also there are indications of a pear-shaped outline. The hut types in the area investigated by the Danmark Expedition fall into line therefore with our own results.

We must rely on the evidence of other explorers to trace the lines of migration along the central east coast and along the north coast respectively. All along the east coast numerous connecting links are known. On the north coast, however, where in my opinion the main migration took place, Rasmussen, who has investigated the area, states very definitely that there are no remains. If his evidence is correct it precludes the possibility of migrations along this line; Rasmussen's view however has I am told already been disputed by Dr. Lauge Koch[1]).

2. Evolution of culture and reason for eventual extinction. We may conclude that the culture was mainly an "arctic" one with an infusion of "sub-arctic" from the south.

The sub-arctic people appear to have stayed on the coast both summer and winter. Judging from the large meat depots in connection with their colonies and the whale bones found at Cape Simpson (the only undisturbed sea-coast colony which we visited) we may infer that they hunted whales as well as seals. The disappearance of either of these mammals from this part of the coast might therefore be one of the reasons for an earlier extinction of this form of culture as a separate entity or its absorption into the arctic form; the inhabitants would probably be driven inland to the fjords to find the necessary winter's food.

The culture in the coastal regions of Traill Island and Geographical Society Island was evidently exclusively sub-arctic, and the theory of its earlier extinction is supported by the fact that, whereas Clavering in 1823 discovered Eskimo still existing in the fjord colonies, Scoresby the year previous found Traill Island completely uninhabited.

The majority, however, of the former North-East Greenland Eskimo in my view possessed an arctic culture, along with certain features adapted from the sub-arctic migrations which had reached them. In

[1]) As a result of his examinative of the articles and objects collected by us Dr. Mathiassen states (Medd. om Grønl., Vol, 74, p. 164) that the view of an immigration north about Greenland is confirmed.

summer they lived on the coast and used the kayak to hunt seals; while in winter they retired to the shelter of the fjords, using sledges on the smooth fjord ice and hunting land animals such as muskox and reindeer.

We can only put forward tentative suggestions to explain the eventual extinction also of the people of arctic culture. Reindeer disappeared from this part during the middle of last century; a similar shortage at an earlier date, or a decline in the numbers of seal and musk ox, by cutting off the food supply, was probably the essential cause. How this shortage may have come about is unexplained. It is quite possible that an increase in the severity of the climate has been a contributing factor, but it is not known for certain that this has occurred. I feel that a failure of food supply has been the vital factor.

It is interesting to note that the only occasion where human remains have been discovered in the huts themselves, i. e. under conditions which indicate that the last inhabitants died with no one left to bury them, was by the Danmark Expedition in two huts at Snenaes in 76°49′ N. It seems therefore as if inhabitants existed in the northerly stretch of coast after being extinct in the southerly part, and that, instead of, as might be expected, attempting to migrate south to a more favourable climate, they in fact moved north, towards the place where tradition may have told them was their ancestral home.

We may summarise our conclusions as follows: —

(1) The inhabitants of this part of the coast have been extinct for fifty years or more, the last occasion that they were seen being in 1823.

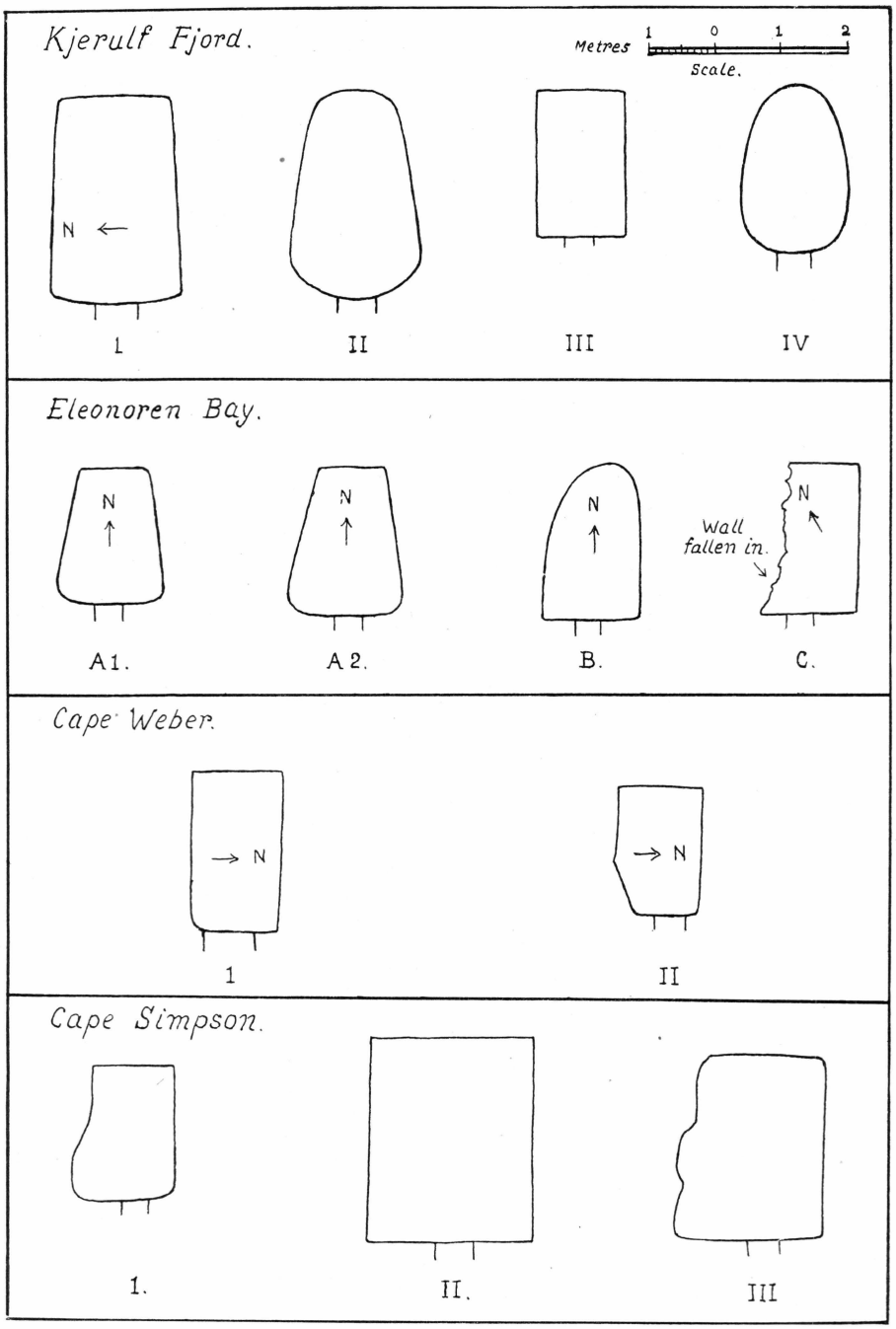
(2) Previously the coast was occupied by Eskimo continuously over a long period of years.

(3) The culture of the region has both "arctic" and "sub-arctic" characters; it is probable that immigrations have occurred from both north and south. These must have occurred before the special developments of culture seen to-day among the Angmagssalik Eskimo and the Polar Eskimo respectively.

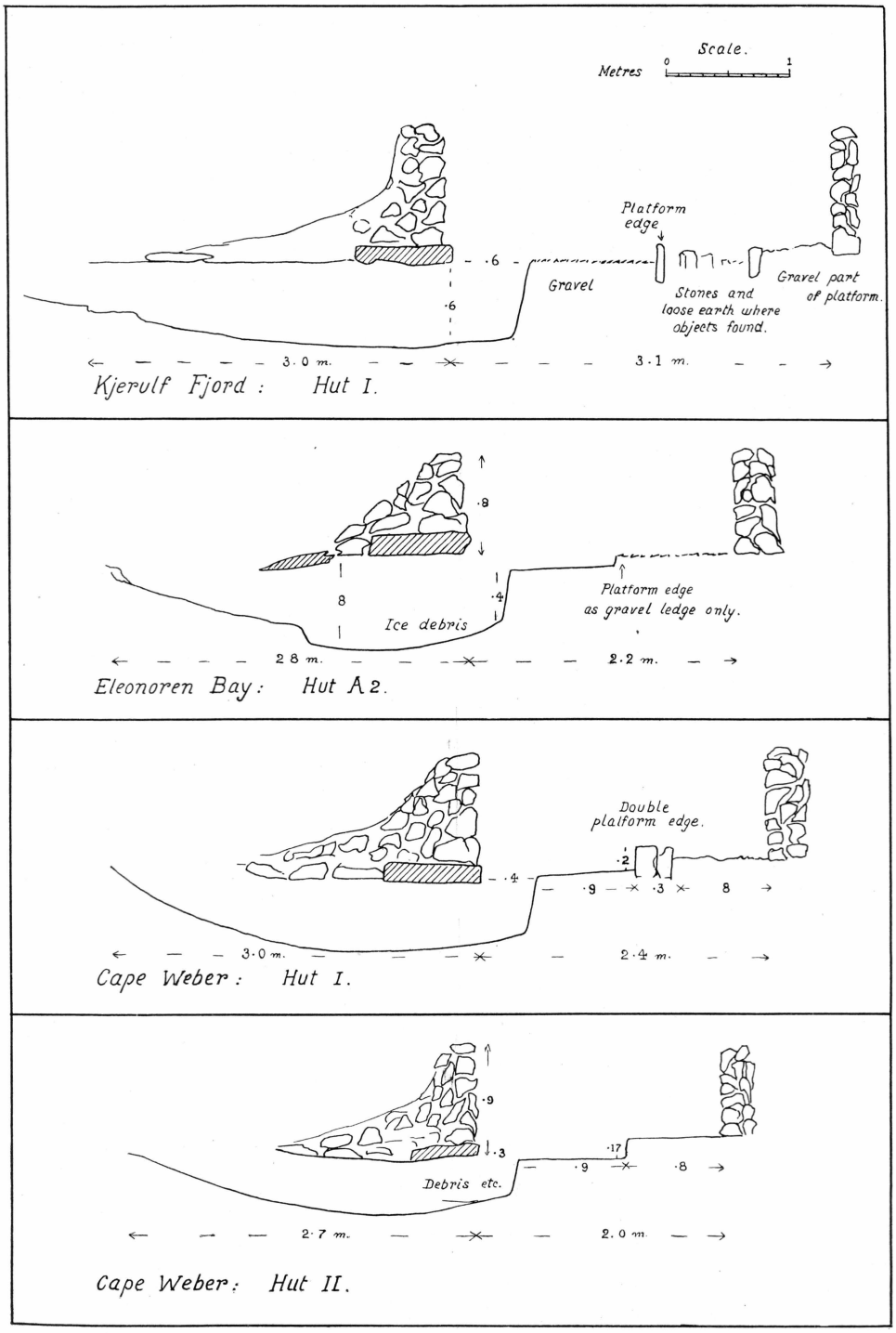
(4) The sub-arctic and arctic cultures have at first existed more or less contemporaneously; but the sub-arctic has then disappeared as a entity or been absorbed into the arctic culture.

(5) In the coast regions of Traill Island and Geographical Society Island the culture has been exclusively sub-arctic; elsewhere (except e. g. in the hut-colonies at Observatory Peninsula on Sabine Island and at Little Pendulum Island) it has been predominantly arctic with only subordinate sub-arctic features.

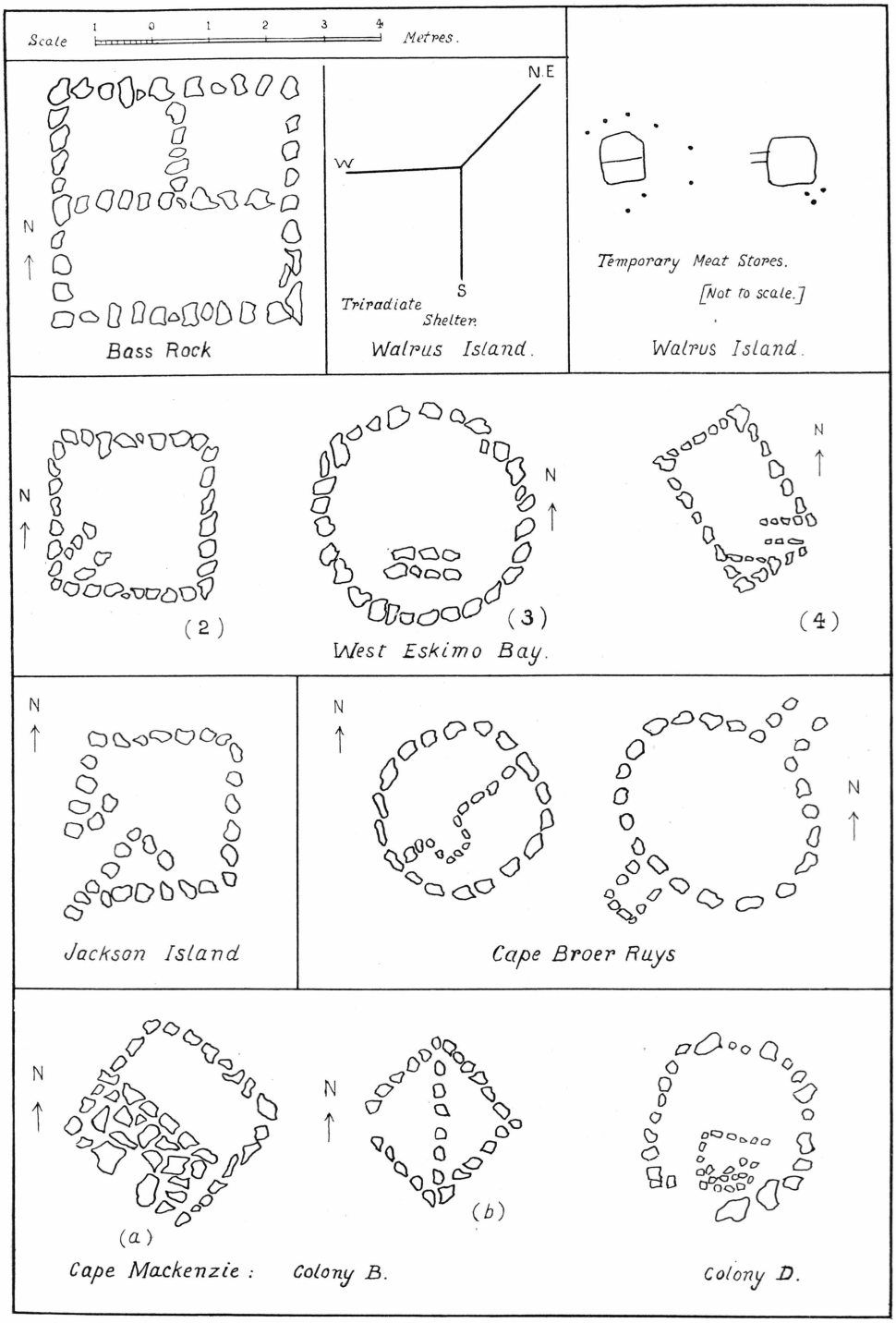
(6) The most probable cause of the inhabitants finally dying out was the disappearance of seal and reindeer and consequent shortage of game. Their last attempt to migrate elsewhere may have been a movement northwards.



Outlines of Huts.



Longitudinal Sections of Huts.



Tent-borders.



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