

II.

PROVISIONAL REPORT ON THE EXCAVATIONS AT SKARA BRAE,
AND ON FINDS FROM THE 1927 AND 1928 CAMPAIGNS. BY
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THE EXCAVATIONS IN 1927, BY J. WILSON PATERSON.

The ruined dwellings at Skara Brae were discovered in 1850 and have at various times been excavated and the results recorded in the *Proceedings* of the Society.¹ Little, however, was done in the way of preserving the buildings, with the result that they were rapidly being destroyed by exposure and the action of the sea. The site was placed under the guardianship of H.M. Commissioners of Works in 1924 by the trustees of W. G. Thomas Watt, and steps were taken to arrest the encroachment of the sea. This was accomplished by the erection of a long sea-wall, constructed in a not unsightly manner of stone quarried on the site. The wall was built with a great batter a few feet from the buildings, and the space between it and the bank filled up with stone and rubbish and the top paved to form a walk along the north side of the buildings. The erection of the sea-wall occupied the greater part of the summers 1925-26, and it was not until 1927 that it was possible, for financial reasons, to attempt to preserve the actual buildings. To do this it was necessary to clear away the rank growth of vegetation and blown sand which had accumulated since the previous excavations. Work was commenced in Chamber No. 1 on plan and the sand removed down to the floor-level previously bared by George Petrie. No new features were found; the central hearth, the enclosures, stone boxes, and built ambry or dresser remained as recorded on the former plan. A certain quantity of animal bones was found in the disturbed soil.

On the west side of the chamber, to the south of the enclosure, a low opening appeared to have partially fallen in. On examining this with a view to securing the back, it was found to be the entrance to a low passage turning to the left or southwards. The passage was cleared of its filling of sand, and a few feet from the bend it narrowed to about 1 foot 9 inches, and at 3 feet 6 inches from this constriction a doorway led to a small, roughly circular chamber about 4 feet in

¹ Vol. vii. pp. 201, 426; vol. xlviii. p. 344.

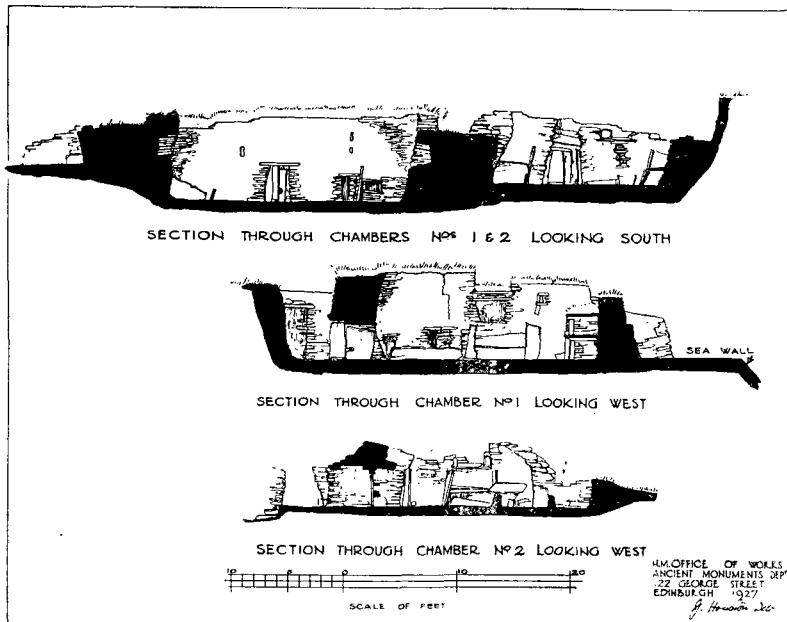


Fig. 2. Sections of Buildings at Skara Brae.

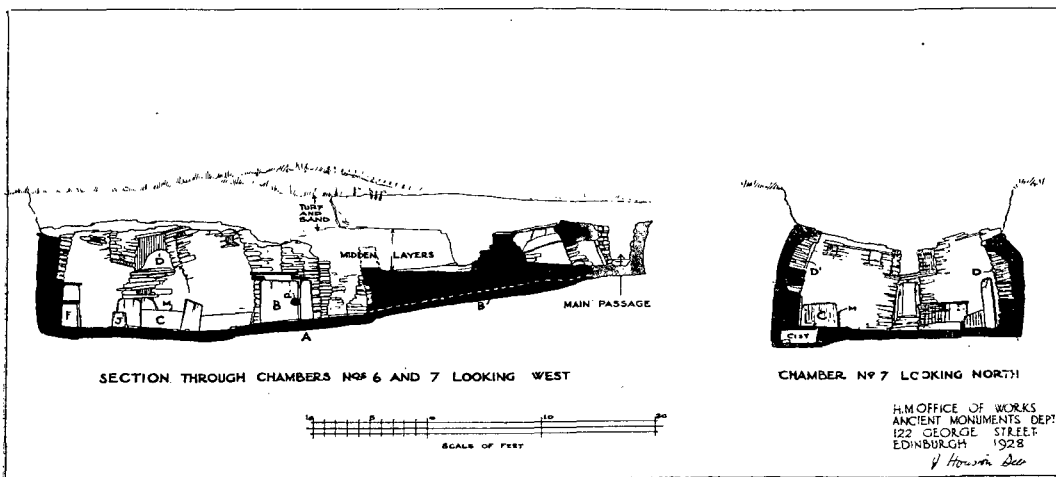


Fig. 3. Sections of Buildings at Skara Brae.

diameter and 3 feet 4 inches high. The passage and chamber were roofed with stone slabs, those in the latter being in excellent condition. The floor-level of the little chamber is 1 foot 10 inches higher than the general level of Chamber No. 1, the rise being formed in the passage with rough stones. In this chamber a large collection of arti-

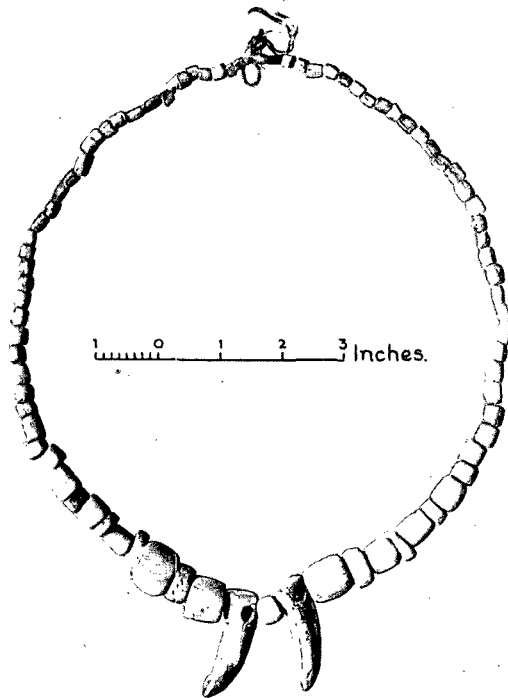


Fig. 4. Necklace of Bone Beads.

facts were found; these were mostly of bone. The greatest number were beads of all sizes, over three thousand being recovered along with a few teeth, bone needles, etc., as detailed in the separate list attached. They were scattered over the surface of the floor. One group of beads and ornaments were found clustered together at the inner threshold of the very narrow doorway. These have been strung together and form a necklace (fig. 4). It would appear that the necklace had fallen from the wearer while passing through the low doorway, and that the chamber itself was a cache or safe for the bone articles. The north

wall of the Chamber No. 1 has apparently been partially rebuilt since Petrie's time as there is now no trace of the little chambers in the wall where shown on Petrie's plan. He shows a rectangular-shaped chamber entering from behind the feature which we have called a dresser. The entrance, however, has been so well built up that no indication of it remains. It is therefore obvious that the back has been rebuilt. The other chambers shown by Petrie in the north-east angle were circular in shape and entered from a doorway in the corner. The opening has likewise been built up, while the north walls of these chambers have been swept away by the sea.

The debris on the wall tops was removed, and the loose stones throughout secretly bedded in cement and the turf relaid over the same. The ground to the west of the chamber was lowered to the level of the top of the sea-wall to expose and examine the outside face of the west wall of the chamber. The excavation was carried out working southwards from the sea-wall. In so doing the outside face of a wall of a new chamber, No. 2 on plan, was met. Thereafter the clearing was continued southwards and westwards in a very careful manner, and close watch kept to find any stratification which would indicate floor-levels of different occupations. No conclusive evidence of this was noted and only one floor with its hearth was discovered. The absence of stratification may be due to ground having been disturbed during the excavation by Mr W. Balfour Stewart in 1913, when he cleared the passages and a small portion of the chamber. The complete excavation revealed a chamber (fig. 1, No. 2) somewhat similar in detail to Chamber No. 1 but smaller in size, the floor measuring approximately 14 feet from north to south and 16 feet from east to west. In the centre of the floor was a hearth, having at its north a stone, 1 foot 3 inches by 9 inches, rising 1 foot 5 inches above the floor-level. A similar stone has been found in a subsequent chamber. There is a straight joint between the north wall and the outside face of Chamber No. 1. It is obvious from this and from the shape of the plan of the chamber that it has been built up against, and so is later than, the wall of Chamber No. 1. In the north wall there are the remains of two small chambers—the eastmost roughly circular in shape and the westmost rectangular. The walls of these chambers now stand only 2 feet 6 inches above ground, and there is therefore no evidence of the construction of the roof over the same. It is likely, however, that they would be covered with large slabs projecting over each other in a manner similar to those in the other small chambers in the walls. No artifacts were found in these small chambers except one bodkin in the westmost one. To the west of the entrance to these chambers are situated two stone boxes. They are approximately 12 inches

square by 12 to 14 inches deep, and like the others on the site they are partially sunk below the floor-level. The bottom and the four sides are each formed of thin square slabs, while the joints are made water-tight by the application of clay on both the outside and inside. The enclosure against the west wall (fig. 6) was found to be similar to that in the east wall of Chamber No. 1. The function of these enclosures has not yet been determined. In this particular instance the fallen debris covering the floor of the enclosure was not cleared in 1927. There is a wall recess immediately above the enclosure. A point of interest is that quite a number of bone needles and walrus tusks were



Fig. 5. Chamber No. 2, south-east side.

found just outside the enclosure on the irregular floor-surface, which consisted of clay ashes and crushed limpet shell. On the east side of the chamber there is another enclosure (fig. 5) similar to that in the east wall of Chamber No. 1. The sides and front are built of slabs set on edge and held in position by wedged pieces of stone sunk into the floor. A curious feature is a large upright stone standing on end. It is difficult to see what purpose these particular stones served unless to support something. In this case the stone rises about 4 feet 3 inches above the floor. It is probable that the enclosure had a paved floor, as there is one complete floor slab.

Mr Balfour Stewart apparently found this enclosure and either mistook it for a hearth or found a hearth superimposed. He writes:

"A hearth was found in the floor at F (near point 3 on the 1927 plan) with an earthenware pot and charred bones, too soft and broken to remove.

“Across the hearth, between E and F, a stone is standing, 3 feet 10 inches in height, and between E and G a stone lies 5 feet 5 inches long and 1 foot 4 inches high.”

Continuing he states:

“When excavating above the hearth a large collection of limpet shells, and beyond the hearth, at the point marked G, 120 astragali (ankle-bones) of oxen and 8 of red deer were found. These were not midden finds. Scarcely any other bones were found near the collection, which seems to show that they were preserved for a purpose. Astragali have been found elsewhere and are generally supposed to have been used as an



Fig. 6. Chamber No. 2, south-west side.

early form of dice. It is possible that the limpet shells and astragali were used for some gaming purpose, but it is curious that in an adjoining habitation bone cubes marked as dice were also discovered.

“A stone saw of Old Red Sandstone and the rib of a whale, broken at each end and measuring 5 feet 4 inches, were found between E and G.

“Another hearth was found between I and J, and above this hearth, in the wall, was found an incised ball of basaltic rock measuring $2\frac{1}{2}$ inches in diameter.”

A number of interesting articles were found between the hearth and the outside of the enclosure (fig. 5). Two bone picks were lying almost hard up against the upright front stone of the enclosure, while a quantity of bone beads, some of them highly polished, and a playing-man with incised markings (fig. 7, No. 1) were lying close to the front

upright stone of the enclosure at its western end. To the north of the part just described there remain the fragments of another floor-box. Against the south wall of the chamber (fig. 6) there are also two boxes sunk well below the floor-level. In the wall, immediately above the boxes, there is evidence of a recess similar to that already described, and about 18 inches to the east another recess above the entrance (fig. 5). In this wall the entrance to the chamber is situated towards the east end. It is 3 feet wide at floor-level, tapering to approximately 2 feet 9 inches at the head. It has one upright stone rising from the

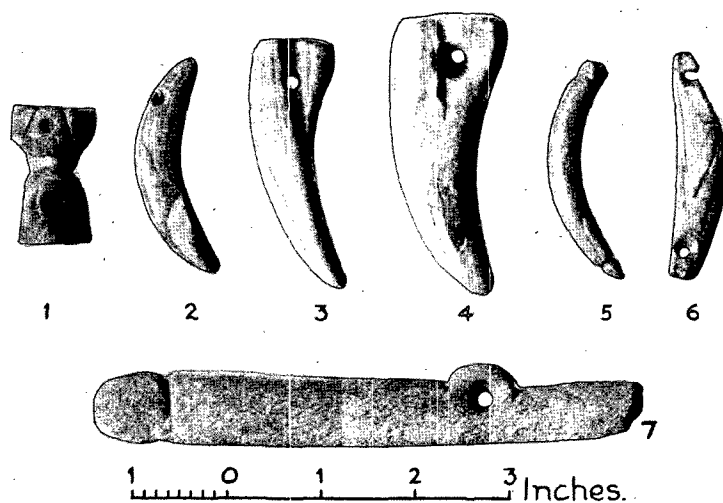


Fig. 7. Playing-man and other Objects made of Bone or Teeth.

floor in line with the right-hand inner jamb. Again it is difficult to suggest for what purpose the stone is placed. At approximately 2 feet south from the inner jambs there are two square holes in the thickness of the wall—evidently the bar holes for fixing the door (see bottom section). At the door-opening a stone kerb is sunk into the soil floor and projects some two or three inches above floor-level and would act as a stop for the door. The articles found on the floor of the inner entrance were some bone beads and a bone axe-like implement. The opening on the south side was considerably smaller than on the north or inner side, having narrowed to 1 foot 6 inches wide by 3 feet high, there being just sufficient room for one person to squeeze through on hands and knees (fig. 5). To the south of the door-opening there is a

small, irregular, circle-shaped antechamber with its stone roofing complete, connecting the doorway to the main arterial passage, which runs roughly east and west. There is evidence that this passage was between 3 feet 6 inches and 4 feet 6 inches high, and completely roofed in by large stone slabs spanning the distance between the walls. The slabs are approximately 3 inches thick, and range in breadth from 1 foot 6 inches to 2 feet 3 inches, and from 3 feet to 5 feet in length, to suit the varying widths of the passage.

In the further clearing of the main passage from entrance of Chamber No. 1 to Chamber No. 2 the entrance to a new chamber and the opening of another passage were found on the south wall, but as the area over these entrances was covered with a midden heap it was decided to discontinue the clearing until another season, when a systematic survey could be made simultaneously with the clearing. This was done during the past summer by Professor Childe.

Proceeding with the preservation of Chamber No. 1, clearing was undertaken on the east side of the site (Chamber No. 3 on plan), where previously excavated by Petrie. On reaching floor-level it was soon apparent that the greater part of the chamber had been destroyed and many floor fittings lost.

Several artifacts were found, having, no doubt, been missed by the previous excavator. One bone bead and three needles were found on the floor-level in south-west corner, all lying in close proximity to a complete floor-box, and two polished beads, one polished bone implement, and a small ironstone implement, at a point about 5 feet from south and west walls. Out of the riddled soil from the floor were obtained one bone needle and one ironstone implement.

The wall between the Chambers Nos. 3 and 1 being 8 feet 6 inches thick led one to expect a wall chamber in the thickness, but no evidence of this was found. An examination, however, of the wall face on the passage side disclosed a straight joint running the full height of the wall as far as it remains.

This shows that the wall of the one chamber was built up against the other. At the moment, as I have not actually examined this joint since its exposure, I cannot say which was the earlier.

The accumulated sand and turf was cleared from the walls and floor of Chamber No. 4, exposing the arrangement of floor furnishings as planned by Mr Petrie (fig. 8). Several small details have been added to the plan. The face work of the west wall has been destroyed, leaving an irregular outline. The original line may have been as indicated by the dotted line on plan. The main north wall being 10 feet 6 inches thick from north to south and approximately 12 feet 6 inches from east to

west led to investigations being made, with the result that an elliptical cell measuring 7 feet by 6 feet was found having entrance from the south side of main passage-way. Its floor-level is approximately 1 foot 3 inches above the level of the main passage at its entrance. The walls stand to a height of approximately 3 to 4 feet in places. There is now no evidence of the roof. The following artifacts were found in the excavated debris: an axe-like implement; a bone chisel; a tusk pendant; an awl; a richly ornamented potsherd; and bone pins.

The floor was partly covered with broken slabs lying in a mass in the south-east corner, and at first it was thought that these had slipped from the chamber walls and fallen in a heap at the spot already re-



Fig. 8. Chamber No. 5, with No. 4 in background.

By the courtesy of T. Kent, Esq., Kirkwall.

ferred to. After careful examination it was found that the top slab, which had broken in three pieces and was lying out of line, had been purposely laid and the breaks thereon had been made by a fall of stones from the upper walls. Excavation work was temporarily suspended until figured sketches of the slab stones as they lay had been made. The slabs were then carefully lifted and marked, and laid aside.

As excavations proceeded the inner walls of a very narrow and shallow passage appeared below the floor of the cell already described. It measured 2 feet wide by 2 feet 6 inches deep. This passage has its entrance from an aperture in the inner face of the east wall of Chamber No. 5. The entrance is blocked up with a square stone standing on edge, and measuring approximately 2 feet square and possibly 7 to 8 inches thick (fig. 8). At a distance of 2 feet 6 inches from the entrance the passage narrows to approximately 9 or 10 inches in width

and runs in a north-easterly direction. This narrowing is due to the south wall having been rebuilt. Its original width would be probably similar to that of the entrance. It bends northwards, and terminates in a very small square cell, 3 feet by 3 feet, built within the west wall of the entrance passage to Chamber No. 4. The artifacts found in this cell were: a flat slab stone with radiating incisions converging into a pit marking—the latter probably contained oil—for sharpening and polishing bone needles, etc.; a large stone basin; and two vertebræ of a whale.

In 1928, yet another small cell was discovered on the south-east of the aforementioned one, roughly circular in shape, and measuring approximately 4 feet 6 inches by 3 feet. Within it were found the following artifacts: one carved stone ball with six projecting knobs; two worked bones; an axe-like implement; a bone pick; four bone pins; a tusk; three bone awls; a worked tooth; eleven bone beads; a tusk ornament; and a bone implement.

As Mr Petrie's plan only shows the entrance to Chamber No. 5, which was subsequently excavated, the details within the chamber have been plotted upon the plan (fig. 1). The chamber is almost square on plan, with rounded corners similar to Chamber No. 1. Its dimensions from east to west are 18 feet 6 inches, and from north to south 14 feet 6 inches. In the south wall there is a small, circular, roofless cell, 5 feet in diameter, with wall recesses situated in the east and west sides. To the right or west of the entrance a stone floor-box is sunk into the floor.

In the south-east corner of wall, between Chambers Nos. 4 and 5 (fig. 8), there is a roofless cell whose floor-level is slightly higher than that of the general floor. It is roughly circular in shape and about 3 feet in diameter. The floor is paved with thin slabs, which cover the one end of the drain (fig. 1) which connects with the small cell in the south of Chamber No. 4 already described. The slabs were removed and the drain cleared out to expose its construction. The drain walls were found to be built of layers of stone slabs laid dry, being 1 foot 4 inches deep at the end, and 2 feet 6 inches deep under the east wall of Chamber No. 4. Against the east wall of Chamber No. 5 (fig. 9) there is the usual low enclosure. The entrance door is situated in the west end of the north wall. On the east of the door there is an opening overlooking the passage. On the floor-level, immediately below the opening, there are two floor-boxes placed side by side and partly sunk below the floor-level. To the west of the boxes there is another low stone enclosure similar to that against the east wall.

The west wall stands to a height of approximately 5 feet 6 inches and has no features in the wall itself. The space in front of the wall is

divided into three low enclosures as aforementioned. In the centre there is the usual hearth arrangement.



Fig. 9. Chamber No. 5, north side.

The finds which were discovered in Chambers Nos. 4 and 5 have been included in Professor Childe's list for 1928.

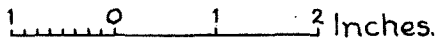


Fig. 10. Stone Dish.

The excavation of Chamber No. 2 has added little evidence of the construction of the upper walls, and the method of roofing is still a matter of conjecture. The chambers may have been covered with a domed roof of small stones, as in beehive structures, or by some method of lintelling with large slabs, as at Jarlshof in Shetland.¹ If by the former, one would have expected to find a great mass of fallen stones among the debris excavated, but no such mass was found in any of the chambers recently exposed, nor were many

slabs found which would have been necessary for the other method. This, of course, may be due to the fallen slabs having been re-used at any subsequent time, such slabs being most useful for many building purposes.

¹ *Proceedings*, vol. xli. p. 11.

The irregular shape of the chambers is against the theory of the domed type, as this is more suited to circular buildings. It is, however, advisable to await the complete excavation of the site before making any definite assertion.

One point, however, is clear, and that is the chambers were not built simultaneously. The irregular lay-out is against any preconceived plan, and the evidence of the walls of Chamber No. 2 shows that the chamber is posterior to Chamber No. 1. It is probable that the village commenced with one or two chambers, and that the others were added on the outskirts as they were required.

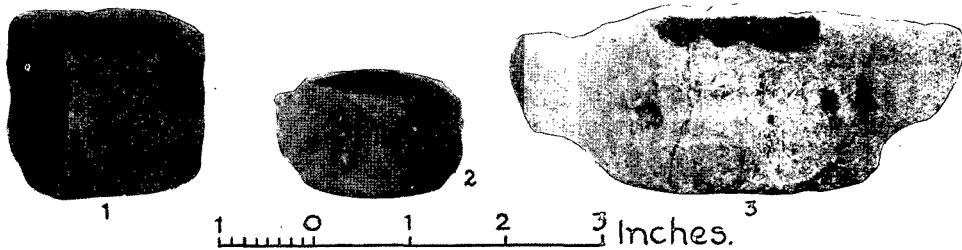


Fig. 11. Vessels made of Stone and Vertebrae.

In conclusion, I desire to acknowledge the services of Mr John Houston for the careful survey and plans which are reproduced, and of Mr John Firth, the contractor, who personally superintended his men with such care that so much has been exposed undamaged.

LIST OF ARTIFACTS RECOVERED, 1927.

1. Stone dish (large).
- 1a. Bone needle.
2. Small stone dish (fig. 10).
- 2a. Oval-shaped stone implement.
3. Bone pick.
4. Bone axe-shaped implement.
5. Very small stone dish (fig. 11, No. 1).
6. Stone dish (unfinished work).
7. Bone pick.
8. Bone pick.
9. Bone bead.
10. Bone bead.

11. Small bead and perforated disc.
12. Bone needle (large, with markings).
13. Bone axe-shaped implement.
14. Bone needle (broken point).
15. Walrus tusk.
16. Bone needle.
17. Stone dish (small, broken).
18. Bone bead (highly polished).
19. Bead.
20. Bone ornament or playing-man (fig. 7, No. 1).
21. Bone needle.
22. Bone needle.
23. Bone axe-shaped implement.
24. Bead (bone).
25. }
 26. } Bone needles.
 27. }
28. Bone needle.
29. Ironstone implement.
30. Two bone needles.
31. Partly hollowed-out triangular stone, small bone, and circular stones.
- 31a. Stone ball carved with twenty small knobs.
32. Two polished beads, 1 polished bone implement, small piece ironstone implement.
33. Bone needle and flat bone, also small bone needle and flat bone.
34. Bone needles, split bead, small iron polisher.
35. Bone implements—bone needle and small bone.
36. Bone needles, bone axe-shaped implements, broken pottery.
37. Broken pottery, needles, and teeth.
38. Broken pottery, bone needles, etc.
- 38a. Stone ball (broken).
39. Beads, bone, of various sizes, and two small tusk ornaments, broken bead and two others of poor quality, bone implements, needles, teeth, etc.
40. Five pair small tusk ornaments and 1 pair large tusk ornaments, 1 boar tusk (all holed at end), 3 other tusks badly decayed.
41. 2400 beads (bone).
42. Broken pottery, red pigment, small bone dish (fig. 11, No. 2), and flat bone implement and teeth.
43. Small bone ornament, holed at both ends (fig. 7, No. 6).

44. Beads, numbering 860 (bone).
45. One bead (bone), 1 needle, 4 teeth, 1 small stone.
46. One flat shell implement.
47. One bone dagger or pin.

Note.—Corresponding reference numbers are marked on plan showing the positions where each artifact or group of artifacts was found.

THE EXCAVATIONS IN 1928, BY PROFESSOR CHILDE.

The work of 1927 had disclosed openings leading off the main passage under the midden-heap to the south and a continuation of the passage itself through the sand-hills to the west. The first necessity was to disengage these openings by removing the superjacent accumulations. I resolved to use the opportunity thus presented for making a systematic examination of the midden. To this end the turf and loose sand were cleared away over an area to the south-west of the passage A. The surface of the midden under the drift sand could easily be recognised by the touch of the spade, and in sections a sharp line of demarcation between the two deposits can be easily detected (fig. 13). The preliminary clearance revealed a huge midden-heap occupying the whole area south of the main passage and extending, as was subsequently proved, for a distance of 16 feet southward from it.

Trenches, originally about 5 feet wide, were then cut through the midden. No. 1 ran west-south-west, where passage A was expected to continue; No. 2 south-south-east, over the entry to what came to be known as passage B; and No. 3 in the same direction, over the doorway to what is known as Chamber 6. In each trench the material was removed in layers of approximately 6 inches thickness, so that any stratigraphical variation in its contents might be noted.

The midden proved to be a hard compact mass of clayey nature, embodying very numerous fragments of broken and more or less decayed animals' bones, limpet shells, ashes, cracked stones, coarse and very friable potsherds, and various artifacts, including Skail flakes, bone pins, beads, etc. No regular stratigraphical change in the composition of the midden could be observed. The included pins, beads, and sherds were identical in type at all levels, and the bottom of the deposit, where it has been reached, as in trenches 1 and 2, proved to be the roof of passages containing artifacts of identical character. At the same time layers of ash and even intercalated bands of more sandy material could be observed extending over considerable areas in the lower deposits, notably along the western face of trench 2 and along the south face of the area

called 6, before the limit of the midden had been reached. One of the black bands extends right from the edge of the cutting near the entry to B¹ across to the face of wall Q (2 feet 6 inches below top of midden), and it was noticed that the outer face of the wall had been blackened at that depth as if by fire. Moreover, collapsed pots were more than

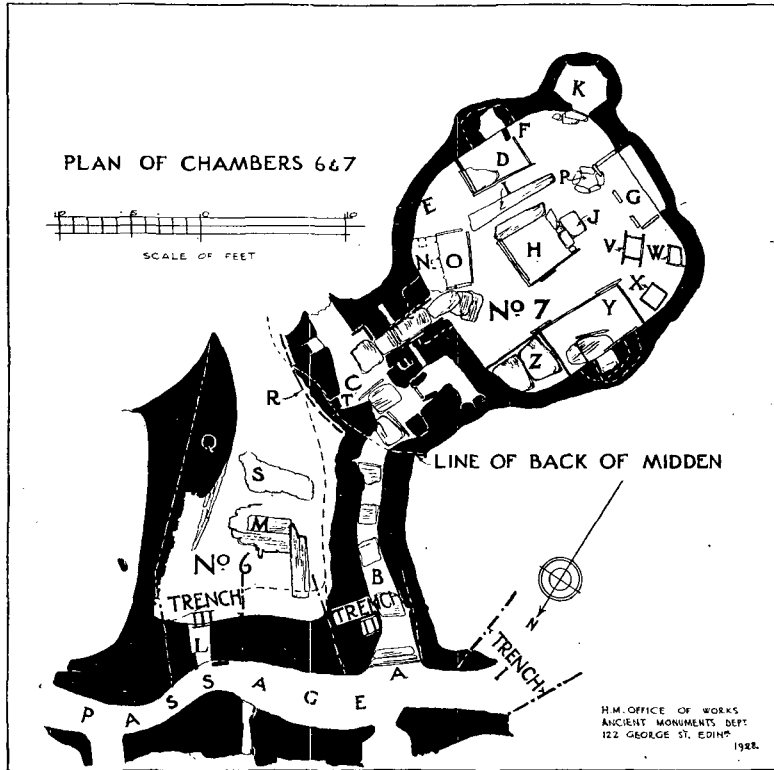


Fig. 12. Plan of Chambers Nos. 6 and 7 at Skara Brae.

once found apparently *in situ* in just such a black belt. This is, perhaps, evidence that these layers represent "floors," *i.e.* that they represent surfaces of the midden accumulation on which people had encamped for the purpose of cooking food and the like.

Superficially the surface of the midden, as exposed by the removal of the drift sand, was perfectly homogeneous in the east-west sense between

¹ In this section the lettering of the plan reproduced as fig. 12 will be followed throughout, as this includes several features irrelevant on the general plan (fig. 1), but necessary for the comprehension of the excavation report.

the face of trench 2 and the outer wall of Chamber 5, and also north and south from the edge of passage A for a distance of from 16 to 20 feet. No channelling by rain-water or other traces of weathering were visible on its surface throughout this area. None the less it was found that the upper levels, cut by the original trench 3 between the ruin termed wall S and passage A, were of a rather more sandy nature, and included fewer artifacts than the deposit cut by trench 2. Yet even in this section of 3 broken animal bones were very abundant, and no sharp frontier could be detected between the more and the less compact portions of the deposit.

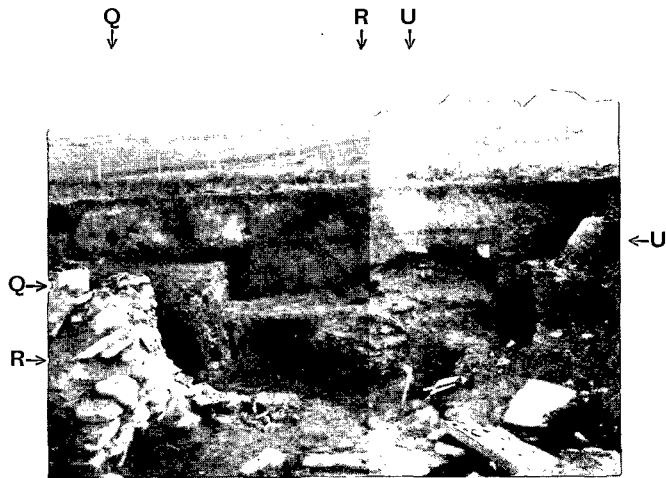


Fig. 13. View across "Chamber 6" before the discovery of Hut 7. The walls and dome will be found at the meeting points of lines drawn from respective pairs of letters.

On the other hand, in the southward and south-easterly extensions of trenches 2 and 3 we found that the midden ceased abruptly along the line south of R indicated in the plan. Superficial examination here disclosed a broad belt of pure sand some three feet across, limiting the midden deposit on the south. Beyond the sand belt the midden was observed to rise up again in a sort of dome at U, but here it was mixed up with a formless agglomeration of loose stones. On the western edge of the excavation here the midden appeared absolutely hollow, projecting over pure sand (fig. 13, on left). This phenomenon seems to be due to the collapse of the roof of passage C, on which this section of the midden deposit had once rested; in fact a heavy midden deposit was found filling passage C. South-west of U, however, no midden was encountered. The whole area over Hut 7 and above its walls, as far as excavation has

proceeded, was entirely free from the midden deposit, and was occupied by pure sand down to the floor of the chamber, or as far as excavation has been carried.

Relation of the Midden to the Buildings.

The whole area south of passage A and west of Hut 5, almost up to the outer walls of Hut 7, is thus seen to have been occupied by an immense midden deposit. A similar deposit was found by Mr Houston

between passage A and the walls of Huts 4 and 5, and above the interposed cell and its entrance passages. On the other hand, it has been proved that the midden deposit did not extend over the area occupied by Hut 7, which was still more or less intact at the time of the desertion of the village. Mr Firth records a like observation in the case of Hut 2.

Nevertheless the midden extended continuously and compactly across the passages. Trench 1 exposed a midden deposit 15 to 18 inches deep, resting directly upon the slabs constituting the roof of passage A. One large pot, of which the base was found, must have stood directly above this passage, probably in a hearth. In this superincumbent midden was found the whale's head, which is seen *in situ* reposing above the passage roof in fig. 14. The



Fig. 14. Whale's Head *in situ* on roof of Passage A.

same observation applies to passage B. Here nearly 4 feet of midden accumulation lay above the roof of the passage that connected the A system with Hut 7, as is shown in fig. 15.

The potsherds, and pins, beads, and celtiform implements of bone, as well as the stone flake-knives (Skail flakes) found in the midden above the passages, are absolutely identical in type with those collected in the chambers which the passages serve, though they are generally rather rougher specimens. The finds from Hut 7, and particularly from the submural tomb there, indubitably illustrate the industry of the builders and occupants of the village. Hence the discovery of the same industry in the accumulation of refuse overlying the passages proves that the villagers themselves were responsible for that accumulation;

they must either have thrown the kitchen refuse from their hut floors out on to the passage-roofs, or have themselves temporarily camped upon those roofs—for instance, to cut up and cook animals.

The Principal Structures uncovered in 1928.

The exploration of the continuation of the main passage A disclosed under trench 1 was postponed pending an examination of the southern area; the direction of the passage is now fairly clear, and a section of the intact roof has been uncovered (*cf.* fig. 14).

The entry L under trench 3 in its structure exactly resembles the



Fig. 15. Roof of Passage B exposed under Midden; behind wall of Passage A.

normal doorway to a chamber such as the entrance to 2 discovered in 1927. It was, however, found to be blocked on the inside (*i.e.* at the end away from passage A) with collapsed roofing slabs. Trench 3 was accordingly dug to enable us to tackle this section from above. It disclosed, under a light midden deposit which contained, amongst other bones, a large portion of a short-horned bull, a series of slabs, mostly broken, but all lying parallel to the axis of the doorway L. The skull of the bull rested directly upon these. The slabs, as in most passage roofs, consisted of wide thin pieces (49 inches by 17 inches by 2 inches) and beam-like blocks (72 inches by 6·5 inches by 2·5 inches). Their northern ends rested (1 foot 6 inches to 2 feet above the lintel of L) upon an overhanging wall roughly parallel to the passage A, but curving away from the latter on either side of the door. This overhanging

wall undoubtedly is the remnant of the north side of an old chamber (termed Chamber 6) showing the characteristic rounded corners and corbelled structure familiar from previous excavations; but it breaks off abruptly about 3 feet to the east and 8 feet to the west of the doorway. Owing to the insecure condition of the wall it was impossible to reach the floor of the chamber this season, but building can be seen extending for at least 1 foot below the inner sill of the door, which is on a level with the floor of passage A. We endeavoured, instead of making deeper excavation on the north, to find the opposite wall of this hypothetical chamber by extensions of trench 3 and cross-trenches that joined up with trench 2.

It was at once obvious that the collapsed roofing slabs encountered blocking the doorway and immediately to the west thereof could not belong to the original roof of "Chamber 6." From their disposition and lengths they seemed rather adapted to cover a passage more or less parallel to A. In fact some actually rested on a ruinous structure (M) running east-north-east to west-north-west. Here we encountered five or six courses of dry masonry resembling a wall but resting apparently on midden. Up to date it has been impossible to relate this "wall" to any other structure. Further to the south-west and at a lower level was a raggle of loose stones running east to west. This was at first thought to be the top of a wall termed S, but deeper soundings failed to bring to light any intact structure. The stones were lying in compact midden with a sandy layer immediately beneath them. The finely ornamented sherd 251 was found in this sandy layer, and belongs to a pot that had been crushed by the stones of S.

East of S the extension of trench 3 in the sense of the axis of doorway L revealed the well-defined wall Q, whose marked batter and convexity on this side stamped it as an external wall, perhaps belonging to Hut 5, but certainly discordant with the original system of "Chamber 6," as deduced from the northern wall described above. Nor can Q be connected organically with the system of walls enclosing passages B and C. It stands to a height of about 4 feet and seems to rest on midden at about 9 inches below the floor-level of passage A.

South-west of wall Q trenches 2 and 3 abutted on a rough wall with its convexity to the north-east that has been labelled R. Its top was buried in midden to a depth of 2 feet 1 inch, while its inner face corresponds approximately to the line of collapse in the upper layers of midden noted on p. 241. The so-called wall R turned out eventually to be nothing more than the upper courses of the north-east wall of passage C that had become displaced and deformed. Similarly, the "dome" U noted beyond the gap in the midden represents the ruins of the south-west wall

of the same passage. One roofing slab resting on the top of R was actually found in position extending in the direction of U, but it collapsed before our eyes. That fate had already befallen other slabs of the same series, the result being the sinkage of the midden layers into the passage that has given rise to the curious gap. It is just possible that the courses of wall R and its counterpart date from a secondary heightening of the passage connected with the blocking up of the door of Hut 7 and the opening of the breach above it.



Fig. 16. View across Hut 7, with "Chamber 6" in middle distance and Bay of Skail in background.

The actual southern wall of "Chamber 6" has perhaps been found in the northern wall of passage C with its foundations four or more feet below the floor-level of A. Here, almost opposite the doorway of Chamber 7, a narrow entry (T) is distinctly visible, although it had evidently been built up in antiquity. The exploration of the area enclosed between this wall and the north wall of "Chamber 6," in so far as such exploration is at all compatible with the preservation of wall Q, will be one of the tasks of future campaigns.

The whole of this area termed "Chamber 6" was, as has been said, occupied by a midden deposit, mixed with stones of ruined walls, down

to the bottom limits reached by the season's digging. At least in the upper 2 feet 6 inches the greater number of artifacts found in this area lay south of "wall S" and between it and the southern edge of the midden. But at a depth of 3 feet 2 inches below the surface of the midden a large pot was found inverted *in situ* just 18 inches south of wall M, and beside it a fine pin with lateral eyelet, as well as other

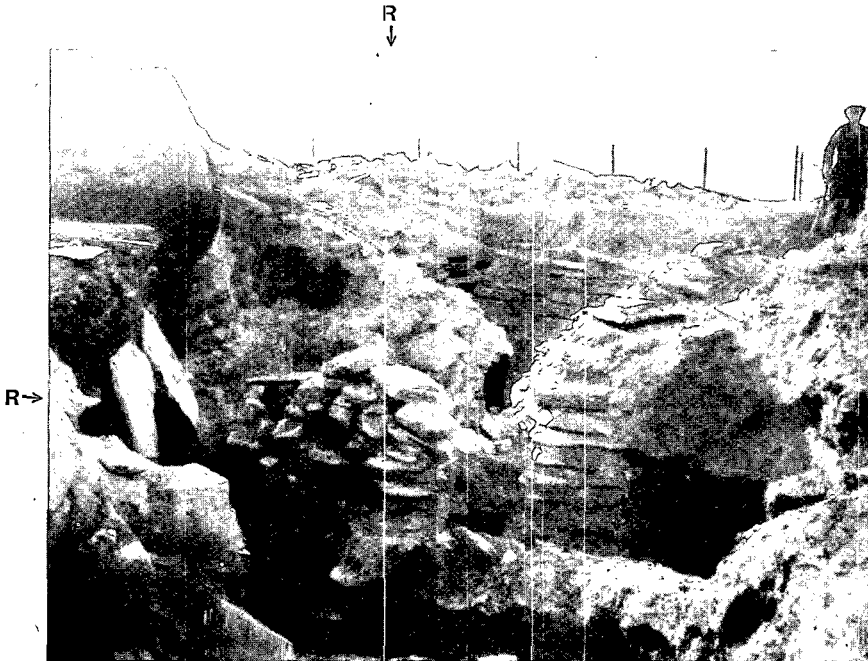


Fig. 17. View across "Chamber 6" after excavation of Hut 7.

artifacts. As already noted, a large pot was found under the ruin termed S over 4 feet below the midden surface.

Chamber 7 and Passages B and C.

The actual discovery of the intact chamber christened No. 7 was due to the search for a south wall to "Chamber 6," but in fact the chamber belongs to the same system as passage B, which was previously discovered under trench 2.

The trench led us to the stone-flagged roof of a narrow descending passage, which was found to be filled with clean sand. The sandy filling was then removed from inside after the strain upon the roof had been relieved. The passage runs south-eastwards for a distance of some 15

feet from its junction with passage A, then it turns to the south, and after 3 feet 6 inches, opens into passage C almost at right angles. At the original exploration by the uncertain light of a bicycle lamp we thought passage B terminated in a cul-de-sac. It was only after the discovery of Chamber 7 and the passage C which served it that the true nature of B could be recognised; for the entry to C was blocked by a slab fallen from the roof of the latter passage.

At its entry passage B was nearly 3 feet wide, but here the north-west wall looked like a secondary construction making a raceband joint with its continuation about 3 feet 6 inches from the mouth. Hereafter the passage is barely 2 feet wide and sometimes considerably less, perhaps owing to the deformation of the eastern wall under the pressure of the accumulations in "Chamber 6." The passage is partially paved with slate flags. Its floor just beyond the threshold is 18 inches below the floor of passage A, and thereafter descends gradually till at the junction with C it has dropped 3 feet 8 inches below the level of passage A. The passage, as originally discovered, was roofed over throughout its entire length, the roofing slabs being on an average 3 feet 9 inches above the floor. Unfortunately many of the slabs proved to be rotten, and had to be raised to make it safe to traverse the passage.

When discovered, the entry to passage B was filled from the floor up to the level of the threshold of the door with limpet shells. This deposit extended inwards for a distance of several feet, effectively blocking the passage. It thus seems that B was no longer used as a thoroughfare during the last phases of the occupation of the system of huts opening on to passage A.

As already noted, passage B seemed, when first discovered, to lead into a cul-de-sac 3 feet 2 inches beyond the bend to the right mentioned above. Actually, however, this point was the junction with a broader and higher passage (C), on to which Hut 7 at least opened. This passage ran in a south-easterly direction, attaining a width of over 3 feet. It, too, was paved with slabs, and descended gently so that opposite the door of Hut 7 it was 1 foot lower than at the junction. Its walls are intact to a height of about 4 feet, but to this should be added the height of wall R, from the top of which the roofing stones of the passage seemed to extend. Unfortunately the roof had completely collapsed before exposure save for one slab that cracked as it was being cleared. Indeed the upper courses of the passage walls have themselves collapsed beyond repair. The carved stone No. 327 was included among the loose stones at the top.

Hut 7, to which passage C led, was discovered during a search south of U for a solid substructure. Exploring in pure sand to the south-west

of this point, the top of a firm wall came to light 2 feet 6 inches below the turf. It was then followed round counter-clockwise until the whole superficial area of the chamber had been determined. Except for the gap over the door the wall was practically continuous all round and remarkably firm. No trace of midden was encountered during this operation, nor indeed at any point within 3 feet of the wall top. The whole chamber was filled with drift sand, with which were mixed a certain number of stones of various sizes, some reminiscent of the slabs used for roofing passages. At a depth of about $1\frac{1}{2}$ feet from the brink of the wall a veritable layer of large stones lying in utter chaos came to light (fig. 18). These stones were of the same general shape and size as

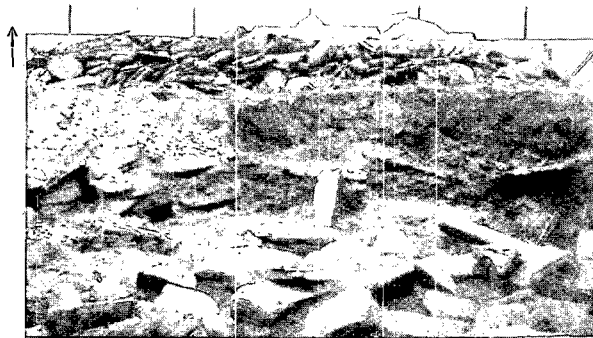


Fig. 18. Excavation of Hut 7: layer of stones lying in loose sand.

those used in the construction of the chamber walls, and had no doubt slipped in from the higher courses thereof. Still, despite their quantity, the stones discovered could hardly have sufficed to complete the roof as a beehive vault, the chamber having a diameter at the top of the extant walls of just under 14 feet.

At the same level a number of curious "pigeon holes" formed in the walls by the omission of a header stone, principally at the corners, came to light, as well as the corbelled roof of the ambry above Y and the tops of the tall niches over D and G. Upright slabs also came into sight, especially over G. These proved to belong to temporary structures built on the sand while the chamber was silting up. Both above and below the layer of stones stray red-deer antlers had turned up, and below the stones layers of ashes mingled with limpet shells and the bones and antlers of deer were encountered at various levels. In

the same strata hammer-stones sometimes turned up, but no significant artifacts beyond a broken bone awl and a fragmentary stone mortar that might conceivably have been left on ledges of the wall while the chamber was still regularly inhabited and have fallen thence. However, at a depth of 2 feet 6 inches from the wall rim a sort of stone box standing on loose sand had been built against the rear wall in niche G' (fig. 19). An analogous but far less well-defined structure was brought to light in the north-east corner. In both cases the materials used were thin stone slabs, and the manner of building is reminiscent of that used for the fixtures in the intact chambers. There were thus clear remains of temporary occupations after the original doorway had been silted up with sand.

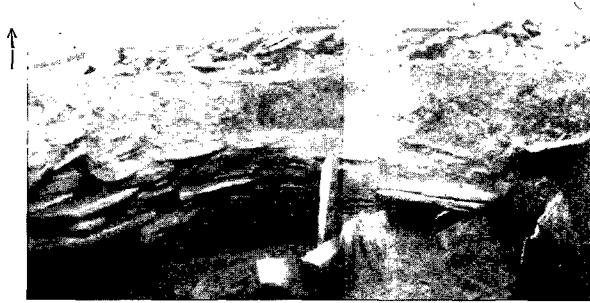


Fig. 19. Excavation of Hut 7: temporary structure built on loose sand.

The lowest of such traces of reoccupation came at a depth of 5 feet 5 inches, and was represented by a thin layer of ashes, including a few limpet shells and burnt bones. But a few inches higher up, at a depth of 5 feet, proof of a more serious occupation was afforded by a rectangular hearth framed by curbstone slabs and floored with a slate slab, precisely as in the case of the central hearth in each chamber (in fig. 20 the stone hearth, the doorway in course of clearance, and the layer of ashes 5 inches below the hearth level are all visible). Red-deer antlers were found immediately under the slabs of this hearth, which stood on loose sand.

These layers of ashes and shells, red-deer antlers, and structures resting on loose sand prove clearly enough that man periodically visited the chamber, it would seem, in order to cook and eat venison while the chamber was actually filling up with drifted sand. From the style

of their constructions and the two artifacts mentioned it would seem probable, and in the case of the stone-hearth builders certain, that the visiting roisterers belonged to the same tribe as the hut-builders. Very likely indeed they were residents in some of the later huts. They cannot have reached the chamber through the proper door, which was already blocked up far too deeply. Perhaps they gained access to the chamber through the breach above the lintel, which may have been made for that purpose. A fairly high date for these visits is implied in the abundance of red-deer (the antlers, all unworked, exceed 25 in number), that can hardly have been imported from Caithness in these numbers and must have died out in the island soon after 1000 A.D., if not before.



Fig. 20. Excavation of Hut 7: temporary Hearth.

Already, before the stone hearth 5 feet down had been reached, fast stones belonging to the original fixtures of the chamber had begun to project through the sand, and thereafter these rapidly multiplied. At the same time the sand became ever damper. When eventually we reached the floor layers we were working in a slimy mass having very much the consistency of a blanc mange. It consisted of saturated sand merging into the red clay of the floor, and containing, in suspension, broken bones, lost artifacts, and all sorts of refuse. In this glutinous mass a multitude of large stones, mostly broken, were lying about in disorder, forming unstable and slippery islands on which one was glad to stand as refuges from the surrounding morass. Under these circumstances stratigraphical methods had inevitably to be abandoned, and it is seldom possible to state whether a given object was recovered in the floor itself or in the slime lying upon it. In view,

however, of the comparative thinness of the deposit in question, seldom more than a couple of inches deep and of the internal consistency of the finds, this defect does not seriously affect our conclusions.

The floor proper consisted of a reddish clay 5 to 8 inches thick and apparently almost water-tight. In its superficial levels (to a depth of 2 inches) implements as well as animals' bones were embedded, but though finely comminuted particles of bone and ashes were found throughout its extent, the lower layers where they were intact were quite sterile in respect of artifacts. Below this thick clay layer, that I regard as artificial, came a deposit of sand, from 8 to 10 inches deep and quite clean. This rested directly on the virgin soil—blue clay passing over almost at once into shale. The hearth enclosure was filled entirely with red clay mingled with cinders to a depth of over 1 foot. Below this came the virgin soil without any sandy layer intervening. The hearth had apparently been originally a pit dug in the sand and surrounded by the usual stone curbing. From these soundings it may be inferred that the walls of the chamber are founded upon the rock. In any case, there is no trace of a prior occupation of the hut site, nor is there any stratified accumulation upon the present floor. Though the occupants of the chamber tolerated an incredible amount of filth on its floor, they did not allow this to accumulate into a substantial deposit. This squeamishness is doubtless responsible for the existence of the midden.

Chamber 7 is a very typical example of a Skara hut. Since these have been so admirably described by Petrie it is unnecessary here to go into details. The chamber might be described as a flattened circle or as a rounded square—the sides, that is to say, are straight lines, but the corners are rounded. The breadth of the chamber on the floor-level is just 17 feet, its depth a little less. The walls are built of dry masonry, using the flattened shale fragments that can be found in abundance on the beach. The masonry is far from primitive. Its authors understood the principle of breaking band, and sometimes even resorted to the stretcher-header method. As might be expected in a structure that was at least partially subterranean, no exact orientation is discernible; none the less the corners approximate to the points of the compass. Naturally, too, there are no windows, at least in the 9 feet of wall available for study. On the other hand, as in other chambers at Skara, there are various niches or ambries in the walls. In the south-east wall there is a recess 2 feet deep by 1 foot 6 inches wide by 1 foot 3 inches high at a height of 3 feet from the floor. It is covered by a single flat slab, which forms the base of a second niche of like depth but 3 feet 6 inches wide. At a height of 4 feet in the south-

west wall is a shallow recess barely 1 foot deep but 5 feet 6 inches wide, and extending upward as far as the intact wall. Finally, in the north-west wall, beside a narrow shelf, there is a broad recess 18 inches deep, nearly 4 feet wide, and 3 feet high. It is roofed on the corbelled vault principle. Besides these recesses, about 7 or 8 feet from the floor the walls near the corners are honeycombed with curious pigeon-holes, already alluded to. They frankly suggest joist-holes, but no strict symmetry in their disposition can be detected.

In point of fact we simply do not know how the chambers were roofed over. The walls of No. 7, as of other chambers, converge considerably, each course, especially in the corners, projecting slightly

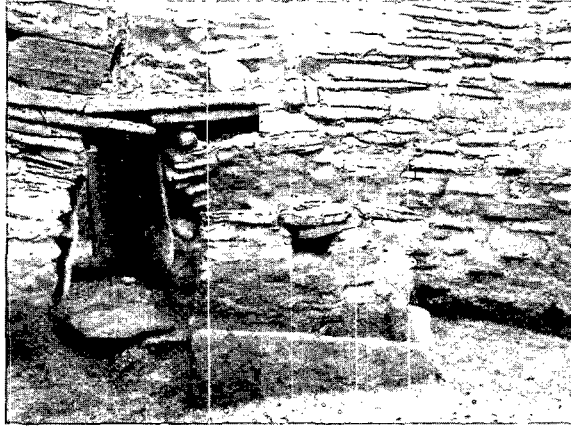


Fig. 21. Hut 7. Doorway from within.

beyond the one below it; but on the straight side the overhang at a height of 9 feet is less than 1 foot. Mr Houston has worked out a hypothetical completion of the roof on the beehive principle. This gives a vault 13 feet 6 inches to 14 feet high at the apex.

Chamber 7 is connected with passage C by a narrow passage 3 feet 6 inches long and 4 feet high, paved with slate slabs and entered at its outer end by a very narrow doorway. The jambs are scarcely 3 feet apart; the threshold is formed by a narrow slab set on edge. The passage within is faced on either side with two large but thin slate slabs in which holes for a bar have been cut immediately behind the jambs. On the north-east there is an aperture in the thickness of the wall to give play to this bar, that must have been used for blocking the door just as in the brochs.

Round the chamber walls are arranged various fixtures of stone

slabs, most of which have counterparts in the other chambers. On the left of the entry is a low enclosure (O) framed by three slabs set on edge. At the back thereof is the curious building N, roofed with slate slabs and exhibiting pigeon-holes, to which no exact parallel can be cited and whose function is entirely unknown. Further round, in the centre of the south-east wall, is the pen-like enclosure D. Its lateral slabs are not fast in the wall; instead, between their inner ends and the wall, come the flat pillar-like slabs shown in fig. 22. Pen D was at least partly paved with slates. In the south corner a low doorway gave access to a small beehive cell whose floor lies 1 foot 3 inches above the floor of the chamber. It is 4 feet 2 inches high and a little over 3 feet in diameter. Then, against the rear wall and



Fig. 22. Hut 7. Pen D and entry to Cell.

immediately below the broad niche previously noted, was a two-storeyed erection like a dresser (G), to which Hut 1 offers an exact parallel. The upper shelf was bare, but underneath were broken sherds and burnt bones. In front was a pit (P) 1 foot 4 inches deep filled with excrement, at the bottom of which was found a ground piece of hæmatite, No. 349. In the west corner three cists (V, W, X) had been sunk in the floor. They were from 1 foot 7 inches to 1 foot 9 inches deep and lined with slates. The joints of the slates had been smeared on the outside with clay. Rib bones of oxen were found in two, the third was absolutely empty. On the north-west was another pen (Y) corresponding to D on the opposite wall. To its peculiarities we shall return later.

The north corner was also fenced off by a slab continuing the line of Y2 but showing a triangular gap in lower south-west corner. This enclosure (Z) was paved with solid slate slabs, as is a corresponding

enclosure in Chamber 1. Beneath these slabs were loose stones and a little slime and organic refuse.

The hearth of four curb slabs stood as usual in the centre of the chamber. Immediately behind it stood an enormous block of stone (J), roughly square, that might pass for a pillar base. To the right of the hearth lay a very long slab (I). This, however, cannot have been in position, since it lay upon the ruins of a big pot that it had crushed in its fall.

All the foregoing features except perhaps the "pillar-base" J can be more or less accurately paralleled in other chambers and were accordingly already familiar. We must now mention two details which are so far unique, and which yet must rank among the original



Fig. 23. Hut 7. Hearth, "Pillar-base," and "Dresser."

fittings of the hut. At the back of pen Y we had at once been struck by a large upright slab against the north-west wall which, on examination, proved to be firmly built in. On clearing out the floor of the pen it was seen that this slab rested on a horizontal slab that passed beneath it under the wall behind, but also projected forwards some 2 feet in the red clay of the floor and partially covered thereby. At the front edge of this slab was found another slab on edge, running almost parallel to the wall. The horizontal slab had been broken in antiquity, and the front fragment, less than one-fifth of the whole, was at once raised. Its removal disclosed a skull and other human bones lying in loose earth. Fearing to undermine the chamber wall if we removed the rest of the cover-stone, we took out the slab on the edge that formed the front side of the tomb and extracted the skeleton

sideways. Though the earth round the head was looser and drier than the clay of the floor the corpse firmly proved to be embedded in a glutinous mass of clay and limpet shells mixed with a few burnt animal bones. In this same mass were found one Skail flake and a chip of translucent flint devoid of secondary working. There is no reason to suppose that these had filtered in through the crack in the cover-stone,



Fig. 24. Hut 7. Pen Y.

By the courtesy of T. Kent, Esq., Kirkwall.

so that they, together with the limpet shells and animal bones, must rank as funerary gifts. In view of the cramped space for working and the bad light the exact position of the skeleton is not as clear as could be wished. It could, indeed, never be viewed, but had to be traced by touch. As the ribs and vertebræ were little harder than the tenacious matrix in which they were embedded their exact disposition is questionable. However, it is certain that the legs were doubled up

and that the whole body lay in the contracted posture, probably on its right side, facing outwards.

But after skeleton 1 had been extracted, the pelvis and long bones of a second came into view. It was then resolved to suspend operations till the wall had been supported with shores and then to remove the cap-stone. When this was done, it appeared that a gap 30 inches wide had been left in the foundations of the chamber wall. This gap was spanned by a cross-beam like a lintel, under which the cap-stone passed. The north-west wall of the cist was formed of a few courses of thin stones lying horizontally at a right angle to the hut wall, but the top course, at least of this side of the cist, was askew, spanning the left-hand

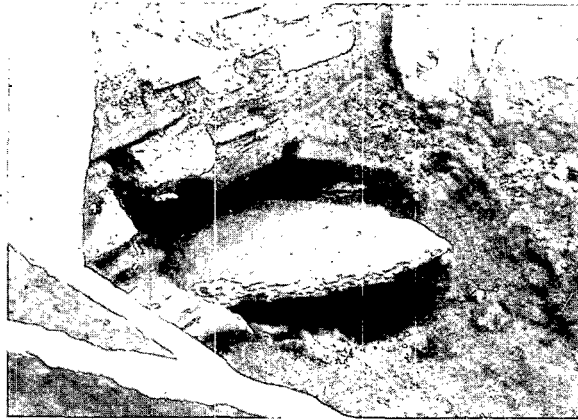


Fig. 25. Capstone of Tomb in Hut 7.

(from the observer's standpoint) corner of the cist. The same method of construction was used on the opposite side. The whole cist was therefore roughly rectangular, 3 feet 6 inches long by 2 feet 8 inches wide by 1 foot 2 inches deep. Of the total length 1 foot 6 inches was beneath the wall of the chamber. The bottom may have been formed of one or more very thin slate slabs, as rotten fragments of slate were found under the skeleton, but too badly decayed to allow of any certain conclusions. In any case the grave-trench extended right through the red clay of the floor into the subjacent sand. (In estimating its depth the under surface of the stone pillow has been taken as lying flush with the bottom.)

Skeleton 2 lay in the contracted position on the left side with the legs drawn up nearly to the chin. The left arm was extended beneath the body and legs, while the right was bent at the elbow to an angle

of 45 degrees, so that the hand was in front of the face. The skull lay far in under the chamber wall, reposing on a stone pillow and crushed in by another stone that came from some undeterminable point above. Mixed up with the bones of this skeleton too were many limpet shells, forming an integral part of the mass previously mentioned.

The position of the two skeletons and the grave that contained them make it certain that their interment was anterior to the building of the present chamber wall. The tomb formed an integral part of the hut as it stood before its desertion. It might have been argued that the tomb, like the short-cist interment with a cinerary urn under the wall of an alleged cashel in Arran (*Book of Arran*, p. 205), had no immediate connection with the hut builders; they might have discovered and respected a much older interment. The fortunate discovery of the Skail flake is, however, fatal to such an explanation. Beyond all possibility of reasonable doubt the tomb was built and the bodies deposited in it by the same people who built the village of Skara Brae. It is surely not far-fetched to regard the individuals thus buried with a minimum of funerary gifts under the walls of such a luxurious and elaborate chamber as victims of a foundation sacrifice. The belief that the immolation of human victims was necessary to give stability to house walls is so widespread among primitive peoples to-day and is so well attested both archæologically and textually in oriental antiquity (see article "Foundation" in *Hasting's Encyclopædia*) that its existence in early Scotland need give no cause for surprise.

Another peculiarity of pen Y had already come to light before the burial had been discovered. The frontal slab of the enclosure is a sandstone block 6 feet 6 inches long by 1 $\frac{7}{8}$ inches thick, rising about 2 feet above the floor-level. Sitting on the edge of this slab examining the floor in front I noticed deep cuts or scratches on its upper edge towards the north end. Closer inspection revealed that these marks were too regular to be accidental and yet not sufficiently symmetrical to be merely decorative. They were, in fact, alphabetiform signs, and formed part of an "inscription" that doubtless finds its explanation in the interments under the wall behind the slab (fig. 26).

The upper edge of the slab is considerably pitted all over and along the middle is worn down, as might easily happen through people climbing or leaning over the slab into the pen behind. In this central portion no traces of lettering survive, but on the less worn section at the southern (south-west) extremity there are indistinct traces of scratches that may have formed part of the same inscription that is so clearly preserved near the opposite end. It is then probable that part of the inscription was obliterated by the wear to which the slab was exposed

in the daily life of the hut. In that case the inscription must date back very nearly to the original foundation of the hut, when the grave was also laid out. At all events, the slab which bears it was buried in sand before the stone-hearth Hh was laid on the loose infiltrated sand above it. The latter still belongs to the period prior to the final desertion of the village, so that the inscription itself may safely be regarded as the work of the villagers, if not, as is most probable, of the actual builders and occupants of Hut 7.

A description and list of the finds from the excavation is given below. Here it will be convenient to give some account of the dis-

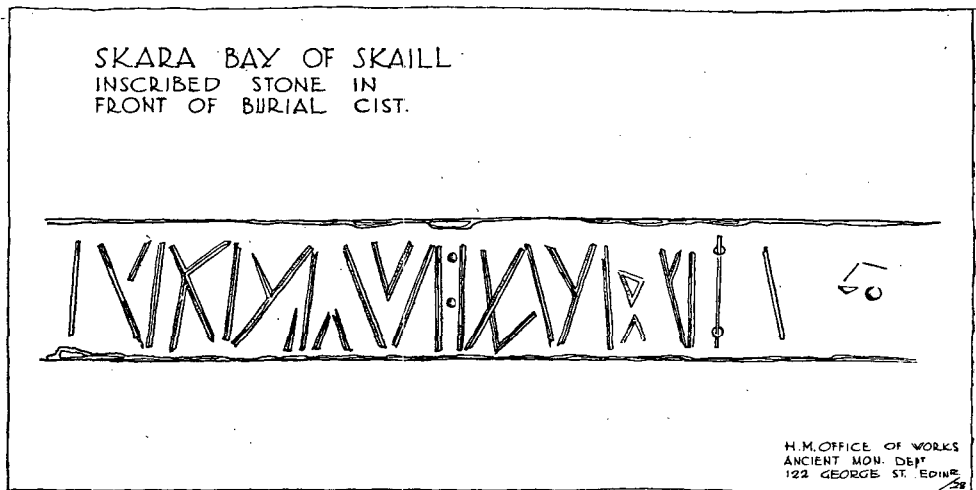


Fig. 26. Inscription on Frontal Slab of Pen Y as viewed from centre of Chamber. (2.)

position of objects on the floor of Hut 7 since no such observations have previously been published. In this way some idea may be formed of conditions of life in the hut at the moment of its final abandonment.

As already stated, the floor-level was covered over with a dark-coloured slime, through which projected, beside the slabs of the fixtures ("pens" and the hearth), a number of broken beam-slabs in complete disorder, and therefore not *in situ*. It was, in general, under the level of these that finds were made. I believe them to have fallen from above. In their fall they would have smashed slate paving-slabs had such been present. Broken pieces of thin slates were, in fact, found all about the floor mixed up with the slime and refuse. All were brittle and badly decayed. The entrance passage inside the door, as well as the area immediately in front of it, had certainly been paved

with such slates, and the remains just noted may indicate a similar pavement over a larger area. None the less, bones and relics were unearthed below as well as above such slabs. Some, indeed, give the impression of having been laid down to serve as stepping-stones through the morass of filth that covered the floor, or to mask deposits of bone and refuse that the inhabitants were too lazy to remove.

The general impression produced by the floor was chaotic and disgusting. Bits of bone, ashes, fragments of pottery, and, mingled therewith, stray implements and ornaments, were littered about everywhere. The pens D and Y were no cleaner than the rest of the floor—a fact which militates against the view that they served as beds. Indeed, in the south-west corner of D we found a deep deposit of greenish matter, apparently excreta, going down into the sand layer.

Still a certain number of objects could be identified as found *in situ*. In both the front corners of enclosure Z stood, on the slate floor, large cooking-pots containing a mess of animal bones—doubtless a prehistoric stew. Next to the more southerly pot stood a large basin of cetaceous bone, and immediately behind it a stone mortar. In the corner, against the wall, stood a small cup made out of the vertebra of a whale. In Y there was little but bones, a huge quartzite pebble, and a decorated pot that fell to pieces when touched (No. 330). A large pot in bad condition had been resting on the floor against the wall between cists W and X.

On the opposite side a small cup made from the rear vertebra of a whale stood in the corner E. In the north-east end of pen D the skull of a short-horned bull was lying on a slate slab. Just outside the southern slab of this pen and right against the wall in corner F stood a fine little stone mortar, and close by remains of a pot. In front, but still close to D, lay together two bone picks and a scapula that had been used as a shovel. Several tusk pendants lay embedded in the floor in the same corner.

Cell K sheltered a large pot, as usual incapable of preservation. Behind it, against the wall, we found a small cache of beads and pendants.

At the south side of the hearth had stood a very large pot with a decorated rim. Unfortunately this had been smashed by the fall of I, and the rim part, in particular, had been reduced to pulp.

The foregoing relics may be regarded as having been found in the positions which they had normally occupied when the hut was inhabited. A different explanation is needed for the beads found in the doorway and in passage C. A great number of beads and pendants were collected just inside the threshold and in the passage immediately beyond

it. The largest pieces lay just on the inner side of the sill, which it will be remembered is set on edge and projects above the level of the passage floor. This collocation of the jewels suggests that they had fallen from a necklace which had broken during its owner's hurried exit from the chamber. The majority of the dropped trinkets lay just in the place where, owing to the extreme narrowness of the door, such a catastrophe was most liable to happen. However, another extensive group of beads was found under a slate slab in the passage C, about 4 feet from the doorway. Whether this lot, which included several fine pendants, should be assigned to the same necklace is doubtful.

The position of the remaining relics could not be regarded as significant. Often they must have been awaiting us in the places where the hut's inhabitants had originally lost them in the filth of the floor.

While the essential homogeneity of the industrial remains, and especially of the pottery from the Skara village, demonstrated the cultural, and hence also (if the unit be large enough) chronological, unity of the site, conspicuous architectural discrepancies prove that this unity embraces a multitude of structural phases. It is not yet the time, nor am I the person, to undertake a detailed examination of these peculiarities. But certain general points may here be laid down for the guidance of future excavations.

We have as one fixed point passage A and the chambers opening on to it, Nos. 1-5. These were presumably inhabited as late as any structures hitherto discovered. The last phase of their occupation, illustrated in the finds made in them and in the upper 18 inches of midden, may be termed the A phase. Before the close of this occupation passage B had fallen into disuse, its entrance having been used as a dump for limpet shells. On the evidence at our disposal it seems likely that Hut 7 was abandoned by this date, which we may regard as the end of phase B. In Hut 7, therefore, we might assign the re-occupations only to phase A. Its regular occupation will fall into phase B. But in passage C we have traces of a still older system that had become obsolete while Hut 7 was still inhabited. This system is denoted for us by the still unexplored depths of the area termed "Chamber 6." When this earlier system was in use there was a doorway opposite the entry to Hut 7 opening on to passage C. This doorway may well have given access to the old chamber, whose existence has to be inferred from the fragments of curved and converging wall found south of door L. Between these two entries there must lie, at a level considerably below the present floor of passage A, the remains of one or two chambers, the hearths at least of which should be discoverable by excavation. These chambers, or at least that served by door T,

must have been occupied at a date when passage C, and in all probability also Hut 7, were already in use. On the other hand, they had been abandoned and door T blocked up before the closing up of passage C or the desertion of Hut 7; and before the end of phase A they had been so completely obliterated that they not only served as a midden dump, but that walls, notably Q, could be erected on the midden accumulated in them. Here, then, we have traces of a structural system older than that of phase B (to which we assign the culture revealed on the floor of Chamber 7), which we may conveniently refer to a hypothetical phase C. Obviously the exploration of this section promises to be of great interest, offering us the possibility of reaching relics of a cultural phase older than that represented on the floor of any hut in the A system, older even than that discovered this year in Hut 7 and assigned to the B phase. (It will be remembered that the relics collected on the floors of the huts belong as a whole to the latest period of the occupation of the buildings in question immediately prior to their final abandonment. It is further self-evident that relics found on the floor of the hypothetical Chamber 6 would substantially antedate those collected from even the lowest levels of the midden that lies above them.)

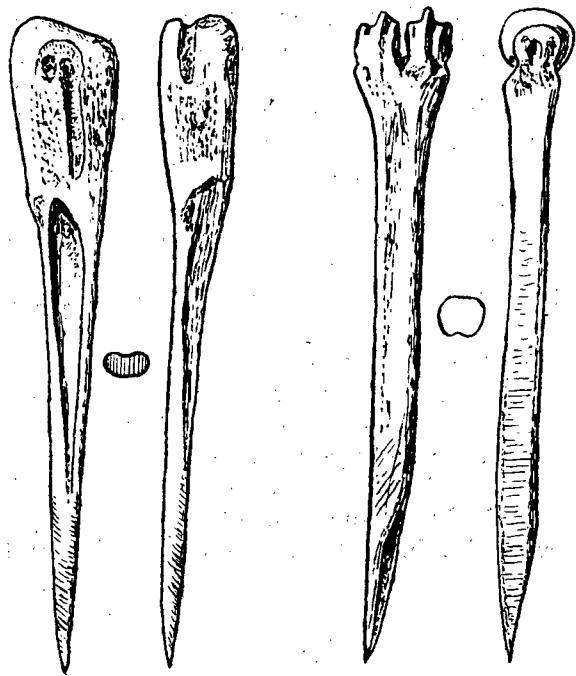
THE RELICS.

The main types of remains discovered at Skara Brae are already familiar from Petrie's excellent paper in the *Proceedings* for 1867. The relics unearthed subsequently conform for the most part to the types there illustrated. A short systematic account of the main types, with an indication of their relative frequency and some fresh comparative material, may none the less be useful as a guide to future excavators,

BONE AND HORN IMPLEMENTS.

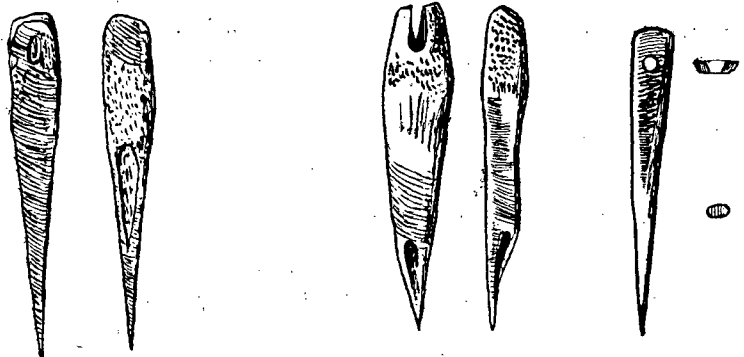
Group A—Piercing Tools (figs. 27, 28).

A 1. *Borers or Pins.*—By far the commonest type found at the site, and especially in the midden. Out of 350 artifacts collected under my supervision at Skara 90 belong to this class, but only 8 of these came from Hut 7, the majority having been unearthed in the midden. The tool is formed from a splinter of the metapodial of a sheep (one large specimen, perhaps of a deer), taken off in such a way as to preserve part of the lower articulation, which forms a head for the implement. The point has been sharpened by polishing, probably on a flat sandstone



A1

A2



A1

A2a

A3

Fig. 27. Bone-piercing Tools. ($\frac{2}{3}$.)

slab. The operation has left minute spiral grooves, as shown in the figure.

The type is so simple as to have little chronological or other significance. Yet curiously enough the only other Scottish examples I can find come from the broch of Jarlshof in Shetland and from the Road Broch, Keiss, Caithness. From England there are examples from a Hallstatt domestic site at Grimes Graves.¹

Foreign parallels may be cited from Denmark and Sweden during the Passage Grave period,² from the "Neolithic" lake-dwellings of Switzerland and Upper Italy,³ from Neolithic Thessaly, from Levkas,⁴ and from huts and graves of the Badarian period in Egypt.⁵

A 2. An awl or pricker, made from the metacarpal or metatarsal (cannon-bone) of a sheep (or goat) by cutting off the upper part of the shaft obliquely (the lower articulation being left intact) and rubbing down the tapering end, as in A 1. The type, though as simple as the foregoing, is by no means so common. I only collected 8 examples in 1928.

The type has been found in the following Scottish Iron Age sites: Howmæ, North Ronaldshay, the White Gate and Road Brochs near Keiss, and Bealach Ban and Foshigarry in North Uist. In England examples occur at All Cannings Cross⁶ and elsewhere in the Iron Age. In Denmark and Sweden it is coeval with A 1, and recurs in the Swiss lake-dwellings. There are several examples from Neolithic deposits in Thessaly of the first period.⁷

A 2a is a variety of the foregoing in which the articulation has been trimmed both at the sides and on the faces, so that the head is roughly square in cross-section.

A 3 is the only type of needle represented in our collection, and that only by two specimens. It is a bone splinter with the point rounded and the faces flattened by rubbing. The grooves resulting from the two operations are indicated in the drawing. The eyelet has been bored from one side in the flattened shaft.

The same simple type of needle is found in the Scottish Iron Age sites of Everley, Foshigarry, and Geiresclet in North Uist. It recurs in the Neolithic period in Switzerland, Thessaly,⁸ etc.

¹ *Proc. Prehist. Soc. East Anglia*, vol. iv. p. 192, fig. 20.

² S. Müller, *Ordning af Danemarks Oldsager*, No. 192; Montelius, *Minnen från vår Forntid*, No. 601.

³ Munro, *Lake-dwellings of Europe*, fig. 23 (13).

⁴ Dörpfeld, *Alt-Ithaka*, Beilage 82, a.

⁵ Brunton and Caton-Thompson, *Badarian Civilisation*, pl. xx. 16.

⁶ Cunnington, *All Cannings Cross*, pl. ix. 8.

⁷ Wace and Thompson, *Prehistoric Thessaly*, figs. 69, f-g; 92, d.

⁸ *Ibid.*, fig. 68, n.

A 4 is in contradistinction to the foregoing; a very distinctive type, though we only found one broken example in 1928. The specimen shown in fig. 28, together with another fragment, was found by Mr Firth in the previous year. I regard the implement as a pin with lateral eyelet. Such a pin in metal actually forms part of the Glen Trool hoard.¹ The carved bulbs constituting the head of the specimen illustrated also call to mind the so-called spear-butt of bronze from the brooch of Harray, Orkney.² I was inclined to regard the type as based on a metal model, but Mr Edwards has pointed out its similarity to a bone tool with lateral bulb from the mound of Quoyness, Orkney.³ The latter is generally regarded as a sepulchral monument of Neolithic date. It is possible that the Quoyness implement and ours may have been made from the *os penis* of a seal or young walrus. These bones do sometimes have lateral protuberances that, trimmed up and pierced, might yield such a lateral loop as characterises the Skara type.

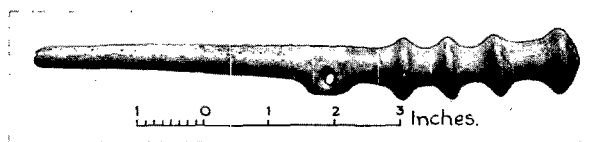


Fig. 28. Bone Pin (type A 4).

Apart from the relics from Quoyness and Glen Trool already referred to and some Central European pins of bronze,⁴ I know of no parallels to our tool.

Group B comprises a miscellaneous series of cutting or polishing implements whose exact use is really unknown (fig. 29).

B 1 may be termed a celtiform implement, and is one of the most distinctive Skara types. A dozen specimens were collected during the 1928 excavations. The implement is essentially an oblong slice, probably from the flat face of the metatarsal of a bovid. The whole has been very carefully polished by movements indicated in the figure so as to leave one edge comparatively sharp. In form the resulting implement looks extraordinarily like the celt of polished stone, and still more like the shell celts of the Pacific Islands. That it was actually used as an axe- or adze-head seems unlikely; the designation "chisel" is sometimes applied to examples from Swiss lake-dwellings.⁵

¹ *Proc. Soc. Ant. Scot.*, vol. lvii. p. 136, fig. 3; 14.

² *Ibid.*, vol. vii. p. 103.

³ *Ibid.*, vol. vii. p. 399.

⁴ Hampel, *Bronzezeit*, pl. lii. 7; *Bul. Soc. Préh. Franç.*, Jan. 1911.

⁵ A specimen in Archaeological Museum, Cambridge, from Robenhausen; others in the Horniman Museum, to which Dr Harrison kindly drew my attention. All are rather narrower than the Scottish tools.

Two implements of very similar character come from the Road Broch, Keiss, Caithness,¹ and there is another from Kenny's Cairn² in the same county. The latter structure is regarded as a Neolithic burial-place, and has certainly yielded Neolithic pottery.

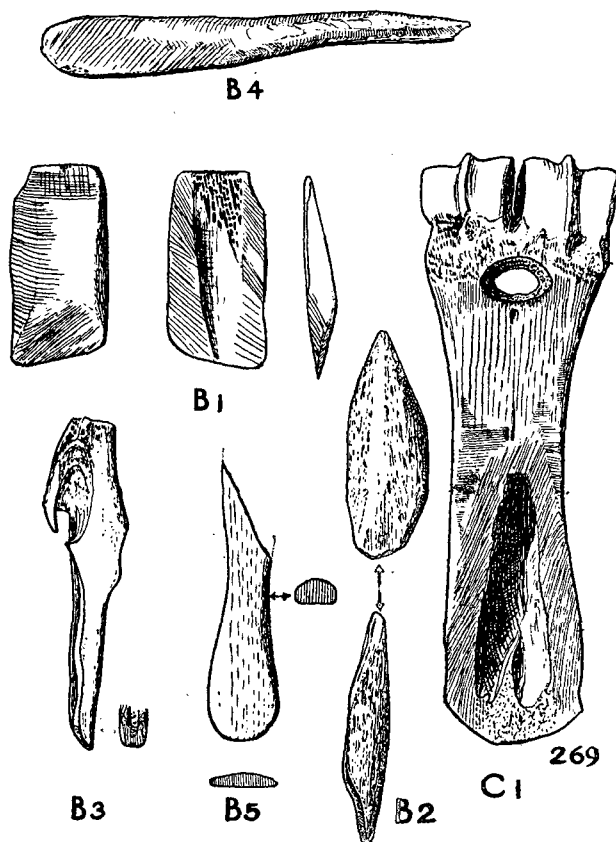


Fig. 29. Bone-cutting and Smoothing Tools. ($\frac{3}{8}$.)

B 2 may be related to the foregoing. It is made from the more convex side of a similar sort of bone. The edge is more or less straight, and has been treated very much as in *B 1* but not sharpened. Three examples were found in 1928, and there are several more in the Museum.

B 3. A blunt-nosed tool made from the lower jaw of a bovid. The

¹ *National Museum*, Nos. GJ, 10 and 11; cf. *Proc.*, vol. vii. pp. 44 ff.

² *Ibid.*, No. EO, 87.

National Museum possesses implements of the same shape from Foshigarry. At Skara three examples were found in 1928.

B 4. Spatula or smoother made from a rib; one specimen from Hut 7.

B 5. Shaped spatula; one broken specimen found in Hut 7.

Group C—Picks and Shovels.

C 1 is undoubtedly the most distinctive Skara type, 10 examples being secured during 1928 in addition to a greater number from earlier excavation. The tool is formed by cutting away the lower part of the metacarpal (or metatarsal) of a bovid so that the plane of the cut forms an acute angle with that of the flat face of the bone. The resultant edge is sharpened by grinding. A large oval hole has been bored just below the articulation. The only clue to the use of such tools is my discovery of two associated in a single group with a shovel made from an ox scapula in Hut 7. This suggests use as a pick.

The only known parallel comes from the Knowe of Saverough, Birsay, Orkney. The parallel is not very illuminating, as the report on the site published in the *Gentleman's Magazine* is naturally useless. The same site, as is well known, yielded an early Christian bell.¹ Metatarsal bones similarly cut, but without a perforation, are, on the other hand, so common as to be of no significance.

C 1a. The National Museum possesses a perforated metatarsal (or metacarpal) of the type just described, in which the cut has been made across the flat faces of the bone so that the edge, formed by its intersection with one side, is parallel to the shaft-hole. This specimen seems to be isolated.

C 2. Scapula of an ox (or pig) used as a shovel. Such a use of shoulder-blades is so common that comment is unnecessary beyond a reference to Dr Cecil Curwen's paper,² to which Mr Callander has kindly drawn my attention.

STONE IMPLEMENTS.

Celts.—In 1928 only one polished stone celt was found. It lay on the floor of Hut 7. The National Museum possesses four others of rough workmanship, and there are several in the collection at Skail House. Some of the latter are superbly polished and worthy of the best Neolithic traditions. Some at least of these weapons were presumably manufactured by the Skara villagers, who certainly used them.

Knives.—By far the commonest stone tool is an oval knife. One

¹ Anderson, *Scotland in Early Christian Times*, vol. i. p. 167.

² *Sussex Archaeological Collections*, vol. lxxvii. pp. 139-45.

face is naturally smoothed, being the outer surface of a water-rolled stone, while the other is rough. Petrie explained the manufacture of this tool in 1867, and I have verified his account. Such a knife can, in fact, easily be made by dashing a rounded piece of local shaley stone from the beach sharply on the ground, when it breaks along the bedding-plane, yielding a flake of the required form. An immense number of knives of this kind were included in the midden, four or five lay on the floor of Hut 7, and one was found in the grave.

Scrapers might be made from similar beach-stones broken in half. One found had been formed by bisecting such a stone and then removing flakes all round the edge in the manner of a Mousterian disc. Both scraper and knife might easily be mistaken for natural products but for their context.

Carved Stone Balls.—Two balls of stone covered with protuberances (one perforated) are figured by Petrie. Two more were brought to light in 1928. One lay on the floor of Hut 7. It is only roughly fashioned and the protuberances are rounded knobs. The second, found after my departure in a small cell between Huts 4 and 5, was far finer, and shows the flat circular bosses distinctive of the finest balls of this class.

The excellent papers on these mysterious balls by Smith,¹ Anderson,² and Mann³ are familiar to all. Unfortunately neither the age nor the use of the objects has been finally settled owing to the absence of any datable context. Their similarity to certain carved stone mace-heads from New Guinea may, nevertheless, be noted here.⁴

Besides the foregoing specialised types the site yielded many pounders, rubbing-stones, and pot-boilers that need no description. Querns, however, were conspicuously absent.

FLINTS.

Flint, being quite rare locally, was at all times sparingly used in the Orkneys. Flakes are nevertheless comparatively common at Skara. One small unworked flake was found in the grave under the wall of Hut 7. Of implements, by far the commonest type was a small thumb-nail scraper. Seven of these were found on the floor of Hut 7, one in passage C, and a third in the midden over passage LM. Others came to light after I left. The worked edge is generally very finely trimmed. One scraper has a pronounced keel.

The flake shown in fig. 30, 3, and used apparently as an end- and side-scraper, comes from the cell between 4 and 5.

¹ *Proceedings*, vol. xi. pp. 29 ff. and 313 f.

² *Scotland in Pagan Times, Iron Age*, pp. 161 f.

³ *Proceedings*, vol. xlviii. pp. 407 ff.

⁴ Specimen in the Cambridge Museum.

Most interesting is the double side-scraper (fig. 30, 4) found in the midden overlying passage A. It has been made out of a fragment of a polished flint axe-head. An unmistakable segment of the ground and polished edge is preserved, but the butt has been broken off and the body attenuated by the removal of thin flakes from either face. Finally, both sides have been carefully retouched to form scraper-edges. An interesting feature is that the original polished surfaces seem to be a trifle more patinated than the scars left by the secondary flakes.

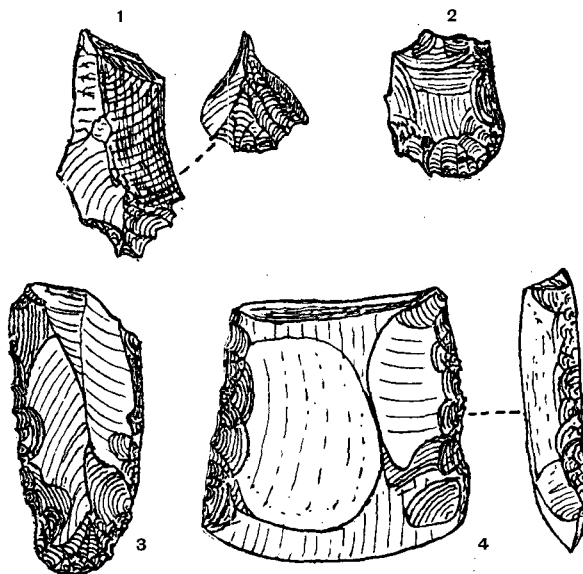


Fig. 30. Flint Implements. (4.)

That would imply the lapse of some time between the manufacture of the polished flint celt in the Neolithic or early Bronze Age and its conversion into a scraper by the inhabitants of our village.

Hæmatite.—Lumps of heavy metallic-looking material have often been noted at Skara. They are usually polished and faceted, but have not been shaped to any specific form. My colleague Dr Campbell, Reader in Petrology, very kindly undertook a petrographic examination of one such polished lump collected in 1928, and reports that the material is hæmatite. The mineral occurs locally in the sandstones. No doubt these lumps are the raw material, which has been ground down for a red pigment.

THE POTTERY.

Prior to my visit to the site pottery from Skara Brae was practically unknown. This sad gap in our knowledge was due partly to the inadequate attention paid to fictilia by all archæologists in Great Britain prior to Lord Abercromby's campaign, partly to excessive attention to the rich finds from hut floors at the cost of less profitable work on the midden, but principally to the frightful character of the ware itself. The Skara pottery is, in fact, the worst I have ever handled. It is so coarse and badly baked that for a time I mistook the first large lump of it I came across in the midden for a plaster hearth, such as are so often met in Danubian settlements. Skara pottery is so badly fired that when first uncovered in the midden it can be cut with a penknife. In the damper environment of a hut floor it is sometimes literally plastic. On drying in the sun it soon becomes friable. No complete vessel could be rescued. The majority of the sherds come from the midden, and even there the rims have been so distorted by pressure that the original curvature can no longer be estimated.

The great majority of our fragments come from cooking-pots. In these the clay is of inferior quality and mixed with large lumps of grit. The firing is usually incomplete. In fact it looks as if only the outer skin has been really baked,¹ the core remaining black and incoherent. The outer skin is generally red, but often smoke-blackened, especially round the rim. The larger vessels were built up in sections. The lower ring was pinched and flattened on its upper rim to a bevelled edge, the next ring was forced over this and smoothed down on either side when the lower ring was already drying. In the case of one fragment drying had been allowed to go too far, with the result that the two rings have joined badly. The edge of the lower portion is so sharply defined that I at first took it for the rim of a distinct pot. The true rims are, however, in all cases very carefully moulded.

It was impossible to reconstruct the shape of any of these coarse vessels, but all had flat bottoms and the sides were probably almost straight.

Besides this coarse, thick ware a few fragments of smaller vessels were discovered. These were a little finer in texture and a trifle better fired, but still very coarse, unpolished, and far from solid. The fragments seem to come from small round-bottomed bowls or dishes.

Despite its coarseness the great majority of the pots found had been ornamented, generally just below the rim. The technique used was the same in all cases. The pattern is formed by the application

¹ By "baking" I understand here the process whereby clay is transformed into earthenware by elimination of the "water of constitution" and chemical changes (*cf.* Harrison, *Pots and Pans*, p. 19).

of strips or dabs of wet clay applied to the surface of the vessel before it was dry. The joins have been gone over with a wet finger and a smoother, so that the surface should look homogeneous. None the less the ribs easily break off.

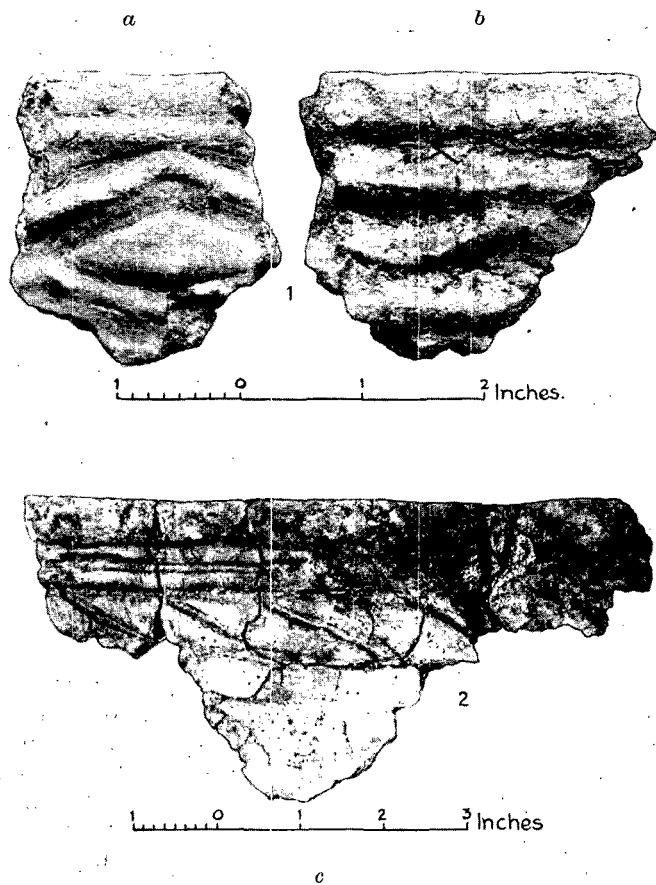


Fig. 31. Decorated Sherds.

Usually the ribs simply encircle the vessel horizontally just below the rim. Sometimes, however, they are arranged to form regular patterns as follows:—

- (a) Wavy line between two horizontal ribs (No. 119) (fig. 31, *a*).
- (b) Parallel horizontal ribs joined by oblique ribs that may either be parallel (*b1*) (224) or at an acute angle to one another (*b2*) (274).

- (c) Erect triangles with perpendicular from the apex.
- (d) Lozenges with solid centre (fig. 31, a).
- (e) One pot shows a broad applied strip that has been slashed across with oblique strokes (fig. 31, c).

One vessel of quite coarse clay found in Hut 7 is covered all over with elaborate patterns in relief. On the outside, below the rim, which is itself scalloped, comes a series of irregular arcadings that cross one another as in interlacing work (*f*). Lower down are fragments showing the patterns *g* and *h* (fig. 32), which cannot be reconstructed accurately. On the inside the same vessel bears the motive (*a*) below the rim.

The bottom of one large vessel was found inverted in the midden. Despite the utmost care most of it crumbled away, but a segment was conserved and brought to Mr Edwards in the National Museum. On removing the contents he found the base to be decorated in the usual technique with ribs *on the inside* (fig. 32, 2).

The only precise parallel to the Skara pottery is provided by some sherds in the National Museum from Dingis Howe, Orkney, to which Mr Edwards kindly drew my attention. As no satisfactory record of the excavation of this tumulus exists, the sherds it contains merely show that the Skara pottery is not a variety peculiar to one site in the islands.

Technically the Skara ware stands at the bottom of the long series of prehistoric Scottish ceramics which, beginning so brilliantly in the Neolithic period, steadily degenerate to the age of the brochs. It might therefore be regarded as posterior to the last-named fabrics. Still it bears no visible relation to normal broch pottery. The least remote parallels come, not from the Iron Age, but from the end of the Bronze Age. It will have already become plain from the description that the decorative technique employed at Skara agrees precisely with that of the essentially North British class of fictilia termed by Lord Abercromby "Encrusted Urns." The agreement is not limited to technique. Our wavy line motive (*a*) is exemplified on the urn from Aglionby near Carlisle (Fox,¹ No. 5) and on Abercromby,² Nos. 498 (Cumberland) and 553 (Ireland). An approximation to our pattern *d* is to be seen on the urn from near Lauder in the National Museum and in a curvilinear form on the urn from Penllwyn recently published by Fox. A richly ornamented urn from County Down (Abercromby, No. 557) exhibits a sort of barred triangle pattern like our *c*. What is still more significant, the lower register in the same urn's decoration bears a pattern of

¹ Cyril Fox, "An 'Encrusted' Urn of the Bronze Age from Wales with notes on the Origin and Distribution of the Type," *Antiquaries Journal*, 1927, pp. 115-33.

² *Bronze Age Pottery*, vol. ii.

interlaced arcading, in its treatment really very similar to that from Skara on fig. 32, 1.

It is, I think, clear that the Skara pottery is allied in tradition to that of the Encrusted Urns, and Fox has shown that the latter developed in North Britain out of a variety of food-vessels, while the latter in

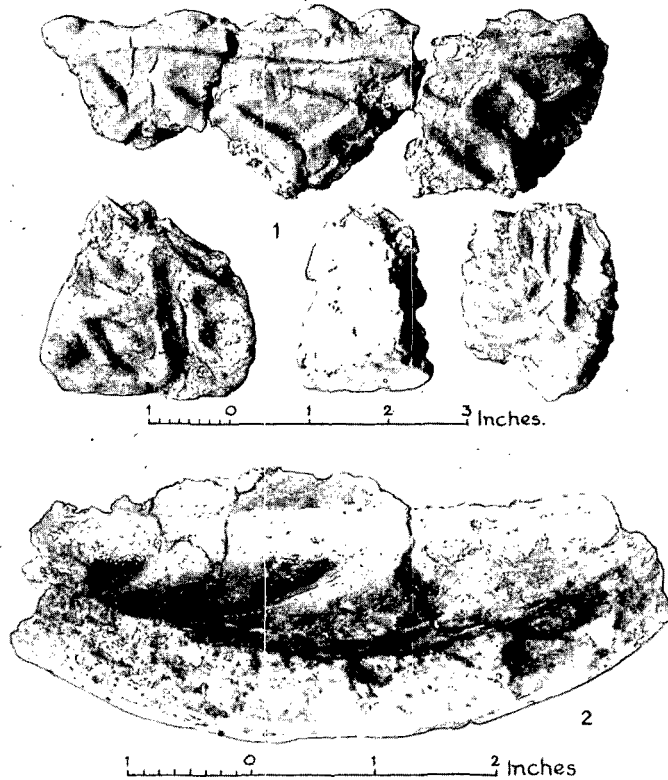


Fig. 32. Fragments of Bowl and interior of Pot Bottom.

turn is notoriously related to the Neolithic fabrics of the north. Thus our Skara pottery appears as the representative of a very ancient stock autochthonous in North Britain. Additional traces of this ancestry are betrayed by the rims, whose profiles recall those of food-vessels and even Neolithic wares. On the other hand, the internal "decoration" on the base of the pot shown in fig. 32, 2, may be compared to the cruciform patterns noted inside the bottoms of Late Bronze Age

cinerary urns from Dorset, Wiltshire, and Cornwall,¹ and on a pot base from Dartmoor.² Similarities between Devon and Orkney architecture may lend significance to the last-named parallel.

Of course these facts have no chronological significance. Abercromby has already pointed out the survivals of the Encrusted tradition in some broch pottery. Our material, though closer to the originals, may be a still later survival. It may further be significant that the most relevant parallels are provided by North Irish rather than Scottish urns, and, despite the remoteness of the site, the extraordinary

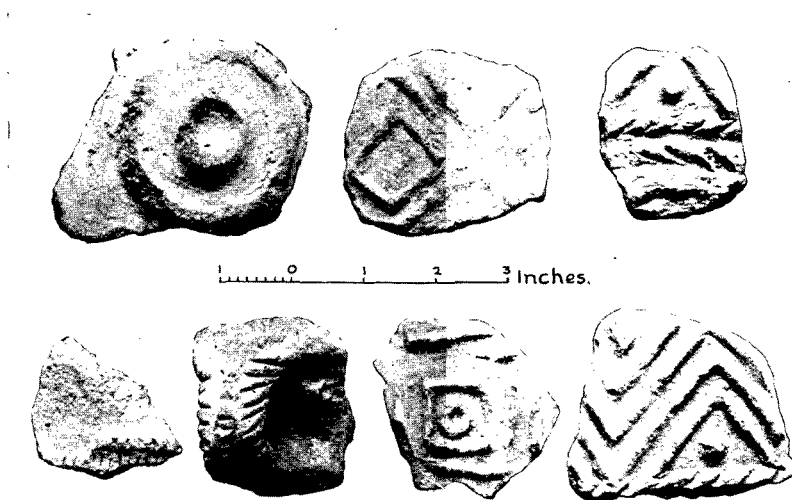


Fig. 33. Sherds from the Cave of S. Joan d'Os, Catalonia. By the courtesy of Prof. P. Bosch-Gimpera.

similarity of the sherds from the cave of S. Joan d'Os, Tartareu, Catalonia, to ours can hardly be accidental. Not only many of the Skara patterns, but even the same decorative technique, albeit on rather better ware, recur there (fig. 33). Professor Bosch-Gimpera dates the deposit in the cave to the end of the Copper Age, but I noted the presence of El Argar (full Bronze Age) types.

Pot Lids.—The pots were covered with discs of slate or shale carefully trimmed all round. One of our pots lay crushed beneath its lid, and such lids were very numerous both in the midden and in Hut 7—an

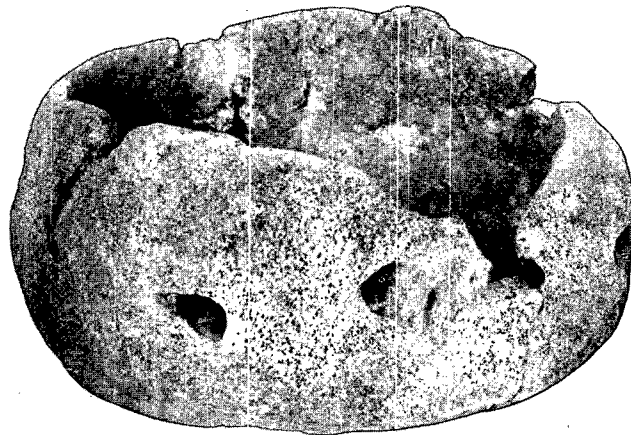
¹ Examples collected by Clay in *Wilts. Arch. Mag.*, xliii. p. 317; for Hungarian parallels on the bases of jars built up in the same manner as ours see *Wiener Prähist. Zeitschr.*, xv. (1928), p. 24.

² *Trans. Devon. Assoc.*, xxx (1898), p. 102.

additional indication that the midden areas include open-air cooking places and occupation levels.

VESSELS OF WHALE-BONE AND STONE.

The Skara villagers used cetaceous bone for vessels of a more sumptuous kind than rough cooking-pots. In Hut 7 we were fortunate enough to secure one complete bowl carved out of the vertebra of a large whale. As restored by Mr Edwards it constitutes the finest



1 0 1 2 3 Inches.

Fig. 34. Bowl of Cetaceous Bone.

example of such a vessel in any Scottish collection. Its base is rounded. Half of a similar bowl with flatter base was also obtained from the same hut. In both cases the rims are bevelled on the inside. Similar bowls are known from the brochs of Elsay (Caithness), Burray (Orkney), from Howmae, from the North Uist earth-houses, etc.

Two small cups made from the vertebrae of a small whale were found in the same hut. In these the base of the ribs have been left on to serve as handles. Similar cups are known from the broch of Burray, etc. Several small mortars hollowed out of sandstone were found in Hut 7 and in the midden, and there are many examples from earlier excavations.

ORNAMENTS.

A well-known peculiarity of Skara is the enormous quantity of beads and pendants found in every excavation. The midden at all levels yields isolated beads and pendants, generally broken or unfinished, while immense hoards of the same types are to be expected in huts and cells.

The beads are made from bone, teeth, and ivory, very rarely of stone. The commonest type is the cylinder or barrel of bone or tooth, and the stages of manufacture of these are fully represented in the collection. For making bone beads the leg bone of a bird was preferred. The epiphyses were cut away and the marrow cavity cleaned out, leaving a natural thread-hole. The tubè was then notched at appropriate lengths and the segments broken off. Mr Firth has recently sent down



Fig. 35. Bone and Teeth Beads. (3.)

one such bone prepared for division and with the first notch already cut near one end. We found several bone beads consisting of two or three segments. These were perhaps genuine segmented beads, but I prefer to regard them as unfinished stages in the process of manufacture.

In making teeth beads the roots of the incisors of bovids were selected and the pulp-cavity used as the string-hole. The crown was cut away and the root divided into three segments by notches. Fig. 35, No. 1, shows a tooth prepared for division found by Mr Firth. No. 2 shows one of the crowns with the roots cut off, found in the midden. The remaining figures show segmented beads and finished products.

The majority of the bone and teeth beads would fall into the standard or long, convex, barrel group of Beck's¹ classification. In addition to these common types, small disc-cylinders were comparatively common, and there were a few isolated examples of Beck's groups II. B 1, *d* (No. 9),

¹ Horace C. Beck, "Classification and Nomenclature of Beads and Pendants," *Archæologia*, vol. lxxvii. pp. 1 ff.

and IV. C 2, *b* (No. 8). All the last three types are made of ivory. Of the same material is made the large cube shown in fig. 36, 7. It will be noticed that its edges have been carefully bevelled.

Of stone, we only found one short barrel of black stone and an unfinished spoiled cubic bead. Mr Firth collected the cube with rectangular cross-perforation shown in fig. 36, 6.

Fish vertebræ were included in several groups of beads and the intervertebral disc from a young whale's spine in one group.

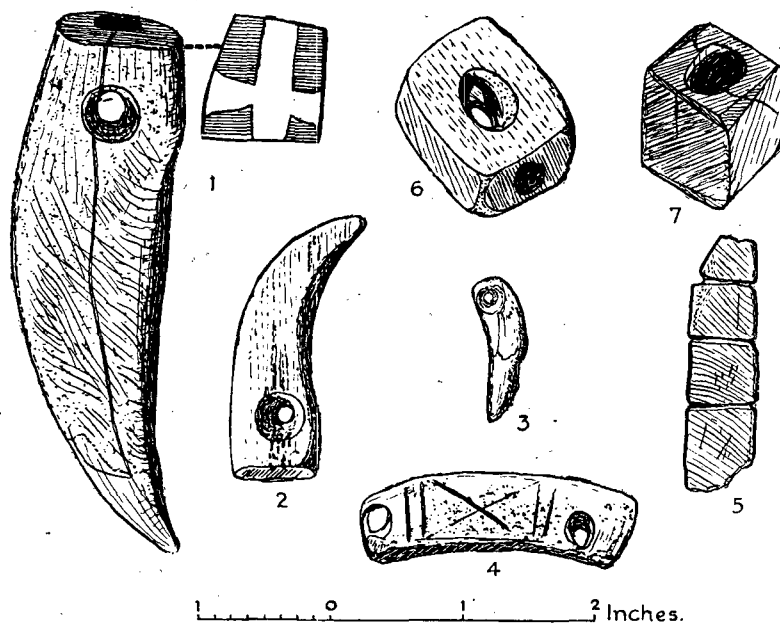


Fig. 36. Miscellaneous Ornaments.

Of the foregoing types only the segmented beads call for comment here. It would be natural to connect them with the segmented beads of vitreous material found in this country and the Mediterranean and the supposed imitations thereof in stone and bone but that some at least of our specimens are so obviously simply unfinished barrels. In point of fact our grooved bone tubes must be distinguished from the beaded bone tubes from Spanish and French sites that have been cited by Evans as copies of East Mediterranean segmented beads of faience.¹ Some of the grooved bones from Malta² and South Russia³ may well be

¹ *Palace of Minos*, vol. i. p. 204; and Dechelette, *Manuel*, vol. ii. fig. 145.

² *Archæologia*, vol. lxxvii. Pl. xvi. 3 (2).

³ *Eurasia Septentrionalis Antiqua*, vol. ii. fig. 44 (1).

just unfinished products. The existence of this stage in the manufacture of bone beads must always be remembered as a caution when the relations between segmented beads of other materials are under discussion.

Pendants.—1. Tusk pendants. By far the commonest pendant conform to the type shown in fig. 36, 1. Such are carved out of ivory and perforated from both faces. In form the type recalls the so-called claw amulets of Egypt and their Mediterranean counterparts. The shape may, however, rather have been suggested by the actual teeth of whale and walrus. Such are perforated for stringing on necklaces among the Esquimaux, and have actually been found perforated at Skara, as figure shows.

2. Segments of boars' tusks perforated or notched for suspension were also manufactured.

3. The arc-shaped pendant made from a segment of boar's tusk shown in fig. 36, 4, must have formed part of a necklace, being found with the group of jewels No. 305 under a flag in passage C. The form at once calls to mind parallels in tusk and stone from Swiss lake-dwellings and the megalithic culture of France.¹ The pattern of a saltire in a panel engraved upon it is not uncommon in Beaker pottery. The same motive with other Beaker designs recurs on the carved stone published in *Proceedings*, vol. lxi, p. 192.

CONCLUSIONS.

Even the careful observations made during 1928 have given us no further clue as to the date of our village. The comparatively large number of well-worked flints, and still more the recognition of parallels to two distinctive types, in an allegedly Neolithic context (B 1 at Kenny's Cairn, Caithness, and A 4 at Quoyness) might seem to strengthen the case for a high dating. The force of such arguments is, however, largely discounted by the identification of A 1 and other less distinctive types in an Iron Age context. None the less the arguments used by Laing² for a pre-broch age—the absence of querns, whorls, combs, iron and knife-handles, and other Iron Age types—still hold good.

The principal argument for a post-broch dating is founded upon the alleged discovery of the mould for an even-armed cross at the site—a discovery of which there is no detailed record—and a loose stone disc bearing what have been regarded as two Runic letters carved upon it. The context of the first object is unfortunately not well authenticated, while the "Rune," so long as it remains absolutely isolated, must be

¹ Childe, *Dawn of European Civilisation*, p. 283.

² *Proceedings*, vol. vii. p. 75.

regarded as at least inconclusive. The inscription found *in situ* this year is certainly not Runic. On the other hand, it may exhibit the influence of a Latin script that would point to a yet later date. More plausible evidence is provided by the secondary structures round and in certain brochs, particularly Jarlshof. The architectural analogies between these and Skara must certainly be admitted. One might also notice the similarities of the Skara huts to the beehive cells in several cashels, particularly on St Michael's Rock.¹ It is precisely from Early Christian times that we have literary and, in Ireland, also archæological evidence for submural interments. On the other hand, Professor Macalister has rightly pointed out that the monastic beehive cells merely carry on a tradition going back to pagan times, and of which our own hut-circles are a record. The contracted posture of the corpses at Skara is specifically pagan, and in fact very ancient. -

It is frankly difficult to understand how, if Skara was partly contemporary with the brochs that stand so near it, not a trace of distinctive broch types and metal has been found in the village. The absence of iron might be explicable by the interruption of relations with the south at the time of the Anglo-Saxon invasions of England, but that will not account for the abandonment of weaving. Mr Edwards' recognition of Skara pottery from Dingis Howe, as well as the tool of type B.1 from the Knowe of Saverough, proves that Skara is no isolated phenomenon, but represents a phase of culture common to the whole island. That phase is either prior to or posterior to the regular broch period, but we cannot certainly say which. Personally I have the impression that the abandonment of Skara was due to climatic changes initiating the regime of intense westerly storms that still rules. Such conditions would accelerate erosion and the formation of sand-dunes, such as were already burying the village in the later stages of its occupation. If the supposed climatic change be equated with the well-known deterioration of the climate of northern Europe at the beginning of Blytt and Sernander's "Subatlantic phase," we should have to admit a pre-broch age for our village. It may reasonably be hoped that further excavations at Skara and similar sites will finally settle this question.

On the affinities of the Skara culture we are to-day rather better informed. The style of building adopted is, in a general way, the same as that employed on the island from the beginning of the archæological record in the chambered cairns of Unstan, etc. The huts are merely glorified versions of the structures whose ruins constitute the hut-circles

¹ Anderson, *Scotland in Early Christian Times*, vol. i. p. 83; Dunraven, *Notes on Irish Architecture*, vol. i. p. 3.

of northern Scotland, and the roofed "streets" are the culminating form of the long, low, entrance passages already foreshadowed in the hut-circles. The pottery certainly comes of a stock native to North Britain. Against these indications of autochthony, however, may be set certain more or less significant Irish parallels, particularly to the pottery. Though that is rooted in a North British tradition, it is an Irish version of that tradition that comes closest to the Skara variety. The possibility must not be entirely disregarded that the Encrusted tradition was transmitted to the Orkneys from North Ireland.

In conclusion I should like to express my personal indebtedness to Mr J. M. Houston of H.M. Office of Works, who assisted in the excavation and did all the surveying, and to Miss Dorothea Bate of the Natural History Museum, South Kensington, who kindly identified the bones from which implements had been made. And I must again insist upon the debt archæology owes to Mr Firth and his staff for their work in conserving the monument and collecting its relics.

REPORT ON BONES FROM SKARA BRAE. By Professor
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Two skeletons labelled F. I. and F. II. found in a cist at Skara Brae during the excavations of 1928 were sent to me for examination and report. The following is a brief provisional account of the remains.

Both individuals were women. The characters of the pelvic bones make this conclusion indubitable. Both women must have suffered during life from osteo-arthritis, an affection which may have been induced by the cold and damp conditions under which they lived. The typical lesions of the disease are seen in the joints of the limbs and in the vertebral column. The limb joints were more seriously implicated in skeleton F. II. than in F. I. In both the knee-joints suffered most, and in F. II. these joints were profoundly affected. The joint surfaces show the increase in the density of the bone and the eburnation which indicates that the cartilage had disappeared, while new bone has been laid down in considerable quantity round the margins of the articulations. The hip and elbow joints have largely escaped in both individuals. In the shoulder joints a distinct ring of new bones surrounds the articular surface, but this is not eburnated.

In both cases the vertebral column has been seriously implicated, and especially in the lumbar region. The bodies of the vertebræ are flattened and expanded, and their edges are produced, by formation

of new bone, into lips overlapping the intervertebral discs. Technically this condition is known as spondylitis deformans.

Of the two women the one represented by F. II. was more robustly built and rather taller than her companion. She was, in life, about 5 feet $4\frac{3}{4}$ inches in stature, while the other, F. I., was an inch or more shorter and the bones were less stout.

The bones of the legs in both cases show the same features described in the Rennibister bones, which indicate that the dwellers in these low underground dwellings must have habitually adopted the squatting posture from early life. The changes in conformation of the bones are readily explicable on this hypothesis.

The skull of F. I. was recovered almost entire; that of F. II. was broken into many fragments, but it was found possible to reconstruct the brain case.

From the condition of the sutures and the edentulous state of the jaws it may be concluded that the individual F. I. had reached advanced life. The second person was not so old, but was well on in middle age.

Both skulls are moderately long and narrow, the cephalic index of F. I. being 75.8 and of F. II. 74.6.

The face of F. I. was destroyed beyond possibility of repair, but that of F. II. was entire. It is remarkably small and low, and the orbits are specially low and rectangular. The nose is small and the nasal bones project somewhat.

The brain case in both skulls has the same general form and proportions as that in the series of skulls from Rennibister described last year, but the face of F. I. is quite different, being markedly lower, while the orbits are distinctly smaller and of less height. F. I. differs from F. II. in having a narrower frontal width.

The characters distinctive of race are indeterminate. Beyond a rather projecting nose there are no features suggestive of the Nordic type, nor, on the other hand, can it be said that the skulls belong to the other dolichocephalic type—the Mediterranean. They are specimens such as might be found among the skulls of a mixed race like the present-day inhabitants of the Orkney Islands and of Scotland generally.