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RESEARCHES INTO NORSE CULTURE IN GREENLAND

INLAND FARMS IN THE NORSE EAST SETTLEMENT

ARCHAEOLOGICAL INVESTIGATIONS IN JULIANEHAAB DISTRICT, SUMMER 1939

BY

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WITH 70 FIGURES IN THE TEXT

APPENDIX

MAGNUS DEGERBØL
ANIMAL BONES FROM INLAND FARMS IN THE EAST SETTLEMENT

KØBENHAVN
C. A. REITZELS FORLAG
BIANCO LUNOS BOGTRYKKERI A/S
1943

PREFACE

The following is a report of excavations made in the summer of 1939 in the East Settlement of the Norsemen, known today as the Julianehaab District. With Mr. Holger Rasmussen assisting me I cleared ruin groups 64a, 64c and 78a; journeys were also made for the purpose of protecting ancient monuments and of reconnoitring, especially in Igaliko and Tunugdliarfik fjords, in the course of which some ruins hitherto unknown were discovered.

On the return of the expedition a report was submitted to the Committee for Scientific Research in Greenland, and in addition a comprehensive report with many photographs and plans was handed to the National Museum for its archives. A preliminary and popular account of the expedition's results was given in Christen Leif Vebæk: Middelalderlige Bondegaarde paa Grønland (Fra Nationalmuseets Arbejdsmark 1941).

The expedition in the summer of 1939 was very successful in every way, and it is with pleasure that I take this opportunity of expressing my heartfelt thanks to all those who contributed to that result, first and foremost my collaborator and travelling companion Holger Rasmussen. I thank Dr. Poul Nørlund, Director of the National Museum, for entrusting to me an interesting task which I can only hope will not be the last. To Dr. Aage Roussell, who initiated me into Norseman research by taking me with him as assistant on the unforgettable expedition to Austmannadalen in 1937, and who has given me much good advice in the compiling of this publication, I also owe a debt of thanks. That results were so good was greatly due to the kindness and understanding of the officials of the Greenland Administration in Denmark and up in Greenland; I would ask its Director, Mr. Knud Oldendow, to accept my sincere thanks. Last but not least I must thank my excellent Greenland workmen, Benjamin Sikimsen, Andreas Egede, Jehu Motzfeld, and whatever their names may be—men of whom I shall always preserve pleasant memories.

Most of the photographs and plans of the excavations reproduced here were prepared by myself, the others by Holger Rasmussen; in the

latter case the fact is indicated in the list of illustrations. All reproductions of Norse relics are from photographs taken by the National Museum's photographer Mr. Sophus Bengtsson.

Mr. Erik Holtved has been of great assistance to me in preparing the plans. Miss Elisabeth Vebæk, my sister, drew the map Fig. 9 and got the plans ready for publication.

The animal bones recovered from farms and their middens and passed on to the Zoological Museum have been classified by Dr. Magnus Degerbøl, whose report accompanies this paper in the form of an appendix.

The translation of my original report in Danish is the work of Mr. W. E. Calvert.

CHRISTEN LEIF VEBÆK.

INTRODUCTION

In the summer months of 1937 Aage Roussell excavated the interesting Norse farms in Austmannadalen, in the Godthaab district, the West Settlement of the Middle Ages[1]). These farms, West Settlement No. 53c and d, as well as No. 35 on lake Tungmeralik, in the stretch of country between Kilaurssafik and Kapisilik, which was excavated that same year[2]), were the first Greenland inland farms to be thoroughly examined, the Norse-archaeological investigations having previously been concentrated on the farms on the fjords; this was partly because the largest farms, and those most interesting historically, lie here (Gardar, Brattahlid[3])), partly because of the very considerable difficulties of transport associated with excavations up-country. In 1937, however, these difficulties were overcome, due to a great extent to the Icelandic ponies placed at the disposal of the expedition by the sheep-farming station at Julianehaab. Having regard to the extremely good results, many of them very surprising, obtained from excavating the upland farms in the West Settlement, it was decided to make a similar investigation in the East Settlement, the present Julianehaab district. These plans were realized on what up to the present is the last Norse-archaeological expedition in the summer of 1939.

The selected sphere of operations was the region southeast of Sdr. Igaliko (or the Kagssiarssuk of Igaliko fjord), the Undir Høfda of the Norsemen, now East Settlement ruin group No. 66, examined by Daniel Bruun and Aage Roussell[4]).

In the middle of 1911 some Greenlanders while on a hunting trip

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[1]) Aage Roussel: Farms and Churches in the Mediaeval Norse Settlements of Greenland, MoGr 89, 1, 1941 (in the following quoted Roussel 1941), pp. 64—69 and 171—190, and Aage Roussel: Udgravninger i en afsides Nordbobygd, Fra Nationalmuseets Arbejdsmark, pp. 55—64.

[2]) Roussell 1941, pp. 73—75 and 164—167.

[3]) Poul Nørlund: Norse Ruins at Gardar, MoGr LXXVI, 1930, and Poul Nørlund and Mårten Stenberger: Brattahlid, MoGr 88, 1, 1934.

[4]) Daniel Bruun: Arkæologiske Undersøgelser i Julianehaabs Distrikt, MoGr XVI, 1896, p. 368 ff., and Roussel 1941, pp. 99—101 and 219—220.

over the ground northeast of Sdr. Igaliko came across some ruins which they assumed to have been left by the Norsemen. They reported their find to the Rev. Erik Jespersen, then the vicar of Julianehaab, who soon afterwards made an excursion to the spot and made some notes on the ruins, which he published in MoGr together with some sketches of the sites and the terrain[1]). Mr. Jespersen established the presence of the ruins of two farms not previously recorded, and called them "Enoch's Ruins" after one of the finders. As new links in the chain of known farms in the East Settlement they were numbered 64a and 64b. From Mr. Jespersen's description they seemed to be well-preserved and in many ways interesting sites, and therefore they were noted for further examination on the Norse research programme. In 1926 Professor Knud Jessen, Dr. Hilmar Ødum and Aage Roussell made an excursion in to the ruins, which were then measured and described by Roussell[2]); they were also included in Ødum's geological map of the region, published in MoGr[3]) and utilized as the basis for the map in the present paper.

Excavating these farms was our chief object in 1939. No. 64a was excavated according to programme; but as it turned out to be impossible to get to No. 64b, for reasons that will be explained in the following, we had to abandon it for that year at any rate. Instead we turned our attention to a hitherto unknown farm, No. 64c, which we discovered in the same area. It is the chief purpose of this paper to submit an explicit account of the examination of these interesting farms, which in several respects may be said to be unique among Norse farms so far excavated. Before doing so, however, mention must be made of the secondary objects of the expedition, carried out prior to and after the extensive excavations on No. 64a and c.

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[1]) Erik Jespersen: Nyopdagede Nordboruiner i Julianehaabs Distrikt, MoGr L, 1912 (1911), pp. 97—104.

[2]) Report by Roussell in the National Museum archives. No. 64b is described in Roussell 1941, pp. 70—72.

[3]) Hilmar Ødum: Geologiske Iagttagelser i Landet øst for Igaliko Fjord, MoGr LXXIV, 1927, p. 43 ff.

CHAPTER I

EXCAVATION OF RUIN GROUP 78 A AND OTHER, MINOR INVESTIGATIONS IN THE EAST SETTLEMENT

East Settlement Ruin Group 78 a, Ekaluit.

On the south side of Igaliko fjord, eight miles or so from its mouth, a funnel-shaped gulf cuts in at Ekaluit, the salmon river, which drains one of the big lakes in the extensive lacustrine country between Igaliko fjord and the Agdluitsok and Amitsuarsuk fjords, the Vatnahverfi of the Norsemen. Between the bay—the Norsemen's Hafgrimsfjord—and the big lake behind it, there is an expansive, smooth plain on both sides, thinly covered with grass and willow scrub. According to Grønlands historiske Mindesmærker there should be Norse ruins here[1]); but neither Gustav Holm, who travelled to the spot, nor Daniel Bruun, who looked down upon it from the mountains, were able to discover any[2]). Roussell visited the place in 1935, and he too was unable to find any sites, though in the neighbourhood he discovered a hitherto unknown farm, ruin group 78a, which we excavated in the summer of 1939[3]).

Group 78a lies on the north side of Ekaluit bay, inside a small lateral valley running almost east-west, bordered on the south by a very low rocky ridge out towards the bay, on the north by a low hill, 25—30 m. high. On the west the valley opens into a cove of the bay, whereas its east limit is the high mountain that terminates the long, steep chain running east-west between Igaliko fjord and the big lake. From the beach the ground rises smoothly to a height of about 50 m. above sea level. Almost the whole of the valley bottom is covered with luxuriant grass, a fine and characteristic home-field, on which the willow

[1]) Grønlands Historiske Mindesmærker, III, 1845, p. 810.

[2]) Gustav Holm: Beskrivelse af Ruiner i Julianehaabs Distrikt, MoGr 6, 1894 (1883), p. 104, and Daniel Bruun, l. c., MoGr XVI, pp. 402—403.

[3]) Report on Roussell's visit to the place, in National Museum archives.

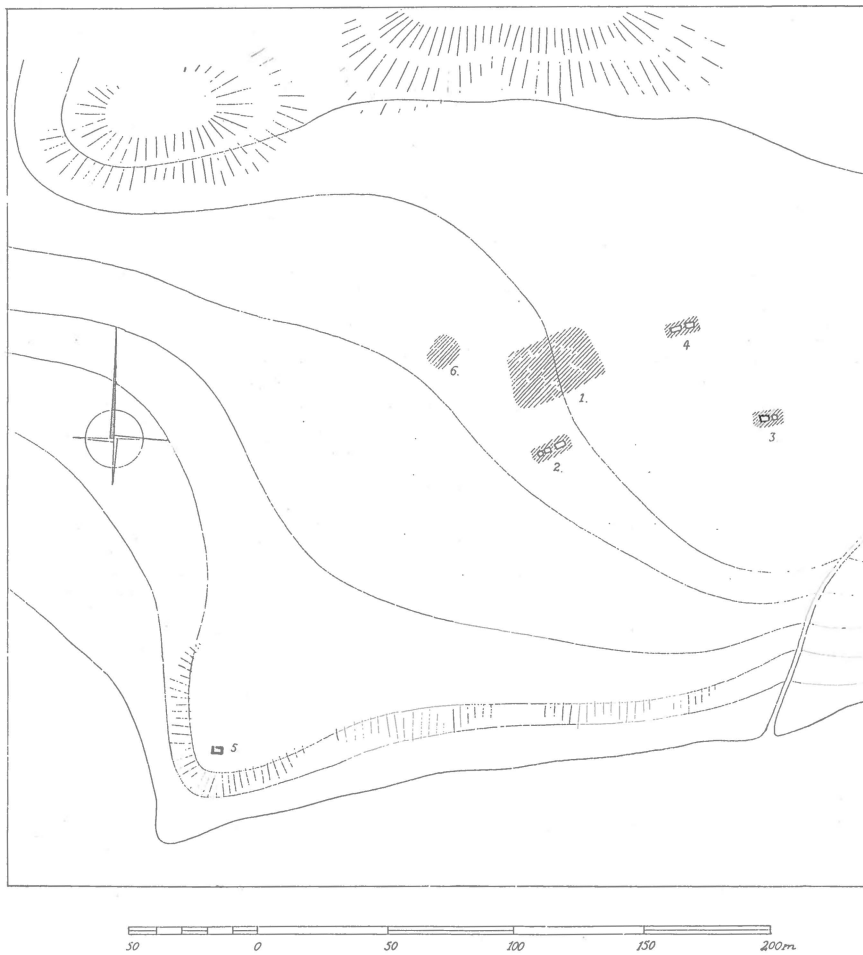


Fig. 1. East Settlement No. 78a, contour map, 1:3000.

scrub has invaded only the edges. Some distance back on this field, which on the northeast is fringed by a brook running into the bay, lies the ruin of the farm-house surrounded by five outhouse remains, in addition to two outhouses (folds) in the surrounding fells (fig. 1).

It may be said of the farm as a whole that it is in a poor state of preservation. The house in particular (Contour map, No. 1; Fig. 1) is in a complete state of collapse, overgrown and confused, and after some days of excavation in it with negative results—not a single wall line was definitely found—we abandoned further digging. All that can be said of the house, whose site measures about 40 m from east to west and about 16—17 m. from north to south, is that beyond all doubt it was a passage-house with many rooms. The construction was the usual,



Fig. 2. Looking from east over the bay at Ekaluit, East Settlement No. 78a, down over the home-field. In the foreground one of the excavated ruins (contour map, No. 2).

stones and turf. Stretching out on all sides of the house are midden deposits, of which small areas were excavated, the result being some fragments of steatite vessels and some animal bones (see list of Norse objects, p. 107 and Appendix, p. 114—15).

A few metres south of the house lies an outhouse with three rooms (Contour map, No. 2; fig. 2). As in the other sites on this farm, only the inner part was excavated. The length—inside measurements—seems to have been about 10.5 m., the breadth from 1.5 to 2.0 m., wall thickness about 2.5 m., orientation east-west. The entire building was in a state of advanced collapse, but most of the basement course was more or less in its original position. As the walls now stand they are nowhere more than 0.7 m. high, with at the most three or four irregular courses. The masonry was of stones and turf. In two of the rooms the floor was of gravel with a few round stones for paving; in the third room the floor is almost entirely covered by a large flat field-stone. The approximate measures of the rooms are: 1.5×1.5 m., 2.2×1.5 m., and 4.5×1.7—2.0 m. In the latter room, extending from wall to wall at about the middle, lies a large flat stone about 2.0 m long, about 0.8—0.5 m. wide and 0.05—0.08 m. thick; it lies in a slanting position, almost quite on its side, but still resting on a row of sill-stones. This must be

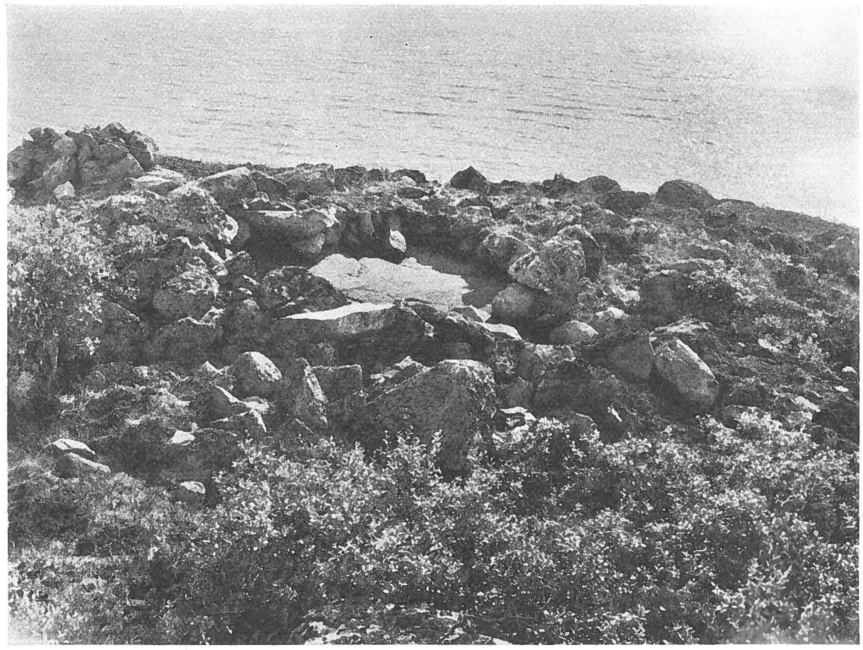


Fig. 3. East Settlement No. 78a, Building 5, Skemma, from the north.

an overturned partition stone. It was impossible to discern any doorway in this outhouse, which doubtless was a sheep-shed.

Somewhat east of the farm-house is an outhouse with two rooms (Contour map, No. 3). In shape it is oblong, the orientation being east-west. The rooms measure 4.2 × 2.0—1.3 m. and 1.5 × 1.7 m. The wall thickness is 2.0—2.5 m., wall height 0.7—0.9 m. in three or four stone courses tightened with turf. Again no door was found in this building, which was possibly a sheep-shed.

Outhouse No. 4 is a much collapsed ruin, and only approximate measurements can be given of the two rooms it contained: about 3.0 × 3.0 m. and about 2.8 × 2.8 m. The two rooms are separated by a wall about 1 m. thick. The floor is of sand. No doorway could be found. The purpose of this building is uncertain.

Out on the point to the southwest, standing high and dry on a rock, is outhouse No. 5 (fig. 3). It is an irregularly foursided building running east-west, with interior measurements of about 2.6 × 2.0 m. This small building is of dry-wall construction, but with turf in the lower courses. It is much collapsed, only one or two courses remaining over the ground course; the highest wall still standing is on the north-east side, about 0.9 m. high, thickness 0.6—1.0 m. The floor consists of the rock surface itself, which has a steep slope from south-west to north-east. Access to the building is from the north, almost at the middle of



Fig. 4. East Settlement No. 78a, cave in the fell, built out as a sheep-pen. The man is standing at the entrance to the cave.

the side, through a doorway 0.4—0.5 m. wide. Judging from its shape and situation this outhouse was doubtless the farm skemma (store-house).

Just to the north-west of the house, between it and the low rocks, is a completely collapsed and overgrown ruin (No. 6), which was not excavated. It measures about 12 m. from east to west, and about 6 m. from north to south.

On the low rock above the house, at the foot of a steep cliff, lies a small, much collapsed ruin orientated east-west. Excavation revealed only a single course of stones, with only few of them still in position. In shape it is an irregular rectangle, the length being about 4 m., the breadth about 2 m. This house has no definite doorway and is presumably a sheep-shed.

Finally, about 400 or 500 m. east of the farm-house and some way up the steep mountain side, in the middle of an accumulation of stones is a curious sheep-shed (fig. 4). It consists of two rooms connected by a narrow passage. The larger room is an irregular rectangle measuring about 6.5—7.0 × 3.0—4.8 m. The passage is 2.8 m. long and 1.0—1.3 m. wide. The other room, which approaches the circular in shape, has a diameter of about 3.5 m. The outer room is built as sheds of this kind usually are, of dry-wall consisting of large and small field-stones and

utilizing the boulders on the terrain. The back room, however, is a veritable cave, the walls being almost all rock and covered over by two enormous sloping boulders. The interstices in the cave walls between the boulders are closed with dry masonry. The passage is formed of two large but fairly low boulders, heightened by means of two courses of stone. The height of the walls in the front room is about 1 m. There is a doorway in the south-east corner of this front room.

Altogether these buildings form a small Norse farm with an attractive and favourable position. The well-grown home-field, which is better than those at many of the larger farms, would certainly be capable of providing a good hay crop for the livestock. The reason why no cow-byre was observed may be that it was contained in the large dwelling block, in which case the farm would belong to the type that Roussell has called "centralized" and discussed in detail in MoGr 89.1 with the farms in Austmannadalen as the model[1]). In addition to agriculture the farmer here would be able to procure a valuable supplement to his economy by fishing in the salmon river and in the lake and fjord, as well as by hunting on the water and in the boundless country behind.

While at No. 78a I made a reconnaissance of the country between Ekaluit bay and the big lake to see if I could find the mysterious ruin group 78, with the result that almost midway between the bay and the lake, on the south side of the river, I found a cluster of at least three completely collapsed and overgrown ruins, so much so indeed that no measurements, let alone a plan, can be given of them. Without doubt these are the ruins referred to in Grønlands historiske Mindesmærker (see above, p. 5, Note 1).

Protection and Reconnaissance Trips.

On land and water, on horseback and on foot, by motor-boat and row-boat, we made several excursions into the northern part of the East Settlement, especially in the centre of the ancient habitations in the region of Tunugdliarfik and Igaliko fjords, principally for the purpose of marking the already known ruins with the protection sign agreed upon some years ago: a broad red band enclosed by two parallel white bands painted on a stone in every ruin to indicate that the site must not be disturbed. In former years many stones have been removed from the Norse ruins at Igaliko, Sdr. Igaliko and Kagssiarsuk by the Greenlanders who now live there and who used them for erecting their own houses. All Norse ruins—and some Eskimo monuments as well—are now protected and the work of marking them has begun.

[1]) Roussell 1941, p. 64 ff., and p. 159 ff.

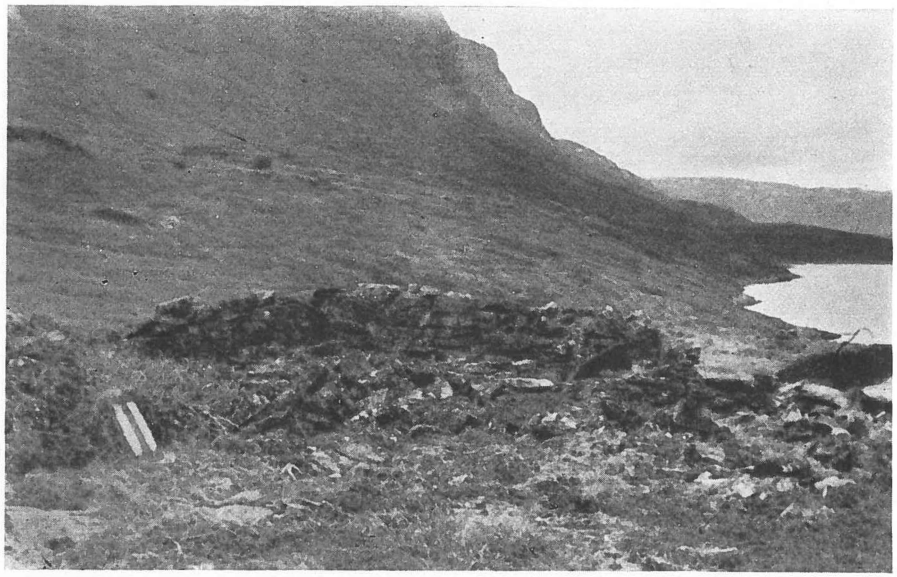


Fig. 5. A protected Norse ruin in Julianehaab district.

These journeys had another purpose, however, that of searching for hitherto undiscovered Norse ruins. Almost every expedition to the settlements has made additions to the list of known Norse farms and thereby helped to clarify the topography of the country occupied by the Norsemen; in this respect the expedition of 1939 formed no exception. Besides the farm No. 64c described below we found another that had not previously been observed, as well as quite a larger number of ruins at several of the known groups than had received attention before.

East Settlement Ruin Group 27 a.

In Tunugdliarfik, in the inland stretch south-west of Kagssiarssuk (Brattahlid) we discovered in a valley running east-west, almost midway between ruin groups 27 and 28 but four or five km. inland, a small group of ruins which we have called 27a. It consists of a small dwelling site, completely overgrown and collapsed, and, separated from it by a small willow-fringed brook, an equally dilapidated livestock building built of stones and turf; as far as could be seen the latter contained two rooms: a large one lying east-west, about 12×6 m., and a small outbuilding at the south-west end, about 3×4 m. The doorway into the large room is in the south side, almost at the middle. In front of the farm-house at its west end is a fairly large home-field. This group also includes a small foursided pen, about 6×3 m., lying about two hundred metres

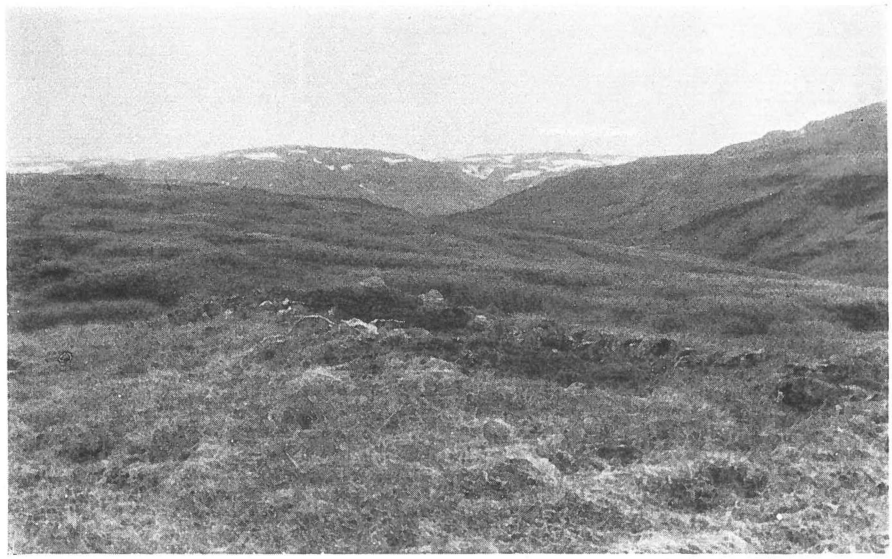


Fig. 6. East Settlement No. 27a. Ruin of livestock building, seen from WNW. In the background the snow-covered mountains across Tunugdliarfik fjord.

west of the farm on a steep hill slope in dense willow scrub. Built of dry masonry, this too was in an advanced state of collapse. This group, which did not call for excavation, undoubtedly represents a small farm of the type which Roussell calls a "cot"[1]).

East Settlement Ruin Group 80, Kanisut.

While inspecting ruin group 80 on the bay at Kanisut, on the north side of Igaliko fjord, we established the existence of a much larger number of ruins than was previously recognized according to Gustav Holm[2]).

On the east side of the river at the head of the bay is a large and very good home-field, about 200×100 m., covered with grass and low willow scrub. In the north end is an entirely collapsed and overgrown site, about 10×10 m. (farm-house?). About 20 m. to the north-east of it, built up against a rock, is a small shed, about 3×4 m., in a good state of preservation and neatly erected of dry-wall to the height of four or five courses. A very similar one, but quite collapsed, lies about 20 m. to the south-east of it. The home-field is bordered on the south-east by a brook, on the far side of which is the stone building on a large

[1]) See list of farms, Roussell 1941.
[2]) MoGr 6, p. 103.



Fig. 7. East Settlement No. 80, Kanisut, Skemma.

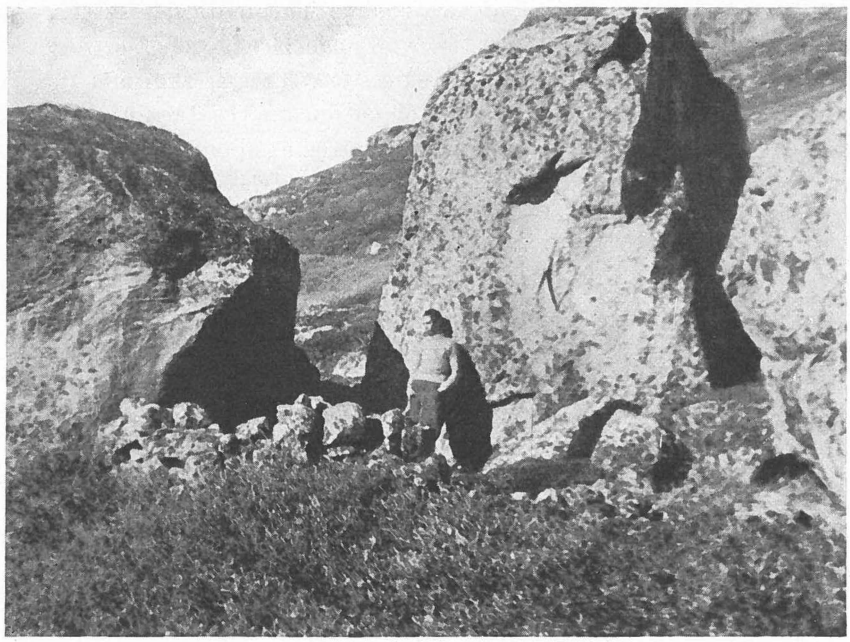


Fig. 8. East Settlement No. 84, Markai. Sheep-pen, built between three large rocks, seen from the west.

stone mentioned by Holm, with remains of a similar one alongside. This must be a skemma, surprisingly well preserved (fig. 7)[1]).

On the west side of the river and west of the bay is a large home-field (about 300 × 150 m.), with a somewhat uneven surface and scattered patches of grass and willow. In this field and lying about 150 m. from the water on high ground is the ruin of a livestock building, orientated north-south and with a doorway in the east end. It measures about 17 × 6 m. on the outside and is built of large and small stones with scarcely any turf. It is in a very ruinous condition but it is possible to distinguish two rooms, of which the south one, in which a few stall-stones can be seen, was a cow-byre. Just in front of this site is a very small, collapsed and overgrown building measuring about 4 × 4 m. About 15 m eastwards is the west end of the almost obliterated farm-house, which measures about 27 × 17 m. running north-south. Several rooms can be discerned but it is impossible to give any plan. Between the house and the water is a small, shapeless site measuring roughly 10 × 10 m. A similar one lies north-east of the house, near the water. Finally, on a flat rock north of the home-field, on the far side of a wet depression, is the round fold mentioned by Holm, constructed of large stones.

On a small cove at the entrance to Kanisut Holm found a ruin on the slope just above the water. It is orientated north-south, measures about 8 × 4 m. and consists of two rooms. The material is stone and turf. It is badly collapsed, but the walls can be traced and there is a doorway into one room in the east side. Between this ruin and the bay, about 25 m. from the latter, on an elevation on the terrain is a fairly large ruin, completely collapsed and overgrown, about 35 × 20 m., lying north-south. In appearance it is very like a dwelling.

It would thus seem that there were at least two, and perhaps three farms at Kanisut. Unfortunately, the state of preservation here as at No. 27a and No. 84 (see below) was so bad that systematic excavation would have but little prospect of yielding anything of value.

East Settlement Ruin Group 84, Markai.

On the south side of Tassiussak, the inner part of Kakortok fjord, not far from Hvalsey church, is ruin group 84, Markai. Here Holm found two folds[2]), but when we were there in 1939 we found several other sites in addition, so that there can be no doubt that the locality contained a farm, not merely a couple of isolated folds. About 30 m.

[1]) Also reproduced in Roussell 1941, p. 234, fig. 146.
[2]) MoGr 6, pp. 100—101.

north-east of Holm's round fold, on a slightly lower piece of ground, is a large farm-house site entirely overgrown with grass and much collapsed. Its measurements are about 20 × 30 m. A few wall lines can be followed and some rooms picked out, but no plan can be given. About 50 m. to the north-east of this ruin is another, but somewhat smaller, about 12 × 4 m., in which no rooms could be discerned. Between these two sites is luxuriant green grass, which suggests a midden. A little to the east, just on the far side of a brook, is another collapsed little ruin, about 20 × 20 m. Finally, about 100 m. east of this, up on the hill side, is a pen formed of three very large rocks on three sides and a dry-wall of field stones on the fourth (the west side) (fig. 8). The wall is 7 m. long and 1 m. high in three or four courses, and has a breadth of 0.5 to 0.7 m. This pen is a good example of the Norsemen's utilization of the advantages provided by nature when erecting their buildings.

East Settlement Ruin Group 66, Kagssiarssuk.

Near ruin group 66, Kagssiarssuk (Sdr. Igaliko), east of the river there is a large number of curious hollows in the ground, covered by a rich vegetation of grass, angelica and willow. Two of these hollows were examined by Daniel Bruun[1]), who found that they were artificial and that they contained pieces of steatite, animal bones, charcoal, ash and a few stones; he discovered no feasible explanation of them, however. He suggested that there may have been some summer huts there. Mogens Clemmensen has since inspected these hollows, but without excavating them[2]). He essays the theory that they are the remains of a dwelling and thinks it not unlikely that there was also a farm on this side of the river, as there would seem to be land enough for several farms at Kagssiarssuk.

While at Kagssiarssuk on one occasion we seized the opportunity for a brief examination, cutting a longitudinal section through one of the hollows. It proved to be of exactly the same character as those which Bruun examined, and we found some animal bones (see appendix p. 114), some of them charred, and some pieces of steatite. Once again examination failed to provide the explanation of these hollows; the only way would seem to be to make a systematic excavation of a large area.

[1]) MoGr XVI, pp. 386—387.

[2]) Mogens Clemmensen: Kirkeruiner fra Nordbotiden m. m. i Julianehaabs Distrikt, MoGr XLVII, 1911, p. 345.

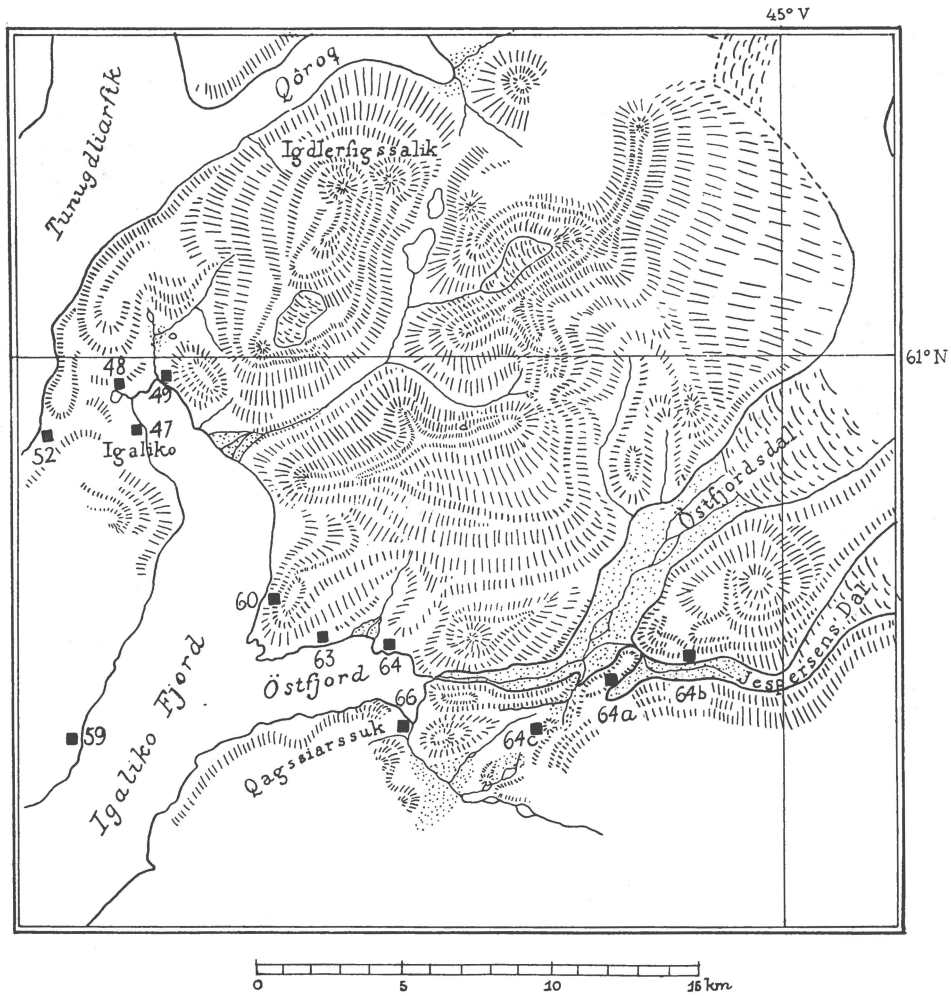


Fig. 9. Map of the region south-east of Igaliko (based on Ødum's report).

CHAPTER II

EXCAVATION OF EAST SETTLEMENT RUIN GROUP 64 A

Topography.

In the area south-east of Igaliko the inland ice sends two enormous lobes in a south-westerly direction towards the east arm of Igaliko fjord (see map fig. 9)[1]). The more northerly of these glacial lobes is drained through a widely ramified river running through Østfjords valley, which for a long stretch is more than 2 km. wide and occupied from bank to

[1]) Cf. Hilmar Ødum's description of the terrain in MoGr LXXIV, pp. 49—51.

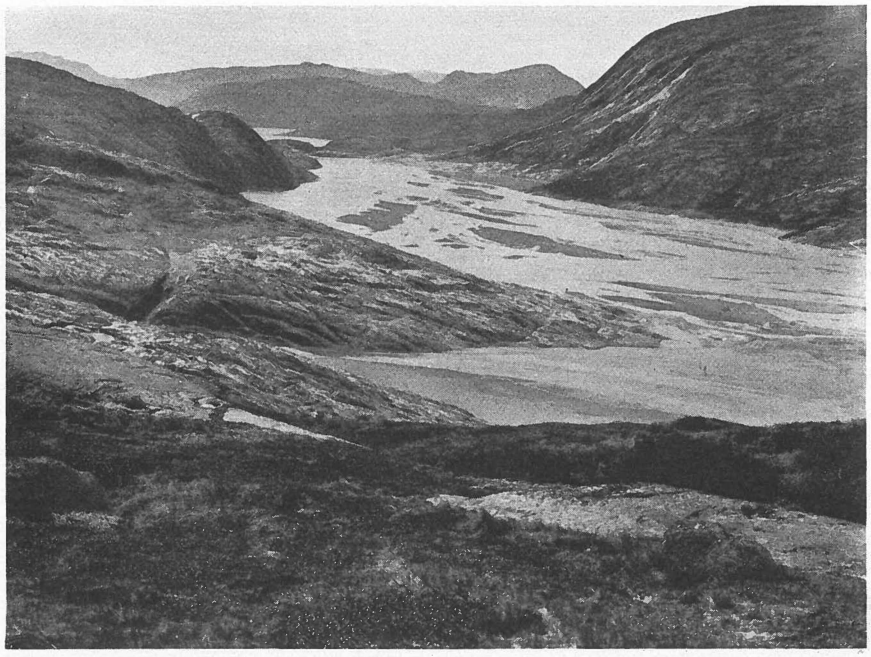


Fig. 10. Looking from east over the west part of Østfjord valley. Igaliko fjord in the background.

bank by a large plain of sand and gravel. The river first runs south-west, then west and finally empties into the Østfjord after the valley has narrowed in considerably (fig. 10). About 8 km. from the fjord this river, called Kugssuak, receives the meltwater from the south-east and smaller of the two glaciers. This meltwater river with its many branches runs westwards through Jespersen valley which, like Østfjord valley, is occupied by a flat waste of sand and gravel. The valley is about 1 km. wide; but about $^3/_4$ km. from Østfjord valley it narrows down and the branches converge into one river which through a veritable canyon breaks through the mountain and joins the principal river.

On the north side of Jespersen valley, about 2 km. from Østfjord valley, lies the Norse farm 64b on a small plain between the river and an enormous mountain (figs. 11 and 12). It would be hard to find a more isolated and shut-in spot for a human dwelling, even for a Norse farm, several of which lie in remote areas that, at any rate today, are very inaccessible, e. g. the farms in Kangersunerk and Austmannadal in the West Settlement[1]).

East Settlement No. 64b was one of the farms we were to excavate in 1939. Unfortunately we were obliged to relinquish the plan on that

[1]) Roussell 1941, p. 59 ff.



Fig. 11. Air photograph of the region south-east of Sdr. Igaliko. Farms 64a, b and c outlined with white circles (Photo: Geodaetic Institute).

occasion, for the reason that with our horses and all our equipment it was impossible to cross the river, which that year was extraordinarily swift and swollen as a result of the unusual melting of the ice above. To judge from Roussell's description, however (see p. 6, Note 2), an excavation of these ruins is so attractive a project that everything will be done to carry it out at the first favourable opportunity.

To return to the description of the ground. On the map a lateral valley will be seen opening from Jespersen valley in a south-west direction, almost parallel with Østfjord valley. Through this valley (fig. 12), which is over 2 km. long and averaging 500—600 m. in breadth, the more southerly of the two glaciers once had an outlet for its meltwater to the south. The bottom of the valley, which bears the signs of the meltwater activities, is a flat, faintly undulating plain of sand and gravel with large numbers of small stones. It has hardly



Fig. 12. Looking from the west over the ancient meltwater valley in towards Jespersen valley. In the background below the high mountain is East Settlement No. 64b. In the middle distance to left (by the tents) No. 64a.



Fig. 13. East Settlement No. 64a, seen from the mountain behind the farm.

any vegetation except for a narrow fringe along a winding brook on the south-east side. On both bank slopes, however, there is a luxuriant growth of grass, club-moss, whortleberry and willow scrub, while on the north-east slope alone there is also dense bush with very vigorous, fairly

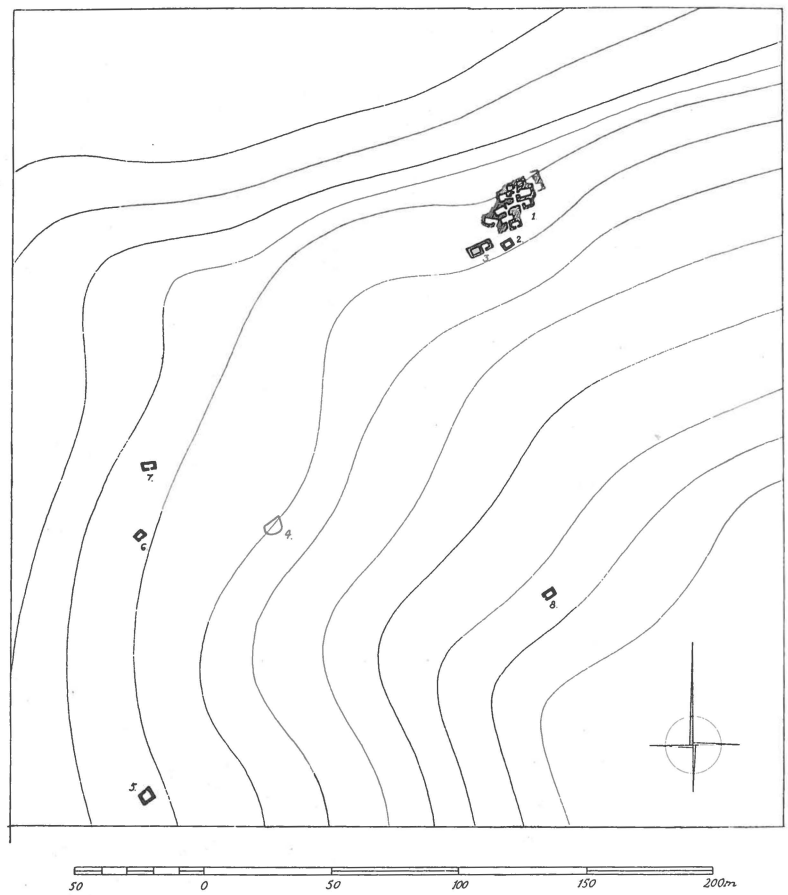


Fig. 14. East Settlement No. 64a. Contour map 1:3000.

tall birch here and there. On this side there is also a rich growth of angelica and many kinds of flowers.

Near the south-west end of the valley the steep rocky north-east slope, which rises about 150 m. above the floor, recedes a little and forms a small plateau at a height of 50 to 60 m. On this plateau lies farm 64a (figs. 11, 12 and 13).

At the northeast corner of the plateau, which slopes evenly but steeply down towards the valley, is the main ruin of 64a, a dwelling house and presumably livestock quarters (here and in the following see the contour map fig. 14). On the west and south the house faces a large

home-field, though only a small part of it is now open pasture, the remainder being thickly overgrown with luxuriant willow and birch scrub. This home-field, which is not enclosed by any fence, seems originally to have had an extent of about 80 × 80 m. Below the house and out towards the valley the ground drops away, especially on the east side. On this steep slope is a midden deposit, easily recognizable from its sap-green grass. Up against the house on its south-southwest side are two outhouses, one with two rooms (contour map, Nos. 2 and 3). About 125—150 m. more to the south-west are three outhouses (map, Nos. 4, 6 and 7) on the far side of an almost dried-up brook running from east to west; it is possible that this brook once carried more water than it does now; the nearest watering place is now the brook on the southeast side of the valley. About 100 m. south of the outhouses is another outhouse, probably a skemma (map, No. 5). Finally, there is a small outhouse about 150 m. south of the farm ruin, on the lower part of the slope a few metres above the bottom of the valley (map, No. 8), Despite a thorough search of the surrounding area, no other ruins were found.

The Main Building, Farm House and Livestock Rooms, (Contour Map, No. 1).

The farm-house (figs. 15 and 15a) of No. 64a must be said to be the best preserved building of its kind so far excavated in Greenland. It is also remarkable in having been sited on and partly dug into a sandy slope, a fact that unquestionably helped to secure the house from collapse. Reckoning from the ground surface below the lowest room to the upper edge of the upper room there is a rise of about 5 m. along a stretch of only 17 to 18 m. Since the Middle Ages the rooms of the house have been filled more or less with blown sand from the plateau, some indeed to such an extent that it was impossible to discern them prior to excavation, as for instance Room I; on the other hand this blown sand conserved the walls, aided by the special construction of the house, and in actual fact several of the walls are still standing to what is practically their original height. The top of all walls is now covered by from 0.20 to 0.60 m. of blown sand grown with lyme grass (fig. 16).

The farm-house is a passage building, on the whole lying north-east—south-west, covering an area of about 15 × 25 m. There are seven rooms in it, all connected by passages and doorways, with two doorways leading outside, both facing south-east towards the valley. In addition there are two rooms, one at the south-west end of the house, the other on its south-east side; they were built together with the house and



Fig. 15. East Settlement No. 64a. Buildings 1 (house), 2 and 3, plan 1:300.

partly share its walls, but have no direct doorway or passage connection with the other rooms.

Through the entrance door nearest the west (fig. 17) a somewhat curved, ascending passage, 4.25 m. long and 0.6—0.9 m. wide, leads into the first room of the house, Room I. The entrance is well paved with flags, large and small in carefully laid steps; the doorstep is a very large stone. Towards the north-east the entrance follows the wall of Room VIII, and here the wall is scrupulously built up with large ground stones and smaller stones higher up. Where the wall is highest, in

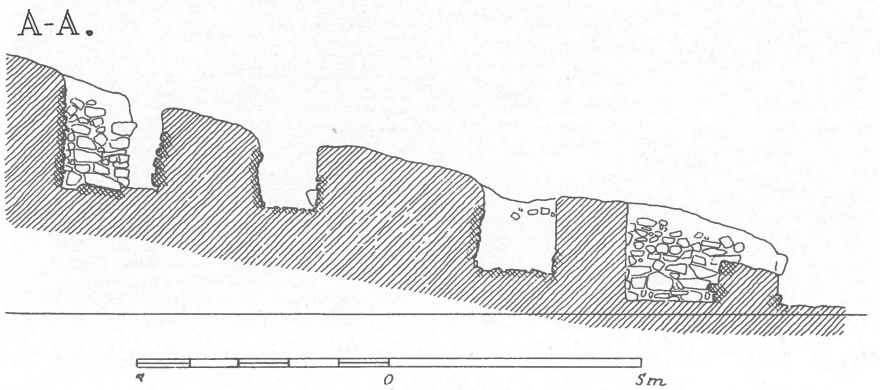


Fig. 15a. East Settlement No. 64a. Building 1 (house), cross-section 1:150.

towards Room I, about 1.25 m., there are eight or nine courses, whereas on the other hand, where the height is about 1 m., there are four or five. The material in this wall—as almost everywhere in the block—is stone and turf. The stones are mainly of granite; Igaliko sandstone was found in only one part of the building. The other side of the entrance is formed of the wall of Room I, a wall which with an outer facing of turf seems to have been about 5.5 m. thick, an unusual dimension for a wall. It is built chiefly of turf; only in towards Room I is there a wall properly built up of stones, whereas in towards the passage it has collapsed a good deal as a consequence of all the turf used. At the opening into Room I there are five or six courses of stone, and here the wall has a height of 0.80 m., whereas at the other end of the passage all that can be seen is a single row of basement stones, one of them being very large. That the wall has not slipped outwards here seems to appear from the fact that the front wall at the same time bends inwards, to bend outwards again at a right-angle 1.7 m. more to the south-west. The course of ground stones was undoubtedly for the support of a wall of turf built as a packing outside the wall proper; it seems to have been 1.0—1.5 m. thick. The front wall, by the way, is very poorly built of irregular stones in few courses; its height is 0.6—0.8 m.

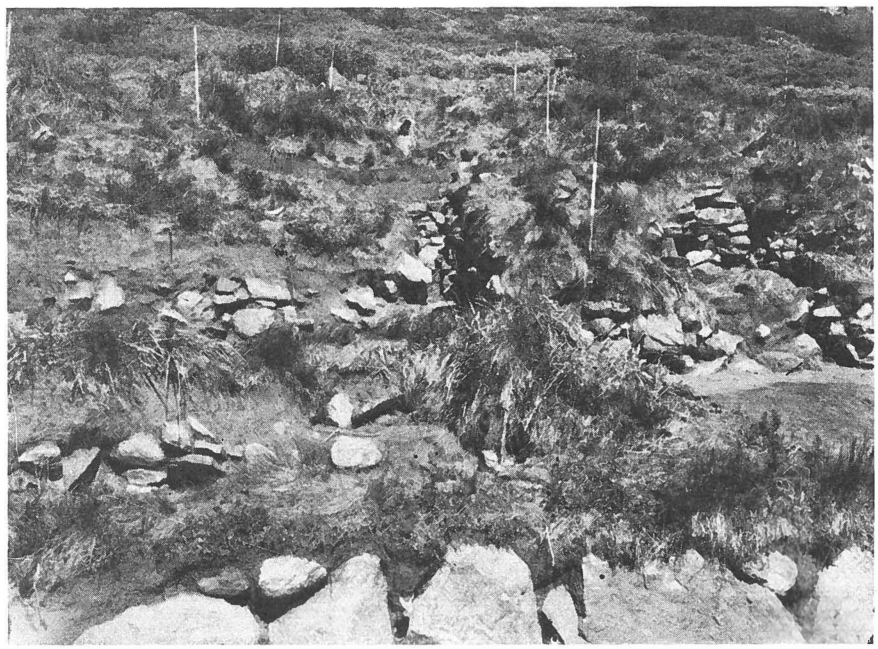


Fig. 16. East Settlement No. 64a. Buildings 1 and 2 during excavation, seen from south-east.

Room I (fig. 18) is a rectangular, very regularly shaped room, about 5.5 × 1.75 m. When excavations were commenced this room could not be seen at all, being full of blown sand and a few fallen stones. Its walls stand so high that in all probability they were never more than one or two courses higher. One remarkable feature about it is that except for a short stretch, all the walls are very thick, which is partly explainable by the fact that to some extent they are outer walls. The front wall has already been mentioned; the south-west wall is also of good thickness, 1.3—2.4 m., and the third outer wall on the north-east side seems to have been 2.0—2.5 m. thick. In addition, however, the partition wall to the higher room II is very thick, about 2.8—3.0 m., whereas that between Rooms I and VIII is only 1.3—1.4 m. Three of the four walls of this room are built in the usual manner, of suitable large and small stones together with turf. Where the north-west and south-west walls join there are eight or nine courses, otherwise there is an average of five or six. The fourth wall, to the north-east, is entirely of turf, although on its outer side there is a ground course of stones in prolongation of the wall of Room VIII. This turf wall extended at least 0.5—0.6 m. further into the room than it does now after excavation; but as the flat floor paving continued in towards the wall, part of it was cut away. There are a few stones in the uppermost part of the wall,



Fig. 17. East Settlement No. 64a. West entrance to house, from outside.



Fig. 18. East Settlement No. 64a. 1 I, from the west.

but these have doubtless slipped down from the walls in the higher rooms. The floor is paved with small and large flags as well as a number of thicker, more irregular stones. It is difficult to form an opinion on the use of this room. Was it a cow-byre? The thick walls, the turf wall and the paving would seem to suggest that it was; undeniably it is very small, and there are neither stall-stones nor dung-passage. On the other hand we were unable to find any separate cow-byre on this farm elsewhere, and therefore this room, which at any rate has the character of one, may possibly have been a small byre.

From Room I a passage leads to Room II. Just before reaching the doorway into Room II the passage bends sharply northwards and runs on into the house. This passage curves somewhat and ascends smoothly up to Room II. Its length is barely 3 m, corresponding to the wall thickness between I and II. Both walls of the passage, especially the north-east one, are much collapsed, and they were not excavated to the bottom for fear of further slipping; for this reason we cannot say whether there are any steps or not, except for the piece just at the entrance to Room II, nor can the true breadth be given; as it is now it measures only about 0.35 m. at the lower end; in towards Room II the breadth is nearly 0.5 m., and at most it has probably been 0.2—0.3 m. wider. In towards Room II are two fairly large paving flags, one of which extends over the threshold into the room. The wall height in the passage can be given only for the upper end, where it measures about 1.3 m. and is well built in eight or nine courses. In both walls near Room I is a large, fairly flat granite block on edge.

Room II lies almost parallel with Room I, with which it shares the aforesaid common wall. This room too is rectangular, its approximate measurements being 4.75×2.0 m. All the walls are of stone and turf, and three of them are among the best preserved in the entire block. The fourth wall, on the north-west, is built direct into the sandy hill, where the pressure from the outside has caused a good deal of slipping, except for the north-east corner; in order to prevent the whole wall from slipping during excavation it was necessary to leave standing a short length that projected into the room. The part of the room that is in the best state of preservation is the north-east corner. Here the wall still stands in what is certainly its original height, up to 1.85 m., and it is possible to count twelve or thirteen well-laid courses. The south-east wall is also in fine condition with its nine or ten courses; the part near the doorway is especially good and the door-jamb is quite sharp. In the doorway, which is 0.5—0.6 m. wide, there is a sill-stone, as already stated. The floor of the room is flagged in a curious manner, there being some unusually large flags in the middle and towards the door; the largest measures about 1.65×0.35 m. Between these flags are



Fig. 19. East Settlement No. 64a. 1 II, the north-east wall, with two recesses.

some smaller stones, some of them rather lumpy; on the other hand there are only two flags in the south-west end. The room presents still another remarkable feature, the two small recesses in the north-east wall (fig. 19). They are carefully built of flat stones, some on edge in the sides, others lying flat in "roof" and "bottom", the "roof" of the lower recess being the "floor" of the upper one. The upper recess measures 0.23×0.13 m., with a depth of 0.28 m., the other one 0.33×0.27 m., depth 0.40 m. The distance from the floor to the bottom of the lower recess is 0.90 m. No recess of this kind has been observed previously in Norse farms, no doubt because the walls rarely stand to a height of a metre now. In this farm they occur in several rooms (see below) and must have been a kind of "built-in cupboard".

Just before reaching the doorway to Room II the passage turns off to the north, as already remarked, and after about 2 m. turns again ENE. towards Room VII. This passage from Room II to VIII is about 6.7 m. long; its breadth varies considerably, from about 0.8 to about 2.0 m., the latter measurement, however, only for a short distance in the south-west end. The line of the north-west passage wall (the wall of Room III) is very remarkable, for along a length of about 1.75 m. it juts out into the passage to a depth of about 0.65 towards the south-west, but only 0.30 m. to the north-west. An examination of the courses showed beyond doubt that this was a kind of wall reinforcement built

up after the wall between Room III and the passage had been erected. Presumably this was done for constructive reasons, either in order to provide better support for the roof or to buttress the wall of Room III.

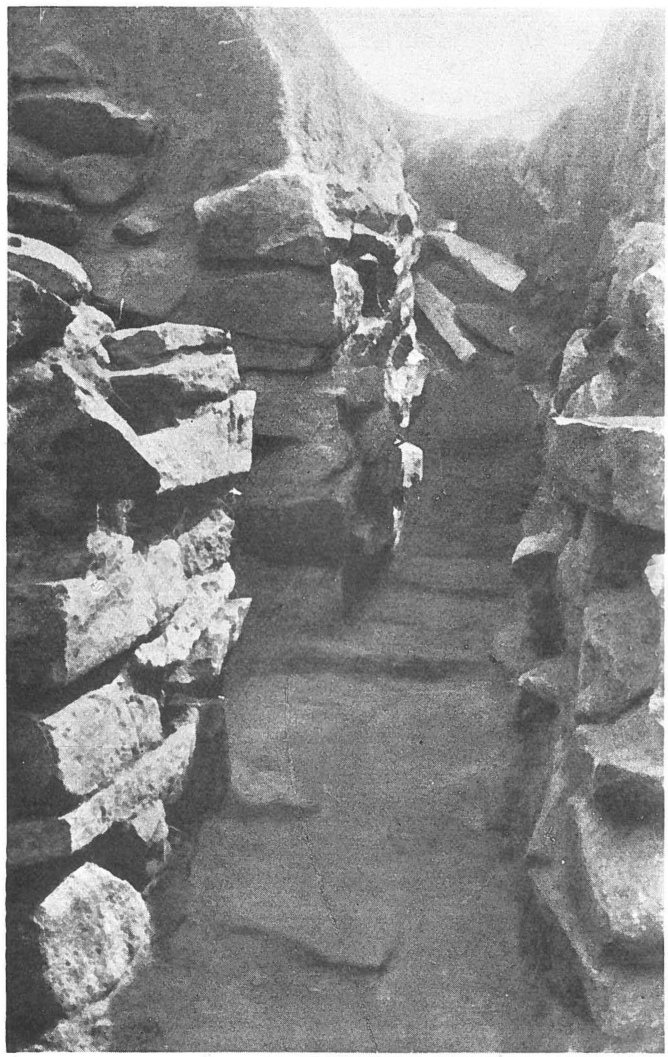


Fig. 20. East Settlement No. 64a. Part of the passage in the house.

The walls in this passage are in good condition and to the north and west reach up to what must be their original height, especially where the passage continues into the house; here on both sides the walls are about 1.50 m. high and about eight courses can be counted (fig. 20); the lowest parts of this wall are towards the south and east (0.5 and 0.6 m.). The passage is flagged along its entire length; at the south-west end



Fig. 21. East Settlement No. 64a. 1, III, oven and fireplace during excavation.

the flags lie about 0.1—0.2 m. higher than at the other end, but as the paving on the whole is much displaced, it is impossible to say whether this was the original state or not. About half way along its north-west side a branch passage continues. Here the passage is very narrow and apparently was never wider than about 0.6—0.7 m., whereas now in places it is only 0.25—0.30 m. wide owing to the slipping of one wall. The doorway of Room III is reached 2.4 m. farther on.

Room III in many respects is one of the most interesting in the whole block. It is a rectangular room lying north-east—south-west, about 3.5 m. long, but with different widths at the two ends, the near half towards the doorway being about 1.7 m. wide, whereas the south-east wall in the other half recedes about 0.6 m., making the width there about 2.3 m. All the walls of this room are in a good state of preservation and lack but little of their original height; the north-west wall, which is built into the slope, has a height of 1.8 m. with twelve or thirteen courses. The south-west wall is also sited direct into the hill side. The other two are partition walls. The wall to the passage has already been mentioned as far as its outer side is concerned, and with regard to the inside it has been stated that the innermost half recedes a little. Originally the position seems to have been that the wall ran obliquely, whereby the width of the room decreased gradually from 2.3 to 1.7 m. near the door; this is suggested by the fact that the ground course in the pro-

jecting part lies one or two courses higher than the other ground stones, on an old floor surface. The wall on the north-east, where the doorway is, remains in unusually good condition and the door jamb is quite distinct and sharp; from eight to nine courses can be counted. The doorway itself has a depth of 1.35 m., corresponding to the thickness of the wall. The north-east jamb is in a line with the south-east wall. The width of the doorway is 0.4—0.5 m., the height of the jamb 1.1—1.3 m. In the doorway lie four large flags and a small one. The floor of the room is partly paved and otherwise consists of yellowish sand.

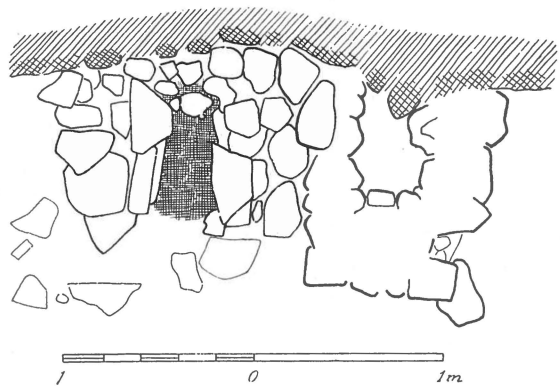


Fig. 22. East Settlement No. 64a. 1 III. Plan of oven and fireplace 1:40.

Features of particular interest in this room are the oven and the fireplace up against the north-west wall (figs. 21—24). Supported against this wall is a carefully constructed oven of stones supplemented with turf, four-sided in cross-section. The front of the oven is in line with the north-west door jamb and measures about 0.80 m. in breadth; its rear wall, which coincides with the north-west long wall, is of the same breadth. Both sides of the oven measure about 1.10 m. Its height now is 1.10—1.20 m., and at the most would have one or two courses more; in the front wall, which is well built of flat stones, there are six or seven courses, in the rear wall seven or eight, mostly of spheroid stones. The sides and the lower courses of the front wall consist of single stones only, so that the same stones form the inner and outer walls, whereas in the front wall there seem to have been very broad stones in one row as well as smaller stones in two or three rows in the upper courses. Here the thickness of the oven wall is 0.5—0.6 m., whereas elsewhere it averages 0.25—0.35 m. Presumably this is an indication of the construction of the oven top, which doubtless was vaulted, though now it is almost entirely collapsed. There was probably no chimney. Out towards the door of the room there is a four-sided stoking hole,

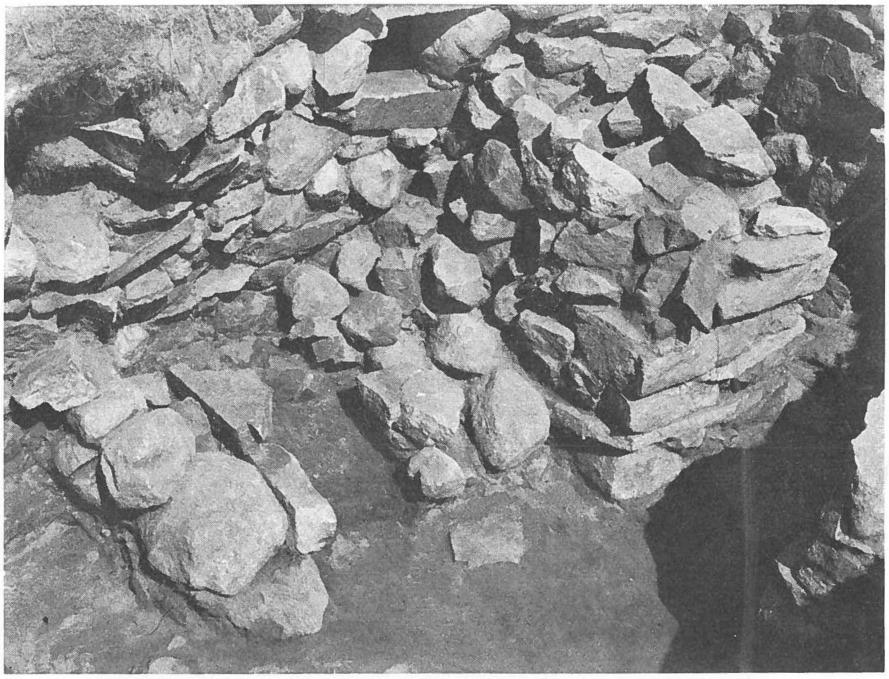


Fig. 23. East Settlement No. 64a. 1 III. Oven and fireplace, from the south.

about 0.35 × 0.35 m., in the south-east corner of the oven. The oven contained nothing else than a little sand mixed with charcoal, though it was not excavated right to the bottom owing to the risk of collapse. On the outside all the oven stones are black with soot. Up against the two sides, south-west and south-east, were large numbers of very small pebbles in size from that of a hen's egg to a fist, a few slightly larger. These stones, all of them thick with soot, were found lying from the upper edge of the oven down to floor level; presumably they were piled loosely on and around it.

With its good state of preservation and its type this oven so far is unique in mediaeval finds, not only in Greenland but to the best of my knowledge in all countries within the sphere of Nordic architecture.

What was the purpose of this oven? Notwithstanding the objections outlined below I consider it to have been a bathroom stove, intended for giving off steam when water was thrown upon it, or a stove for drying various vegetable and animal products, especially grain, or possibly, as a third hypothesis, a stove for both purposes. It was scarcely a baking oven, for there is no opening for placing the loaves inside.

An argument against the assumption that it was a bathroom stove or a drying kiln is the fact that when the small black stones were removed we discovered on its south-west side a characteristic cooking

hearth (fig. 23). It is a well-made, rectangular hearth, with its opening towards the room and running back against the wall. The inside measurements are about 0.35×0.65 m., the outer ones about 1.30×0.80 m. A dense layer of ash and charcoal was found in it.



Fig. 24. East Settlement No. 64a. 1 III. The oven, from the south-east.

The presence of a hearth of this description would characterize the room as the farm firehouse, an idea that is supported by its position opposite the living room, Room VI (see below). On the other hand we have the large stone oven in the same room, so that it is hard to explain this room in any other way than as a combination of firehouse (kitchen) and bathhouse (and/or drying room). Nothing of the kind has ever been encountered before, but from ethnological sources we have a hint of a possible connection of firehouse with bathhouse

(drying room), e. g. Axel Nilsson[1]), who considers that the bath-stove originally stood in the firehouse, whence it was later separated and given a room of its own; on the other hand Sigurd Erixon[2]) explains the connection from almost the opposite angle, his theory being that in the tree-less regions of South Sweden (Scania) and the equally timberless, stony parts of West Norway the bath-stove for reasons of economy was forced inside the house, i. e. placed in the firehouse and there, in the form of a "smoke-stove", used as a bath-stove and as a drying-kiln, thus saving both fuel and building material. According to Erixon, this assumption is supported by the circumstances that separate bath-houses and drying-houses seem to be entirely absent in the regions of Sweden and Norway where the smoke-stove[3]) is built into the dwelling, and this is actually the case in Scania and West Norway.

The bath-house has previously been encountered on Norse farms in Greenland, but only once with complete certainty. This was a small bath-house on Farm 52a, Umiviarssuk, in the West Settlement, built in the form of a separate building some distance from the dwelling, and having a well-preserved wooden platform and the foundations of a stone stove[4]). This stove seems to have had an almost horseshoe-shaped furnace, with the firing orifice wide towards the room, and to have been covered with a loosely-piled dome of hand-size stones, which in the course of time has collapsed. Thus the stove in 64a differs from the one previously known both by its type and by being situated within the house-block, and indeed in a room partly intended for another purpose. However, the fact that the bathhouse is in the dwelling itself is only what might perhaps have been expected from the Icelandic saga[5]), except that there the bathhouse is usually described is being in a cellar. Nevertheless it is a fact that no bath-stove or indeed any kind of stove has been discovered in the ruins of Icelandic mediaeval farms. In Greenland these two stoves already referred to are supplemented by the indisputable bath-stove found on farm 64c and described below, though in this case it is of the same type as that in West Settlement 52a, and it is situated in a room used solely as a bathhouse. As in 64a, this room is one of a block, though in this case except for the bathhouse the block seems to consist of nothing but rooms for the accommodation

[1]) Axel Nilsson: Äril, Spis och Ugn, Ymer 1905, p. 197.

[2]) Sigurd Erixon: Ofen mit rundem Grundriss, Folk-Liv 1939, p. 304.

[3]) On the smoke-stove see (apart from Nilsson l. c.) H. M. Schirmer: Aare, Røgovn, Peis, Aarsberetning for Foreningen til norske Fortidsminders Bevaring, 1904, p. 1 ff.

Errata.

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of livestock. Finally, Roussell found a much collapsed stove on farm 53d in Austmannadal, occupying almost the whole of a small room in the middle of the large house-block[1]). Roussell considered this stove to be either a smith's forge or a bath-stove; I consider the latter to be the more likely explanation. In and about all these Greenland stoves were quantities of the aforesaid small, scorched stones, which must have formed the top of the stove or at any rate they must have lain on it. On all the bath-stoves of more modern times in Norway and Sweden the stones forming the upper structure of the stove are much larger[2]), and it is difficult to understand how these small stones could remain in position. In conclusion, after Gudmundson's saga-based work Nørlund made a search for bathhouses at Gardar and Brattahlid, but as a result he ventures merely the suggestion that there may have been one in the house of the South Farm (Brattahlid 18), whereas nothing can be said as to Gardar[3]).

Accordingly it is my opinion that Room III of the house-block at 64a was used for both cooking and bathing, and, as suggested above, possibly as a drying-room as well, especially for grain and other vegetable products, but also for meat. On the other hand, as this was a Greenland farm, where there was little or no cereal growing, it must be confessed that grain-drying would be of subordinate importance. In Norway and Sweden the bath-stove has been used for this purpose right up to the present day[4], whereas elsewhere in the region of Nordic culture there were special stove types for grain drying, the "kiln" in the Orkneys and Shetlands[5]), and the "Sodnhus" in the Faeroes[6]).

The two recesses in the north-west wall of Room III remain to be mentioned. They are of exactly the same character as those in Room II. One, between stove and hearth (fig. 23) measures 0.30×0.28 m., depth 0.46 m., the other, about 0.50 m. further to the WSW., measures 0.18×0.22 m. with a depth of 0.24 m. The floor of both lies about 1 m above the ground level.

Past the door to Room III the passage continues northwards, now rising steadily; up a number of stair-flags one comes to the doorway to Room IV.

Room IV is a very small, almost square room about 1.5×1.5 m. Two of its walls are built into the sandhill; one of the other two faces

[1]) Roussell 1941, p. 187.

[2]) See e. g. Nilsson l. c., Ymer 1905, p. 196, fig. 7.

[3]) Gardar, MoGr LXXVI, p. 94, and Brattahlid, MoGr 88, 1, p. 76.

[4]) See e. g. Roussell l. c., MoGr 88, 2, p. 80, and Wilhelm Lund: Ildsteder og Belysningsmidler paa Nordmøre, Aarsberetning for Foreningen til Norske Fortidsminders Bevaring, 1910, p. 146.

[5]) Aage Roussell: Norse Building Customs in the Scottish Isles, 1934, p. 60 ff.

[6]) Daniel Bruun: Fra de færøske Bygder, 1929, pp. 153—154.

partly into Room III, partly into the passage, and the other, the north-east wall, into the passage. This room is remarkable in that it has about the highest walls left in the block; the north-west and north-east walls are especially high. At the door-jamb in the north-east wall there are no fewer than 18 to 19 courses of flat stones, now somewhat displaced, to a height of 1.90 m. Facing the passage the wall has a thickness of only 0.70—0.80 m. The door is in the south-east corner and one jamb is in line with the south-east wall; the breadth below is 0.30 m., higher up 0.60 m., the explanation being that the ground courses have slipped outwards somewhat. The floor is of sand. There has been a fire in the north-east corner, for some charcoal was found there, and the stones in the wall are charred. The use of this room is uncertain.

From Room IV the passage ascends rather abruptly and turns north. After a metre or two with two or three paved steps one comes to Room V.

Room V lies higher than any other in the block. Its floor is about 0.8—0.9 m. above the floor of Room IV. It is also rectangular in shape, but is widest at the north-east end, from where it narrows down towards the passage. The north-east wall measures about 2.3 m., the south-west wall (including the doorway) about 1.4 m., on the north-west side the wall is about 3.3 m., the other about 3 m. All the walls of this room are much collapsed and are now rather low, the highest part being in the north-west corner, 1.5 m. The north-west wall is built into the hill, the north-east wall is an outer one and on the outside is very distinct to a height of five or six courses of large, thick stones. The south-east wall is shared by Room VI, the living room. The doorway is 0.6 m. wide and seems to have been somewhat wider, but the wall here is in a very tumbledown state. In the doorway lies a very large sill-stone, and the entire room is paved with rather large, well-shaped flags, some of them overlapping. Along the north-west wall there is actually an elevation of the floor along the entire length of the wall and about 0.55—0.65 m. wide. To judge from its situation this room was a Skáli (sleeping room), in which case the elevation was presumably a sleeping bench.

Below V, almost opposite Room III, with a doorway into the passage is Room VI, the principal room of the house, without doubt the living room. It lies almost ENE.—WSW. On the latter side the room is bordered by the wall of the passage, on the WNW. partly by the wall of Room V, partly by an outer wall; on the ENE. by the outer wall, on the ESE. by the partition wall to the passage and to Room VII. The length of the room is about 4.8 m. along the WNW. side, about 5.2 m. along the other side; on the ENE. side the wall is about 2.7 m. long, whereas the other short wall, by the door, measures about 2.4 m. As a whole the walls of Room VI are built of selected large and small flat

stones in regular courses. The walls are somewhat displaced, and parts of the WNW. wall have slipped into the room. Generally speaking, however, they stand well; the ESE. wall leans outwards a little, but it seems to have done so always. The highest are parts of the WNW. wall, up to 1.95 m. reckoned from the underside of the basement course; here the courses number twelve to thirteen. The lowest part is near the door (1.25 m., nine or ten courses). Thicknesses vary from 1.20 to 1.80 m.

A feature of particular interest in the walls is the course of the two long sides. About 2.30 m. from the WSW. wall the ESE. wall bends off suddenly in a right-angled corner and recedes about 0.35 m.; it then runs slightly obliquely into the room, thus approaching its original line. Meantime the basement course, or more correctly the lower two courses, continue from the first line of the wall almost parallel with the changed direction. Three large stones are observable in the upper of the two courses, whereas only one was excavated in the lower course. That this basement course and the corner are not accidental through the partial slipping of the wall is evident from the carefully masoned edge of this corner, in which several of the stones lie across the longitudinal direction of the wall. This must be a special constructional feature, for the same phenomenon is observable on the other long side, especially as it is hard to imagine any slipping of the basement course there. On this side the wall recedes about 2.40 m. from the WSW. wall, but in not quite the same manner as the other wall, as the lower two or three courses above the basement course leave the original basement course in a smooth curve, whereas the upper ones, as far as can be judged from their collapsed condition, form a corner of similar kind and depth to the one opposite. I am inclined to think that these two rows of basement stones once formed supports for side benches or—perhaps more probably—wall panelling.

In the background of the room is a pálr (dais), for that must be the interpretation of the elevation of large, thick stones up against the ESE. wall (fig. 25). It measures about 1.5×1.7 m. It is in two steps. The lower one lies 0.18—0.20 m. above the present floor level, and the upper one is 0.35—0.40 m. from the same level. A large stone between the presumed pálr and the WNW. wall may have belonged to it too. Of course one cannot dismiss the possibility that they are merely stones that have fallen in and lain in this peculiar manner; but a very similar—and indisputable—stone bench at the end of the living room, opposite the door, was found by Roussell in one of the farms in Austmannadal, No. 53c[1]).

[1]) Roussell 1941, p. 175, fig. 107.

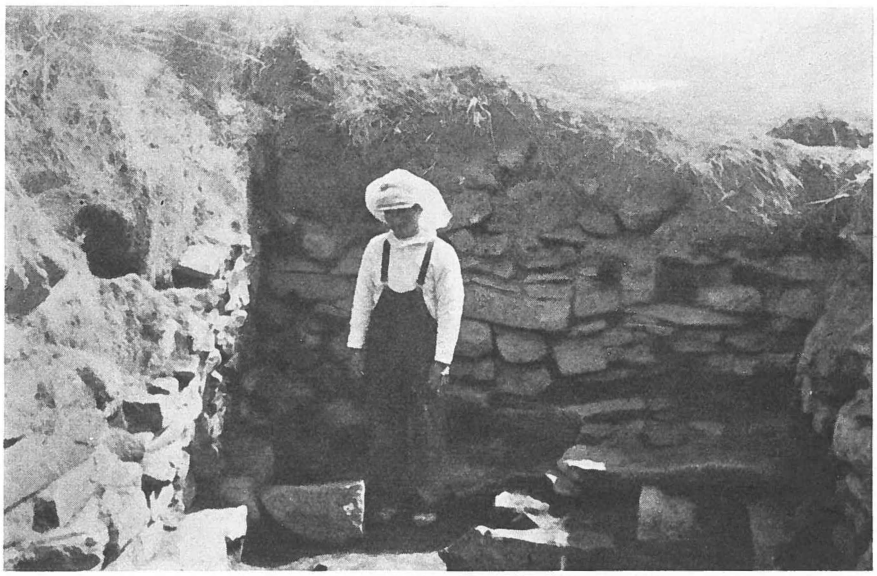


Fig. 25. East Settlement No. 64a. 1 VI. ESE. end, from WNW., with remains of a pálr. The height of the wall indicated by the man in the middle.

Access to Room VI is, as already explained, gained from the passage, and the doorway is in the middle of the WSW. wall. The entire doorway is in an advanced state of collapse with the exception of the south-west jamb in the corner in towards the room; here the wall remains to a height of seven or eight courses of flat stones. It is difficult to say how wide the original doorway was; as it is now it measures about 0.30—0.50 m. At both inner and outer ends there are sill stones, and at the middle is a single flag; but the floor level as it was at any rate towards the end of the habitation period lies about 0.25—0.35 m. above the original floor, and the last floor consists of a mass of sand, soot, a few bones and some rubbish stamped down firmly. Only few excavations were made through this secondary floor; complete excavation to the basement courses would involve a risk of bringing the walls down.

This room has now been described except for the two fireplaces at the door, one on each side, one in the south-west corner, the other in the north-west corner (fig. 26). These two fireplaces, well built and in a good state of preservation, are undoubtedly for cooking. The one in the north-west corner (fig. 27) consists of a large stone slab, measuring about 0.80×0.50 m., laid horizontally into the corner about 0.35 m. above floor height, resting upon smaller stones and with two thick flat slabs on edge extending as side-walls from the wall on the south-west. One of these slabs, the one nearer the north-west wall, rests on the horizontal slab direct. It looks as if a fire had been laid under this slab, as a piece

of scorched steatite and some ash were found under it. But to all appearance there was also a fire on top of it, for it is much scorched over a small area out towards the edge and up against the inner side-wall. It was also found that there had been fire on the small heap of stones in front of the slab, in against the wall.—No fireplace of this type has previously been discovered in Greenland, and its character is not quite clear; nevertheless it seems most reasonable to assume that the cavity under the slab was employed as a kind of repository for

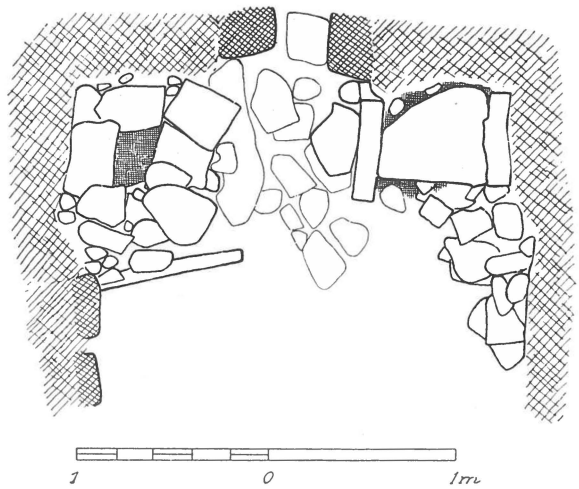


Fig. 26. East Settlement No. 64a. 1 VI. The fireplaces near the doorway. Plan 1:40.

embers[1]), and that the fire itself was made on top of the slab. On the other hand we cannot quite dismiss the possibility that the fire was made under the slab to heat it for baking e. g. flat-cakes, notwithstanding the burnt area on the top.—The other fireplace is of the ordinary type (fig. 28). It is in the form of an open pit, with stones laid around it, and measuring on the outside about 1.0×0.8 m., and inside about 0.20×0.35 m., with a depth of 0.40 m., the bottom being lined with small stones. Here again we found a burnt piece of steatite in addition to ash.

Judging from the placing, size and entire lay-out of this room and from the objects found in it (see the list p. 91ff.), there can be no doubt that this was the living room of the farm.

Instead of proceeding along the passage to Rooms II—VI one can continue north-eastwards to Room VII (fig. 29), a small, almost square room measuring about 2.10×2.0 m. Prior to excavation this was one

[1]) These ember-boxes are usually holes in the floor, edged with flat stones. See Roussell 1941, p. 197, fig. 121.



Fig. 27. East Settlement No. 64a. 1 VI. The north-west fireplace.



Fig. 28. East Settlement No. 64a. 1 VI. The south-west fireplace.



Fig. 29. East Settlement No. 64a. 1 VII, seen from the west.

of the rooms that stood out most clearly, with a distinct doorway. It has outer walls on the north-east and south-east sides; on the north-west it shares a wall with Room VI, and on the south-west is the wall to the passage. The doorway is in this latter wall, one jamb being flush with the wall in towards Room VI. In the other jamb, which is somewhat oblique, is an enormous basement stone, 0.85 m. long, 0.55 m. high. The depth of the doorway, corresponding to the thickness of the wall, is about 1.20 m. The walls are rather low, and there must have been some falling in, especially from the front wall; the remaining courses, however, six to nine in number, are still very distinct. The greatest wall height is in towards Room VI (1.5 m.), whereas it is lowest by the doorway (0.7 m.). The floor covering consists of sand, though there are two or three flags. Nothing can be said as to the use of this room.

From Room VII there is access to the outside through the second front door, as the passage continues about 1.5 m. to the south-east, whereafter one steps outside across a fine big sill-stone (fig. 30). On the outside of this doorway the ground drops away towards Room VIII, there being a difference of about 1.5—1.6 m. between the levels of the basement course in the wall at the entrance and that in Room VIII.

Room VIII (fig. 31) adjoins the house, having its rear wall in to Room I and one side wall in common with the main entrance; on the



Fig. 30. East Settlement No. 64a. East entrance to house, seen from the south.

other hand there is no direct communication with the other rooms, the doorway being towards the south-east and leading into the open. Practically the whole of the front wall has fallen—it is the least well-preserved of all the walls in the block; and as the wall to the passage is also in a state of collapse, the dimensions of the room can be given only approximately, about 2.0×3.2 m. The other two walls in contrast are particularly fine to a considerable height, 1.70 m. and with nine or ten courses. Despite the collapsing of the front wall it is possible to discern four or five courses here and there. The upper courses of the north-east wall have a large bulge outwards, and as there was a risk of collapse there, we did not carry the excavation down to the basement course. The doorway was in the middle of the front wall, with a presumed width of 0.5—0.6 m., the depth being about 1.2 m. The floor consists of sand, but at about the middle, running transversally, are six flat stones extending from one long wall to the other; it is possible that this was a foundation for a partition of timber or turf. In this room too is one of the aforesaid recesses, in the rear wall, a little to the north-east of the middle, about 0.7 m. above the floor. This recess measures 0.4×0.3 m. with a depth of 0.5 m. This room may have been for livestock.

Up against the west end of the house-block is Room IX (fig. 32). It is a regular rectangle, about 3.2×1.5 m., lying east-west. Two of the



Fig. 31. East Settlement No. 64a. 1 VIII, seen from the south. The height of the walls is indicated by the man in the corner.

walls, the south and west, are outer walls whereas a short stretch of the east wall rests against a corner of Room II, the remainder lying out to a peculiar little passage building. The fourth wall, on the north, is built into the slope of very carefully laid and rather large stones. The walls are not very high, 0.8—1.0 m. in five or six courses, the south wall being still lower; but apparently there were never many more stones than now. On the other hand it is beyond doubt that part of the walls were heightened with turf, at any rate the south wall. In the south-west corner there is a length of 0.9 m. where turf alone was used. Of the outer walls the west one ist best preserved, with only three very large stones. The wall thickness is 0.8—1.0 m. The doorway, which is in the east end, has fine jambs built of large stones, with a door breadth of 0.65 m. This doorway, however, does not lead straight out into the open air but into the aforesaid passage-building, which runs southwards parallel to the east wall, to the north limited by the wall of Room II, to the east following the wall of Room I. At the south end of the passage building it is flanked by two very large stones, one of them flat, measuring about $0.5 \times 0.9 \times 0.25$ m.; it stands on edge and right up to the wall, whereby it is in line with the passage. The other stone, which is placed against the wall opposite, is an almost cubic block, about $0.6 \times 0.6 \times 0.5$ m. The passage building does not end at these stones, however, for about 0.7 m. further to the east is a sill-stone, about 0.6×0.25 m. The entire passage building measures about 3.5 m. in length from the north door-



Fig. 32. East Settlement No. 64a. 1 IX, seen from the east.

jamb in IX to the outer edge of the sill-stone; the width is about 0.8—0.9 m., but only 0.60—0.65 m. between the stones. These two large stones were doubtless put there to support the turf covering; the probability that this covering extended still farther out from the stone wall than is indicated by the length of these two stones is shown partly by the sill-stone, which seems to lie in its original position, and partly by the irregular row of smaller stones lying along the front wall at the same distance from it as the sill-stone and at the same level; this row of stones must also have supported the turf covering, which in that case would have a width of about 1.4—1.6 m. The room itself, packed so well in turf, must have been for livestock.

It is beyond all doubt that the block of rooms described above includes some for human habitation, for Rooms III and VI are definitely identifiable as the fire-house (bath-house) and living-room respectively. At the same time it seems extremely probable that other rooms were intended for livestock, particularly Room I which, as stated above, has the character of a byre, but also Rooms VIII and IX, and possibly II. Probable dwelling-rooms are IV and V, the latter despite the paving which otherwise is usually confined to byres; and finally there is also Room VII. In other words, the block consists of a house end, the north-east end, with five rooms mutually connected by a passage and

with a common entrance on the south side of the house, at Room VII, and a livestock end, the south-west end, with four rooms, of which two are in direct communication not only with each other but also with the house end, and with a separate entrance at Room VIII. Accordingly the main building at 64a is a handsome and characteristic centralized house of the type classified by Roussell, the first of its kind to be excavated in the East Settlement; Brattahlid ruin 47, excavated in 1930 by Nørlund[1]), cannot be described as typical[2]).

As Roussell has pointed out, the centralized type of house, and with it the entire farm lay-out, is characteristic of the small and medium-sized farms and in all probability is a type that was developed independently in Greenland at a fairly late period; that it is a late development is suggested particularly by the fact that except for the atypical Ruin 47 at Brattahlid, and No. 78a, described above (the latter included with all due reserve on account of the poor state of preservation), it has so far been observed only in the interior or in remote, inaccessible fjords (Kangersunerk), in regions that presumably were settled later than the more suitable sites on the big fjords. As yet, however, there is no direct evidence of this. It is probable that future excavations will reveal more specimens of this centralized farm, especially in the East Settlement, and it is to be hoped that in time it may be possible to clarify its typological and chronological relation to the other types of Greenland farms.

To return to 64a. This centralized house does not contain the earliest dwelling in the locality, for remains of an earlier habitation were found outside of the north-east wall (fig. 15, plan). Almost from the bending in the outer wall a double basement course runs towards the north-east for a distance of about 2.7 m.; it seems to be continued in a WSW. direction in under the farm-house; here, however, the wall has fallen to some extent, so that no definite pronouncement is possible. On the north-east this wall-line, which in places has two courses, encounters a transversal wall running at right-angles to its direction. The transversal wall is also double, there being two rows of ground stones, again in one or two courses. The interval between them, about 1.4—1.5 m. wide, is entirely occupied by particularly well-preserved, characteristic turf walling to a height of 0.5—0.6 m. The outer row of stones (that more to the north-east) ascends evenly for 2.5 m. towards the north-west and then bends sharply to the north-east for about 1.3 m., whereafter it dwindles away with two stones in the same direction and two to the south-east; we are unable to say how this is to be explained. The other basement course continues for 0.5 m. and then meets a transversal wall

[1]) MoGr 88, 1, p. 92 ff.

[2]) As also stated by Roussell 1941, p. 160.

running ENE.—WSW. This wall is built below of big stones and remains to a height of three or four courses, with smaller stones and turf on top. The height of this wall now is almost 1 m. and its thickness about 2.5 m., for to the WNW. there is a basement course running parallel with it and undoubtedly belonging to the same wall. To the north-east the direction of this wall is uncertain; the stones cease abruptly, and no transversal wall was found; its course to the south-west, in towards the north-east wall of the farm-house, is also uncertain. The three walls here described would presumably enclose a room, but how far it extended to the south-west, in under the present ruin, cannot be stated with certainty. In breadth it was about 2.4 m., and the present length is about 2.5 m. It had a paved floor, consisting of thin stone flags laid close together; whether they extended right up to the wall, and perhaps in under it, cannot now be said; some may have been removed during excavations. The floor paving, of which all the flags were badly scorched, lay about 0.4—0.5 m. higher than the lower side of the basement course. In the north-west corner were traces of a fireplace, a mere heap of blackened stones; the stones in the masonry there are also very black with soot. With regard to the flags there is the remarkable feature that to the north-east they continue 0.8—1.0 m. over the basement course and with a layer of turf 0.1—0.2 m. thick between them; the wall must thus be earlier than the paving. That the floor formed by the flags is not the earliest in this room—that perhaps more likely there was an earlier room, partly on the site occupied by the paved room—appears from the circumstance that under the flags we found a culture layer, 0.5—0.6 m. thick, consisting uppermost of charcoal, part of which is not completely charred, and soot, ash and Norse artefacts below. To judge from the latter this was once the site of a living room, the earliest found on this farm. The second living room was possibly the paved room, and the present living room (VI) perhaps only the third. Of the walls of this paved room that on the ENE. side seems to be the only one that could belong to the earliest room, for under it the basement course lies on the substratum and the black deposit stops there; on the other hand the basement course towards the south-east was unmistakably laid on and in the black deposit, which likewise passes in under the wall to the south-west and north-west. Finally, farthest out towards the north-west, opposite Room V, there are some curious double basement stones in some confusion, almost in semicircles, with from one to three courses; possibly they enclose a small room and the intervals between the rows of stones were perhaps filled with a turf wall; the lengths of these rows are about 3.0, 2.5 and 2.0 m. It is also possible, however, that these rows belong to different building periods; but as many stones must have been removed when the old houses were

demolished, the problem cannot be solved with any certainty. Finally it should be recorded that in the bend in the outer wall of the farm-house there are three or four very large stones which cannot have fallen from the wall. Between the stones and the wall are two long flags and some smaller ones, all in nearly the same plane. Unless these stones are to be regarded as a kind of buttress to the turf wall of the house now occupying the site they must date from earlier building periods.

The Outhouses.

Just below the house-block lies a small, four-sided outhouse, (contour map, No. 2, fig. 14 and photo, fig. 16). This building, consisting of merely one room, is orientated north-east—south-west, and its north-west long side is parallel to the front of the house. Its outside measurements are about 5.2 m. in length and about 3.3—3.7 m. in breadth, whilst the corresponding inside measurements are about 3.1 and 2.0 m. The latter figures are only approximate, as the walls are in an advanced state of collapse so that the wall lines are difficult to follow. The outside measures, on the other hand, should give the exact size, as the stones of the basement course are quite distinct and in position all the way round. The walls are of stone and turf. Some very large, well-shaped and flattened stones were used in the outer wall as well as a number of flat stones which have now slipped. Only one or two courses can now be made out in the outer wall, whereas in the inner wall there are three or four. It would appear, however, that these walls were not much higher originally, as there were not many fallen stones to be seen; in all probability the building had no roof. This supposition is supported by the fact that no doorway is discernible. The floor consists of the sand of the substratum; there is a single small flag in one spot, in the south-west end. Presumably this ruin may be assumed to have been an open hay-yard or a fold.

West of No. 2 lies No. 3, an outhouse with two rooms, orientated north-east—south-west. The room at the east end, No. I (fig. 33) is about 3.75×5.0 m. outside measurement, about 2.5×1.6—2.0 m. inside; these are only approximate figures, however, as the north-west wall was not excavated on the outer side, and inside all the walls are badly collapsed. These walls are built of stone and turf. Most of the stones are more or less spherical, though large flat flagstones were used at the doorway and still remain to a height of eight courses; there are also a number of flat stones at the outer corners, which still stand well. The front wall, facing south-east, is particularly well preserved; it stands to the height of eight or nine courses, about 1.4—1.5 m. The basement course of the rear (north-west) wall has been let down somewhat into

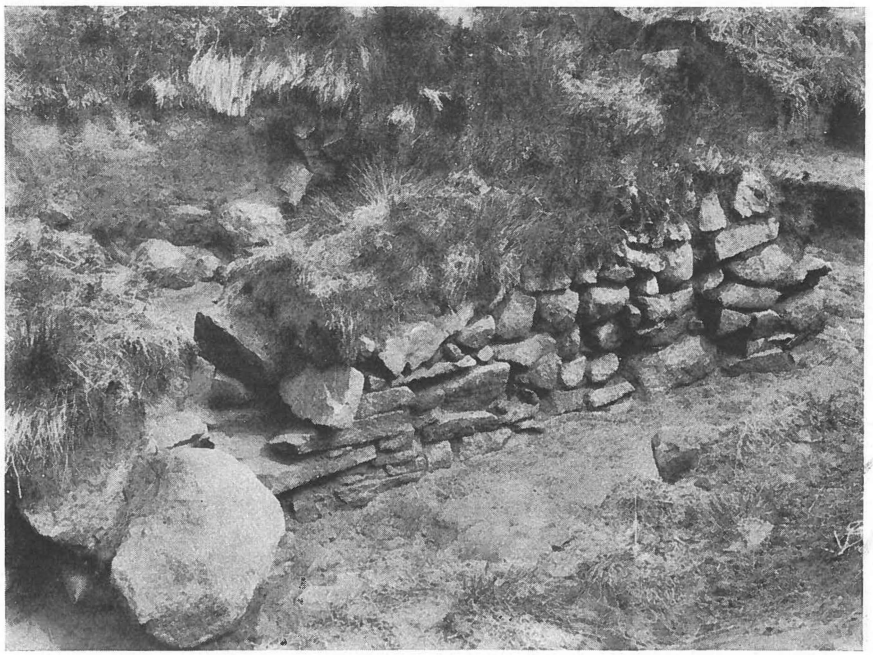


Fig. 33. East Settlement No. 64a. 2 I. The front wall, seen from the south.

the original, rather steeply sloping ground, and the wall itself, to judge from a cross section, was covered with a packing of turf. This turf wall was covered with slipping midden deposits even when the house was inhabited, and later the deposits in turn became covered with blown sand, so that the present grass-grown top of the wall is on a level with the slope behind. The doorway into this room was in the south-west corner and has a sill stone.—Nothing can be said as to the use of the room.

In direct prolongation of Room I lies Room II. The south-west wall of I is the north-east wall of II. The measurements of this room are: outside, south-east wall 6.0 m., north-east end 3.8 m. and south west end 3.5 m.; inside: 3.7, 1.9 and 2.2 m. respectively, and the north-west side 3.2 m. The outside measurement for the north-west wall cannot be given as it is built into the slope, so that actually it has no outer side. The walls are of stone and turf and seem to be of their original height, no more than 0.5—0.6 m., with only one to three courses of stones, for hardly any fallen stones were found inside or round about the room. The front wall is very thin, 0.3—0.6 m. in thickness, and at one place, near the south-west corner, consists of a single thickness of stones only. On the inside this wall is badly collapsed. Otherwise the walls do not seem to have slipped, and in particular the south-west end wall stands very well, built of rather large stones; the large basement stones of

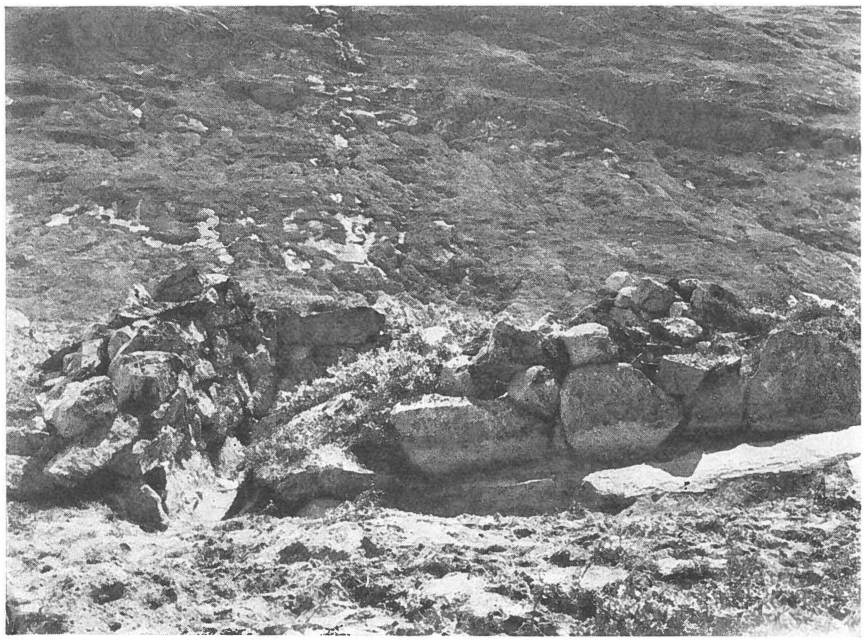


Fig. 34. East Settlement No. 64a. 5. Skemma, seen from the north-west.

the north-west wall are also very distinct. The floor is of sand. No doorway was found, and as the walls have scarcely been higher than they are now, the probability is that this was an open hay-yard.

Contour map, No. 4 is a fold, arranged as these often are with the use of the rock surfaces and boulders of the terrain. Of this fold, which runs north-east—south-west, most of the north-west wall consists of a single rock, 0.9—1.0 m. high, up against which the other walls are laid out in the form of a large half-circle of large, block-shaped boulders in three or four courses. These walls have a height of 0.7—1.0 m. and apparently have never been higher. Their thickness is also about 0.7—1.0 m. In the north-east corner is a doorway, of which the outside width is 0.7 m., and inside 0.45 m., with a well-built jamb. The floor, which slopes steeply upwards from north-east to south-west, consists of a single, or perhaps two or three large flat rocks. Inside the approximate diagonals are about 5.5×7.0 m., outside about 8.0×10.0 m.

Of all the buildings the most distant, and the one lying highest, is contour map, No. 5 (figs. 34 and 35). It is a rectangular building of dry masonry, though turf was used to tighten the lower courses. This building, which has only one room, is uncommonly well preserved, with sharp corners, and lies north-east—south-west. The inside measurements are: north-west wall 3.15 m., south-east wall 2.65 m., north-east wall 2.30 m. and south-west wall 2.20 m., the corresponding outside measure-

ments being: 5.20 m., 4.50 m., 4.80 m. and 3.80 m. The north-east and south-west walls stand particularly well, up to 1.6 m. with eight or nine courses; the lowest wall length is at the entrance, where it is 0.75 m. high. Here again nature was utilized. For its basement course the north-west wall has a long block which projects a little way into the room and partly outside as well, while the south-west and north-east corners are supported by other large blocks. The doorway is in the north-west

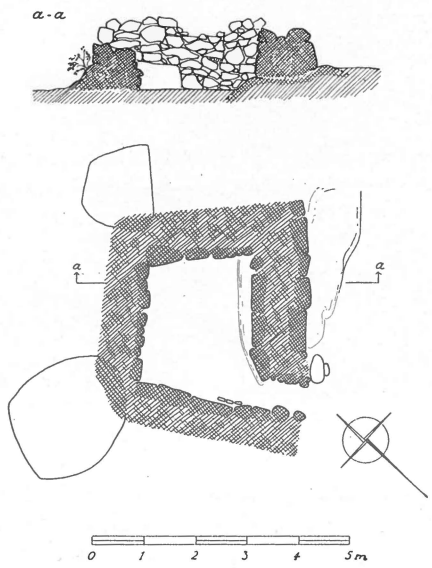


Fig. 35. East Settlement No. 64a. 5. Skemma. Plan and cross-section 1:150.

corner and in line with the north-east wall. The floor consists of sand, though one or two flags can be seen. To judge from its construction and position this building was a storehouse, the skemma of the Norsemen and Icelanders.

No. 6 on the contour map is an outhouse, oblong in shape, with one room lying north-east—south-west (fig. 36). For the long walls the exterior dimensions are 6.5 and 5.3 m., and for the end walls 3.6 and 3.5 m.; the inside measurements are 3.15—3.65 and 1.9—2.3 m. respectively. Most of the north-west wall consists of a single block standing almost vertically, about 1.5 m. high. The wall was made somewhat higher by adding a couple of courses of stone and turf; the parts that are left stand well, though the outer wall has slipped a little. The height varies from 1.7 m. in the north-east wall to 0.5 m. in the south-west corner. At about the middle of the front wall is a doorway, about 0.45 m. wide, and a sill stone lies almost in the middle of it. The floor is a continuous rock surface which extends some way under the walls. This surface

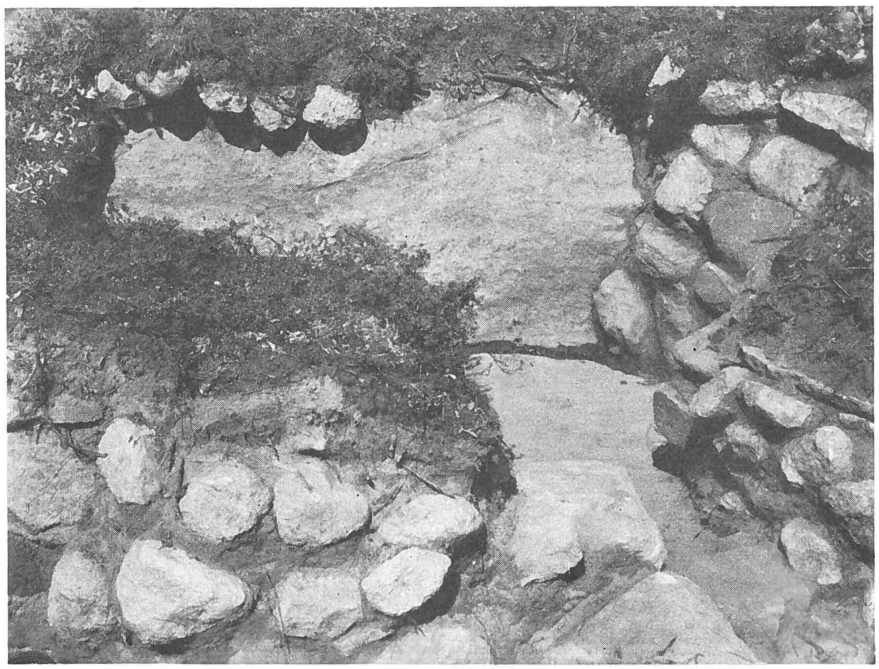


Fig. 36. East Settlement No. 64a. 6. Outhouse, seen from the south-east.

slopes a little and meets the north-west rock wall almost at right-angles. There seem to be two blocks, but they are cemented together so closely that one cannot be quite certain; it may perhaps be a single block which by some freak of nature has a bend of 90°. Presumably this building is a sheep shed.

No. 7 is a small outhouse, of one room, lying ENE.—WSW. In shape it is oblong, and the masonry of stone and turf stands to a height of three or four courses, which seems to have been the original height. For the side walls the inside measurements are 3.0 and 2.95 m., and for the end walls 1.4 and 1.65 m., the outer dimensions being 5.2—5.6 and 3.2—3.3 m. respectively. The height of the walls is about 0.5—0.6 m., their thickness 0.7—1.0 m. Again a rock surface was utilized, one side wall having a single large block as its basement course. The doorway is near the south-east corner and has a breadth of 0.4 m.; it is in a somewhat collapsed state. Must be a livestock shed or a pen.

The outhouses conclude with No. 8 on the map. This is a very small building with only one room. It was built on a rock surface that slopes evenly to the south-east and its orientation is north-east—south-west. The building is four-sided, very poorly built of rather large stones with a little turf and a few stone wedges in between; only one to three

courses are discernible and the highest part of the wall is 0.75 m. The outside measurements are: side walls 4.95 and 4.20 m., end walls 3.1 and 3.6 m., the corresponding inside dimensions being 3.55—2.90 and 2.30—1.95 m. In the south-east wall there is only one course, a row of big stones, whereas the south-west wall has only one stone, the remainder being turf, though it is possible that there were one or two courses more originally. In the north-east wall is a large flat stone on edge, and no doubt it indicates the maximum height of the original walls. The thickness of the walls is 0.4—0.65 m. There seems to have been a doorway in the south-west corner, but it is by no means certain. This building too was probably a sheep pen.

Conclusion.

If finally we consider the total result of the excavations at East Settlement No. 64a, taking into account the buildings and the Norse relics as well as animal bones found (relics and bones are described in Chapter IV and the Appendix), we may summarize by saying that this farm with its fairly large block of farm-house and livestock rooms, and its not inconsiderable number of outhouses scattered on and about the extensive home-field, is a typical Greenland inland farm of medium size. Without doubt this farm (which unlike most large farms in Greenland cannot be identified with any Norse name) had sheep, goats and cows besides horses, even if it is probable that there were only few cows, as there is little land suitable for grazing in the valley except for the home-field and on both sides of the stream; this supposition receives some support from the fact that no cow-byre was definitely observed on this farm. The farmer was unable to sustain his family by agriculture alone; at any rate, he eked out his supplies in other ways, as is proved by the large number of bones of game found here and there in the buildings and in the midden. Apart from the bones of terrestrial animals like the reindeer and the polar hare and those of various kinds of birds, there was a large number of seal, walrus and whale bones, which one would not expect to find on an inland farm. This is nothing exceptional, however, as the same thing occurred at the farms in Austmannadal (see Appendix). And it would appear from the artefacts found, most of them exactly like those from the larger farms, that this Norse farmer succeeded in living a tolerable life there with his agriculture and his hunting, and no doubt fishing as well.

Finally, there is the question of when this farm was inhabited and when it was abandoned. In this respect unfortunately we have almost

nothing to go upon. The artefacts found in the ruins provide no criterion for dating—Norse relics on the whole rarely give any indication of period; the remains of the buildings themselves can tell us only that there were several building periods, from which fact we may assume that habitation stretched over a long number of years. And to judge from the type of the main building, it is probable that at any rate the last habitation dates from a time long after the first settlement of Greenland, perhaps several centuries.

CHAPTER III

EXCAVATION OF EAST SETTLEMENT RUIN GROUP 64c

Topography.

In order to carry our gear and food supplies up to 64a from Kagssiarssuk, where we had our base, we had to take our pack-horses along the river that empties into the head of Østfjord, moving inland in a south-easterly direction. A few kilometres from the fjord the river valley widens out and contains a broad fluvial plain vegetated with grass and sporadic willow scrub; about three kilometres from Kagssiarssuk, however, the river receives a small tributary from the north-east. There we turned off and followed the latter's course through a very curious landscape. The valley is a sandy waste surrounded by low, barren hills. The sand came from the meltwater stream that once ran here from the south-east glacier (see above, p. 20). A few kilometres farther on the valley opens out into a small plain that is entirely desert in character. This having been passed, still towards the north-east, another low, hilly waste appeared. And then suddenly we stood on the shore of a smiling little lake. On the far side of this lake rises a small, domed hill which, as distinct from the hills on the north-west, west and south-west, is covered with a rich growth of willow and birch scrub as well as grass, angelica, buttercups, and other plants. This hill stands at the south-west end of the narrow pass which, to the north-east, connects with the old meltwater valley at whose north-west side lies Farm 64a.

Here, on the lower westerly slope of the hill, on which the vegetation is thrown into uncommonly sharp relief by the surrounding naked hills and sandy stretches, lies Ruin Group 64c, as the crow flies about 5 km. from Kagssiarssuk (figs. 11, 37 and 38).

We discovered this farm on our first preliminary survey inland, before excavating at No. 64a. Together with a Greenlander we passed through the desolate landscape, but taking a somewhat shorter, more direct way from Kagssiarssuk across the hills, passable only on foot. Out in "the desert" the Greenlander pointed out the sand covered ruins

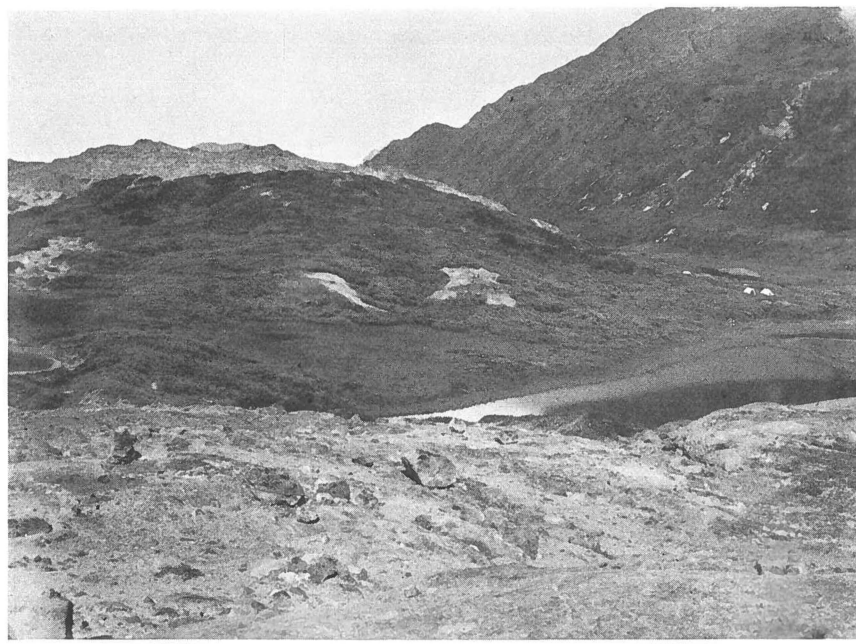


Fig. 37. The terrain around East Settlement No. 64c. The farm lies on the slope on the far side of the lake. The two light spots in the middle of the picture indicate the excavations. Seen from the west.

of a double pen built up against a small rock (House 8, fig. 54; see below). There was no doubt as to its being a Norse ruin, but it was certainly surprising to come across it in such surroundings and far from the nearest known Norse farms (Nos. 64a and 66); we considered that there must have been a Norse farm in the vicinity, and, when a few hundred metres farther on we came to the small lake and saw the thickly overgrown land on the far side, we no longer were in doubt: this must be the home-field of a farm, recognizable by the vegetation and by nothing else—particularly the sap-green grass which is an almost infallible guide to the finding of Norse ruins in Greenland. On making a closer examination of the ground we found that within the dense scrub there were several shallow oblong depressions which could be no other than the rooms of the farm; but strangely enough not a single stone was visible. The explanation of this was found when we commenced excavating there later that summer after having been obliged to abandon our plan for getting to No. 64b.

It transpired that after much strenuous work to remove the unusually well-developed willow and birch scrub we had to dig down through no less than from one to three metres of sand to reach the farm walls, and as much as four metres from the present surface of



Fig. 38. The terrain around East Settlement No. 64c. On the right in the middle distance on the slope is the farm, indicated by two light spots in the scrub. The third light spot (to the left) is an area where the scrub has been torn up by the wind. In the background to the left the ice-cap.

the ground to the floor of the rooms. So it was not so remarkable that we could see no stones when we first examined the spot. Up to the present no other Norse farm in Greenland has been found in such a sanded state. The sand came from "the desert", and in the course of time it has, whipped up by the frequent south-easterly gales, spread into large, lobed dunes on the leeward side of the hill; the Norse farm was thus buried and would never have been discovered again were it not for the fact that the vegetation over and round about the farm had held its own through the centuries despite the sand. At some time or other the dunes settled, whereafter they were covered with scrub which prevented any further shifting; nevertheless the gales still tear at the vegetation on the outskirts, so that there are open areas here and there (fig. 38).

As is natural, the excavation of No. 64c was a lengthy and laborious process (fig. 39). Still, it had its compensations, for under the sand we found extremely well-preserved ruins of a fairly large farm of an interesting type and having several valuable details. What is more, the Norse relics found in it are among the best ever recovered from the East Settlement.

The farm (see contour map, fig. 40) consists of a dwelling-house (1) and two large livestock buildings (2 and 3), the latter with a bath-house and possibly living rooms, as well as seven small outhouses (4 to 10).

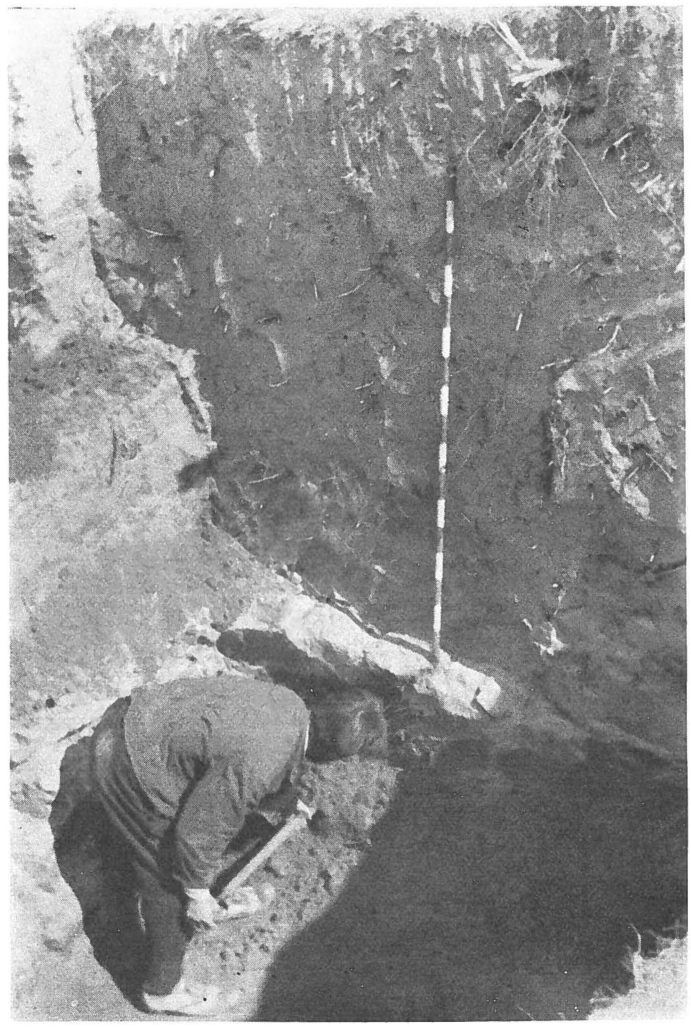


Fig. 39. From the excavation of East Settlement No. 64c. The earth is thrown up in benches.

The dwelling and livestock building No. 2 lie almost in a line, but without being joined together, on a small eminence—no doubt an ancient dune—jutting out a little way into the wet meadow around the lake. About 25 m. north of these buildings is No. 3 on a similar eminence; here again the orientation is almost east-west. Just on the border of the vegetation, NNE. of No. 3, are three smaller outhouses, Nos. 4, 5

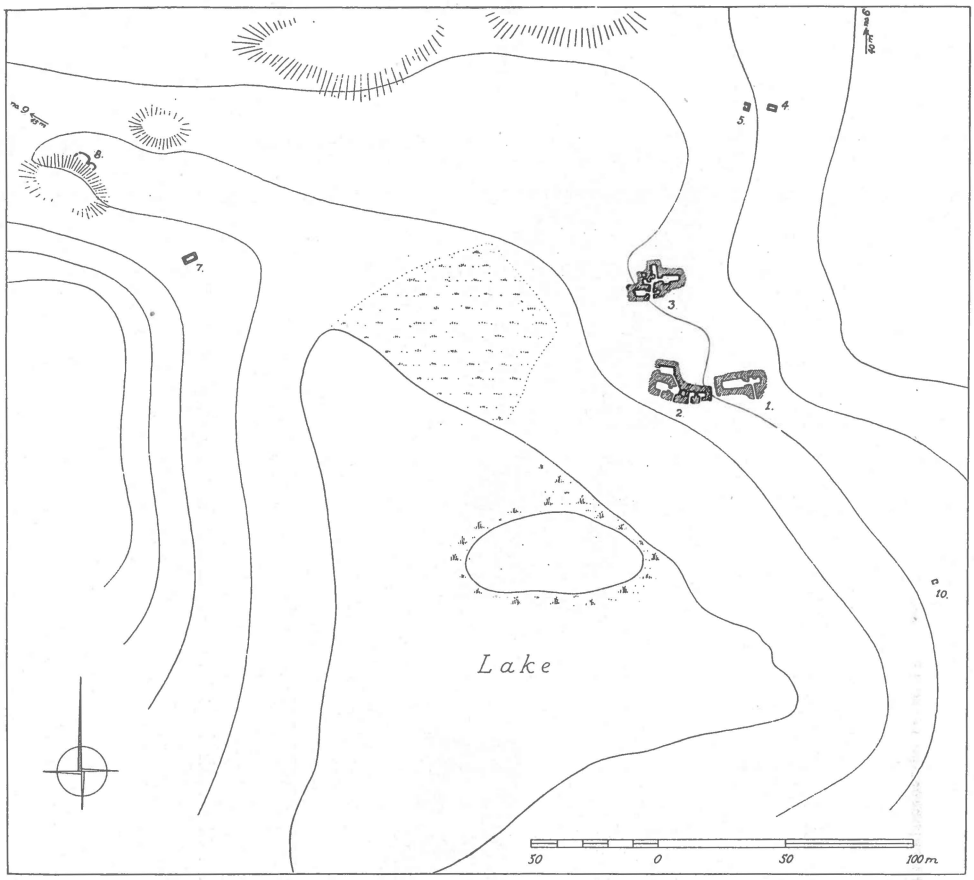


Fig. 40. East Settlement No. 64c. Contour map 1:3000.

and 6, each with one room and all more or less sanded up. The same applies to the other outhouses, No. 7, 8 and 9, lying about two hundred metres WNW. of the larger buildings in the "desert", and to No. 10, which has an isolated position about 100 m. ESE. of No. 1. Of these latter ruins only No. 8 has two rooms. In front of Buildings 2 and 3 lies a small home-field which passes imperceptibly into the meadow along by the lake. The higher part of the homefield is overgrown with willow. The only place at which we found midden deposits of any great extent was on the slope below No. 3.

The Farm-House.

No. 1 on the contour map is the farm-house (figs. 41 and 41a). There is no doubt about this, thanks to the shape and style of the rooms and the objects found in them. It lies farthest back on the same island

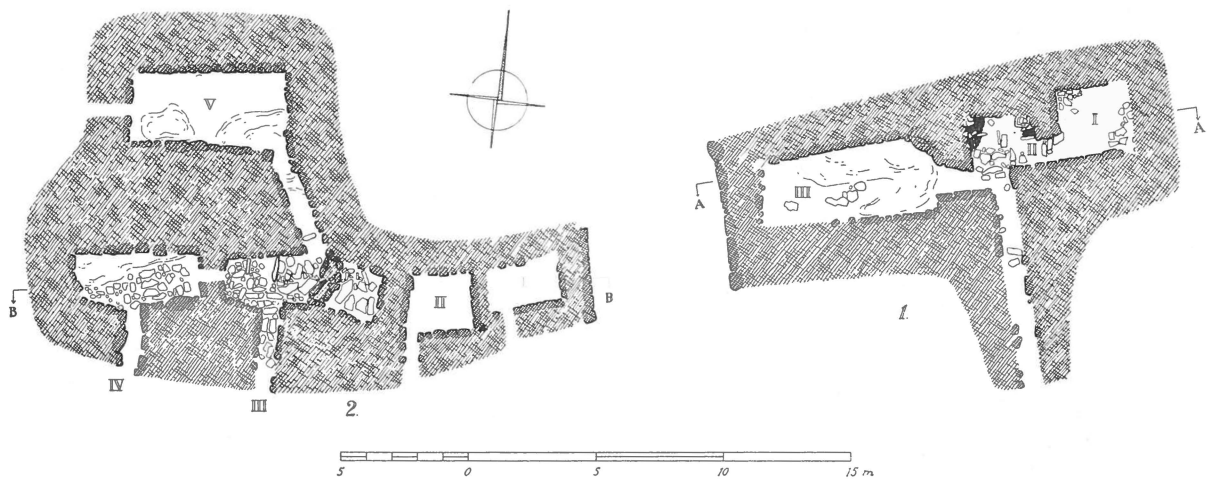


Fig. 41. East Settlement No. 64c. Buildings 1 (house) and 2 (livestock), plan 1:300.

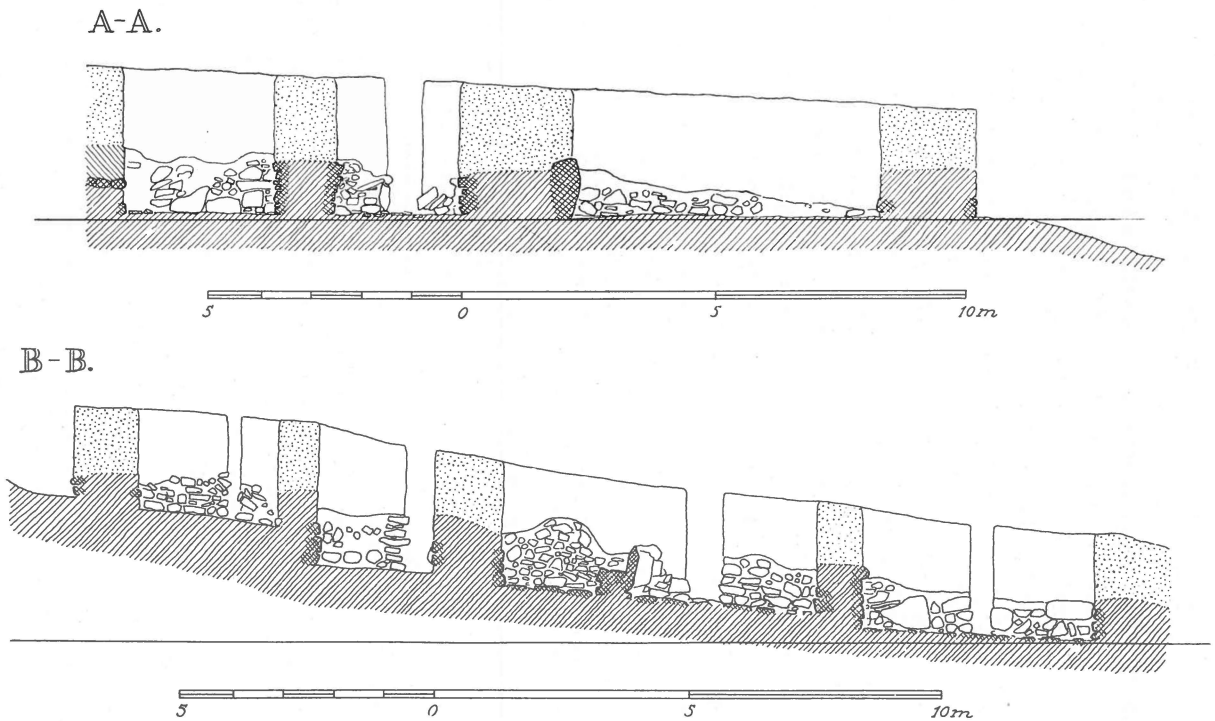


Fig. 41a. East Settlement No. 64c. Buildings 1 (house), A—A, and 2 (livestock), B—B, cross-section 1:150.

as No. 2 and is orientated almost east-west, with its front facing south. Here, as at almost all the ruins in this locality, the enormous masses of sand covering them precluded our uncovering the outer walls; but we did clear the west end. The building is a long house of three rooms, all connected by doorways but with only one common exit, on the south side through a surprisingly long passage which, sloping evenly downwards, begins almost at the centre of the middle room, Room II, and runs at right-angles to the longitudinal axis of the building.

The passage of the farm-house is in an extraordinary state of collapse. It is about 8 m. in length, but presumably only the innermost five or six metres represent the depth of the passage itself; the stones observed in the outer two or three metres were doubtless merely intended to support a turf packing, or they may be parts of the collapsed wall. The best preserved part of the passage wall is that of Room II; here and there it remains to a height of about 0.8—0.9 m., with six or seven courses. The walls are built of rather large stones with the use of turf. In this passage are two long, flat stones placed across it; they seem to form steps.

From the passage a doorway 1.4 m. wide leads into Room II, the kitchen (firehouse) (fig. 42). It is a small, rectangular room, about 2.00×2.60 m., with walls built in the usual manner of stone and turf and, with the exception of a part of the north wall, fairly well preserved to a height of 0.65—1.25 m., in six or seven courses. On the whole these walls are built of fine boulders, many of them cubic, in almost regular courses, especially at the corners towards I and III. The sand floor is partly flagged, the flags now lying very irregularly; a few flags not in position may have been removed in the course of excavations. The entire floor was covered with a thin, firm and very sooty deposit. Up towards the west end of the room, in the direction of Room III, are two fireplaces. One of them, covering an area of 0.75×0.45 m., is enclosed by the north-west corner and two stones on edge running at a right-angle from the west wall to a distance of 0.75 m. into the room. These and the stones in the wall are black with soot. In addition to some ash the fireplace contained a whale-bone spade with a spindle whorl burnt on to it, and several fragments of a round-bellied steatite vessel (see list of objects, Nos. 88, 116 and 99). The other fireplace was up against the other side of the two stones that extend into the room, in the corner between them and the west wall; here too was some ash. A third fireplace was found up against the east wall near the doorway in to Room I. The back of this fireplace is the wall, whereas one side is formed of two stones on edge extending at a right-angle 0.4 m. from the wall, and the other side of a built-up stone wall of four or five courses; the area of this fireplace is about 0.40×0.25 m. (Fig. 42). The



Fig. 42. East Settlement No. 64c. 1 II. Firehouse, seen from the WNW. Left: entrance to 1 I, right background: passage to outside; right middle distance: glimpse of doorway into 1 III. In the corner by the door to 1 I a stone-set fireplace.

stones are considerably scorched and there was some ash. Judging from the shape of the room, its position and equipment it was undoubtedly the firehouse.

In the south-east corner of the firehouse is the doorway into Room I. One door jamb is in line with the south wall of the firehouse and continues in the south wall of Room I. The doorway has a width of 0.55 m. and a depth of 1.25 m., corresponding to the wall thickness. Two or three flags lie in the doorway and have the appearance of sill stones. The masonry of the doorway is among the best preserved in the whole house (fig. 43); in regular courses it reaches a height of 1.25—1.35 m. Like Room II, Room I is rectangular. The dimensions from east to west are about 2.7 m., and from north to south about 2.5 m. The south and west walls are in fine condition and have a height of 1.35 m.; these walls are of stone and turf, whereas the other two consist mainly of turf with one or two stone courses. In the east wall and in the east end of the north and south walls, to a depth of 0.7—0.8 m. the lower 0.3—0.4 m. of the wall consists of the sand of the substratum, as here, owing to the upward slope of the ground, the room is cut partly into the slope; only very few basement stones were found in these parts of the wall. In the east wall there is but a single row of



Fig. 43. East Settlement No. 64c. 1 I. Part near the doorway into 1 II, seen from the NNE.

stones, 0.5 m. from the floor surface, with turf under and over. The upper turf layer reaches a height of about 1.5 m. above the floor and is quite distinct from the overlying deposits of blown sand, which here have a thickness of about 1.7—1.8 m. The turf in this wall is much compressed and pushed outwards so that it is difficult to see how it was laid, but this detail is easy to see in the north wall, where the technique used is mainly "Klömbruhnauslag"[1]). In the latter wall there is a basement course proper along the first two metres or so from the west wall, and over it Klömbruhnauslag to a height of about 0.8—0.9 m. from the floor, followed by a double row of stones, rather flat; to a height of 0.2—0.3 m. In the east end of the wall there is only one double row of stones with turf over and under, exactly as in the east wall, but in this case 0.1—0.2 m. lower. The floor of this room is paved in the north-west and south-east corners with good flat flags; there may have been more, possibly removed during excavation. In the north-west corner there had been a fireplace, as flags and wall stones are black with soot. This room must be the Skáli (bedroom), as Room III is definitely identifiable as the living room.

Room III (figs. 44 and 45) is the largest room in the building, measuring about 6.8 m in length, whereas the width at the west end

[1]) Daniel Bruun: Fortidsminder og Nutids Hjem paa Island, 1928, pp. 127—130.

is 2.4 m. and at the east end 2.8 m. In shape it is approximately rectangular, although the east wall from the doorway to the north wall runs obliquely, being formed mainly of a single very large stone, about

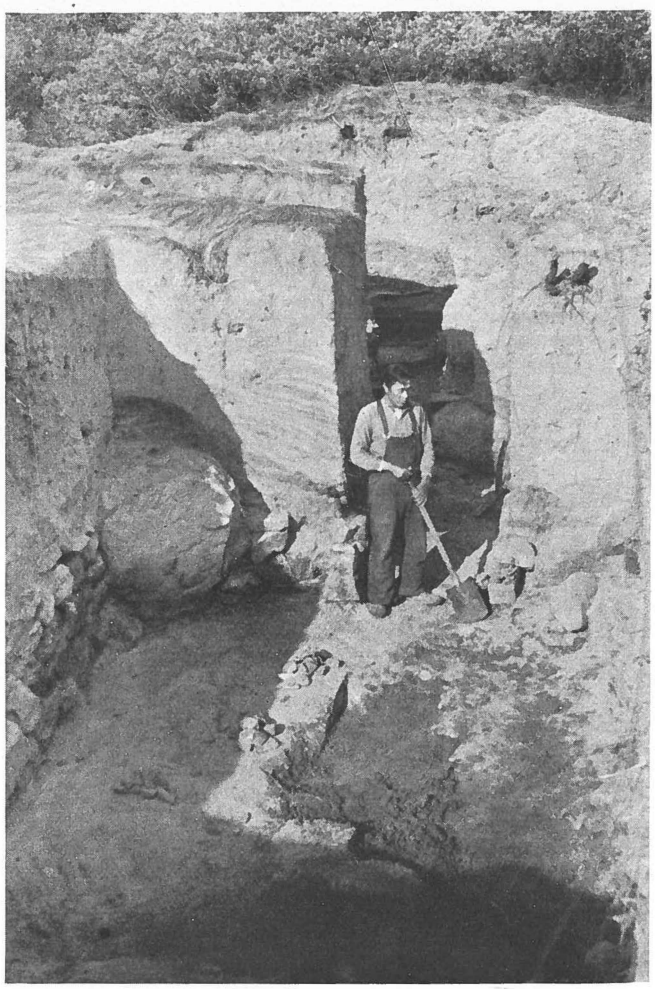


Fig. 44. East Settlement No. 64c. 1 III, living room, seen from the west. The man in the doorway indicates the thickness of the blown sand.

1.15 m. high and of the same width. Access to the room is from the east side, from the passage and the kitchen, through a doorway about 1.4 m. deep and 0.8 m. wide. One jamb is much collapsed, whereas the other remains to a height of about 0.6 m. The walls of III are all badly collapsed, especially at the west end, though the basement course and a single course of stones are still in position in the north wall; indeed, in this wall for a short distance up to the big stone the height is 0.95 m.



Fig. 45. East Settlement No. 64c. 1 III, living room, seen from the west. In the middle the hearth.

in six or seven courses. The considerable quantity of stones lying inside this room shows that the walls must have been much higher and mainly built of stone with the aid of turf. Now, as already stated, they consist mostly of one or two courses of stone, above which is a compressed layer of turf from a few centimetres high to about 0.5 m., except in part of the south wall towards the east, where the turf wall has a height of 0.8 m. Here the technique is Klömbruhnaus, and it stands out very clearly (fig. 46), in the north wall alternating courses of Klömbruhnaus and Strengur. The explanation of these turf walls (not counting that on the south-east side) must be that originally the turf was higher up the wall, with more stone courses below than can now be seen; the pressure of the sand must have caused the stones to slip out, whereas the compact layers of turf merely sank lower down and became more compressed. As the walls stand now, however, any opinion as to their original appearance would be merely guesswork. The floor to a great extent consists of a very uneven rock surface which runs under the south and west walls; the basement course of the latter rests on the rock itself. Elsewhere the floor is of gravel. Almost in the middle of the room are five or six flat stones, two of them overlapping; they are all badly burnt, so that they probably formed a hearth; otherwise there is only a single flag, near the south-west corner. As it now lies the floor



Fig. 46. East Settlement No. 64c. 1 III, living room. Turf wall (Klømbruhnaus) in south wall.

is very uneven, but towards the close of the habitation period at any rate it was almost flat, as there was a fairly thick, sooty, solid layer of earth which filled up the hollows. In addition to the hearth in the middle of the floor there was one in the north-east corner, up against the large stone; the whole of this area is black with soot.—Several Norse relics were found in this room, in particular a very large number of worked steatite fragments, nearly all pieces of vessels and most of them with a hole through. Judging from its size, shape and arrangement Room III can only have been the living-room.

Of the outer walls only the west end was excavated, as stated above; it measured about 5.5 m. in length and its thickness is about 1.5 m. This wall was well built, with a double basement course and large stones in the corners (fig. 47). These ground courses lie on gravel which is highest at the middle of the wall and falls away to both sides. Over these courses is turf laid in Klömbruhnaus technique, unusually well preserved and distinct, to a thickness of 0.4—0.6 m. The total height of the wall as it stands today is about 0.7 m. at the middle, and about 0.85 m. at the corners. The turf wall was undoubtedly higher originally, but in the course of time some of it has slipped out and the remainder pressed down. Except for the basement courses there seem to have been no stones in this outer wall; at any rate none were found in the

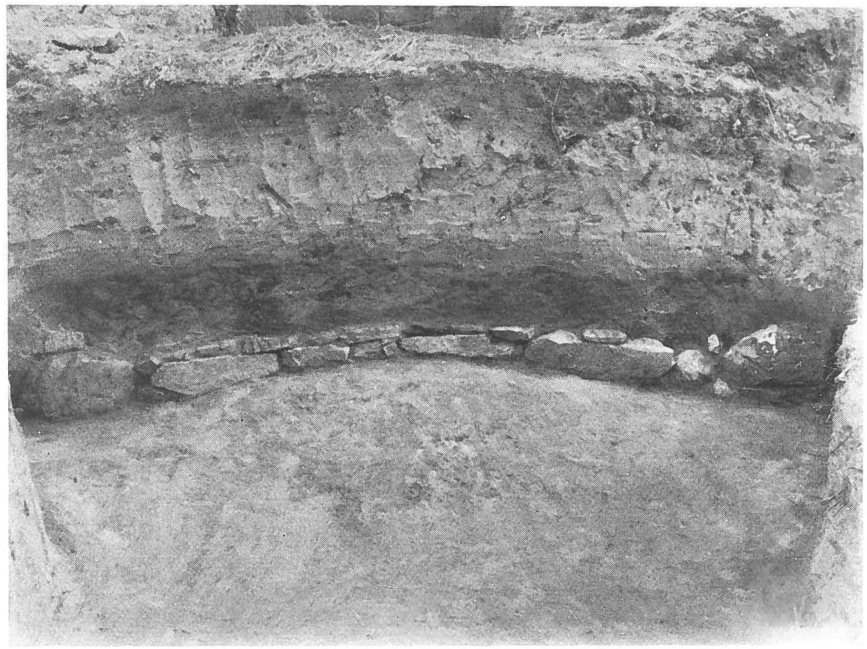


Fig. 47. East Settlement No. 64c. West end of Building 1, the house.

debris outside. It had an outer packing of turf, which can be traced to about 2 metres from the face,

As described here this house with its three rooms (firehouse, bedroom and living-room) end to end and with only a single entrance is a typical long-house of very simple form. It is the first farm-house of the long-type excavated on an inland farm in Greenland, and on the whole only the second of the type found on a farm of small or medium size, as all the long-houses so far examined are part of the large farms (Gardar, Brattahlid, Hvalsey, Anavik and Sandness) with the sole exception of East Settlement Ruin Group 20, Tunuarmiut[1]); indeed, the type does not stand out so prominently there, as in the course of time the dwellings of these farms became altered considerably through all the additions and alterations.

Above (p. 46) it was said to be characteristic of the centralized type of farm that it occurred inland and in out-of-the-way fjords, and that in all probability it represented a type that was devised in Greenland and gradually developed. Farm 64c is evidence that farms with a house of the long type—without livestock rooms attached—is not peculiar to fjord settlement, for it is also found up-country. There are others, only they have not yet been excavated, for example (according

[1]) MoGr XVI, p. 263 ff.

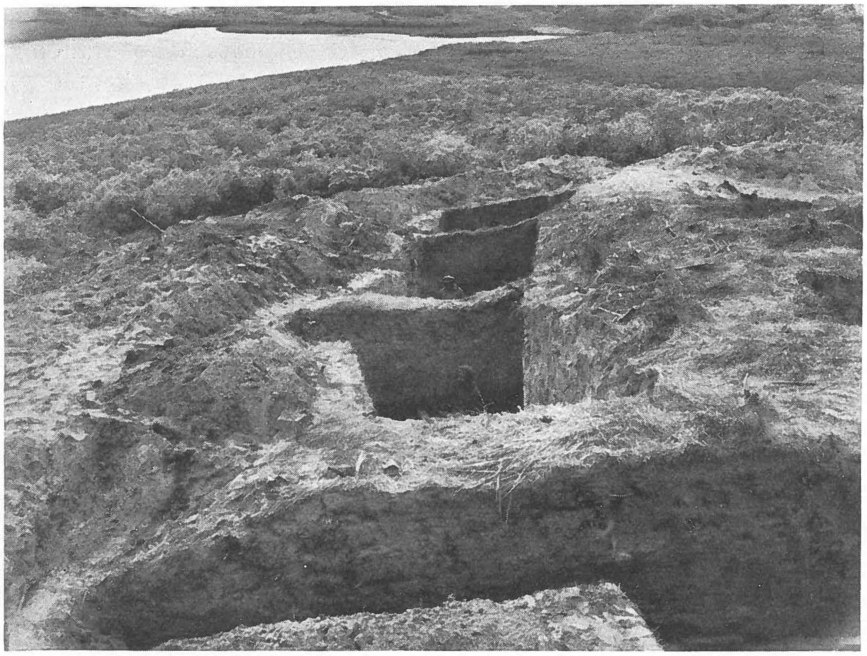


Fig. 48. East Settlement No. 64c. Building 2, livestock, seen from the east.

to Roussell's list of farms[1]) those in the Qordtlertoq-Tasiussaq valley (East Settlement Nos. 34, 35, 36, 37 and 38) and two in Vatnahverfi (East Settlement Nos. 70 and 72). Thus if farms with a long-house dwelling and separated from the livestock accommodation are earlier than the centralized type, the occurrence of the former type inland shows that even at an early phase of the Norse settlement the people were moving from the immediate vicinity of the fjords and taking land in the most favourable spots farther inland, but beginning at places with most convenient access from the fjords, as in the Qordtlertoq-Tasiussaq valley, between Tunugdliarfik and Sermilik fjords.

Block of Livestock Buildings.

Below the house lies No. 2 on the contour map, a livestock building with five rooms (figs. 41, 41a and 48). Four of these rooms are in a row, running in the same direction as the house; the fifth adjoins the north side of IV, but runs east-west too. From the west end of the

[1]) Roussell 1941, p. 290 ff. By the way, Roussell's list of farms must be corrected in respect of this very farm, as the house of 64c is erroneously listed as a passage building. In the text, p. 159, however, it—and with it the whole farm—is placed to the centralized type, which is not correct either, as will appear from the present work.

house the ground drops away suddenly and steeply in only few metres; the distance from the west end of the house to the east end of Building 2 is about 5.5 m, and along this stretch there is a fall of about 0.7 m. from east to west. Whereas the ground under the house has only a slight fall, it falls much more under No. 2, i. e. about 2.8 m. in about 20 m. (from the outer wall on the east to the inner wall on the west). Nothing can be said of the character of the outer walls of this building except the end wall on the east. Having a length of 3.6 m. it consists of a single ground course, over which there must have been a turf wall like that of the west wall of the house; it is now completely destroyed. The absence of fallen stones in front seems to show that it was scarcely a stone wall. In plan this building has the character of a long-house, its front facing south and with a door leading direct from the outside into each room, but with only one doorway connecting two rooms inside, viz. from III (the cow-byre) to V (the barn), and a very uncertain one from III to IV.

Room I is a small foursided one, about 2.7 m. long, 2.0 m. wide at the east end, narrowing westwards to 1.75 m. The walls are of stones and turf, though turf was used almost exclusively in the east and west walls. Both these latter walls have a single ground course of stones and turf above, but only traces of it remain to a height of 0.15—0.25 m. More stones were used in the other two walls; the north wall is best preserved at its west end, for there it has stones in three or four courses to a height of about 0.75 m., with turf (Strengur) in a layer 0.15—0.20 m. thick. The best wall in the room is the south one, which stands in handsome, well-preserved courses to a height of 0.7—0.9 m. The doorway is in this wall, near the south-west corner; it is in a state of advanced collapse, the ground course at the west end especially having slipped. As it stands now it measures only about 0.25—0.35 m. in width. The floor, which has a fairly steep slope to the west, is of sand. Nothing can be said of the purpose of this room.

Room II is an almost square room, about 2.1 × 2.1 m. The walls are all fairly well preserved, built from the bottom of rather large field stones in three or four courses, and above them turf in fine Klömbruhnaus, best preserved in the north-east corner where it measures about 0.7 m.; here the total wall height is about 1.5 m. In the south wall there is a single row of stones some way up the turf wall in addition to the lower stone courses. A remarkable feature is that the floor, which consists of gravel and sand and which slopes slightly from the north and east, is dug down into the slope so that at the east wall the floor level is 0.65 m. below that at the west wall of Room I (see cross-section, fig. 49a). The doorway of II is in the south-west corner, and one of its jambs is in line with the west wall. The other jamb still has seven courses of



Fig. 49. East Settlement No. 64c. 2 III, cow-byre, seen from the east.

stone up to a height of about 1.0 m.; the width of the doorway is 0.5 m. Like I this room has the character of an outhouse (for livestock), but nothing precise can be said of its use.

Room III (fig. 49) is a rectangular, somewhat irregular room with a length of about 6.0 m., breadth at the east end about 1.7 m., at the west end about 1.5 m. and at the middle about 2.0 m. All the walls are of stone and turf, and here again there seems to have been an upper layer of pure turf, of which thin stripes are still visible here and there. The walls are fairly well preserved; at one or two places, in the south wall nearest the east end and in the north wall about the middle they must be almost at their original height, 1.25—1.45 m. Access to the room is from the south, at about the middle, through a doorway in fairly good condition, 0.6 m. wide and about 3.5 m. deep, with paving on the inner two metres or so. At the threshold to the room is a rather high sill-stone. The entire floor of the room is paved with large and small flags which on the whole are still in position. The paving along the south wall reckoned from the partition (see below) almost to the west wall is sunk about 0.1 m. below the other flags to a width of about 0.4 m. This was undoubtedly arranged to drain off the liquid manure etc. from the cows. For the fact that it is actually a byre appears from the two (three) stall-stones in the room. They are still standing upright in their original position against the north wall. The distance from the

west wall to the first stone (0.74 m. high, 0.24 m. long, 0.12 m. thick) is 0.9 m., and from there to the next one (0.56 m. high, 0.9 m. long, 0.15 m. thick) it is 1.1 m.; finally, the distance between this and the third stone (0.65 m. high, 1.15 m. long, 0.25 m. thick) is about 2.0 m. However, only the first two stones nearest the west were actually employed as stall-stones, at any rate at the time the place was abandoned, for the third stone forms part of a curiously oblique, somewhat curved transversal wall dividing the byre into two parts, so that there are an east section of about 1.7×2.1 m., with no stall-stones, and a west one, occupying the remainder of the room and in which the stall-stones now stand. This partition wall is clearly secondary, as may be seen from its course in relation to the long walls of the room. It consists of only two or three courses of stone to a height of about 0.5—0.6 m., with a corresponding breadth. Nevertheless almost the whole of one side, facing west, consists of two large flat stones, one of them being the third stall-stone already mentioned, the other a stone of the same character but larger ($0.95 \times 1.0 \times 0.18$ m.); this latter stone is not resting direct on the floor but on a single basement course. This wall, in which no doorway can be discerned, does not seem to have been higher than now, and there can scarcely be any doubt that both sections of Room III were under the same roof. It is presumable that the large flat stone now forming part of this transversal wall was originally a stall-stone, as possibly the other one too, but it has been moved and placed end to end with the first one in order to form a partition to form a small compartment, a stall, perhaps for a calf. Between stall-stones 2 and 3 and nearest the latter a passage runs from Room III over to Room V, where it opens into the latter's south-east corner. In towards Room III this passage, measuring 4.2 m. in length, corresponding to the thick wall between Rooms III and V, has fine jambs in four or five courses to a height of 0.8—0.9 m.; here the width is 0.7 m.; in to Room V the jambs are also distinct, but the width there is 0.5 m. The middle part of the passage, which ascending evenly from both sides rises about 0.4 m. above floor level in both Rooms III and V, has fallen and slipped considerably; only one or two courses of stones remain, overlain by badly decomposed turf, which at certain places can be seen to a height of about 0.9 m. above the basement course. Finally it should be stated that from Room III to IV there may possibly have been a doorway at the middle of the common wall, but the latter is in such a state of collapse that nothing definite can be said.

Room IV is a rectangular room orientated east-west, measuring about 4.6×1.5 m. The walls are of stone and turf, terminating upwards in pure turf. Except for the lower courses these walls have collapsed a good deal; only in parts of the north and south walls, at the east



Fig. 50. East Settlement No. 64c. 2 V, hay-barn, seen from the west.

end of the room, do the walls remain up to five or six courses and a height of about 1.1 m., on top of which is about 0.2—0.3 decomposed turf. The doorway to this room is in the middle of the south wall and measures 0.4 m. in width, but it is badly collapsed. The depth of the doorway is about 2.5 m., which seems to correspond to the thickness of the wall. The floor is paved with rough, irregular stones which have been displaced in the course of time; about a third of the floor, however, along the north wall and obliquely downwards towards the south-west, in the corner, consists of rock in situ, on which indeed the north wall stands direct. This room was doubtless for livestock.

Room V (fig. 50) is the largest room in Building 2, its dimensions being approximately 6.0 × 2.8—3.0 m. It is rectangular and orientated east-west. The walls are built in handsome courses of stone and turf with turf on the top and must have been very high, to judge from the quantity of fallen stones inside the room. Most of the north wall and parts of the east wall still have four or five courses in position to a height that averages about 1.0 m, though in places it reaches 1.3—1.5 m. with seven or eight stone courses. The door into the room from the outside is in the west wall, but it is difficult to say whether it was at about the middle or in the north-west corner, whereby one jamb is in line with the north wall; the latter is the more probable. Finally, this room is connected with Room III by the aforesaid passage. The floor

slopes slightly from east to west and consists partly of rock, which can be followed almost to the middle of the passage. From its size and position, and especially its communication to the cow-byre, this room may with some certainty be identified as the barn.

Livestock Block with Bath-house.

Building No. 3 on the contour map (fig. 51), lying on the other small island jutting into the meadow, is a passage building consisting of six rooms collected about a passage, with only one entrance from the outside, viz. though the passage. Presumably there is still another room, possibly two or three, below, e. g. to the west of No. 3; but this or these rooms cannot be connected with No. 3, to judge from the wall lines and the placing of the doorways. Entrance to the block is gained on the south side by way of the passage, which runs almost north-south along the greater part of its length, but then bends in a right angle and runs east-west. The various rooms with the exception of Room III are entered from the passage by a single doorway, but they are not mutually connected by doors. No doorway could be found in Room III, which adjoins Rooms II and IV, its other walls being on the outside; it is possible that this was an open pen built up against the block. Some of the rooms run east-west (I and V), IV lies south-north, and the other three are almost square in shape.

The north-south section of the passage measures about 7.5 m., the east-west part about 2.4 m.; its width varies between 0.7 and 1.0 m. It rises slightly and evenly from south to north, and about midway along are two stones lying across, rather like steps; in the north part of the passage are some flags, but otherwise the floor is of sand. The room walls out to the passage are in a state of collapse as a whole, but a few parts, especially at the door jambs, have nine or ten courses of rather small stones (disregarding the basement course) up to a height of 1.2—1.3 m.; here again there are remains of turf walling on top of the masonry, laid both in Strengur and in Klömbruhnaus.

Room I is rectangular, about 4.0×2.5 m. The walls are of stone and turf in the lower 0.5—0.7 m., the basement course of large stones being surmounted by one or two courses of smaller ones. Over this low wall, which is well preserved, follows a turf wall, which is in a particularly good state of preservation in part of the east wall, where it has a height of about 1.0 m. and where the total wall height is about 1.55 m. The doorway into the room is in the middle of the east wall. The jambs have collapsed so much that the width now is only 0.25—0.40 m.; the depth, which is equal to the thickness of the wall, is 1.3 m. The floor is paved with flags, some of them very large, and irregularly laid, with

the exception of a small four-sided area in the north-west corner, where sand covers the floor surface; it is possible, however, that some flags were removed during excavation. This room is doubtless for livestock, but no definite identification is possible.

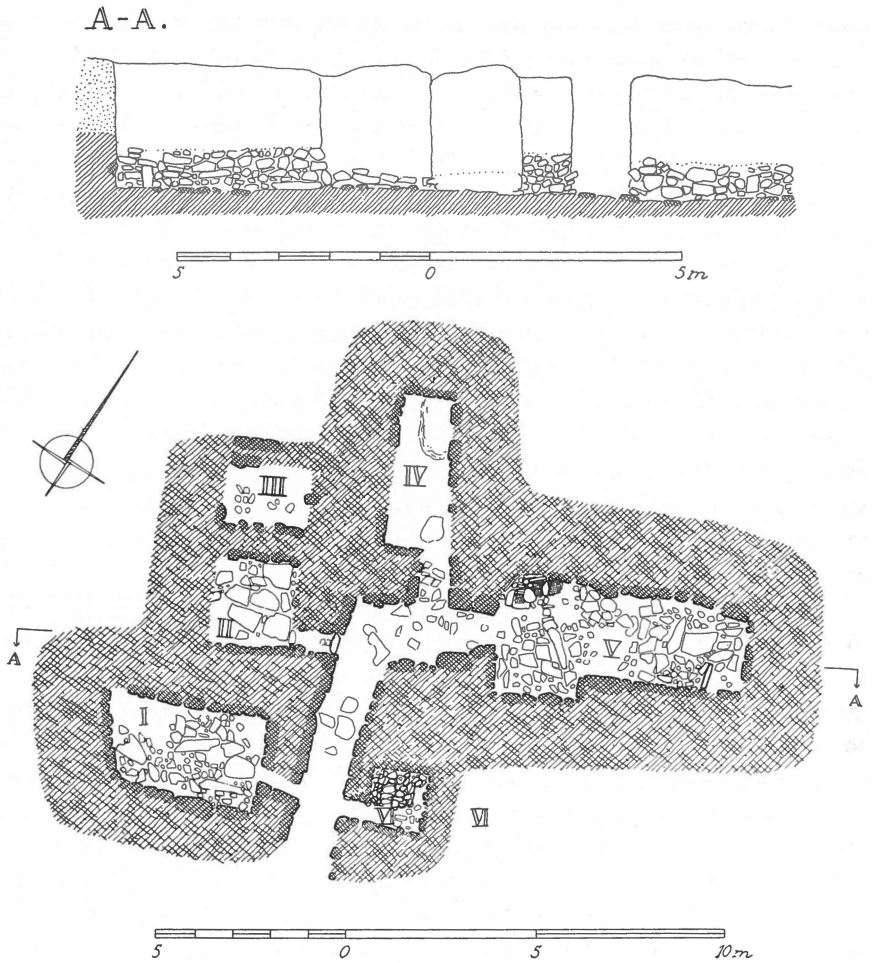


Fig. 51. East Settlement No. 64c. Building 3, block with livestock rooms and bath-house, plan 1:200 and cross-section 1:150.

Room II is a small, almost square room, about 2.0 × 2.0 m. The walls are of stone and turf on the east and west sides, but turf is greatly preponderant. At no place have the walls a height of more than 0.6 m., with a maximum of five courses in the north wall. The doorway is in the east wall and one of its jambs is in line with the south wall; width about 0.5—0.5 m., depth about 1.4 m. The floor is handsomely paved with few but large flags. Purpose uncertain.

Room III is immediately adjacent to II, with which room it shares a wall, Room III's south wall being II's north wall. The length of the room is about 2.0 m., its width about 1.5 m. With the exception of the south wall and a short length of the north one the walls are in bad condition; at one place, in the south-east corner, the height is about 0.75 m. The wall material is the same as in Room II. The floor is paved with irregular stones. No doorway can be seen, but there may have been one in the north-east corner. As stated, this room is probably an open fold, built up against the block but without direct communication with it.

Room IV is the only room in Building 3 with a south-north orientation. It is a regular rectangle in shape, the dimensions being approximately 4.0 × 1.3—1.7 m. Except for the north wall the walls are much collapsed; it would seem that much turf was employed in them, and but few stones. The greatest remaining height was measured in part of the north wall, about 1.0 m., with three or four courses of stone and a course of pure turf under them. The doorway is in the south-east corner, one of its jambs being in line with the east wall; its width is about 0.7 m., the depth being about 1.4 m. One or two flags are to be seen on the threshold, and just inside a single very large and much scorched flag. Otherwise the floor is of sand except in the north-east corner, where the native rock shows. Purpose uncertain.

Room V (fig. 52) is the largest in Building 3, its dimensions being 6.5 m in length (east-west) and 1.9 m in width at the east end, 3.0 m. at the west. The room narrows slightly from west to east, but the marked difference in the breadth is due to the fact that at its west end the south wall recedes about 0.7 m. for a length of about 2 m. Where this recess begins the wall forms a sharp right-angle, where the masonry is particularly well preserved to a height of about 0.95 m. with four or five regular courses. Otherwise the walls are badly collapsed, with only one or two courses of large basement stones left, above which is disintegrated turf walling; this does not apply to the east wall, however, for there the turf still has a height of about 0.8 m. The doorway is in the west wall; it measures about 0.6 m. on the inside, whereas on the outside it is almost 1.0 m. in width; its depth is about 1.5 m. There have been fireplaces on both sides of the doorway. In the south-west corner the sole evidence is the blackened stones, but in the north-west corner there are three small fireplaces, two of them rather cursorily built of fairly small, round stones, whereas the third is built with a flat stone underneath, and on top of this three stones on edge, two at the sides and one at the back, so that it is open out to the room[1]). The

[1]) A very similar fireplace was found by Roussell in the house of the farm Anavik (Ujaragssuit), West Settlement No. 7, Roussell 1941, p. 199, fig. 124.

area covered by this latter fireplace is about 0.30×0.35 m. The floor is partly paved with small and large flags and a few more angular and rounded stones; all this paving is now much disturbed. In the south-east corner of the room is a large stone on edge in against the wall, 0.55 m.



Fig. 52. East Settlement No. 64c. 3 V, seen from the east.

high, 0.6 m. wide, 0.21 m. thick; it can scarcely be a stall-stone, for which it would be too small and thick.

Regarding the use to which Room V was put, it is difficult to express any definite opinion. The fireplaces make it obvious that people used the room, and this is supported by the objects found (see list, p. 91 ff.), but it does not seem to have been a living-room in the proper sense of the term. The paving of the floor is an argument against it and suggests a room for livestock, the more so as another building was incontestibly a dwelling. The occurrence of fireplaces in a room for domestic animals, by the way, is not unique. On Sandnes farm, West

Settlement No. 51, Roussell found a fireplace in what was certainly a sheep-shed[1]). Roussell submits the hypothesis that a serving woman may have lived here together with the animals in her care. Similar outhouse fireplaces were also discovered at Brattahlid[2]) and Anavik[3]). As regards our Room V, however, the further possibility is suggested that this room, and perhaps one or two of the others, were actually living-rooms adjoining accommodation for animals. It may be advanced in support of this theory that we found a surprisingly large number of objects, not in Room V alone but in some of the other rooms of the building and in the passage, and that there are rich midden deposits on the slope below. How to explain the presence of two dwellings is a difficult matter, unless the one replaced the other; on the other hand we have a parallel at Brattahlid, where on the South Farm there is a large dwelling-house (Brattahlid No. 46), and a building with living-rooms and livestock accommodation (Brattahlid No. 47) which in fact is reminiscent of No. 64c, 3, though the supposed living rooms there are not paved[4]). Nørlund considers this house as the first residence of the farmer in that locality, as a modest beginning to the larger farm later on.

Of the rooms in this building No. VI remains to be described. It is a small foursided room orientated east-west, with a length of about 2.0 m. and a width of 1.5 m. Access to it is gained from the passage on the west, and one jamb of the doorway is in line with the south wall. The width of the doorway is 0.4—0.5 m. and its depth 1.1 m., which corresponds to the thickness of the wall. Two of the walls in this room are built mainly of stone and turf and are well preserved; indeed, the north wall is the highest remaining in the entire building, about 1.5—1.6 m., with ten or eleven fine courses of stone and turf, and above these about 0.5—0.6 m. of badly decomposed turf. The other well-preserved wall, the south, has four or five courses of stone and turf to a height of about 0.9 m., with decomposed turf above. The east wall was built mainly of turf, but with stones as a foundation, up to a height of 0.8 m. Nothing can be said of the short wall—much of which is occupied by the doorway—as it is entirely covered by a stone oven. The floor of the room lies about 0.15 m. higher than the passage and the doorway; it is partly paved and was found to be covered with a thick deposit of greasy grey ash and black soot.

Of particular interest in this room is the oven in the corner between the west and north walls, its east side running parallel with the north jamb of the doorway. Its length is about 1.5 m., depth about 0.9 m.

[1]) MoGr 88, 2, pp. 48—49.
[2]) MoGr 88, 1, p. 89.
[3]) The aforesaid fireplace on the Anavik farm is in fact in a sheep-shed.
[4]) MoGr 88, 1, p. 92 ff.

and height 0.8 m. It is constructed of more or less flat, large and small stones tightened with turf to a height of four or five courses measuring about 0.6—0.8 m. above the floor; it has scarcely ever been higher. The inside is horse-shoe shaped and the opening faces south. The bottom of the oven is covered with three flat stones, the foremost lying a few centimetres above floor height, the next a little higher, and the third higher still. The inside dimensions are: maximum depth 0.7 m., maximum width 0.45 m.; at the opening the width is 0.35 m., and on the bottom the depth is 0.5—0.6 m. Inside were quantities of partly white, greasy ash, charred sticks and a fragment of a steatite vessel with a hole through it, and some animal bones. The oven was once topped with a large number of round stones, mostly the size of an egg, and all are covered with soot. These stones were found loose in the debris which had gradually made its way down into the oven, though some were found on top. Presumably these small stones once lay on an oven top built of rather large flat stones—no doubt forming a vaulted roof—as several of these were found among the small stones in the debris. There can be no doubt that this was a bath-oven and the room a bath-house. See above (p. 35—36), discussion on the Greenland bath-houses.

Other Outhouses.

Of the other outhouses discovered on this farm—there may be more hidden under the sand—four were not excavated (contour map Nos. 4, 6, 7 and 9). As to the first two, which are almost entirely covered with sand, it can be said merely that they are small, four-sided buildings of one room. No. 4 measures about 5×3.5 m. and is built of stone, and No. 6, of the same material, is about 6.2×2.4 m. Their purpose is uncertain. No. 7 is a sheep-fold, built up against a rock about 2 m. high. The walls otherwise consist of a row of very large stones which, together with the rock, form almost a rectangle, the enclosed space measuring about 7×4 m.

No. 9 is of exactly the same type as No. 7, a pen, of which one long side and part of the other is formed of a large rock. The interior dimensions are about 8.8×3.4 m.

No. 5 is a small four-sided building of one room, built on a large flat rock. The outside dimensions of this building, which is of stone and, as far as can be judged, turf, are about 5.5×3.8 m., the inside being about 4.2×1.6 m. The walls remain to a height of about 1 m. with up to six courses; the average thickness of the walls is about 1 m. except for the north end, where the thickness is 0.4—0.5 m., the wall consisting merely of one row of stones. The doorway, in the west side near the north-west corner, is about 0.7 m. wide. The north jamb is

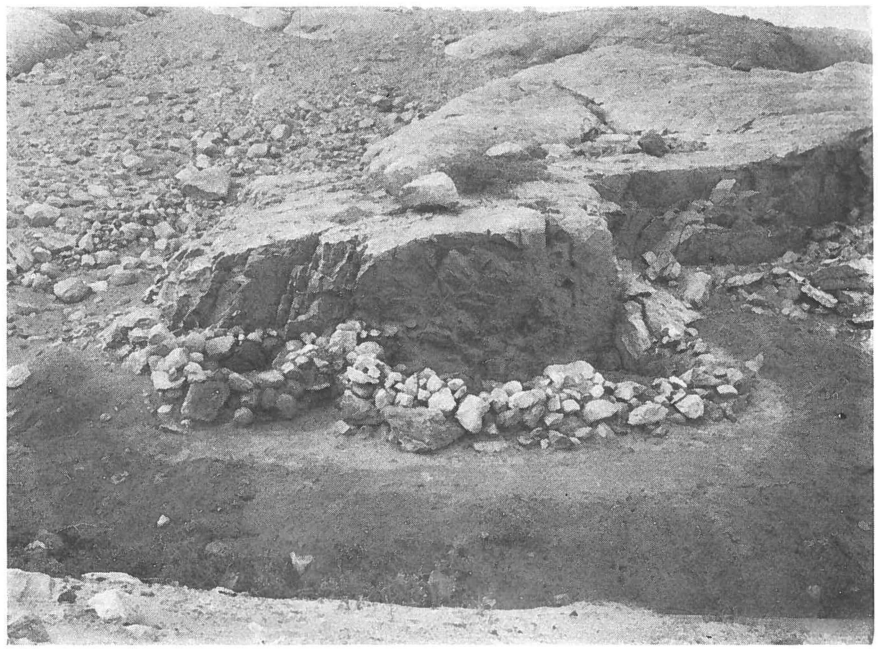


Fig. 53. East Settlement No. 64c. Building 8, seen from the north-east.

formed almost entirely of one large stone about 0.80 m. high. This building is possibly a Skemma, though it may have been a pen.

Finally, No. 8 is a large sheep-pen, divided into two rooms connected by a door, or perhaps more correctly two adjoining pens, sited like Nos. 7 and 9 up against a large rock about 4 m. high (fig. 53). The walls are built of large and small field stones partly in dry-masonry, partly with the use of turf, and they remain up to a height of about 1.30 m. The smaller room, which is almost square, has a floor area of only 1.2×1.2 m. approximately and has no doorway. The larger room is almost rectangular, about 5.4×2.4 m. inside. Near the end farthest from the small room is a doorway, about 0.4 m. wide.

Conclusion.

After this survey of the various parts of No. 64c I shall attempt to give a total picture of it. It is a farm of medium size, perhaps a little more, with a house of the long type, two large blocks of buildings, one of which seems to consist entirely of rooms for livestock, the other partly so, and a large number of small outhouses scattered about the area. In type it differs completely from the neighbouring farm 64a a few kilometres away. In all probability there is also a chronological difference between them, 64c being earlier than 64a. How life went

on at farm 64c (which like 64a could not be identified with any Norse name), and when and why it terminated are matters that are shrouded in darkness. The objects found and the buildings tell us nothing as to this. And yet, it may be that the question of "why?" can be answered. In our time the farm lies buried by the enormous sand dunes which now are held stationary by the vegetation; nevertheless, the south-east gales whirl the sand up in the surrounding terrain—the expedition itself experienced a sand-storm of several days' duration—and it is very probable that conditions were the same in the Middle Ages. The Norse farmer had a constant fight with the sand that threatened to cover his farm and his meagre fields. One day he gave in and left for other pastures, and a few years later the farm would be completely buried; without doubt it might have continued to rest under the sand had the vegetation not disclosed its presence five hundred years or more after it had disappeared.

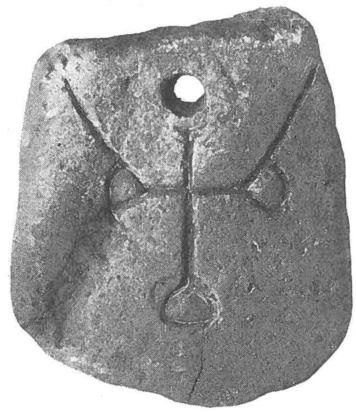


Fig. 54. Loom weight of steatite with incised cross, No. 110. About 1:2.

CHAPTER IV.

NORSE RELICS FROM THE EXCAVATED FARMS

The artefacts of various kinds found in the Norse farms described in the foregoing form a welcome and badly needed supplement to the earlier finds at the farms in the East Settlement. What had been unearthed by excavation at Gardar, Brattahlid and the other places was strikingly little in both quantity and quality compared with the rich discoveries in the West Settlement[1]). There are doubtless several explanations, e. g. that one or two of the West Settlement farms were perhaps abandoned rather suddenly, with the result that relatively many objects were left behind, and some of the farms, for example those in Austmannadal, lie so remote that perhaps they escaped being plundered by the Eskimos—the fate which undoubtedly befell several of those on the fjords, at any rate in the East Settlement. Finally, the natural conditions for preserving objects of wood and bone are much better in the West Settlement, where there is ground ice, than in the East Settlement—except Herjolfsnes, whence we have the best finds of all from Norse times, the incomparable garments[2]).

However, the distribution of finds hitherto has painted a somewhat distorted picture of the conditions of life in the two settlements, for there can be no doubt that the East Settlement was the chief centre of habitation. The latest finds will remedy this to some extent, as in relation to the size of the farms we found many things, and some

[1]) MoGr 88, 2, pp. 95—211, and MoGr 89, 1, pp. 243—288.

[2]) Poul Nørlund: Buried Norsemen at Herjolfsnes, MoGr LXVII, 1924.

of them are of forms not hitherto encountered in Greenland. It must be said, however, that this applies only to the finds at farms 64a and 64c, as the excavation of the farm at Ekaluit yielded merely some fragments of steatite vessels of little interest; only few samples were brought home. The following description therefore comprises only the finds from the two inland farms. The fact that the excavations there proved to be so profitable must no doubt be ascribed partly to the sanding up of the buildings fairly soon after the Norsemen left, the result being that they were spared the attentions of rummaging Eskimos, even if their out-of-the-way position would make them less exposed than other localities.

The description is followed by a complete list of all objects that were brought home to Denmark these afterwards being handed to the National Museum by the Commission for Scientific Research in Greenland.

Tools and Implements.

Of tools and implements there are some knives of iron (fig. 63, Nos. 1, 3, 4 and 79) and a number of whetstones made of quartzite, Igaliko sandstone and red porphyry (fig. 63, Nos. 13 and 84), two shovel blades of whale-bone (fig. 64, Nos. 17 and 90) and a whale-bone spade (fig. 56), all of them characteristic and fairly common Norse objects. In addition, however, there are three interesting specimens. One is a well-



Fig. 55. Fragment of iron gimlet, No. 80. 1:1.

preserved fire-steel of iron (fig. 63, No. 8), found in Building 7 on 64a, 8.1 cm. long, 2.9 and 3.2 cm. wide at the turned-up ends. It is a Nordic mediaeval type[1]) which indeed covered a long period, for it occurs already in Viking times and continues down towards 1800. This first fire-steel to be found in Greenland is impossible to date exactly. The second specimen of interest is an arrow-head of iron from 64c, 3, the

[1]) See e. g. Sigurd Grieg: Middelalderske Byfund fra Bergen og Oslo, 1933, p. 211.

passage (fig. 63, No. 77). In cross-section it is four-sided and measures 8.1 cm. in length, the tang representing 3.3 cm. of this. None of the very few arrow-heads previously found on Norse farms is of this type, but it occurs in Danish mediaeval finds. Finally, the third specimen is the lower end of a gimlet of iron, length 3.9 cm., diameter 1.0 cm. (fig. 55). It was found in the midden outside 64c, Building 3. This small gimlet

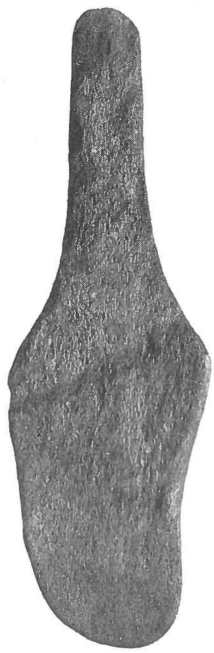


Fig. 56. Spade of whale-bone. No. 88, About 1:3.

is the first of its kind to be found in Greenland. Exactly the same mediaeval type has been found in Denmark, e. g. at Lilleborg Castle in Bornholm, destroyed in 1259.

Domestic Articles.

As in all finds at the Norse farms, steatite vessels predominate, or at any rate fragments, in many different forms and sizes, but all common. Some of the specimens may be identified with great probability as lamps, for example the only intact one found, a small shallow bowl (No. 94 on fig. 65, where other sherds are shown). As usual, a large number of these steatite fragments are pierced by one or more holes and were no doubt used as loom weights. Many of them have an incised cross and other figures (figs. 54 and 66, Nos. 45 and 112). In certain cases these must be owner marks.

Textile Work.

In addition to the above loom-weights there are some which seem to have been carved primarily for this purpose. Other objects under this heading are spindle-whorls of steatite, of which several were found,



Fig. 57. Handle, of steatite, No. 104. About 2:3.



Fig. 58. Weaver's sword, whale-bone, No. 105. About 1:3.

some of them ornamented (fig. 66), and a weaver's sword of whale-bone, 34.5 cm. long; this specimen is not intact, however, for the handle is missing (fig. 58).

Toilet Articles.

It was only at farm 64c that a few objects capable of being included in this group were found. These were two bone combs, with a double row of teeth, of the usual form (fig. 69), besides two small fragments of a third, and a coarse bone needle with a flat head and eye (fig. 69),

the cut-off head end of a similar needle, and a small button of walrus ivory (fig. 68, Nos. 126 and 125).

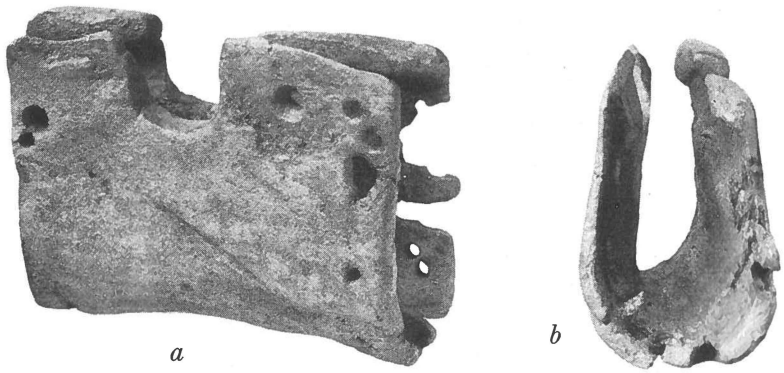
Games Pieces.

Farm 64c, from where in fact most objects—and the best—came from, also yielded some handsome finds of games pieces, viz. three chessmen of walrus ivory: two pawns and a rook, the latter the finest ever found on a Norse farm, and two draughts men, one of whale-bone, also a fine specimen, the other of steatite (figs. 67 No. 128, 68 No. 129) Farm 64a yielded a draughts man and a fragment of another, both of whale-bone (fig. 67 No. 65, and 68 No. 66).

Sundries.

There may be reason for singling out a few of the other Norse relics not belonging to any of the above groups.

Quite unique is a padlock, carved out of whale-bone, from 64c, 3, the passage (fig. 59a—b). This curious specimen measures 7.6 cm. in length and 6.0 cm. where it is broadest. The bolt-way is about 1.9 cm. deep, about 1.8 cm. wide. The end-pieces were fastened on by iron rivets, one of which still remains in the many rivet holes. The inside mechanism is gone. On one side is a little ornamentation in the form of some casually incised interlaced lines. This specimen is clearly a



a *b*

Figs. 59a—b. Padlock, whale-bone, No. 144. About 2:3.

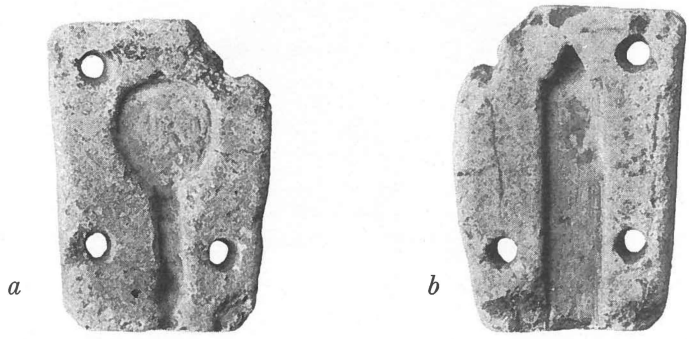
copy of an iron padlock of the type that was long in use in the Middle Ages in Europe[2]) This whale-bone padlock is one of the best

[1]) Grieg: l. c., p. 348.

[2]) See e. g. C. L. Vebæk: Middelalderlige Bondegaarde paa Grønland, Fra Nationalmuseets Arbejdsmark 1941, p. 48, fig. 12, where one of these locks with its key is illustrated for comparison with the specimen from Greenland.

examples so far secured to show the Norsemen's lack of iron. Among others there are an axe of whale-bone and an arrow-head of bone, both from Sandnes[1]).

Another object of whale-bone is a length of sledge shoeing (fig. 64 No. 145), also from 64c, 3, passage. The present length is 42.5 cm.,



Figs. 60a—b. Moulding box, steatite, No. 141. 1:2.

width 4.4—4.7 cm., thickness 1.9 cm., but the specimen was once somewhat longer. It has two holes and traces of a third for fastening the shoe to the runner of a sledge. Similar shoes were found at Brattahlid and Sandnes[2]).

A small, well-preserved mould-box (fig. 60a—b) is of steatite; it was found in 1, III at 64c. The box is four-sided, flat, 8.3 cm. long, width at one end 5.0 cm., and at the other end, where a small chip has broken off, about 6.0 cm., thickness 1.7 cm. Near the four corners are four holes for binding the lid. In one side of the box, a, is a mould, apparently for a spoon, 6.7 cm. long, 2.6 cm. at the widest part, depth 0.4—0.7 cm. In the other side, b, is an oblong mould pointed at one end, 7.2 cm. long, 1.4—1.5 cm. wide, 0.4—0.8 cm. deep, for some unknown object. A few other mould boxes have previously been found in Greenland, most of them from Gardar[3]), but none for objects of the same types as those that must have been cast in this mould.

Of gneiss there is a large mill-stone, of which half remains (fig. 61); this too is from 64c, 1, III. It measures 31.5 cm. in diameter and its thickness is about 6.5 cm. One side is flat and worn smooth, the other rounded and very smooth too. Placed a little eccentrically is a hole, 4.7—6.5 cm. in diameter. On the flat side and running from the hole is an oblong groove rounded at the end, intended for holding the stone

[1]) MoGr 88, 2, fig. 74 and fig. 80.
[2]) MoGr 88, 1, fig. 105, and MoGr 88, 2, fig. 71.
[3]) MoGr LXXVI, p. 146 ff., and figs. 83—84, and MoGr 88, 2, p. 152.

fast to the mill, length about 4.5 cm., breadth about 3.2 cm. This is the first mill-stone found on any of the smaller Greenland farms, but four have been discovered on the largest of them, i. e. at Gardar, Brattahlid, Undir Høfda and Hvalsey[1]).



Fig. 61. Millstone of gneiss, No. 142. About 1:5.

Among other objects that can be identified are some nails and rivets, including clinching nails, as well as a small piece of bell metal. There were also several small pieces of worked iron which cannot be classified.

Objects of Unknown or Uncertain Use.

Apart from the indeterminable pieces of iron there are a few objects that escape identification. For instance there is fig. 65, No. 74. It is of steatite and oval in shape, 6.1 cm. long, 4.0 cm. wide, 1.5 cm. thick. On one of the sides, which is rounded, is a projection 4.4 cm. long, 2.0—2.6 cm. wide and 1.2—1.9 cm. high, with a hole through the longitudinal axis. It is badly scorched. Other very similar objects, but with a flatter projection that is not pierced, were found in 64c. Several others, with and without a hole, have been found at other Norse farms. Roussell suggests that they are patches for domestic vessels[2]); but no definite identification has yet been offered.

Two curious "tubes" are made of steatite and penis bone (fig. 64, Nos. 152 and 156), almost the same in shape but of different lengths: 10.0 and 15.7 cm. respectively. Their purpose is uncertain. Penis bone is also the material of an object 21.7 cm. long, 1.7—2.5 cm. wide, presumably a handle (fig. 64, No. 160), while two other penis bones are sharpened at one end; both are very smooth at this worked end, doubtless by friction; they may be seam-smoothers.

Bone is the material of the remarkable little object shown in fig. 68, No. 154, which consists of two pieces, no doubt of the same

[1]) MoGr LXXVI, p. 141, and MoGr 88, 1, p. 131.
[2]) MoGr 88, 2, p. 200.

size and almost equal originally; one is now broken. The length of the intact piece, in which there is a round and a four-sided hole, is 6.3 cm. At one end the two pieces are held together by three small bronze rivets, the other end being open at an acute angle running from the joint. Use unknown.

Two fragments of a mounting are also of bone (one illustrated, fig. 68, No. 159). It is oblong and seems to have been at least 12—13 cm. long, 1.5—1.8 cm. wide, and 0.6—1.0 cm. thick. One side (the back) is flat, the other slightly rounded. On the latter side there is some ornamentation with two incised longitudinal grooves and groups of small concentric circles, of which one group is preserved. In both specimens are remains of holes which have held iron rivets. The use of this mounting is uncertain.

Finally, among the indeterminable objects there is a richly ornamented piece of soapstone (fig. 70). It is a massive, four-sided object, rectangular in cross-section, measuring about $9.2 \times 4.4 \times 3.5$ cm. Through the middle, from broad side to broad side, is a large hole. The specimen is ornamented on all surfaces with deeply incised geometrical patterns and drilled depressions.

Eskimo Objects.

Quite by themselves are two objects that are of Eskimo origin. One is a towing-line handle of walrus ivory (fig. 62a) found in 64c, 1, I. It measures 10.8 cm. in length and its greatest breadth is 2.7 cm., with 1.7 cm. as the maximum thickness. In the middle is a hole for the

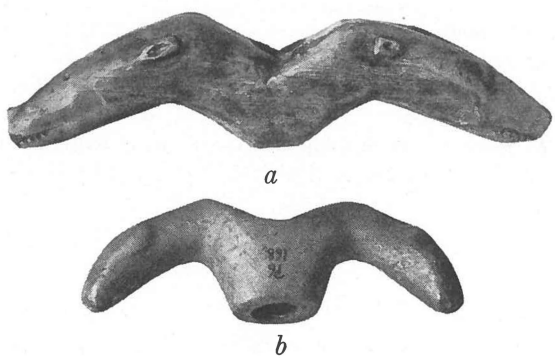


Fig. 62a—b. Eskimo towing-line handle, walrus ivory, a (No. 146) from Norse farm 64c. About 2:3, b from Eskimo settlement Quilalukan, Baffin Land. About 3:4.

towing-line. The two ends of the handle are handsomely carved with two polar-bear heads. Two cross-like ornaments are incised on the back. This curious specimen is of Eskimo origin and is evidence of intercourse between the Norsemen and the Eskimos. It is a rare Thule-Culture type,

its nearest parallel being two specimens from North America, Quilalukan in Baffin Land (illustrated here for comparison with our specimen (fig. 62b)) and Malerualik in King William Land[1]). The type has not previously been observed in Greenland, but it is most probable that this specimen came from North Greenland, whence the Norse farmer may have brought it on one of his hunting journeys to Nordre Sétur. The fact that it is not from Eskimos in the Julianehaab district seems clear, as the Thule Culture has never been discovered there[2]).

The second specimen is an ice-pick of whale-bone (fig. 64, No. 76), found in 64a, 1, VII. It is 14.0 cm. long, 3.2—4.1 cm. wide and 0.9—1.4 cm. thick. The butt end is shaped and the edges roughened by incised notches. The pointed end is badly worn. This ice-pick is of a common Eskimo type. It occurs in the Thule Culture and in the Inugsuk Culture[3]) and is used to this day in Greenland, so that nothing more can be said of the chronological position of our specimen.

The Finds as a Whole.

The total picture provided by the finds described is of a typical Norse culture embracing most of the common types hitherto known, except for objects of wood, of which none were preserved, but extended by a few not hitherto observed in the Norse farms: the whale-bone padlock, the arrow-head and the gimlet of iron, to which we must add the Eskimo artefacts: the towing-line handle and the ice-pick. It is not possible to give any definite date to these finds, and this accordingly involves the farms themselves.

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[1]) Therkel Mathiassen: Archaeology of the Central Eskimos, Report of the Fifth Thule Expedition, Vol. IV, 1927, pl. 41, 7 and pl. 82, 16.

[2]) Therkel Mathiassen: The Eskimo Archaeology of Julianehaab District, MoGr 118, 1, 1936, p. 83—84.

[3]) Therkel Mathiassen: Archaeology of the Central Eskimos, Pl. 4, 2—5, and Therkel Mathiassen: Inugsuk, MoGr LXXVII, 1930, p. 189 and Pl. 6, 8—9.

LIST OF FINDS

East Settlement No. 64 a.

No.	Find-spot	Mus. No.	
			Tools and Implements.
1	1, III	D. 12935	Iron knife, total length 11.4 cm., of which the butt end 5.1 cm. Maximum width 1.9 cm. Fig. 63.
2	1, III	D. 12935	Wood handle with remains of iron knife, total length 7.0 cm., of which the handle 6.5 cm., maximum width 1.9 cm.
3	1, VI	D. 12938	Small, much worn iron knife with remains of wood handle, total length 7.0 cm., of which the butt end 4.5 cm. Fig. 63.
4	Area outside NE. wall of house	D. 12941	Iron knife, point broken off, length 11.0 cm., maximum width 1.4 cm. Fig. 63.
5	Under paved floor outside NE. wall of house	D. 12942	Fragment of iron knife, length 5.8 cm., width 1.2 cm.
6	Under paved floor outside NE. wall of house	D. 12942	Fragment of iron knife, butt end, length 4.1 cm.
7	Midden	D. 12946	Fragment of iron knife, length 4.7 cm., maximum width 1.6 cm.
8	7	D. 12945	Fire-steel of iron, greatest length 8.1 cm., width at the upturned ends 2.9 and 3.2 cm., thickness 0.3—0.5 cm. Well preserved. Fig. 63.
9	1, I	D. 12932	Small whetstone of quartzite, length 4.2 cm., maximum width 1.4 cm, maximum thickness 1.1 cm.
10	1, III	D. 12935	Whetstone of quartzite, length 9.1 cm., maximum width and thickness 1.4 cm.
11	1, VI	D. 12938	5 small whetstones of quartzite (two of them fragmentary), the whole ones with lengths 6.2, 7.0 and 7.9 cm., widths 2.5, 1.6 and 1.4 cm., thickness 1.9, 0.8 and 1.1 cm. respectively, as well as two small fragments of whetstone of red porphyry.
12	Under paved floor outside NE. wall of house	D. 12942	whetstone, foursided, flat, of Igaliko sandstone, maximum length 14.8 cm., maximum width 12.2 cm., thickness 1.9—2.9 cm.

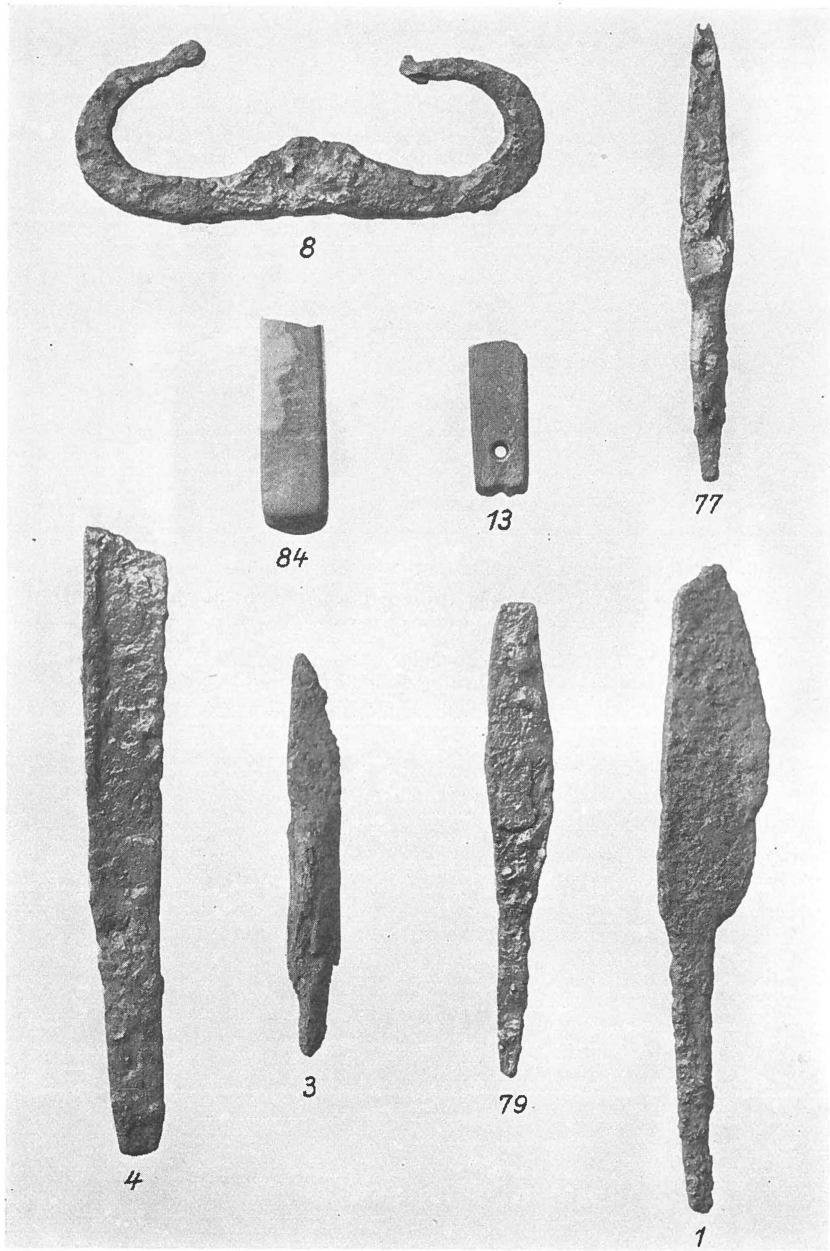


Fig. 63. Implements of iron and whetstones of porphyry from East Settlement No. 64a and c. About 3:4.

No.	Find-spot	Mus. No.	
13	Under paved floor outside NE. wall of house	D. 12942	Fragment of small whetstone of red porphyry, four-sided in cross-section, length 2.7 cm., width 1.0 cm. and thickness 0.6—0.8 cm. With a complete hole and remains of another at one fracture surface. Fig. 63.
14	Under paved floor outside NE. wall of house	D. 12942	Whetstone of quartzite, greatest length 9.4 cm., maximum width 5.4 cm., maximum thickness 4.4 cm.
15	3, I	D. 12943	Flat whetstone of quartzite (?), maximum length 11.7 cm., maximum width 6.1 cm., maximum thickness 2.3 cm.
16	Midden	D. 12946	Two whetstones, one of quartzite, length 9.8 cm., maximum width 1.9 cm., maximum thickness 1.4 cm., the other of Igaliko sandstone, small fragment, maximum length 4.9 cm.
17	1, IV	D. 12936	Shovel blade of whale-bone, length 23.5 cm., maximum width 7.8 cm., with a rivet hole and traces of three others. This shovel originally was wider but it has split, but the wear marks show it to have been used in its present form. Fig. 64.
			Household Utensils.
18	1, III	D. 12935.	Fragment of small, round-bellied lamp (?) of steatite, with two small lugs under the rim, height 3.0 cm.
19	1, III	D. 12935	Fragment of small steatite vessel (lamp?) with straight walls and flat bottom, height 2.1 cm., wall thickness 0.3—0.9 cm.
20	1, VI	D. 12938	Fragment of unfinished lamp (?) of steatite, height 4.9 cm.
21	Under paved floor outside NE. wall of house	D. 12942	Over half of a small, apparently circular steatite vessel (lamp?) with hole in bottom, height 3.5 cm., outer diameter 7.6 cm. Fig. 65.
22	7	D. 12945	Large fragment of steatite lamp, four-sided, straight-walled, width 9.7 cm., height 4.1 cm., wall thickness 1.4—2.0 cm., bottom thickness 0.5—1.4 cm.
23	Passage outside 1, I	D. 12931	Fragment of thick steatite vessel with patching rivet, thickness 3.1 cm.
24	1, III	D. 12935	Fragment (corner) of large four-sided, straight-walled steatite vessel, with inturned rim and large, flat, rectangular lug, height 12.0 cm., wall thickness 0.5—2.0 cm. Fig. 65.
25	1, III	D. 12935	Rim fragment of very large, thin-walled steatite vessel with slightly inturned rim, wall thickness 1.2—1.5 cm. Has a small perforation and a small drilled depression.

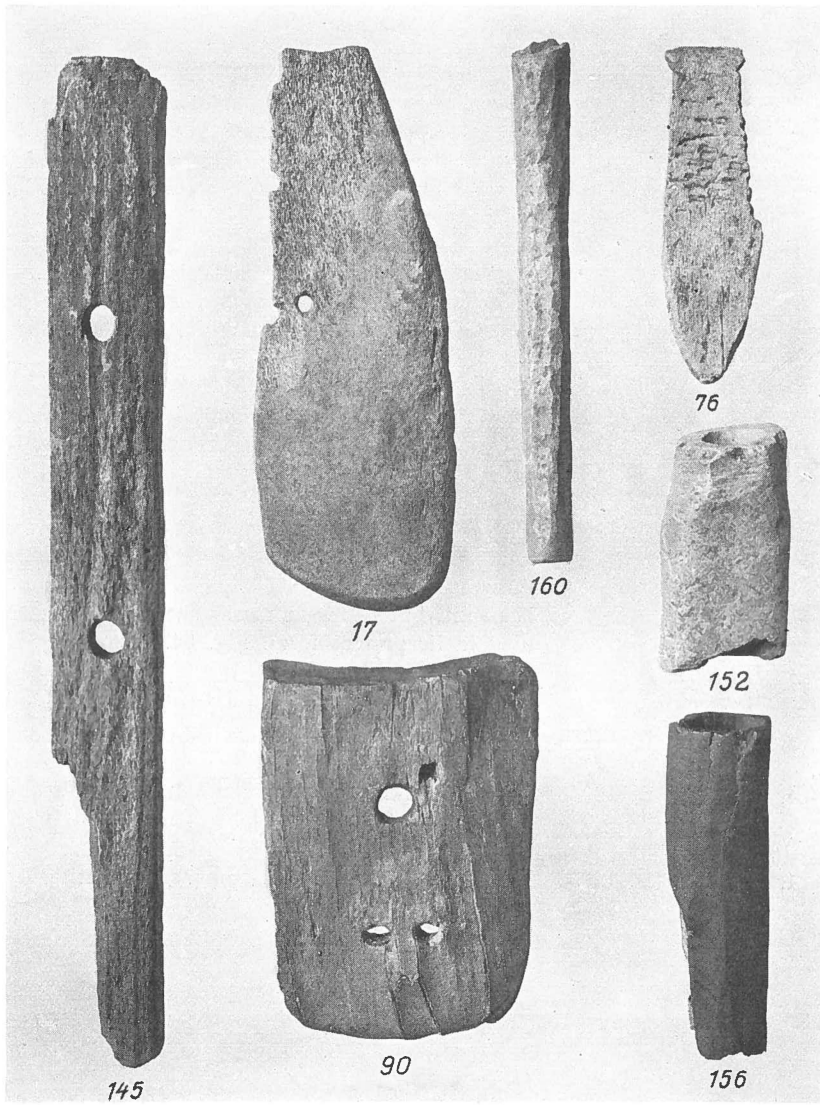


Fig. 64. Implements of bone and steatite from East Settlement No. 64a and c. About 2:5.

No.	Find-spot	Mus. No.	
26	1, III	D. 12935	Two small rim fragments of steatite vessel, one thick with remains of two perforations and one smaller with one perforation.
27	1, V	D. 12937	Side-fragment of large steatite vessel with four-sided, elevated lug, thickness 0.9—1.8 cm.
28	1, V	D. 12937	Rim-fragment of large steatite vessel with slightly inturned rim, thickness 0.6—1.9 cm.

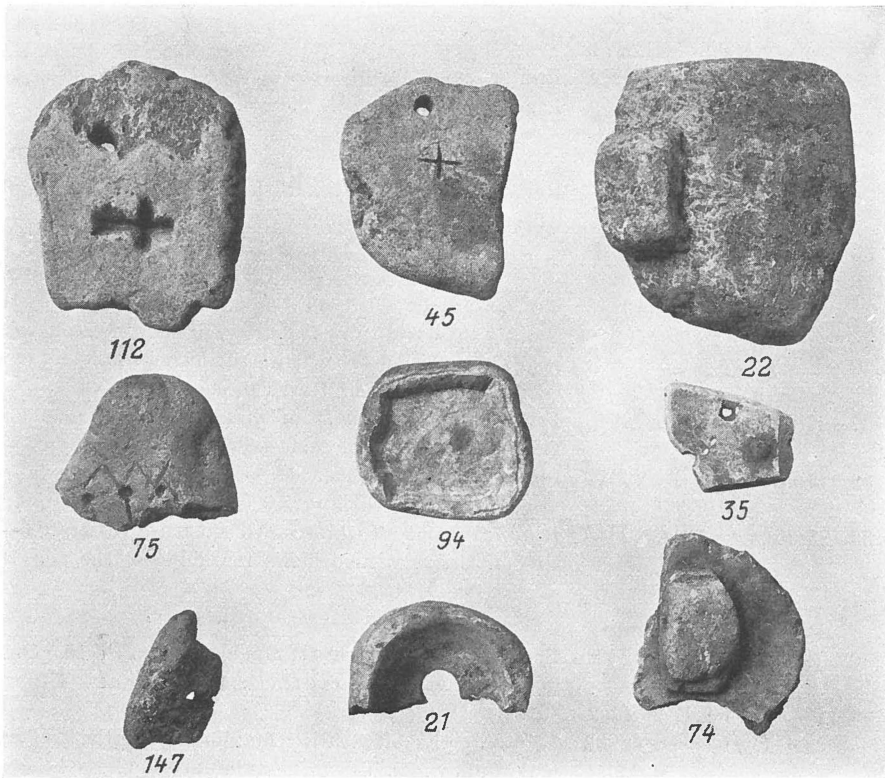


Fig. 65. Objects of steatite from East Settlement No. 64a and c. About 2:5.

No.	Find-spot	Mus. No.	
29	1, VI	D. 12938	Fragment of small, four-sided, straight-walled steatite vessel, presumably a lamp, height 4.0 cm., wall thickness 0.8—1.5 cm.
30	1, VI	D. 12938	Fragment of large, presumably round steatite vessel, with broad, inturned rim ornamented with incised radial lines 1.4 cm. apart. Furnished with a flat, four-sided lug and traces of perforation. Wall thickness 1.0—1.8 cm.
31	1, VI	D. 12938	Small fragment of steatite vessel, wall thickness 0.9—1.5 cm. With an oblong, four-sided lug. Badly burnt on outside.
32	1, VI	D. 12838	Rim fragment of large steatite vessel with slightly inturned rim, ornamented with two incised, broad grooves below the rim. Thickness 1.5—2.4 cm. Furnished with two perforations. Presumably used as loom weight.
33	1, VIII	D. 12940	Fragment of small handle of steatite, thickened at the end. Length 4.1 cm., maximum width 2.3 cm., maximum thickness 2.2 cm.

No.	Find-spot	Mus. No.	
34	Area outside NE. wall of house	D. 12941	Rim fragment (?) of steatite vessel, cut at the ends. Length 7.6 cm., width 2.3 cm., thickness 1.4 cm.
35	Under paved floor outside NE. wall of house	D. 12942	Repair-patch of steatite with three perforations, one with an iron rivet in it. Fig. 65.
36	Under paved floor outside NE. wall of house	D. 12942	Rim fragment of round-bellied steatite vessel with slightly inturned rim. A shallow, broad groove incised below the rim on the outside. Thickness 1.1—1.7 cm. One perforation and traces of another.
37	Midden	D. 12946	Fragment of vessel (?) of steatite, thickness 1.1—2.7 cm. with large circular hole, diameter 3.9 cm.
38	Midden	D. 12946	Fragment of large steatite vessel with a large four-sided lug. Wall thickness 0.7—1.5 cm.
39	Midden	D. 12946	Rim fragment of thin-walled steatite vessel, 0.6—1.0 cm. thick, with owner's mark below the rim.
			Textile Occupations.
40	Passage outside into 1, I	D. 12931	Loom weight of steatite, maximum length 10.8 cm., maximum width 6.9 cm., maximum thickness 4.1 cm.
41	Passage between 1, I and 1, II	D. 12933	Loom weight of steatite, maximum length 9.5 cm., maximum width 7.0 cm., maximum thickness 4.6 cm.
42	1, II	D. 12934	Loom weight of steatite, maximum length 9.4 cm., maximum width 6.8 cm., maximum thickness 4.3 cm.
43	1, III	D. 12935	Fragment of lamp (?) of steatite, used as loom weight, maximum length 12.2 cm., maximum width 7.2 cm., maximum thickness 2.7 cm.
44	1, III	D. 12935	Fragment of large steatite vessel used as loom weight, maximum length 12.5 cm., maximum breadth 4.7 cm., maximum thickness 2.5 cm. Owner's mark.
45	1, III	D. 12935	Fragment of steatite vessel used as loom weight, maximum length 9.0 cm., maximum width 7.1 cm., maximum thickness 2.2 cm. Owner's mark (cross) on both sides. Fig. 65.
46	1, III	D. 12935	Fragment of steatite vessel used as loom weight, maximum length 7.3 cm., maximum width 6.6 cm., maximum thickness 3.4 cm. Owner's mark.
47	1, VI	D. 12938	Loom weight of steatite, maximum length 9.5 cm., maximum width 5.6 cm, maximum thickness 3.1 cm., with two perforations.
48	1, VI under floor	D. 12938	Loom weight of steatite, maximum length 10.4 cm., maximum width 8.3 cm., maximum thickness 3.1 cm. Owner's mark.
49	Area outside NE. wall of house	D. 12941	Loom weight of steatite, maximum length 8.0 cm., maximum width 6.2 cm., maximum thickness 2.4 cm.

No.	Find-spot	Mus. No.	
50	Passage between 1, I and 1, II	D. 12933	Small fragment of irregular spindle whorl(?) of steatite, with incised groove on upper side, length 3.7 cm.
51	1, V	D. 12937	Spindle whorl of steatite, domed form, diameter 4.1 cm., thickness 1.5 cm., diameter of hole 1.1—1.4 cm.
52	1, VI	D. 12938	Spindle whorl of steatite, flat, irregularly round, maximum diameter 3.4 cm., thickness 1.1 cm., diameter of hole 1.1—1.6 cm.
53	1, VI	D. 12938	About half of irregular spindle whorl of steatite, maximum diameter 4.1 cm., maximum thickness 1.7 c., diameter of hole 1.0—1.2 cm.

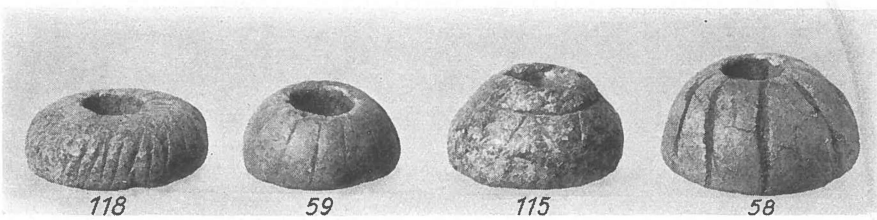


Fig. 66. Spindle whorls of steatite from East Settlement No. 64a and c. About 2:3.

54	1, VI	D. 12938	Spindle whorl of steatite, domed form, maximum diameter 4.1 cm., maximum thickness 1.1 cm., diameter of hole 1.0—1.5 cm.
55	1, VI	D. 12938	About half of spindle whorl of steatite, domed form, diameter 3.8 cm., thickness 2.0 cm., diameter of hole 1.2—1.3 cm. After being broken this whorl was trimmed at the fracture faces.
56	1, VI	D. 12938	Spindle whorl of steatite, domed form, diameter 3.5 cm., thickness 1.3 cm., diameter of hole 1.2—1.6 cm.
57	1, VI	D. 12938	Spindle whorl of steatite, flat, irregularly round, with edge cut in facets, maximum diameter 2.4 cm., thickness 0.8 cm., diameter of hole 0.8—1.0 cm.
58	Under paved floor outside NE. wall of house	D. 12942	Spindle whorl of steatite, domed form, diameter 3.9 cm., thickness 1.9 cm., diameter of conical hole 1.1—1.7 cm. Ornamented on upper side with ten incised radial lines, on the lower side with four crosses (fig. 66).
59	Under paved floor outside NE. wall of house	D. 12942	Spindle whorl of steatite, domed form, diameter 3.2 cm., thickness 1.4 cm., diameter of hole 1.1—1.7 cm. Ornamented on upper side with incised radial lines (fig. 66).

No.	Find-spot	Mus. No.	
60	Under paved floor outside NE. wall of house	D. 12942	Spindle whorl of steatite, flat form, irregularly round, maximum diameter 3.6 cm., thickness 1.1 cm., diameter of hole 0.9—1.3 cm.
61	Under paved floor outside NE. wall of house	D. 12942	About half of spindle whorl of steatite, domed form, diameter 3.2 cm., thickness 1.2 cm., diameter of conical hole 1.3—2.1 cm.
62	Under paved floor outside NE. wall of house	D. 12942	Spindle whorl of steatite, almost domed, diameter 3.1 cm., thickness 1.8 cm., diameter of hole 1.1—1.8 cm.
63	Under paved floor outside NE. wall of house	D. 12942	Spindle whorl of steatite, almost domed, diameter 3.0 cm., thickness 1.7 cm., diameter of hole 1.1—1.4 cm.
64	Midden	D. 12946	Small fragment of spindle whorl of soapstone, length 3.0 cm.

Games Pieces.

65	Passage between 1, I and 1, II	D. 12933	Draughts piece of whale-bone, diameter 3.7—3.8 cm., thickness 1.7 cm., with a shallow depression at the centre in one side, presumably from turning, (fig. 67).
66	Fill from house	D. 12947	Fragment of whale-bone draughts piece, ornamented on upper side with incised concentric circles around the turning hole in the centre (fig. 68).

Rivets, Nails etc. of Iron.

67	1, VI under floor	D. 12938	Iron nail, head broken off, length 5.2 cm.
68	1, VIII	D. 12940	Iron nail, length 3.2 cm., diameter of head 1.4 cm.
69	Area outside NE. wall of house	D. 12941	Fragment of two rivets (heads) joined together, head of iron nail, small angular piece of iron, thick piece of iron, length 6.2 cm., width 1.7 cm., maximum thickness 0.8 cm., and a small piece of sheet iron.
70	Under paved floor outside NE. wall of house	D. 12942	Piece of angular iron, length 4.0 cm.
71	3, II	D. 12944	Small piece of bent-up iron, fragment of iron nail, thick piece of iron, maximum length 5.0 cm., width 1.5 cm., thickness 1.3 cm.

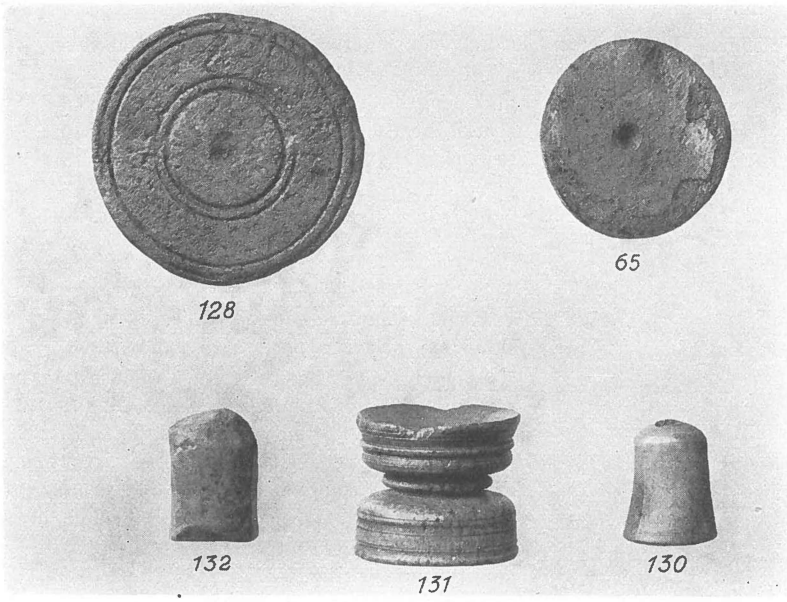


Fig. 67. Games pieces of walrus ivory and whale-bone from East Settlement No. 64a and c. About 2:3.

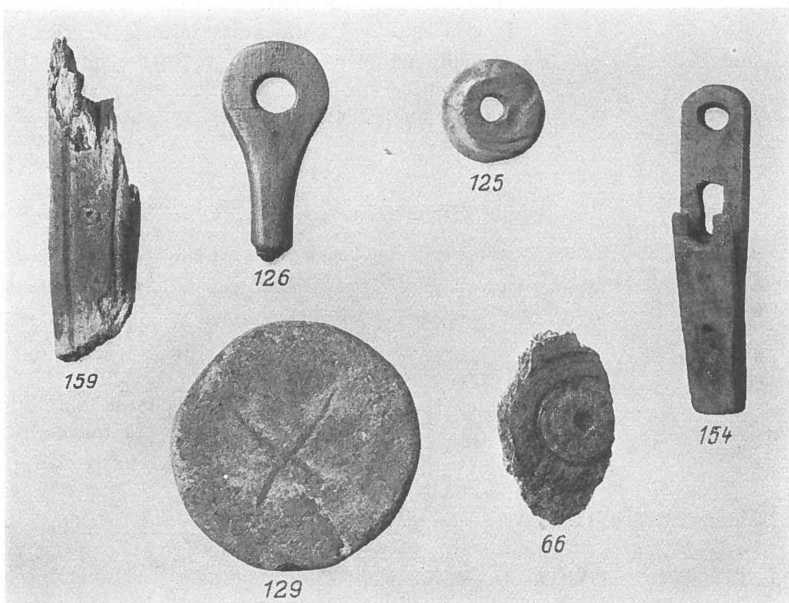


Fig. 68. Various objects of bone and steatite from East Settlement No. 64a and c. About 2:3.

No.	Find-spot	Mus. No.	
72	Midden	D. 12946	Clincher-nail with round head, diameter 2.1 cm., and a square head, 2.0 × 2.6 cm., length 2.5 cm., an iron nail, length 3.7 cm., diameter of head 1.6—2.0 cm., a nail head, diameter 2.3 cm., small piece of iron bent U-shape, maximum length 7.8 cm., and a small piece of sheet bronze.
73	Fill	D. 12947	Nail(?) of iron with head broken off. Length 8.7 cm.
			Objects of Unknown Use.
74	1, I	D. 12932	Fragment of oval or round slab of steatite with four-sided lug which is perforated from side to side. On the side with the lug the object is flat, on the other side slightly domed; on this side is an incised cross (owner's mark?). Badly scorched (fig. 65).
75	Midden	D. 12946	Fragment of steatite object, present length 6.7 cm., width 7.8 cm., thickness 2.5—3.1 cm., ornamented on one side with a zig-zag pattern, in which are three small drilled holes from which incised lines run longitudinally. (Fig. 65).
			Eskimo Objects.
76	1, VII	D. 12939	Pointed, flat piece of whale-bone, total length 14.0 cm., maximum breadth 4.1 cm., breadth at top 3.2 cm., thickness 0.9—1.4 cm. It has a shaft-end, length about 7.3 cm., of which the edges are roughened by incised notches to facilitate lashing to a shaft. On one side smooth and shiny, the other side weathered. The pointed end much worn. Undoubtedly an Eskimo ice-pick. (Fig. 64).

East Settlement No. 64 c.

			Various Implements.
77	3, passage	D. 12960	Arrow head of iron, length 8.1 cm., of which the tang 3.3 cm., maximum width 0.9 cm., maximum thickness 0.7 cm. (fig. 63).
78	2, III	D. 12953	Knife of iron, fragmentary, length about 7.0 cm., of which the butt end 2.1 cm., maximum width 0.9 cm.
79	3, passage	D. 12960	Knife of iron, length 8.3 cm. (the tip broken off), of which the butt end 2.8 cm, maximum width 1.2 cm. (fig. 63).
80	Midden	D. 12963	Lower end of gimlet of iron, length 3.9 cm., diameter 1.0 cm. (fig. 55).
81	1, I	12948	Large flat whetstone of Igaliko sandstone, maximum length 19.5 cm., maximum width 15.0 cm., maximum thickness 5.1 cm.
82	1, I	D. 12948	Grind-stone of Igaliko sandstone, almost round, diameter about 8.8 cm., thickness 3.0 cm.

No.	Find-spot	Mus. No.	
83	1, I	D. 12948	Whetstone of quartzite, length 7.6 cm., maximum width and thickness 2.2 cm.
84	3, I	D. 12955	Whetstone of red porphyry, almost square in cross section, length 3.7 cm. (broken), width 1.1 cm., thickness 1.0 cm. (fig. 63).
85	3, II	D. 12956	Two small flat whetstones of quartzite, thickness 1.6 and 2.1 cm.
86	3, V	D. 12958	Whetstone of quartzite, length 7.5 cm., width 3.2 cm., thickness 1.9 cm.
87	1, I	D. 12948	Three small fragments of a shovel blade of whalebone.
88	1, II	D. 12949	Spade, of whale-bone, length 26.2 cm., of which the handle about 14 cm., maximum width 8.3 cm., thickness 0.5—1.3 cm., badly scorched (fig. 56).
89	1, III	D. 12950	Two small fragments of a shovel blade or spade, of whale-bone.
90	2, III	D. 12953	Shovel blade of whale-bone, length 15.7—16.0 cm., width 10.0—11.6 cm., thickness 0.8—1.7 cm. Has four rivet holes, one of which is not taken right through (fig. 64).
91	3, passage	D. 12960	Fragment of shovel blade(?), of whale-bone.
92	5	D. 12961	Fragment of shovel blade, of whale-bone.
			Household Utensils.
93	1, III	D. 12950	Fragmentary lamp, of steatite, four-sided, maximum length 16.0 cm., maximum height 4.9 cm., thickness of wall 1.1—2.5 cm. Badly scorched. With two perforations, presumably used as loom-weight.
94	3, V	D. 12958	Small, shallow steatite vessel, four-sided, maximum length 7.5 cm., maximum width 6.7 cm., height 1.1—1.5 cm. Well preserved. Lamp? (Fig. 65).
95	1, I	D. 12948	Large fragment (corner) of steatite vessel with inturned rim., height about 12.0 cm., wall thickness 1.4—2.3 cm. With four-sided lug.
96	1, I	D. 12948	Rim fragment (corner) of small steatite vessel with inturned rim, wall thickness 1.1—1.7 cm.
97	1, I	D. 12948	Fragment (corner) of small steatite vessel, height about 5.0 cm., wall thickness 1.0—2.0 cm. Trace of drilling. Lamp?
98	1, I	12948	Fragment of small steatite vessel, wall thickness 0.9—1.4 cm. Perforated.
99	1, II	D. 12949	Large, cemented fragment of large, round-bellied bowl of steatite, circular. Diameter at rim about 17.0 cm., height 6.0 cm., wall thickness 0.7—1.6 cm. Small lug and ornamented on the rim with an incised groove. Somewhat scorched.
100	1, III	D. 12950	Fragment of steatite vessel with large, four-sided lug, about 7.3 × 6.0 × 2.5 cm. Wall thickness 1.6—2.3 cm.

No.	Find-spot	Mus. No.	
101	1, III	12950	Rim fragment of very large steatite vessel with inturned rim. Wall thickness 0.9—2.4 cm. Small perforation. Much scorched on outside. Perhaps used as loom weight.
102	1, III	D. 12950	Large fragment of large, straight-sided, four-sided steatite vessel with inturned rim. Wall thickness 0.9—2.1 cm. Four-sided lug. Much scorched on outside. Perforated. Perhaps used as loom weight.
103	1, III	D. 12950	Fragment of round-bellied, circular steatite vessel, angle between side and bottom. Wall thickness 0.8—1.6 cm. Ornamented on bottom and belly with incised concentric arcs.
104	1, III	D. 12950	Handle of round steatite vessel, presumably a pan, maximum length 10.2 cm., width at base 4.6 cm., width at outer end where it is tongued, 6.6 cm., thickness 1.5—3.0 cm. With "strengthening band" on back (fig. 57).

Textile Working.

105	1, II	D. 12949	Weaver's sword, whale-bone, present length 34.5 cm., but handle missing. Maximum width 4.5 cm., thickness 0.5—1.1 cm. (fig. 58).
106	1, I	D. 12948	Loom weight of steatite, made from the rim fragment of a vessel. Maximum length 16.0 cm., maximum width 8.1 cm., maximum thickness 2.7 cm. One perforation and remains of another. On one side a cross, presumably an owner's mark.
107	1, I	D. 12948	Loom weight of steatite, made from the fragment of a vessel. Maximum length 12.3 cm., maximum width 6.1 cm., maximum thickness 2.1 cm. One perforation.
108	1, I	D. 12948	Rim fragment of steatite vessel with slightly inturned rim, used as loom weight. Maximum length 7.5 cm., maximum width 5.9 cm., maximum thickness 2.5 cm. One perforation.
109	1, III	D. 12950	Loom weight of steatite, made from the fragment of a vessel. Maximum length 11.0 cm., maximum width 9.7 cm., maximum thickness 2.6 cm. One perforation. Lightly incised lines on both sides.
110	1, III	D. 12950	Loom weight of steatite, made from the fragment of a vessel. Maximum length 10.5 cm., maximum width 9.3 cm., maximum thickness 2.6 cm. One perforation. A handsome cross incised in one side. Much scorched (fig. 54).
111	1, III	D. 12950	Loom weight of steatite, made from the fragment of a vessel. Maximum length 11.0 cm., maximum width 8.3 cm., maximum thickness 2.2 cm. With five perforations and remains of a sixth. Some crossing lines incised in one side, presumably an owner's mark.

No.	Find-spot	Mus. No.	
112	1, III	D. 12950	Loom weight of steatite, made from fragment of vessel. Maximum length 8.6 cm., maximum width 6.9 cm., maximum thickness 3.1 cm. One perforation and owner's mark.
113	1, III	D. 12950	Loom weight of steatite, made from fragment of vessel. Maximum length 11.5 cm., maximum width 9.2 cm., maximum thickness 2.6 cm. One perforation. A deeply incised cross in both sides (fig. 65).
114	3, I	D. 12955	Loom weight of steatite, maximum length 9.0 cm., maximum width 6.8 cm, maximum thickness 3.0 cm., One perforation and an owner's mark (cross).
115	1, I	D. 12948	Spindle whorl, diameter 3.5 cm., height 1.9 cm., diameter of hole 1.1—1.4 cm. Ornamented round the hole on the upper side with an incised circle, from which run small, lightly incised line-figures in the form of an upturned V (fig. 66).
116	1, II	D. 12949	Spindle whorl of steatite, domed type, diameter 4.5 cm., height 1.8 cm., diameter of hole 1.4—2.0 cm. Much scorched.
117	1, III	D. 12950	Spindle whorl of steatite, flat type, irregularly round, maximum diameter 3.5 cm., height 1.9 cm., diameter of hole 1.1—1.6 cm.
118	1, III	D. 12950	Spindle whorl of steatite, domed type, diameter 3.6 cm., height 1.2 cm., diameter of hole 1.1—1.3 cm. Ornamented on upper side with slightly oblique, curved radial lines (fig. 66).
119	3, II	D. 12956	Spindle whorl of steatite, poor, irregular specimen, diameter about 3.0 cm., height 1.0 cm., diameter of hole 1.1—1.5 cm.
120	8, II	D. 12962	Spindle whorl of steatite, flat type, diameter 3.9 cm., height 1.8 cm., diameter of hole 1.1—1.6 cm. Ornamented on the side with eight vertical incised lines.
121	Midden	D. 12963	Spindle whorl of steatite, domed type, diameter 3.6 cm., height 2.0 cm., diameter of hole 1.3—1.7 cm.
			Toilet Articles.
122	2, III	12953	Comb of bone, with two rows of teeth. Length 8.7 cm., width at middle 3.2 cm., at one end 4.1 cm. The other end fragmentary. Both ends profiled. Plates fastened on with 3 × 3 small bronze rivets (fig. 69).
123	3, V	D. 12958	Two small fragments of a bone comb, consisting of the two plates riveted together. Width 1.4 cm.
124	3, VI	D. 12959	Comb of bone with two rows of teeth, very fragmentary. Width at one end, which is profiled, 4.4 cm., original length presumably about 9.5 cm. The plates held on with bronze rivets (fig. 69).
125	2, III	D. 12953	Button (?) of walrus ivory, circular, flat, diameter 2.0 cm., diameter of hole 0.3 cm. (fig. 68).

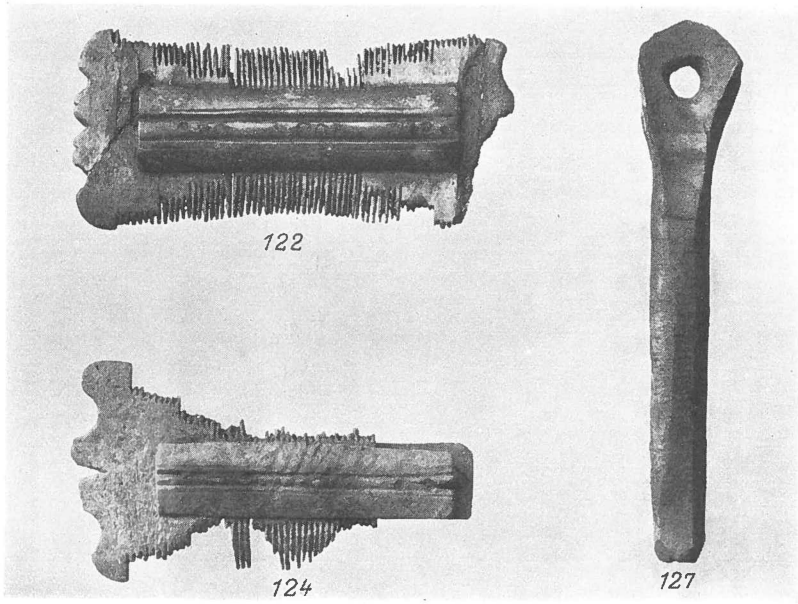


Fig. 69. Two combs and a needle from East Settlement No. 64c. About 2:3.

No.	Find-spot	Mus. No.	
126	3, passage	D. 12960	Severed end of needle of bone with flat head and eye. Length 4.3 cm. (fig. 68).
127	5	D. 12961	Needle of bone with flat head and eye. Length 10.8 cm., but originally longer, the point being broken, whereafter the fracture has been trimmed (fig. 69).
			Games Pieces.
128	1, II	D. 12949	Draughts piece of whale-bone, turned, diameter 5.2 cm., thickness 1.2 cm. On upper side ornamented with incised concentric circles. Well preserved (fig. 67).
129	1, III	D. 12950	Round disk of steatite, doubtless draughts piece. Diameter 4.8 cm., thickness 1.0 cm. Lightly incised cross on both sides (fig. 68).
130	3, II	D. 12956	Chess-man, pawn, of walrus ivory. Turned and then hand-carved. Height 2.3 cm., diameter below 1.8 cm., above 1.4 cm. Well preserved (fig. 67).
131	3, passage	D. 12960	Chess-man, rook, of walrus ivory, turned. Height 2.8 cm., diameter above and below 3.1 cm. Well preserved (fig. 67).
132	3, passage	D. 12960	Chess-man, pawn, of walrus ivory, hand carved, irregular form, maximum width above and below 1.7 cm. (fig. 67).
			Rivets, Nails etc. of Iron.
133	1, II	D. 12949	Fragment of nail or rivet. Length 2.3 cm., maximum width at head 2.2 cm.

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No.	Find-spot	Mus. No.	
156	3, I	D. 12955	"Tube" made of hollowed-out penis bone, fragmentary. Present length 15.7 cm., width at the intact end 4.1 cm., thickness 2.6—3.4 cm., width of hole at intact end 2.2—3.0 cm., at the other end 1.5—1.7 cm. Use unknown (fig. 64).
157	3, II	D. 12956	Four-sided piece of soapstone about 4.8 × 4.5 × 2.4 cm. Perforated through the middle, diameter 1.9 cm. and a number of small drilled pits in both sides.
158	3, IV	D. 12957	Four-sided piece of soapstone with four-sided cross section, about 9.2 × 4.4 × 3.5 cm. A large perforation at the middle through the broad sides, diameter 1.5 cm. Ornamented on all surfaces with deeply incised geometrical patterns and drilled pits. Use unknown (fig. 70).
159	3, V	D. 12958	Two fragments of a bone mounting (?), oblong, original length at least 12—13 cm., width 1.5—1.8 cm., thickness 0.6—1.0 cm. One side (the back) flat, the upper side slightly rounded. On this side ornamented with two incised longitudinal grooves and between them groups of small concentric circles, one group preserved. In both pieces are remains of perforations in which there have been iron rivets. Use uncertain. The larger fragment shown in fig. 69.
160	3, passage	D. 12960	Worked piece of penis bone of walrus, length 21. 7 cm., diameter 1.7—2.5 cm. Shaft (?) (fig. 64).
161	3, passage	D. 12960	Penis bone of walrus, length 38.0 cm., pointed at one end. This end very smooth, presumably owing to wear. Seam smoother?

East Settlement No. 78 a.

162	House	D. 12964	Rim fragment of steatite vessel, thickness 0.9—1.3 cm. Ornamented a little below the rim and partly down the side with two incised lines which ran round the vessel. Much scorched.
163	House	D. 12964	Rim fragment of steatite vessel with inturned, flat rim, ornamented with two incised lines on and along the rim and a similar one on the side just below the rim.



Fig. 70. Ornamented piece of steatite, No. 158. About 2:3.

No.	Find-spot	Mus. No.	Eskimo Objects.
146	1, I	D. 12948	Towing-line handle of walrus ivory, length 10.8 cm., maximum width 2.7 cm., maximum thickness 1.7 cm. At the middle hole for the towing line, diameter 0.7—1.1 cm. The ends carved as two polar-bear heads. On the back two incised cross-like ornaments. One side and part of the under side badly weathered (fig. 62 a).
			Objects of Unknown or Uncertain Use.
147	1, I	D. 12948	Oval piece of steatite with rounded sides, maximum length 6.1 cm., width 4.0 cm., thickness 1.5 cm. On one side a projection 4.4 cm. long, 1.2—1.9 cm. high and 2.0—2.6 cm. wide, pierced across the longitudinal axis of the specimen. Through the middle an iron rivet. Use unknown (fig. 65).
148	1, I	D. 12948	Small fragment of bronze, length 3.5 cm., width 1.2 cm., thickness 0.1—0.2 cm.
149	1, III	D. 12950	Piece of steatite, fragmentary, flat on one side and rounded on the other, present length 10.0 cm., width 5.8—6.1 cm. On the flat side an oval projection, length 9.0 cm., maximum width 4.0 cm., thickness about 1.0 cm. On the rounded side an irregular groove running longitudinally. Through the middle an iron rivet. Use unknown.
150	1, III	D. 12950	Thick, carved piece of steatite, fragment, with a flat and a rounded side, thickness 4.9 cm., maximum width 6.4 cm., present length 4.9 cm. Handle of heavy steatite vessel?
151	1, III	D. 12950	Flat piece of steatite, maximum length 6.5 cm., maximum width 3.9 cm., thickness 1.6 cm. Eight perforations. Diameter about 0.5 cm. Use unknown.
152	2, I	D. 12951	"Tube" of steatite, almost four-sided in cross section. Length 10.0 cm., width 4.5—5.3 cm., thickness 2.4—3.5 cm. Width of hole at one end 1.4—3.3 cm., at the other 1.9—2.4 cm. Use unknown (fig. 64).
153	2, III	D. 12953	Two small fragments of an object of steatite of the same type as No. 149, but flatter. Thickness 1.1 cm. Badly scorched.
154	2, IV	D. 12954	Two small oblong pieces of bone, originally of equal size, held together at one end by three bronze rivets. Length of one piece 6.3 cm., of the other (fragmentary) 4.1 cm. The intact piece has a four-sided (0.5 × 1.0 cm.) and a round perforation (diameter 0.5 cm.), the other the remains of a similar four-sided hole and presumably had a round one too. The pieces are separated at an acute angle almost from the riveted joint. Use unknown (fig. 68).
155	3, I	D. 12955	Penis bone of walrus, length 39.0 cm., pointed at one end, somewhat smoothed, especially at the pointed end, presumably by wear. Seam-smoother?

No.	Find-spot	Mus. No.	
134	1, III	D. 12950	Fragment of nail, length 1.2 cm., diameter at head 1.5 cm.
135	2, I	D. 12951	Head of nail or rivet, maximum width 2.4 cm.
136	2, IV	D. 12954	Massive piece of iron. Length 8.1 cm., maximum width 1.2 cm., maximum thickness 0.8 cm., and a small flat piece of bent iron. Length 5.6 cm.
137	3, I	D. 12955	Clincher-nail, length 1.7 cm., maximum width of head 1.8 cm., and a small piece of sheet iron, length 4.1 cm., maximum width 2.1 cm.
138	3, IV	D. 12957	Two small pieces of sheet iron. Lengths 2.9 and 3.1 cm., widths 1.1 and 2.0 cm., the larger with two small perforations.
139	3, VI	D. 12959	Nail or rivet, incomplete, length 2.3 cm., maximum width at head 2.1 cm.
140	Midden	D. 12963	Slightly bent iron nail, length 2.5 cm., maximum width at head 1.4 cm., and two small iron fragments.
			Sundries.
141	1, III	D. 12950	Double moulding-box of steatite. Length 8.3 cm., width at one end 5.0 cm., the other end is fragmentary but was originally about 6.0 cm., thickness about 1.7 cm. Near the four corners are four perforations for fastening the lid, diameter 0.7 cm. In one side of the box is a mould, doubtless for a spoon, length 6.7 cm., maximum width 2.6 cm., depth 0.4—0.7 cm. In the other side is an oblong mould pointed at one end, length 7.2 cm., width 1.4—1.5 cm., depth 0.4—0.8 cm., for what object is unknown (fig. 60 a—b).
142	1, III	D. 12950	Half of a mill-stone of granite, diameter about 31.5 cm., thickness about 5.6 cm. One side is flat and smooth-worn, the other domed and rather smooth. A little eccentrically to the centre is a hole, top diameter about 6.5 cm., at middle 4.7 cm. On the flat side, running from the hole, is an oblong depression rounded at the end, intended for fixing the stone in the mill, length about 4.5 cm., width about 3.2 cm. (fig. 61).
143	2, II	D. 12952	A small piece of bell-metal, maximum length 4.7 cm., thickness 0.7 cm.
144	3, passage	D. 12960	Padlock of whale-bone, maximum length 7.6 cm., maximum width 6.0 cm., maximum thickness 4.0 cm. Bolt-way about 1.9 cm. deep, about 1.8 cm. wide. At the ends several rivet holes for securing the end-pieces; one rivet remains. Ornamented on one side with cursorily incised, winding lines (fig. 59 a—b).
145	3, passage	D. 12960	Sledge shoeing, whale-bone, fragmentary, present length 42.5 cm., width 4.6—4.7 cm., thickness 1.9 cm. Two perforations (diameter 1.5 cm.) and traces of a third. One side slightly rounded, the natural surface of the bone preserved there. This side, which is badly worn, was the running surface. The back is cut flat (fig. 64).

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APPENDIX

ANIMAL BONES FROM INLAND FARMS IN THE EAST SETTLEMENT

By M. Degerbøl.

The material to be described below, from the East Settlement of the ancient Norsemen, nowadays the Julianehaab District, was excavated in the summer of 1939 by C. L. Vebæk on behalf of the National Museum. This material is in all respects similar to what has previously been published from the East Settlement (Degerbøl: Animal Bones from the Norse Ruins at Gardar, Greenland, MoGr Bd. 76, 1929, and Animal Bones from the Norse Ruins at Brattahlid, MoGr Bd. 88, 1, 1934).

A few bones were found of the following animals: *Lepus arcticus*, Polar Hare, *Ursus maritimus*, Polar Bear, *Odobenus rosmarus*, Walrus, *Phoca vitulina*, Harbour Seal. — *Phoca groenlandica*, Harp Seal, and *Cystophora cristata*, Bladder Nose, are represented by many bones, and in fact they form the great majority of the bone material representing game. *Rangifer tarandus*, Reindeer, is represented by several bones, especially severed parts of antlers and a few tarsal bones; this might suggest that reindeer hunting had taken place far from the settlement. However, the material includes a very small metatarsus: maximum length 180 mm., proximal width transversally 34 mm., antero-posteriorly 25 mm., middle width 20 mm., distal width 41 mm. There are a few fragments of bones from large whales.

Of birds there are a few bones of the following: *Lagopus mutus*, Ptarmigan, *Anas platyrhyncha*, Mallard, *Uria lomvia*, Guillemot.

There are only few bones of domestic animals from which measurements can be taken. Nevertheless, the specimens as a whole show that small oxen, *Bos taurus*, are represented. A horizontal mandible branch has a very convex lower margin as on *Bos taurus longifrons*; the tooth measurements: p 2—m 3 = 124 mm., m 3 = 34 mm., also refer to the small breed. Two loose finds of lower rear cheek-teeth measure 33 mm. in length. The maximum lengths of two radii are 230 and 233 mm. One metacarpus is broad and powerful: total length 172 mm., proximal

width 59 mm., middle width 35 mm., distal width 59 mm. On the other hand a metatarsus is gracile: maximum length 197 mm.; proximal width transversal 43 mm., antero-posteriorly 36 mm., middle width 22 mm., distal width 47 mm. Many bones bear the signs of manual treatment. Of *Ovis*, Sheep, there are both small goat-horned cores, representing females, and large cores which are triangular in cross-section and represent rams. Of *Capra*, Goat, and *Equus*, Horse, there are a few bones. This find too seems to show that the horse was only rarely kept in Norse times in Greenland. The Dog, *Canis familiaris*, is represented by a single bone only.

To judge from this material the Norsemen lived just as much on hunting seals and reindeer as on animal husbandry, as indeed previous finds have shown. It is interesting to establish the fact that hunting marine mammals played an important part in the economy on farms even far from the coast. The same was observed in the West Settlement (M. Degerbøl: The Osseous Material from Austmannadal and Tungmeralik, MoGr Bd. 89, 1, 1941).

(Comparative material with the aforesaid measurements will be found in Degerbøl: Animal Remains from the West Settlement in Greenland, MoGr Bd. 88, 3, 1936, and Bundsø, en Yngre Stenalders Boplads paa Als, Aarb. f. Nord. Oldk. o. Hist., 1939).

Kagssiarssuk, East Settlement No. 66.

(Pit.)

Phoca vitulina, bulla.

Phoca groenlandica, three bullae, part of ulna.

Phoca sp., fragments of scapula, two humeri, one femur, some vertebrae, costae, phalanges.

Ovis (Capra), several teeth, posterior part of mandible with m3 concealed in the bone, two fragments of humerus, distal epiphysis of femur, first phalanx.

Bos taurus domesticus, upper molar, part of mandible, part of proximal end of metacarpus (56 × 35 mm), proximal end of scapula, distal end of humerus, distal end of tibia, metatarsus (maximum length 197), astragalus, first phalanx.

Ekaluit, East Settlement No. 78 a.

Phoca groenlandica, six bullae, humerus.

Phoca sp., parts of seven humeri, two scapulae, three ulnae, two half pelvises, distal end of femur, three tibiae, some phalanges and vertebrae.

Cystophora cristata, parts of five bullae, fragment of mandible, distal end of humerus.
Whale, indeterminable fragments.
Rangifer tarandus, fragments of antler, calcaneus.
Ovis (Capra), parts of mandible with p4, m1 and m2, three loose molars, distal end of tibia.
Bos taurus dom., parts of two mandibles, fragment of scapula, metacarpus (minus distal epiphysis, short and broad), fragments of femur and tibia, calcaneus, part of phalanx.

East Settlement No. 64 a.

1, I.

Odobenus rosmarus, parts of two penis bones.
Phoca sp., fragments of femur and pelvis.
Bos taurus dom., radius, somewhat fragmentary, maximum length about 230 mm.

Passage between 1, I and 1, II.

Cystophora cristata, bulla, ulna, vertebra fragments.
Bos taurus dom., fragment of cranium.

1, III.

Cystophora cristata, bulla, tibia, fibula, fragments.
Phoca sp., scapula, pelvis, fragments.
Large whale, severed fragment.
Lepus arcticus, tibia.
Ovis aries, powerful ram core, hewn off, maximum and minimum diameters 36 and 28 mm., chord about 140 mm.
Capra hircus, powerful metacarpus minus distal epiphysis, middle width 17, distal width 32.
Ovis (Capra), part of mandible with teeth, p3—m3 = 62 mm., some loose teeth, half of pelvis, vertebra.
Bos taurus dom., epistrophaeus, burnt fragments.
Equus caballus, proximal end of ulna.

1, V.

Cystophora cristata, fragmentary mandible.
Rangifer tarandus, astragalus.
Bos taurus dom., premaxilla.

1, VI.

Phoca groenlandica, bulla.
Cystophora cristata, bulla.

Phoca sp., femur, some costae and vertebrae.
Rangifer tarandus, distal end of tibia, astragalus.
Ovis (Capra), molar.
Bos taurus dom., much worn molar.
Lagopus mutus, part of pelvis.
Anas platyrhyncha, humerus.

1, VII.

Bos taurus dom., proximal end of scapula, spina scapula cut off, width of neck 46.5 mm., proximal end of tibia.

1, VIII.

Ovis (Capra), fragment of radius and ulna, femur.
Bos taurus dom., calcaneus.

Area near East Wall of 1.

Cystophora cristata, bulla.
Rangifer tarandus, tibia jun.
Whale, fragment from large whale.
Bos taurus dom., proximal end of scapula, spina scapulae cut off, proximal end of metatarsus.

Under Paved Floor at East Wall of 1.

Rangifer tarandus, astragalus.
Bos taurus dom., fragment of radius, powerful; upper molar.

3, I.

Cystophora cristata, very fragmentary mandible.
Ovis aries, point of core, female.
Bos taurus dom., proximal end of metatarsus, scraped.

3, II.

Ovis (Capra), middle of radius and ulna.
Bos taurus dom., middle of mandible branch, lower edge very arched, p 2—m 3 = 124 mm., m 3 = 34 mm., four loose inferior teeth (m 3 = 34 mm.), one upper molar, middle of femur.
Rangifer tarandus, metacarpus, maximum length 180 mm., very small.

64 a (without precise location).

Phoca groenlandica, five bullae.
Cystophora cristata, two bullae, part of mandible.

Phoca sp., proximal tibia epiphysis, fragments of pelvis, femur, phalanx, costa.
Rangifer tarandus, antler tine.
Ovis aries, metacarpus minus distal end, gracile.
Ovis (Capra), right maxilla with complete tooth-row, p 2—m 3 = 58.5 mm., proximal end of radius and ulna, part of scapula, one cervical vertebra.
Bos taurus dom., radius, maximum length 233 mm., calcaneus, three fragmentary calcaneus, first phalanx, fragments of costae.

East Settlement No. 64 c.

1, I.

Phoca sp., scapula.
Ovis (Capra), ulna.
Bos taurus dom., incisor.

1, II.

Cystophora cristata, part of bulla, mandible branch.
Phoca sp., fragments.
Bos taurus dom., distal end of humerus, incisor, middle phalanx.
Uria lomvia, tibia.

1, III.

Cystophora cristata, bulla.
Phoca sp., phalanx.
Rangifer tarandus, piece of antler, cut off.
Ovis (Capra), distal end of radius.
Bos taurus dom., lower molar.

2, I.

Odobenus rosmarus, part of penis bone.
Ovis (Capra), left half of mandible, m 3 hidden in the jaw.

2, II.

Phoca groenlandica, ulna.
Cystophora cristata, four bullae.
Phoca sp., various bones, twenty in all.
Rangifer tarandus, distal end of tibia, astragalus, lower part of antler with burr, cut off just above the bez tine.
Ovis (Capra), right half of mandible, dp 4 much worn, m 3 hidden in the jaw, two loose teeth, fragments of teeth, distal end of humerus and tibia.
Bos taurus dom., part of mandible, fragment of humerus.
Canis familiaris, middle part of femur.

2, III.

Odobenus rosmarus, cheek-tooth.
Phoca sp., some vertebrae, phalanx, fragments.
Cystophora cristata, humerus.
Ovis aries, one severed core, somewhat fragmentary, unusually powerful with well-marked, somewhat twisted anterior edge, width from side to side 37.3 mm., back to front 44 mm., ram, fragment of smaller core, three loose teeth.

2, IV.

Phoca groenlandica, bulla.
Phoca sp., fragments of two humeri, tibia, half of pelvis, vertebrae.
Bos taurus dom., middle piece of radius, spinal process.

2, V.

Equus caballus, two upper teeth.
Bos taurus dom., upper molar, small.

3, I.

Phoca groenlandica, two scapulae, two humeri, some vertebrae.
Cystophora cristata, left half of mandible, part of ulna.
Ovis (Capra), loose tooth, dorsal vertebra.

3, II.

Phoca sp., halves of pelvis, costae, vertebrae etc.
Bos taurus dom., proximal end of radius, inferior molar, small.

3, III.

Phoca sp., humerus, vertebra, costa.
Ovis (Capra), molar.
Bos taurus dom., epistrophaeus.

3, IV.

Phoca hispida, fragment of maxilla.
Phoca sp., fragments of humerus, radius, phalanx, vertebra.
Canis familiaris, canine tooth.
Bos taurus dom., two cheek-teeth from upper and lower jaw, one incisor, one calcaneus gnawed by dog, metacarpus, broad and powerful, total length 172 mm., the front of the distal end cut off.

3, V.

Rangifer tarandus, scapula, artificially rounded on distal end.
Ovis (Capra), tooth, ulna.

Bos taurus dom., part of mandible.
Equus caballus, two proximal halves of scapula, No. 1: width of neck 58 mm., maximum width 95, width of glenoid cavity 52; No. 2: 58, 84, 53 mm.

3, Passage.

Phoca sp., parts of three half pelvises, astragalus.
Rangifer tarandus, part of scapula.
Ovis aries, part of goat-horned core.
Bos taurus dom., radius minus distal end which has been cut off; in the severed surface an artificial hole smoothed by friction, proximal width antero-posteriorly 40, middle width 33 mm., one molar.

5.

Odobenus rosmarus, sawn-off root of tusk.

Midden.

Ursus maritimus, part of canine tooth.
Cystophora cristata, part of bulla, canine tooth.
Phoca sp., part of humerus, tibia, vertebra.
Ovis (Capra), molar.
Bos taurus dom., two mandible molars, m3 33.3 m., fragmentary metatarsus.

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