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EARTH-HOUSES AT GARRY IOCHDRACH AND BAC MHC CONNAIN, IN NORTH UIST. BY THE LATE ERSKINE BEVERIDGE, LL.D., F.S.A.SCOT. WITH NOTES ON THE STRUCTURES AND THE RELICS FOUND THEREIN, BY J. GRAHAM CALLANDER, F.S.A.SCOT., DIRECTOR OF THE NATIONAL MUSEUM OF ANTIQUITIES OF SCOTLAND.

Last Session in the report on the excavations carried out at the earth-houses at Foshigarry and on the fort, Dun Thomaidh, in North Uist, it was intimated that Mr Beveridge had also excavated other two earth-houses, one at Garry Iochdrach, on the south-western shore of Vallay Strand, and the other at Bac Mhic Connain, on the Island of Vallay, both in North Uist.¹ At the time of his death Mr Beveridge had written a preliminary account of his excavations of Garry Iochdrach, but not of those at Bac Mhic Connain. The diary describing most of his operations on the *latter* site, and his rough working plan, however, were handed to me, and from them I have compiled the following report on it. Evidently some of his notes have gone amissing, as precise descriptions and measurements of certain of the buildings cannot be found.

EARTH-HOUSE AT GARRY IOCHDRACH, VALLAY STRAND. BY THE LATE ERSKINE BEVERIDGE, LL.D.

Garry Iochdrach, a small promontory on Airidh Mhic Ruaridh, on the south-western shore of Vallay Strand in North Uist, is situated two and a half miles south-east from Foshigarry, forming the north side of a shallow tidal bay at Ceann nan Clachan. Towards the eastern extremity of this point was discovered in August 1912, and excavated during the summers of 1912 and 1913, an earth-house which bears much general resemblance to the three large underground structures at

¹ *Proc. Soc. Ant. Scot.*, vol. lxxv. p. 299.

Foshigarry, as also to another at Machair Leathann recorded in the writer's volume on North Uist.¹ It is further noteworthy that the arrangement of radial walls in all five of these undoubtedly subterranean dwellings is practically identical with that disclosed in the neighbouring partially above-ground erections at Cnoc a' Comhdhalach (three hundred yards to the south-west) and Eilean Maleit (five hundred yards to the south-east), both of which have been classed as apparently duns or walled forts.

Attention was first drawn to this site²—in the total absence of any aid from local tradition—by two large flat stones, 3 feet apart, protruding towards each other through the grassy surface to the height of about 1 foot. Upon excavation these revealed themselves as roof-slabs displaced with an upward tilt, surmounting a deep layer of ashes. Within 2 or 3 yards to the south and west we soon found at least five other similar covering slabs, the largest of which measured 4 feet 8 inches by 1 foot 11 inches by 3 inches, all evidently occupying nearly their original positions, at somewhat less than 4 feet above the floor-level.

The main structure showed an interior diameter of 25½ feet enclosed by a well-built circumferential wall, and containing a series of seven radial piers or divisional walls spaced at fairly regular intervals (fig. 1). These radials varied in length from 3 feet to 3 feet 10 inches by a thickness of 1 foot 4 inches to 1 foot 9 inches, each leaving a gap of 2½ feet to 3 feet 4 inches between its outer end and the face of the surrounding wall, except that the eastern radial measured 6 feet 6 inches in length, extending all the way to the boundary wall without any gap, while that on the south was continued by a slab 1 foot 10 inches long and 2 feet high, thus reducing the outer gap to 1 foot. The segments or chambers (marked *a* to *g*) contained between these seven radials were closed at their inner ends or backs—these spaces averaging about 5 feet in length—by unsubstantial walls composed of small slabs built up on end; segments *a* and *f*, however, remained fully open, and chamber *e*, which, although closed, had been apparently at one time partly open to allow access to a sink. A central chamber of heptagonal shape was thus

¹ *North Uist*, p. 120.

² While staying with Mr Beveridge, in Vallay, in 1914, I had the opportunity of visiting these sites and discussing their structural features with him. Mr Beveridge in *North Uist* had included the buildings on Eilean Maleit and Cnoc a' Comhdhalach amongst his list of *duns*, but was not quite satisfied with this classification. The structure on Eilean Maleit is perched on, and occupies the greater part of, a rocky outcrop, near the south-western corner of Vallay Strand, which could not carry any depth of soil, so that the buildings were practically above ground, but at Cnoc a' Comhdhalach an excavation had certainly been made, not very deep, to receive the buildings. We came to the conclusion that as these two structures had too many entrances for defence, and as their internal buildings so much resembled those at Machair Leatham—the finest of all the wheel-shaped earth-houses excavated—which lies only three miles to the north-east, and those at Usinish, South Uist, the whole group in Vallay Strand should be placed in the same category.

formed, measuring about 13 feet across, this, as also the radial segments, being for the most part, if not entirely, paved with comparatively small thin stones.

Without question this site at Garry Lochdrach has been an underground dwelling enclosed by a massive sea-wall varying from 8 feet to 11½ feet in thickness, at the edge of the small bay to its south, and elsewhere by a slender lining wall of about 18 inches thick built against

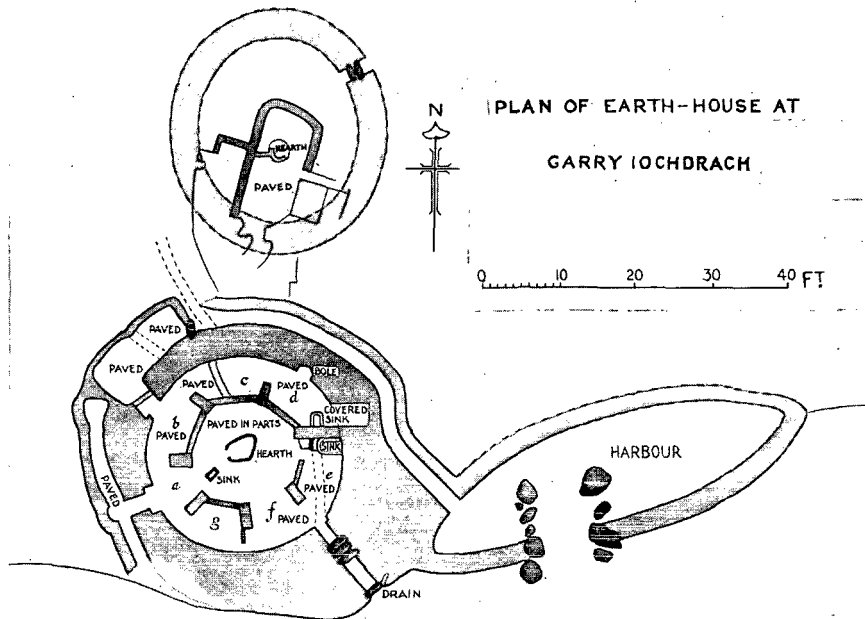


Fig. 1. Plan of Earth-house at Garry Lochdrach, North Uist.

the adjoining bank. This consists, not of sand as at Foshigarry, but of earthy soil intermingled with rock and loose stones.

The base of the whole structure showed a gradual rise of at least 18 inches from south to north, and it is to be specially noted that in chambers *b* and *e* their paved floors had been secondarily raised to the extent of about 12 inches, both sets of floors remaining complete in each case at the time of excavation. Within the upper pavement of *b* was embedded a small pounder, and between its floors were found a hammer-stone, a bone pin, a small nicked stone, and some fragments of patterned pottery, as also two lumps of clay, one of them large. Between the double floors of *c* lay two hammer-stones and some fragments of pottery.

It was also found that the walls closing the inner ends (or backs) of chambers *b*, *c*, *d*, and *e* were not built up regularly from the main floor, all of them evidently belonging to two separate periods. Those at *c*, *d*, and *e* were of double thickness in their lower portions. Moreover, the wall behind *b* contained a large stone recessed in one end as if for use as a mortar; in that behind *d* were found a large pottery whorl, a pounder, and two hammer-stones; while into like position in *e* had been built in part of a quern-stone.

Full evidence was hardly available as to the original roof-height of this earth-house, although it may be fairly taken as varying from about 4 feet to 5 feet. At chambers *a*, *c*, and *d* the outer enclosing wall seemed to retain its full original height of 4 feet, 5 feet 2 inches, and 4 feet respectively; while the western radial stood to 4 feet 11 inches above the floor at its inner end, and the others to about 3 feet 6 inches. The western, eastern, and southern radials were covered only by a sod of 4 inches in thickness, while the other radials had a thickness of 1 foot 9 inches, 11 inches, and 2 feet 2 inches of soil between them and the grassy surface. In the circumferential wall, exactly opposite the south-west radial, were found three courses of not very large stones coving inwards and upwards, commencing from a height of 3 feet above the floor. Here, at least, the gap outside the radial has been arched, but the radial chambers themselves were undoubtedly roofed with stone slabs. It must be noted, however, that two of the seven roof-slabs found lay in the central chamber.

The chief interior features of the earth-house were a central hearth and three sinks. There had indeed been three hearths at successive periods, the lower and largest at the original floor-level, and two others at elevations of about 17 inches and 2 feet 4 inches, the latter bearing a thick deposit of ashes to the extent of 3 feet, up to within about 15 inches of the natural turf. Of these hearths the lower and upper were of irregular shapes, each with four curved sides; while the intermediate was oval and much smaller. Their greatest dimensions, within stone edgings, 3 inches to 8 inches in width, were:—lower hearth, measuring 4½ feet by 3 feet 11 inches, on clay at south, paved to north; mid hearth, measuring 3 feet 2 inches by 2 feet, paved upon 2 inches of clay; upper hearth, measuring 4 feet by 3 feet 10 inches, unpaved.

Half-way between the hearth and the south-west radial was another sink, measuring 1 foot 8 inches by 11 inches and 16 inches deep, with its base 1 foot above the floor, being obviously a secondary insertion, and no doubt coeval with the middle hearth. Within it were found bones (probably of the cow), limpet and periwinkle shells, a piece of cetacean bone, fragments of the usual pottery, and an abundance of ashes. Indeed,

the whole of this large central chamber was practically filled with peat ashes. There was some appearance of a slanting chimney, measuring 2 feet by 1 foot 9 inches, near the inner end of the eastern radial, but this must remain doubtful.

It was most interesting to observe, on 4th Sept. 1913, that an exceptionally high spring-tide had penetrated to the outer edge of the lower hearth. A fact like this may not unreasonably explain an erection of the middle hearth and of the raised sink just noted, and also account for the double floors in chambers *b* and *c*, together with the secondary arrangement of the inner walls closing chambers *b*, *c*, *d*, and *e*.

Two other sinks (already mentioned in passing) were found in chambers *d* and *e*, both of them paved and adjoining the eastern radial. The first of these had been set north and south within the floor, measuring 1 foot by 1 foot 8 inches, and covered by a single slab, measuring 1 foot 5 inches by 2 feet 2 inches. In it were found two hammer-stones. The second sink, close to the encircling wall, measured 1 foot 6 inches by 2 feet 11 inches; it lay east and west, with its base at the floor-level, and a low platform extended from it to the central chamber at a point opposite the north end of the hearth. Both of these neighbouring sinks led into a drain which ran southwards through the middle of chamber *e*, immediately below the paved floor, emerging opposite the south-east radial, with an average width of 21 inches, in a south-easterly direction through the massive sea-wall, there showing its greatest thickness of 11½ feet.

Chamber *d* contained, in the upper part of its boundary wall, an unusually large bole or cupboard which measured 16 inches wide by 14 inches high. It was squared in front, but tapered to a point at the back, its depth being 19 inches. Within it were found a hammer-stone and a fragment of ornamented pottery. Upon the top of the eastern radial, in a nest of soil, lay a stone whorl, in chamber *e* a socket-stone; in chamber *a*, close to the inner doorway of the main entrance, several pieces of cetacean bone, the two largest shaped artificially for some special purpose. A small clay crucible containing traces of bronze was found in chamber *e*; and on the top of a low curved wall crossing chamber *c* just above its floor, a piece of thin flat pumice, oblong in shape, but with one curved end through which a hole had been pierced. As to the general site, apart from the few items already noted incidentally, the chief finds consisted of hammer-stones (including a dozen in quartz), fragments of the usual rude pottery, small, rounded or squared, thin slabs of schist, whorls in stone, bone, and pottery, small pieces of pumice, and a few bone pins. Deserving of individual notice are:—half of a jet or lignite bead, a finger-ring in horn, the handle of a neat weaving-comb

bearing two bands of incised diaper pattern, part of a small-toothed comb with dot and circle ornament, and a tiny crucible of pottery only $\frac{3}{4}$ inch in diameter, and somewhat resembling two others previously found at Cnoc a' Comhdhalach and Foshigarry. Another object seems to require special and more detailed description. This is a water-worn quartz pebble, about $2\frac{1}{4}$ inches in diameter by 1 inch in thickness, bearing upon each of its two opposite and comparatively flat faces what is apparently a symbolical design clearly outlined in a reddish and almost indelible pigment. A small hammer-stone also bore similar markings though much less clearly defined.

The main entrance to this earth-house was from the south-west into chamber *a*, between the western and south-western radials. With its outer opening just above the shore, and an apparent height of about 4 feet, this passage, measuring from 19 to 22 inches wide, first ran for 6 feet straight towards the north-west, and then turned abruptly at right angles in a width of 2 feet 5 inches, and a length of 4 feet, the latter measurement including a recess of 18 inches at each side of its inner end, where it widened to 4 feet, evidently to contain a door barred from within.

Close to the shore, 3 yards west from this doorway, were found traces of an exterior drain, and near its exit a peat and a small piece of wood embedded in the soil at a depth of about 3 feet below the surface. It seems hardly possible, however, to associate this feature, and more especially the perishable objects there found, with the prehistoric site under present notice.

At the north-west boundary of this earth-house, midway between the western and north-western radials, was the opening into a small annexe in the form of a rectangular chamber, which was entered through a passage of about 4 feet wide, with walls in part reaching 4 feet 5 inches in height, and covered, previous to excavation, by soil to a depth of nearly 2 feet. Emerging from chamber *b* in a width diminished to 20 inches by an 8-inch jamb, this access expanded to 3 feet at a narrow sill crossing its floor, with a second and similar jamb in the chamber immediately beyond. Both of the lateral recesses thus formed near the extremities of the passage were situated in corresponding positions on its south side, and seemed to indicate the former existence of double doors, one at each end, and capable of being barred inside at will, so as to prevent any access from the main earth-house.

This chamber—paved also, and measuring about 14 feet in length from south-west to north-east, by 6 feet in width—does not readily lend itself to description, having evidently undergone secondary treatment, especially with regard to an inserted wall, unbonded at both ends, across its northern portion, this wall indeed containing, low down towards the west,

a small bole which measured 10 inches in length by 3 inches in height. Here were found two pottery whorls, one unfinished, and a stone ball indented by two slight artificial hollows precisely opposite each other.

A peculiar and not obviously intelligible feature in association with this site at Garrylochdrach was a narrow exterior passage, 20 to 27 inches wide, and paved with small stones, almost, if not completely, encircling its landward portion—that is, on the west, north and east. At the south-west, this passage, as shown upon the ground-plan, continued in a direct line with the first 6 feet of the main entrance, starting from the point where the latter turned at right angles into the actual doorway of the earth-house. Thence, bordered by slender stone linings and separated from the main fabric by 4 feet to 5 feet of intervening walls and soil, it continued for a length of 15 feet, including an irregularly shaped enlargement of about 3 feet 6 inches by 4 feet 2 inches at its termination close to the south wall of the north-western chamber. Upon the floor of this passage, midway in its course, lay two cover-slabs, the larger of them 3 feet long.

Probably at the original period of its construction this access had completely traversed the adjoining chamber, entering it from the south through a doorway 3 feet wide, (even now traceable as having been built up at an after-stage), and emerging by a much narrower exit at the north-east. This latter opening—now less than 1 foot in width, but with its sides certainly fallen in—had a still-existing cover-slab, underneath which it was possible for a man to creep, a fact twice proved in the course of excavation. Beyond the further end was revealed a continuous paved passage from 1 foot 8 inches to 2 feet wide and with a total length of about 40 feet. In its northern portion, where it ran approximately east and west for 14 feet, it was situated from 3 feet to 5 feet outside the main structure, with walls 3 feet 6 inches high, their tops covered by quite an equal depth of accumulated soil, including what seemed to be the foundations of a comparatively modern cottage upon the very summit. For the remaining 26 feet of its course, this passage, between slight walls, took a south-easterly direction, but in an irregular line and at a gradually increasing distance of $3\frac{1}{2}$, $4\frac{1}{2}$, and $7\frac{1}{2}$ feet from the inner side; finally it reached the shore at a point $12\frac{1}{2}$ feet east from that where the large drain already noticed emerges from the earth-house proper, the passage and drain running almost parallel with each other at this interval for the southmost 4 yards.

Within the walls of this passage lay ashes and fragments of pottery, but, apart from these, few relics of former occupation were found. At the west they included some patterned pottery, two hammer-stones and a pounder, and near the floor two or three rude bone pins: at the north,

a quartz hammer-stone, a piece of pumice, two fragments of iron, a broken bone pin, and half of a centrally perforated disc of unburnt clay, $3\frac{1}{2}$ inches in diameter: at the east, a flaked flint and a bone pin: as also, in the north-west chamber, two small hammer-stones, more decorated pottery, and a small stone cube measuring 1 inch across.

A most interesting feature in connection with this earth-house at Garry Lochdrach is the existence, within 2 yards to the east, of a boat-harbour, apparently contemporary in date. Of elongated oval shape, and with extreme interior dimensions of $48\frac{1}{2}$ feet by $12\frac{1}{2}$ feet, lying approximately east and west, this harbour abuts upon the shore at its north side, where it shows but a slight boundary wall. On the south, however, there still remains a substantial breakwater from 3 feet to $4\frac{1}{2}$ feet in width, composed of large blocks of stone, and extending for the entire length, except where a gap or entrance, 7 feet wide, was left 14 feet from the south-west corner.

Situated in a very shallow bay, within a remote corner of Vallay Strand, this harbour could only have served boats of the lightest draught, and for no more than three or four hours at high water of ordinary tides. About 4 yards north from the earth-house, and at an elevation of 8 or 9 feet above its base, immediately beyond the supposed foundations of a former cottage, is a small flat area upon which stands an oval enclosure, no doubt of comparatively modern date and with all the appearance of having served as a sheep-fold. With exterior dimensions of $32\frac{1}{2}$ feet by 29 feet and interior ones of 24 feet by $20\frac{1}{2}$ feet, and its axis almost north and south, the wall of this construction showed a very regular thickness of 4 feet 3 inches, with a present height varying from about $1\frac{1}{2}$ foot to 3 feet, this latter height chiefly towards the south end, where half of the wall lay below and half above the soil. At the north-east side is a narrow entrance, with three courses of building. It is only 14 inches high, 12 inches wide at its centre, and 17 inches at each end, with two covering-slabs apparently still in their original positions. This enclosure is a mere surface erection and may be dismissed as of no antiquity, although at lower levels on the same site there seem to have stood two ancient dwellings in succession, at perhaps widely separated periods.

Excavation near the middle of this fold revealed the foundations of a somewhat oblong building about 7 feet in width by 18 feet in length, not clearly defined at its south extremity, which, however, seemed to extend half-way under the south wall of the fold. The straight and well-built west wall of this erection partly remained in three courses to a height of 2 feet, and was covered by about 14 inches of soil. Within this dwelling, 4 feet from its north wall, but centrally placed as to width, was found a hearth 2 feet 10 inches in diameter, with ashes in abundance. Nearly

opposite to it to the east was a 12-inch passage through the wall, and to the west a step or sill, giving a slight rise in the floor from that point northwards. The whole building was paved, including the hearth which was 2 feet below the surface. Underneath the west wall of this intermediate building were found scattered ashes, and below its floor various implements, including two stone whorls, one in an unfinished state, two bone pins, and a smoothing-stone. These were evidently to be associated with a still earlier and even prehistoric dwelling, its floor lying from $1\frac{1}{2}$ foot to 2 feet under that of the other, the depth below the surface of the sheep-fold being nearly 5 feet. Here were the remains of a slab-paved floor and also of a large paved hearth, the latter covered by ashes to the thickness of 1 foot, with burnt shells and bones. This hearth extended westwards from beneath the south-west corner of the upper building, and at about 6 feet further west were traces of an outer wall running northwards for nearly 3 yards. In this quarter indications also appeared of a continuation for about 10 feet towards the north-west of the passage already described as outside the north exterior of the earth-house. These, however, were very indistinct, the base rising gradually to within 3 feet of the surface upon solid rock covered by a layer of clay, 1 to 2 inches thick.

At this sheep-fold site pottery was comparatively scarce, but a group of coarse plain fragments measuring from $\frac{3}{4}$ inch to $\frac{1}{2}$ inch in thickness were recovered. There were also found a very few hammer-stones, whet-stones, smoothing-stones, flaked flints, bone pins, fragments of corroded iron, and two small lumps of pumice. Other notable items were the complete but broken stem of a bronze free ring-headed pin, 5 inches long, its small square head ornamented with dots and lines, but wanting the movable ring; an unbaked ring of clay, 5 inches in diameter, with flat base and curved top, a $\frac{1}{2}$ -inch hole pierced through its centre; and a piece of heavy soapstone squared at the base and ends, but with a domed top, measuring $7\frac{1}{2}$ inches in length by 3 inches in width and height, and bearing cut marks, straight in most parts and waved in others, over nearly its whole surface.

About 5 yards east of the fold, 1 foot below the grass and close to a row of small stones set in position opposite a rock-face—no doubt indicating the site of some outer construction—were found a few pottery fragments of quite different type and perhaps made on a wheel, probably attributable to a distinctly later period.

The following relics were found in or near the earth-house:

OBJECTS OF STONE.

Forty-five hammer-stones or pounders; parts of querns; a hollowed stone; a reddish-brown, irregular, oblong object, 3 inches in length,

slightly incised with quadrilateral panels on the two opposite faces; two water-worn pebbles with streaks of rust on them—strike-a-lights—one having also been used as a hammer-stone; five whet-stones; six smoothing or polishing stones, three of symmetrical shape; a ball of granite, 3 inches in diameter, with depressions on opposite sides; an oblong piece of mica schist, $7\frac{1}{2}$ inches in length, of plano-convex section, with truncated ends, scored with tool marks, and pitted on the upper surface; three pieces of mica schist, from 5 inches to 7 inches square and 1 inch thick; seven pot-lids of the same material, from 3 inches to 5 inches in diameter, and from $\frac{3}{8}$ inch to $\frac{1}{2}$ inch thick; a thin polished disc of clay-slate, 2 inches in diameter; eight whorls, of which four were domed and two flat, the perforation in one of the latter being incomplete; a small shaped stone, perhaps an unfinished whorl; a fragment of the rim of a vessel of mica schist; sixteen pieces of pumice, one $1\frac{1}{2}$ inch long, being thin and pierced near one end; two socket-stones; half of a bead of jet or shale, $1\frac{1}{8}$ inch in diameter; and eight flint flakes.

OBJECTS OF METAL.

Twenty-two fragments of much-corroded iron, including rivets, pieces of knife-blades, and an instrument 5 inches long, with two long prongs; four lumps of iron slag; a free ring-headed pin 5 inches long, wanting the ring, and another pin with ornamental head, 3 inches long, much corroded, of bronze; and a fourth-century Roman coin of Constantius II. found in the entrance to the long chamber on the north-west.

OBJECTS OF DEER-HORN.

A finger-ring of irregular shape; two cut points of tines; and five shaped segments of antlers, two of them flat, thin slices, the longer pierced with two holes.

OBJECTS OF BONE.

Weaving comb, 4 inches long, showing the stumps of ten teeth, the handle decorated with two transverse bands of lozenge designs; small flat piece with cuts; a large slab, 25 inches long, 5 inches wide, and $7\frac{1}{2}$ inches thick, shaped throughout, with flat sides and oval ends, pierced close to one end with a circular hole, $2\frac{3}{4}$ inches in diameter, and showing a circular hollow cut to a depth of $1\frac{1}{2}$ inch near the opposite end; segment of a large vertebra, measuring from 5 inches to 7 inches in diameter, a circular hole through the centre; and three smaller lumps partly shaped, all of cetacean bone.

Fragments of a small-toothed comb, with dot and circle ornamentation; three whorls; two needles, one $2\frac{1}{2}$ inches long with a broad head, and the

other imperfect; five pins with round heads, and one with an ornamental head, 3 inches long, wanting the point; seventeen pointed tools, mostly of rude shape; and eleven shaped fragments, seven of which bear traces of corroded iron.

POTTERY.

Two crucibles, the larger 2 inches in diameter, from chamber *e*, containing traces of bronze, and the other imperfect; a small hemispherical crucible, $\frac{7}{8}$ inch in diameter, of the type found in the Foshigarry earth-houses; fourteen whorls made of shards of pottery, varying from $1\frac{1}{8}$ inch to $2\frac{1}{2}$ inches in diameter, seven being unpierced discs; portion of a large ring which had measured about 18 inches in diameter when complete, the ring $3\frac{1}{2}$ inches across; two rings of unbaked clay, measuring 5 inches and 3 inches in diameter and $1\frac{1}{4}$ inch and $1\frac{1}{2}$ inch in thickness, each with a hole in the centre $\frac{1}{2}$ inch in diameter; two large lumps of clay found in chamber *b*, between the double floors; and two hundred and sixty-two fragments of vessels, showing at least thirty-three different decorative patterns, both incised and applied, but chiefly the former.

EARTH-HOUSE AT BAC MHIC CONNAIN. WITH NOTES ON THE STRUCTURES AND RELICS FOUND. BY J. GRAHAM CALLANDER.

On one of the numerous sand-covered hillocks lying to the south of the watershed of the tidal islet of Vallay, about 180 yards north of the bay at Saltam, in Vallay Sound, and a quarter of a mile north-west of Vallay House, an earth-house was discovered by Mr Beveridge in the autumn of 1919. Excavations were commenced on the 13th August and continued until the 23rd September. The site appeared as a mound running west-north-west and east-south-east, steepest towards its south-eastern end, and tailing off in a long sloping shoulder towards the west. It measured about 45 yards in length and 25 yards in breadth, and rose about 12 feet above its south-eastern margin.

The earth-house consisted of two circular chambers, with two smaller quadrangular compartments between them, while to the north-east and south-east of the eastern one were the remains of buildings of indefinite character (fig. 2). The circular chamber to the west, D, which was of the wheel-shaped variety, so well known from Mr Beveridge's previous excavations in the neighbourhood, was larger than Chamber A on the east, and its floor lay at a lower level. Access to the former chamber, however, seems to have been obtained through a narrow passage from the east. The surviving portions of the walls of the chambers and

passages gave no indication of their original height, as apparently in late times, possibly when the present steading on Vallay was being erected, the site had been used as a quarry, and the roofs and upper parts of the walls had been carried off as building material. As will be seen later, the earth-house had either undergone considerable reconstruction or had been built on an earlier inhabited site.

Emerging from the south-eastern slope of the mound, at a higher

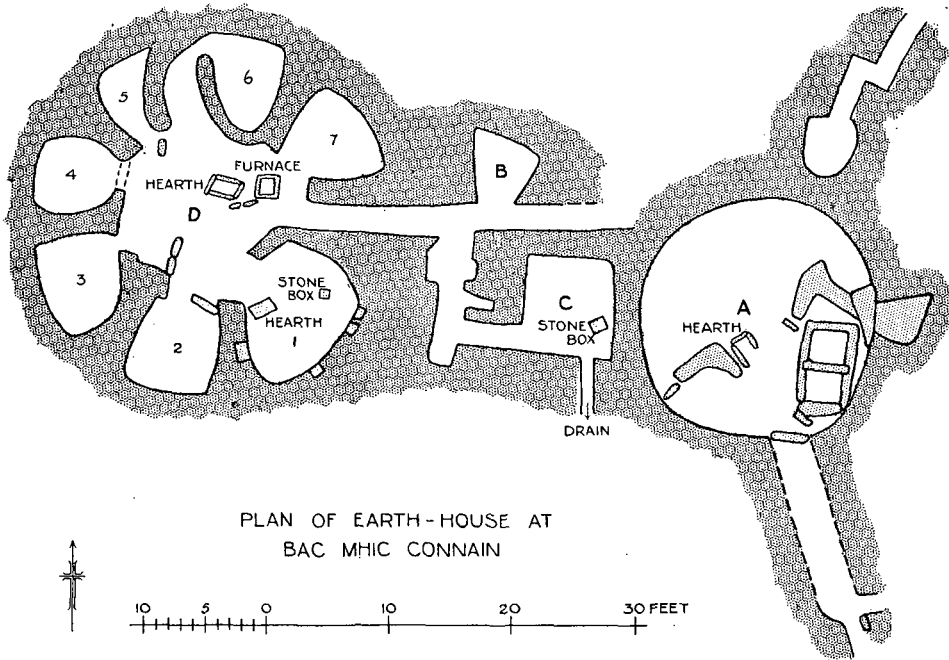


Fig. 2. Plan of Earth-house at Bac Mhic Connain.

point than the base, were the remains of a walled passage, measuring 3 feet 6 inches in width, which ran in a northerly direction for 18 feet, where it entered Chamber A a little to the east of its most southerly point. At the entrance the passage may have been narrower, or even access to it may have been from the east, but here the building was too fragmentary and disturbed to permit of the details of the original structure being ascertained. The passage was for the main part paved, and where it entered the circular chamber there was a flat slab projecting 6 inches above the floor and forming a door-sill.

Chamber A was nearly circular, measuring 19 feet in diameter from north to south and 18 feet 7 inches from east to west, the walls being generally reduced to a height of 3 feet to 4 feet. Above these were

layers of sandy loam about 1 foot to 1 foot 3 inches thick. In the south-western section of the chamber was a radial wall, measuring 4 feet 9 inches in length, the inner end of which was carried to the south-east for about 3 feet more. This radial wall stopped 2 feet 1 inch from the main wall, the vacancy being blocked by an upright slab. On the opposite side of the chamber were the fragments of another divisional wall, but instead of being set radially it extended inwards from the main wall first in a north-westerly direction and then in a curve to the north, for a distance of 5 feet 8 inches; from this point it made a quick return to the south-south-west for other 5 feet. A few inches from its southern termination stood a thin upright slab. Close to the inner end of the south-western radial wall, above floor level, were the remains of a hearth, the kerb being formed of stones set on edge. Only the north-west end was complete, and it measured 12 inches in breadth, the remaining parts on the north-east and south-west sides measuring 1 foot 8 inches and 2 feet 1 inch in length respectively. Close to the south-eastern wall of the chamber was a large rectangular structure formed of slabs set on edge, and measuring externally about 7 feet 6 inches in length from north to south and about 5 feet in breadth; slightly to the south of the centre it was divided into two compartments by a slab also set on edge.

In the most easterly part of the main wall of the building was a large four-sided recess widening inwards from 3 feet 6 inches to 4 feet 6 inches, the northern and southern sides measuring 4 feet 4 inches and 3 feet 6 inches in length.

At the floor level in the wall on the north-west of the chamber was an opening, 10 inches wide and 5 inches deep, which led into a drain running in a westerly direction.

There was no clear evidence that there was any communication between Chamber A and any of the others in the earth-house, but near the most northerly part of the main wall were indications that an opening 3 feet 4 inches wide may have been built up.

In excavating this chamber Mr Beveridge found that, after removing the turf and the blown sand below it, the interior was filled with a dense dark sand which yielded the greater part of a saddle quern half-way down to the floor, and pieces of cetacean and other bones, hammer-stones, and shards of pottery at different levels. From this he concluded that the building had been filled in, possibly at the time when the place had been plundered for building stones. The hearth was at a higher level than the floor; and under the latter and at a lower level than the foundations of the wall, beneath a layer of sand 6 inches thick, was found a deposit 12 inches deep, containing shells, bones, pottery, and ashes.

From the outside of the wall on the north-west of Chamber A, and about 1 foot 6 inches higher, was a passage 2 feet 9 inches wide running in a westerly direction for a distance of about 20 feet, when it entered Chamber D. Its eastern extension, which probably formed the entrance, was very dilapidated, and so this feature could not be traced out. Running along the south side of the passage, just under the floor, was a drain, one end of which was seen in the north-western wall of Chamber A. Under this passage were other two drains superimposed one on another, and both under the one just described. Bones were found as low down as the deepest drain.

On the northern side of the passage, about 9 feet 6 inches along, was an entrance, 2 feet 7 inches wide, opening into Chamber B, a small four-sided cell, the walls of which on the west, north, and east measured 5 feet 6 inches, 6 feet 3 inches, and 4 feet 7 inches in length. The wall on the north consisted of five slabs set on edge.

Slightly to the west of this cell, on the opposite side of the corridor, was another passage striking in a southerly direction, its entrance being 2 feet 7 inches wide, and its total length 10 feet 6 inches. Immediately on entering, the western wall slanted to the south-west, ran south for 2 feet 6 inches, and returned sharply to the east, forming a recess 3 feet 4 inches wide at the mouth and 1 foot deep. On the east side of the passage, at distances of 2 feet 8 inches and 5 feet 8 inches from the entrance, were two recesses, the first 2 feet wide and 1 foot deep, and the other 1 foot 6 inches wide at the mouth and tapering to 9 inches at the back, its depth being 2 feet 8 inches. About 1 foot 2 inches beyond the second recess a passage branched off at right angles to the east. It was 2 feet 6 inches wide, and, after a length of 4 feet 6 inches, entered Chamber C. The passage running south was carried 2 feet 6 inches beyond the south side of the entrance to the latter chamber, and at its termination had contracted to a width of 1 foot 10 inches.

Chamber C was oblong on plan, and measured about 8 feet in width from east to west and slightly more from north to south. At the foundation level of the south wall, 2 feet 4 inches from the south-eastern corner, a drain was traced running south for a distance of 5 feet 6 inches. In the floor near the centre of the south-eastern quarter of the chamber was a small rectangular box formed of slabs set on edge, measuring 14 inches in length, 8 inches in breadth, and 12 inches in depth, which was furnished with a flat stone as a cover.

A very decayed slab of cetacean bone, 2 feet 6 inches in length, 7 inches to 9 inches in breadth, and 2 inches in thickness, a whale's vertebra, 9 inches in diameter and 6 inches in thickness, showing many cuts, a hammer-stone, a piece of pumice, a small crucible, four pieces

of slag, an iron rivet, pieces of deer-horn, bones showing cuts, and shards of pottery were recovered from the chamber.

Chamber D, the largest of the group, was of the wheel-shaped type, with radiating divisional walls between the seven cells ranged round its circumference. It measured 29 feet in diameter from east to west and 27 feet from north to south. The floor level, which was considerably lower than that of the present passage entering it from the east, was about 8 feet 6 inches below the surface of the ground, and generally there was an accumulation of soil and sand on the top of the walls varying from 2 feet 3 inches to 4 feet 6 inches in thickness. As we have seen, there had been three superimposed drains in this passage, which indicated two reconstructions in this part of the building. Presumably the original floor of the passage would be about the level of the floor of Chamber D.

The radial walls of this chamber spring from the main encircling wall, there being no vacant space between them as in the majority of the wheel-shaped earth-houses in the neighbourhood. Generally after leaving the main wall they narrow slightly, and widen out again at their inner ends—that is, towards the centre of the chamber. The cells thus formed are more or less bulbous on plan.

Entering the chamber from the passage, the radial walls on the south side of Cell No. 7, and on the north side of Cell No. 1, formed a prolongation of the entry right into the open centre of the building.

Cell No. 1, which lay to the south-east, measured about 10 feet 6 inches in greatest width and 9 feet in depth. Its wall on the north made an obtuse bend towards the south-west, so that the space between it and the inner end of its western wall formed an entry to it about 3 feet 10 inches broad. While the main wall at the back measured 6 feet 9 inches in height, the front wall was only 2 feet 7 inches, its foundation being at a much higher level. In the lower courses of the main wall, which was corbelled inwards, clay seemed to have been used as mortar. About 12 inches from the western wall was a hearth formed of slabs set on edge and measuring 2 feet 3 inches in length and 1 foot 10 inches in breadth—three of the slabs were 16 inches in height. The hearth was built above the floor level, and under its northern end was found a large oviform clay pot in an inverted position (fig. 3), no relics being found in it. In the south-eastern half of the cell was a small, slab-lined, paved box, measuring 10 inches in length, 9 inches in breadth, and 8 inches in depth, which had a slab cover “strongly marked with soot above.” It contained a large hammer-stone. Half-way up the western wall was a large bole or recess, measuring 16 inches in width at the bottom, 14 inches at the top, 14 inches in height and the same in depth; a piece of antler

and two hammer-stones were found in it. High up in the main wall were two small boles close to each other, that to the east containing a piece of cut deer-horn, and at the floor level on the south-east was another small recess.

In addition to the clay pot already mentioned, this cell yielded eight slabs of cetacean bone, ten pieces of bone showing cuts, twelve pieces of deer-horn, one encircled by a groove worn by friction, a pebble with brown rust marks (a strike-a-light), a ground piece of pumice, shards of pottery, and a lump of iron weighing $2\frac{1}{2}$ pounds. At a depth of 4 feet under the hearth was a whale's vertebra, squarish in shape, which was supposed to have been used as a seat. Two weaving combs were discovered stuck into the wall to the north of the hearth.

The next compartment, Cell No. 2, which lay on the southern arc of the building, measured 7 feet 3 inches, 7 feet 6 inches, and 7 feet 9 inches along the east, south, and west walls, the south wall being 5 feet 4 inches in height. On the east side of the front of this cell was a slab set on end which reduced the width of the entrance to 2 feet 6 inches.

In the adjoining cell, No. 3, to the south-west of the circle, the main wall was reduced to a height of 3 feet. The wall at the back measured 8 feet 8 inches in length, that on the north 6 feet, that on the east, which had a rounded angle 4 feet 6 inches from the main wall and curved back towards the north, had a total length of nearly 12 feet. The entrance was only 1 foot 6 inches wide. About one-third of the floor against the northern wall was paved, and the main wall was built with clay.

Cell No. 4, on the west, measured 6 feet 10 inches along the northern wall, 5 feet 6 inches along the back, and 7 feet 3 inches along the south, their greatest height being only 3 feet 3 inches. The entrance was 2 feet 3 inches in width, with a stone lintel still in position 1 foot 8 inches above the foundation of the wall. At the base of the back wall near the south-west and north-west corners were two small openings, probably drains.

The next cell, No. 5, was of peculiar shape. From an entrance 1 foot 6 inches wide it swung round towards the north-east, attaining a



Fig. 3. Clay Vessel from Bac Mhic Connain.

maximum width of 4 feet 1 inch, and terminating in a rather sharp angle. Its wall was about 3 feet 6 inches high.

In the north lay Cell No. 6, which, like the last, showed peculiar features. The wall at the back and the radial wall on the south-east were normal, measuring 6 feet 3 inches and 6 feet 6 inches in length, but the wall in front of the chamber curved round towards the west and north, overlapping the dividing wall between it and Cell No. 5, so as to form an entrance passage about 6 feet in length, narrowing from a width of 3 feet near the outer end to 1 foot 4 inches where it entered the cell. The walls of this building were badly plundered, as they varied from only 2 feet to 3 feet 2 inches in height.

The remaining cell, No. 7, on the north-east, showed a greater amount of walling in position, as it still stood 7 feet 5 inches in height at the back. This wall seemed to belong to two periods, the lower 2 feet 3 inches being "apparently older" than the part above. The compartment measured 5 feet 1 inch and 5 feet in length along the radial walls on the north-west and south, and 8 feet along the back wall. The entrance was 3 feet wide.

In the central portion of the building, which probably had never been roofed, was a hearth placed a little to the east of the centre. Formed of slabs set on edge, and laid with its axis tending north-west and south-east, it measured 3 feet 1 inch in length, and 2 feet 5 inches and 2 feet 8 inches across the north-west and south-east ends.

Between the hearth and the end of the radial wall on the south side of Cell No. 7 was a very unusual structure, which Mr Beveridge believed to have been a furnace. Built of stone in the shape of a nearly square shaft with two openings on its west side, the total height of the erection was 3 feet 8 inches. Externally it measured 1 foot 11 inches in length and 1 foot 10 inches in breadth, while internally it measured 1 foot 2 inches by 10½ inches, with an inside depth of 3 feet. The upper opening on the west was placed 10¼ inches below the top and measured 10 inches wide, 6 inches high, and 12 inches long; the lower one, which was separated from the upper by a stone 3 inches thick, measured 8½ inches wide, 6 inches high, and 10 inches long. The foundation of the furnace was 1 foot 5 inches below that of the adjoining hearth. The space between the south-west corner of the furnace and the south-east corner of the hearth was blocked by two upright slabs placed in a straight line, the slab on the west overlapping the corner of the hearth by some inches.

No ashes were found in the furnace, but two complete crucibles and an imperfect one, the latter containing vestiges of bronze slag, and ten cut or shaped pieces of bone or deer-horn were discovered in it.

The floor of the central court was dug to a depth of 4 feet 9 inches below the top of the hearth, and many bones were found at the very bottom of the excavation; also, in every one of the cells the floors were lower than the foundations of the radial walls, in some places being more than 2 feet below them. Pieces of bones, antlers, and shards of pottery were found all the way down. Mr Beveridge was satisfied that many parts of the buildings showed signs of reconstruction.

As internal corbelling was noted in several places in some of the cells, it would seem that these had domed roofs, some of them, if not all, with a hole in the top to allow of the escape of smoke. In Cell No. 1 there was a large hearth which would have made living in it unbearable unless smoke could get away by some other aperture than the door.

Excavations were made to the north and south-east of Chamber A, but although indefinite lines of building were met with at both places, the only piece of structure which showed a regular plan was to the north-east. A passage about 2 feet wide was traced for some 5 feet towards the south-west, where it turned at right angles to the north-west for a distance of 2 feet 3 inches; it then struck to the south-west for 3 feet 3 inches, when it entered a small sub-oval cell, measuring 5 feet 6 inches in length and 4 feet 6 inches in breadth. In the excavations to the north-east, worked pieces of bone and deer-horn, including a pick, a pin, and an object with a perforation at one end, of the first-mentioned material, and a bit of a tine with a groove worn round it by friction, were discovered; two pieces of iron slag were also found.

The following lists of relics were discovered during the excavations:—

OBJECTS OF STONE.

Stone mould, incomplete, measuring $5\frac{1}{2}$ inches by $4\frac{5}{8}$ inches by $1\frac{7}{8}$ inch, showing on one face a matrix for casting a bar, measuring $2\frac{1}{2}$ inches by $\frac{7}{16}$ inch by $\frac{1}{4}$ inch, placed transversely, with the remains of a circular matrix on each side of it. On the opposite face traces of a matrix for a bar can be detected.

Stone mould for casting a bar or ingot (fig. 17, No. 10), measuring $3\frac{7}{8}$ inches by $2\frac{3}{4}$ inches by $\frac{5}{16}$ inch, the matrix measuring $2\frac{5}{16}$ inches by $\frac{9}{16}$ inch by $\frac{5}{16}$ inch. It was broken in two when found, but has been restored.

Two strike-a-lights formed of flat, oval, quartzite pebbles of brown colour, with an oblique groove on each face, measuring $2\frac{3}{8}$ inches by $2\frac{1}{8}$ inches, and $2\frac{9}{32}$ inches by $2\frac{3}{32}$ inches.

Ten flat, oval pebbles of quartz and quartzite with streaks of brown rust on each face, probably strike-a-lights, two having also been used as hammer-stones.

Flat, oval pebble of brown quartzite, measuring $3\frac{7}{8}$ inches by $1\frac{7}{16}$ inch,

with an oblique hollow on one face and an oblique groove on the other; both ends are abraded by use as a hammer-stone.

Hammer-stone of brown quartzite, of almost circular section, one side polished by rubbing, measuring $3\frac{7}{8}$ inches by $1\frac{7}{16}$ inch, and another of grey quartzite, measuring $3\frac{1}{2}$ inches by $3\frac{1}{2}$ inches. Ninety-one in all were got.

Socket stone of schist, measuring $5\frac{3}{4}$ inches in length.

Piece of pumice-stone, measuring $2\frac{3}{4}$ inches by $2\frac{3}{4}$ inches. Other ten fragments were recovered.

In addition to the above, fragments of one saddle quern and of three rotatory querns, a pot-lid, thirteen polishing or sharpening stones, and fifteen pieces of flint, of which a few showed slight secondary working, were found.

OBJECTS OF METAL.

Bronze pin measuring $4\frac{9}{16}$ inches in length, with a flat, circular head measuring $\frac{5}{16}$ inch in diameter.

Two pieces of iron slag and five iron rivets.

Fragment of red pigment, hematite, measuring $1\frac{5}{8}$ inch by $1\frac{1}{16}$ inch by $\frac{3}{4}$ inch.

OBJECTS OF BONE AND DEER-HORN.

Half of a hammer-head of cetacean bone (fig. 4, No. 1), measuring $1\frac{7}{16}$ inch in length, $1\frac{3}{8}$ inch in breadth, and $\frac{5}{8}$ inch in thickness.

Pieces of three spindle-like objects, showing oblique grooves worn by friction at the end where they are broken off (fig. 4, Nos. 2 to 4), measuring $1\frac{2}{3}$ inch, $1\frac{1}{4}$ inch, and $2\frac{7}{16}$ inches in length. The second has also a groove in the middle. The first two are made of bone and the third of deer-horn.

Four long-handled weaving combs of cetacean bone (fig. 5), one with ten teeth, complete, measuring $4\frac{15}{16}$ inches in length; another with ten teeth of which three are broken, measuring $5\frac{1}{8}$ inches in length; the third with eight teeth, one broken, measuring $4\frac{3}{8}$ inches in length; and the last, which has had at least ten teeth, all of which are broken off as well as the butt end. The last is decorated with an incised saltire between single marginal lines.

Two borers formed of thin splinters of bone, with long, narrow points (fig. 6, Nos. 1 and 2), measuring $5\frac{3}{8}$ inches and $3\frac{7}{8}$ inches in length, the first being bent into a regular curve.

Two awls or bodkins of cetacean bone (fig. 6, Nos. 3 and 4), measuring $3\frac{1}{2}$ inches and 4 inches in length.

A harpoon head made from the leg bone of a sheep, measuring $5\frac{1}{2}$ inches in length. It is bored at the thick end to form a socket, in

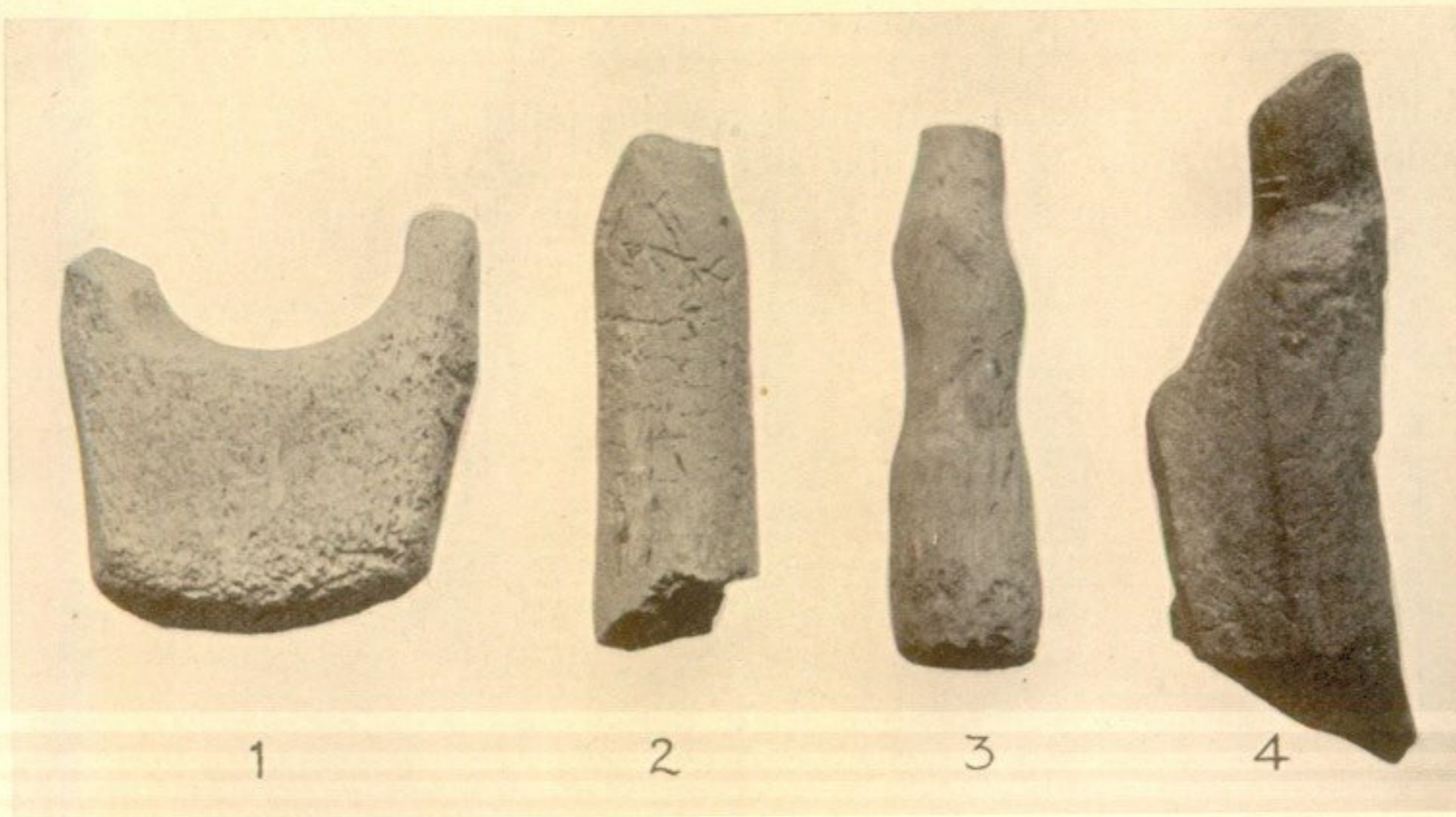


Fig. 4. Part of Hammer and other Objects of Bone from Bac Mhic Connain. (‡.)

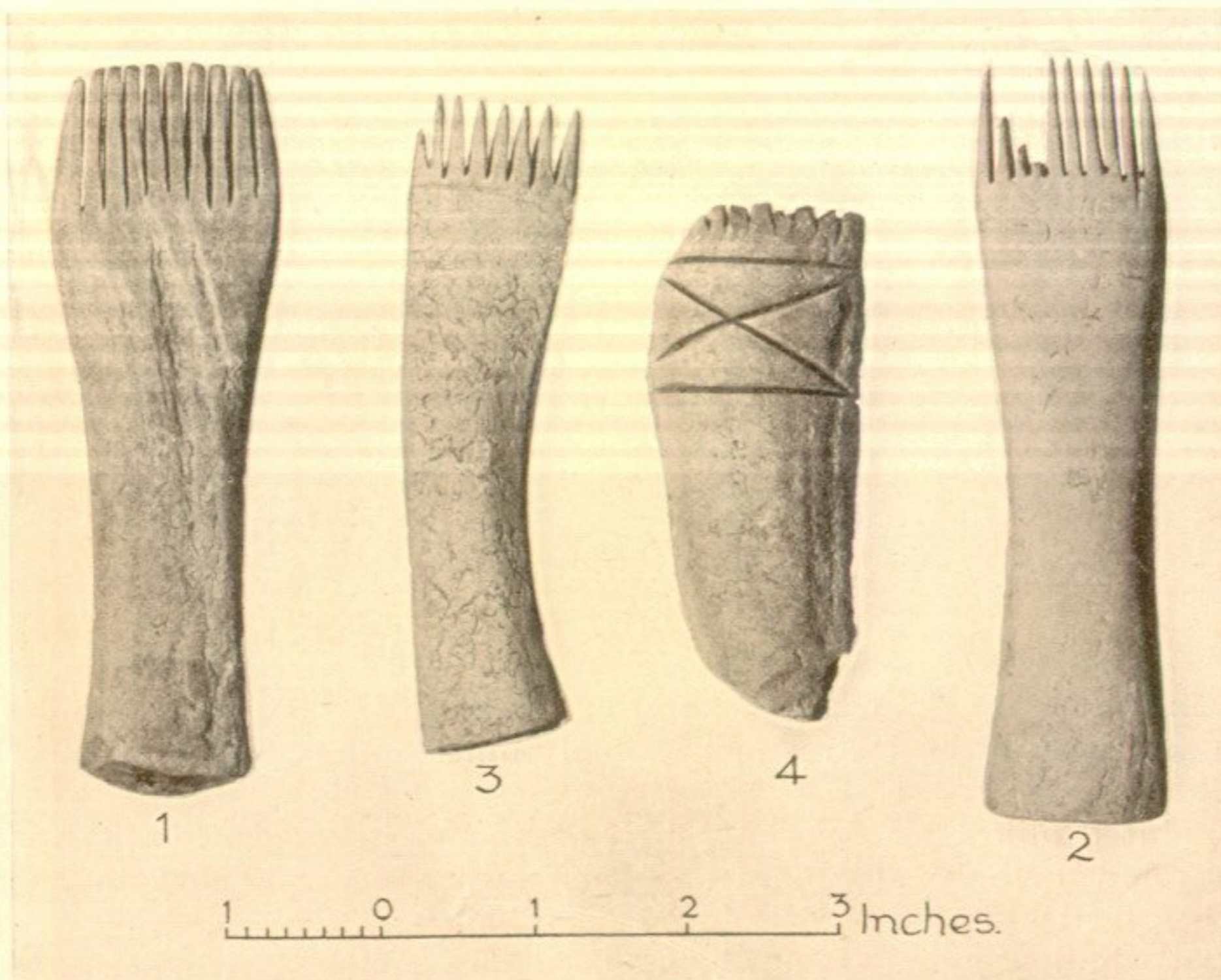


Fig. 5. Weaving Combs of Cetacean Bone from Bac Mhic Connain.

which are two rivet holes; close to the point it is notched on each side so as to form a spade-like head (fig. 7, No. 1).

Four spear-heads made of leg bones of sheep, bored at the thick end to form sockets (fig. 8, Nos. 1 to 4), measuring $3\frac{3}{4}$ inches, $3\frac{1}{8}$ inches,

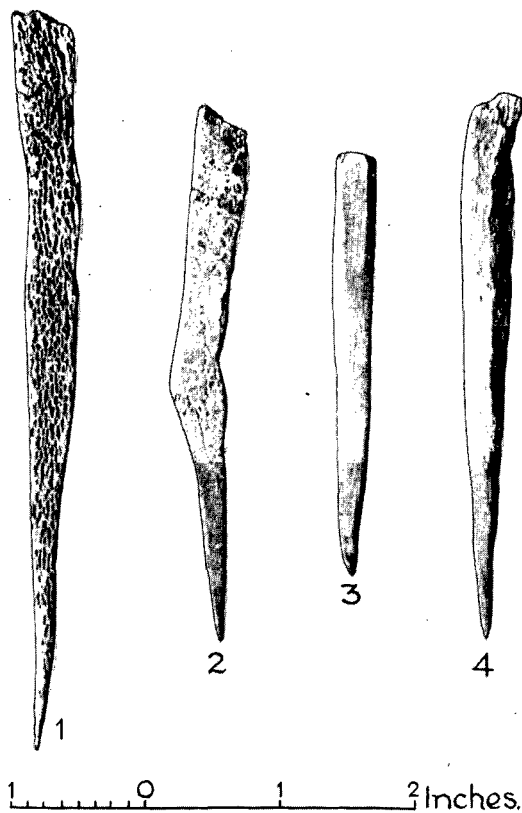


Fig. 6. Borers and Awls of Bone from Bac Mhic Connain.

$4\frac{9}{16}$ inches, and $4\frac{11}{16}$ inches in length; the first has two rivet holes in the socket, and the last, which is finely finished, has part of the socket split off.

Pointed object of bone, measuring 3 inches in length (fig. 8, No. 5).

Hollow cylindrical object of bone, measuring $4\frac{1}{4}$ inches in length, with a lattice design scratched on one side (fig. 7, No. 4).

Two hollow cylinders of bone, used as handles, sawn across both ends, measuring $1\frac{5}{8}$ inch and $2\frac{7}{16}$ inches in length.

Ten hollow cylindrical segments of deer-horn, some having been

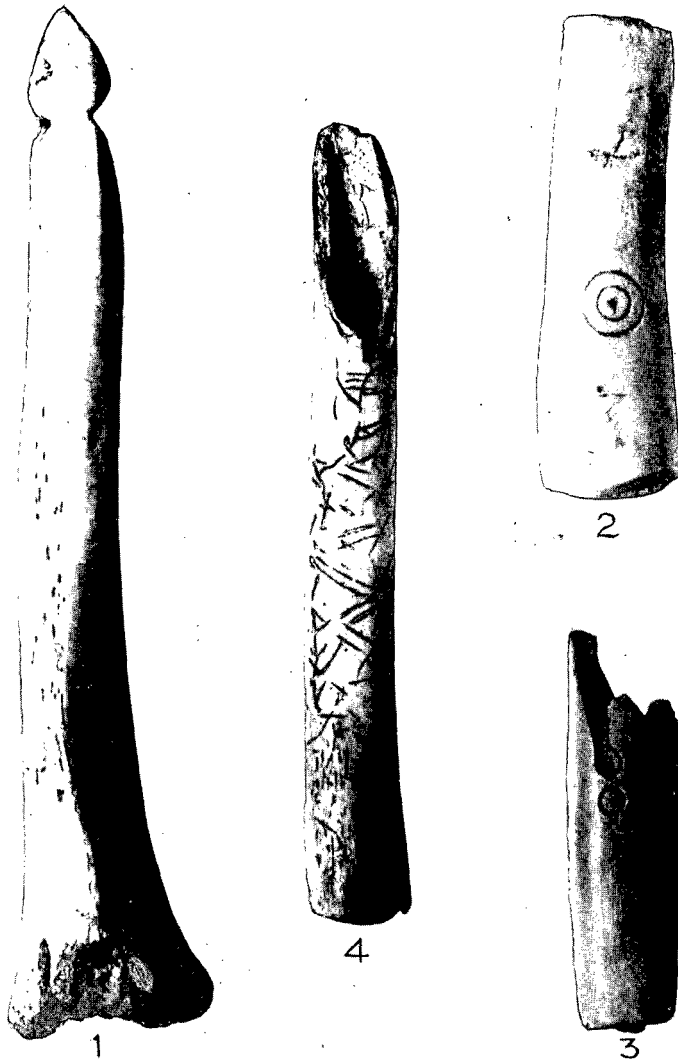


Fig. 7. Harpoon and other Objects of Bone from Bac Mhic Connain. (4.)

used as handles (fig. 9), measuring from $\frac{19}{32}$ inch to $2\frac{3}{8}$ inches in length. The longest is imperfect at one end.

Part of the handle of an iron knife, with a portion of the tang

clasped between fragments of two bone plates by two iron rivets, measuring $1\frac{3}{8}$ inch in length.

Handle of a tool or knife, of deer-horn, measuring $3\frac{1}{8}$ inches in length, of oval section, bored for part of its length, and showing a rivet hole on each side.

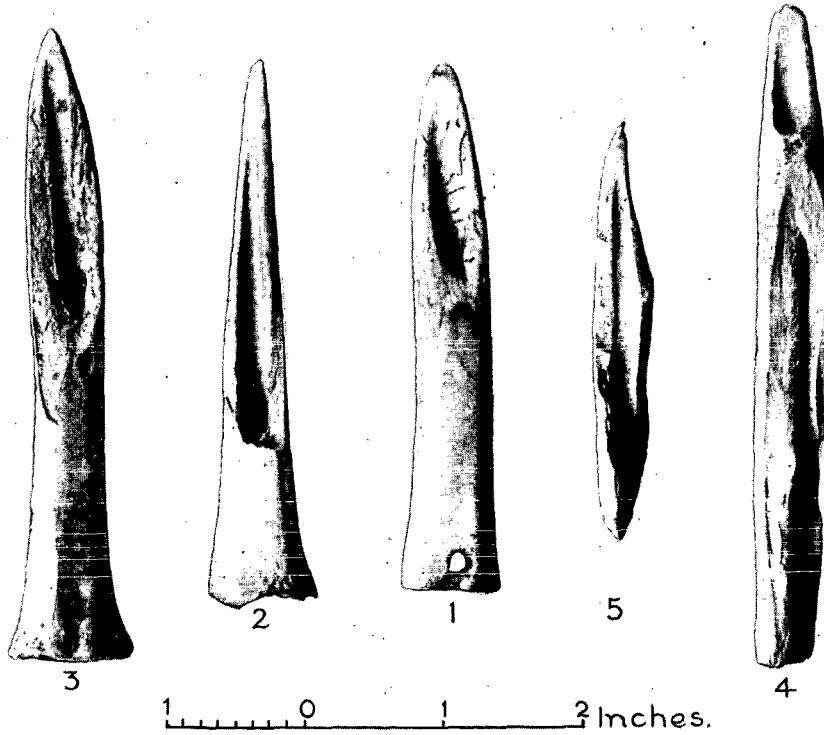


Fig. 8. Spear-heads of Bone from Bac Mhic Connain.

Part of a plate of deer-horn forming one side of the haft of an iron tool or knife, measuring $2\frac{21}{32}$ inches in length. It has two rivet holes, and there is rust adhering to the inside. From mid-north compartment.

Handle of deer-horn, measuring $2\frac{1}{2}$ inches in length, decorated on one side with a single dot and double circle design (fig. 7, No. 2).

Part of a hollow cylindrical handle of deer-horn, measuring $2\frac{1}{8}$ inches in length, finely rounded, with two dot and circle designs on one side (fig. 7, No. 3). A small strip of bone remains fixed in one end of the socket.

Two bone handles measuring $3\frac{7}{8}$ inches and $4\frac{3}{8}$ inches in length (fig. 10).

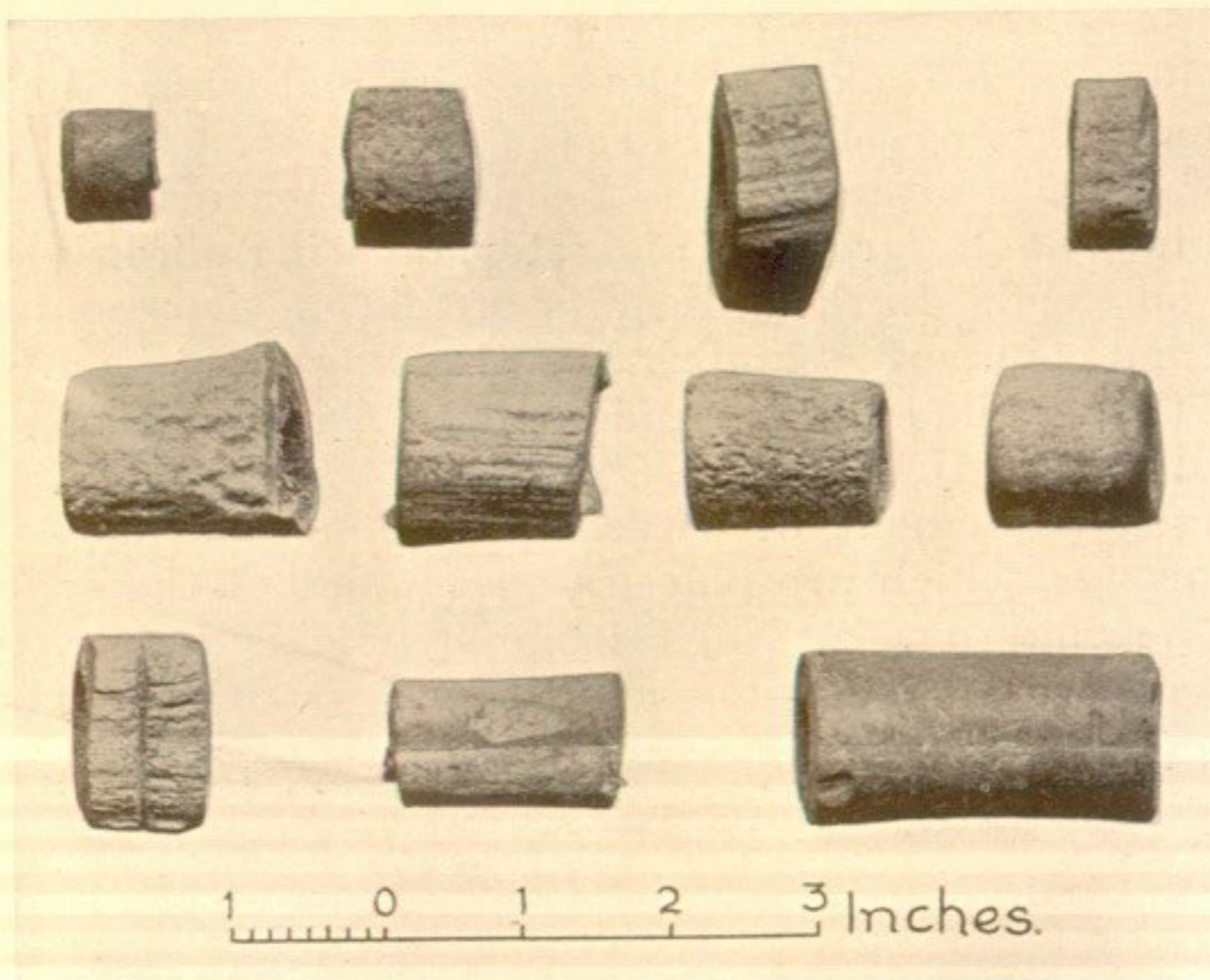


Fig. 9. Sawn and Pierced Segments of Deer-horn and Bone from Bac Mhic Connain.

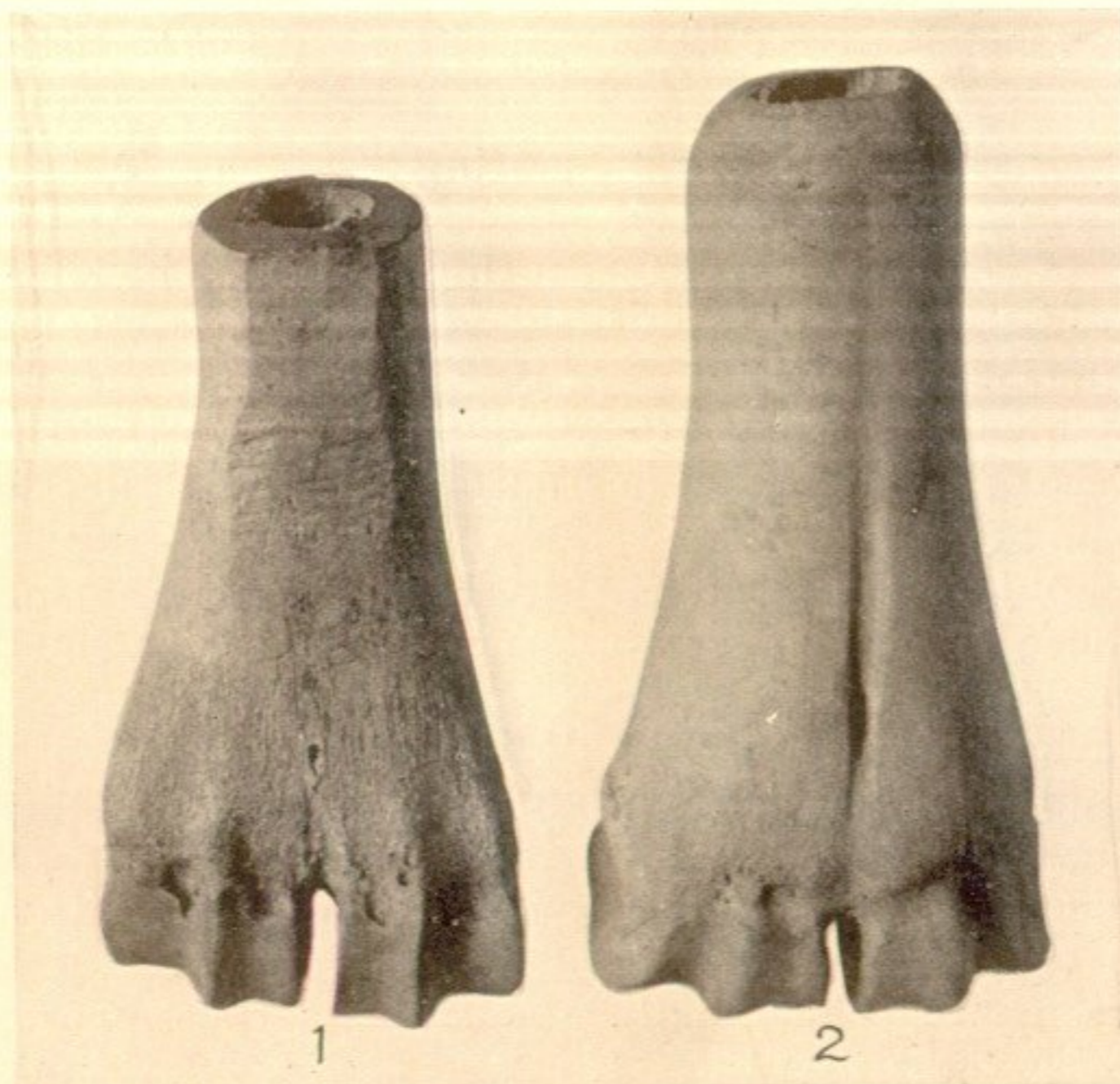


Fig. 10. Bone Handles from Bac Mhic Connain

Handle of bone, measuring $2\frac{17}{32}$ inches in length. It tapers to a narrow truncated point, and is broken at the opposite end where the remaining part of the socket is encrusted with rust.

Handle of a knife of cetacean bone (fig. 11), measuring $4\frac{5}{16}$ inches in length and $\frac{5}{8}$ inch at the greatest diameter, tapering slightly in a gentle curve at the butt end. In the extremity of this end is a conical hollow; the opposite end is imperfect and retains the tang of an iron blade. The inner side of the handle is ridged and bears an Ogham inscription, which has been read as MAQUNM?DENCO(or U)T.

Two-pronged implement of cetacean bone, measuring $4\frac{3}{4}$ inches in length, the prongs, which are placed at each side of the spatulate end, being $\frac{5}{16}$ inch long (fig. 12, No. 8); the handle is constricted and is sharpened at one side of the butt end. From the south-east chamber.



Fig. 11. Knife-handle of Cetacean Bone bearing an Ogham inscription, from Bac Mhic Connain. (†.)

Punch of cetacean bone, now measuring $2\frac{17}{32}$ inches in length, broken at the butt end (fig. 12, No. 5).

Implement of cetacean bone, measuring $3\frac{1}{4}$ inches in length, squared at one end and pointed at the other, with one side straight and the other curved (fig. 12, No. 7).

Boring instrument of cetacean bone (fig. 12, No. 6), measuring $3\frac{1}{2}$ inches in length. It is of stout make, has a rounded projecting head, and is imperfect at the point.

Bracer-like object of deer-horn (fig. 12, No. 1), measuring $5\frac{1}{8}$ inches in length. There is a rudely cut hole near each of the ends, which are cut and not sawn off.

Object of deer-horn, measuring $5\frac{13}{16}$ inches in length, with an oblong cavity cut in one end connecting with a deep notch on the side, suggestive of a whistle (fig. 12, No. 3).

Object of deer-horn, measuring $2\frac{7}{8}$ inches in length, with a deep oval socket at the broad end; on one side is a broad sawn groove placed midway between two other similar grooves on the opposite side, the grooves being cut right into the socket (fig. 12, No. 2). From the furnace chamber.

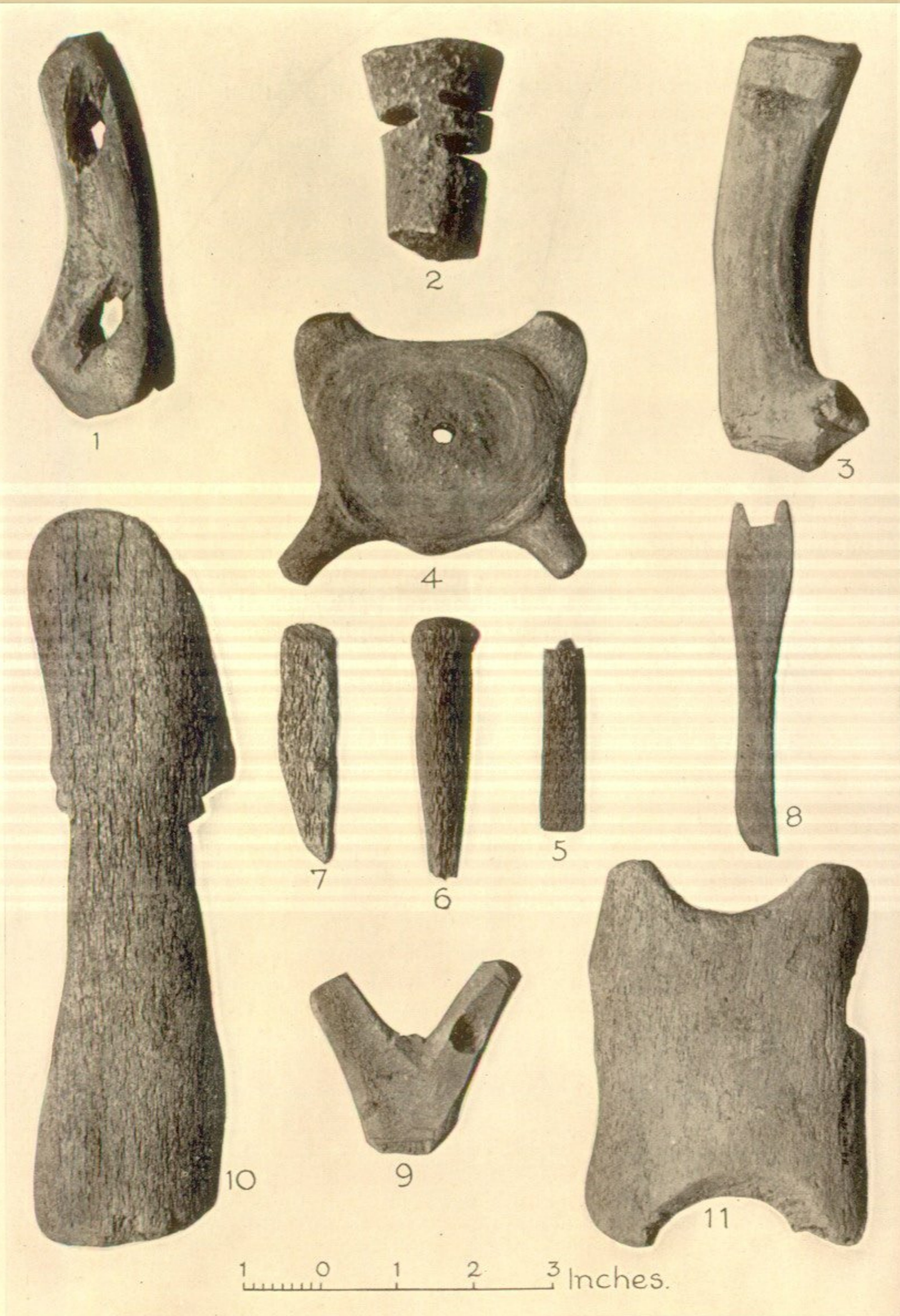


Fig. 12. Objects of Cetacean Bone and Deer-horn from Bac Mhic Connain.

V-shaped object of deer-horn, the longer arm measuring 3 inches



Fig. 13. Implements of Cetacean Bone from Bac Mhic Connain.

in length, both limbs roughly squared, and showing a cavity bored in the longer member (fig. 12, No. 9).

Two metatarsal bones of sheep, measuring $4\frac{1}{8}$ inches and $3\frac{7}{8}$ inches in length, with a perforation through the centre of the shank (fig. 18).

Two implements of cetacean bone (fig. 13), the first measuring $5\frac{3}{16}$ inches in length, one end rounded and the other of chisel shape, and the second measuring $4\frac{5}{8}$ inches in length, tapering towards a blunt punch-like point at one end.

Ornament of cetacean bone (fig. 14), measuring $3\frac{3}{32}$ inches in length, in the shape of an open triangle with a ring at the top. Where the lower part of the ring meets the apex of the triangle is an oblique ridge simulating the familiar trumpet-shaped terminals seen on Early Iron Age bronze ornaments. On either side of the base of the triangle is a circular projection, and, underneath, a groove for attachment to some other object.

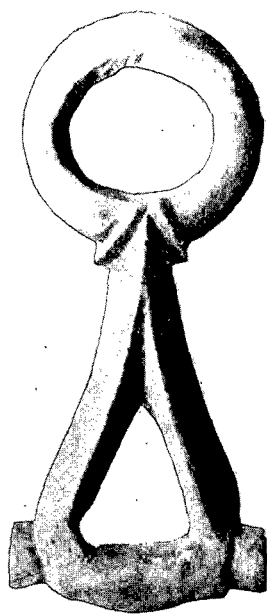


Fig. 14. Cetacean Bone Ornament from Bac Mhic Connain. (3.)

Pear-shaped object of cetacean bone (fig. 15, No. 1), measuring $1\frac{5}{8}$ inch by $\frac{3}{32}$ inch, with two countersunk perforations, and an incised triangle between them on one side.

Perforated triangular ornament of cetacean bone (fig. 15, No. 2), measuring 1 inch by $\frac{1}{2}$ inch.

Small conical pendant of deer-horn (fig. 15, No. 3), measuring $1\frac{3}{16}$ inch in length, with a perforation at the narrow end.

Conical stamp of cetacean bone (fig. 15, No. 4), measuring $1\frac{1}{2}$ inch in

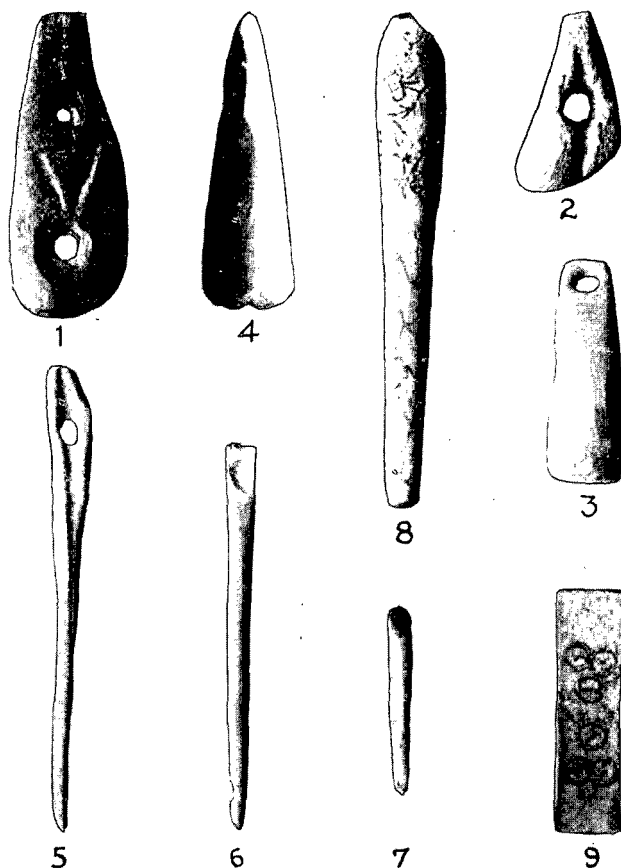


Fig. 15. Objects of Bone from Bac Mhic Connain. (†.)

length, with two grooves cut at right angles on the base to form a cross.

Two bone needles, measuring $2\frac{1}{3}$ inches and 2 inches in length, the second having been broken at the eye and a beginning having been made to drill another from either side (fig. 15, Nos. 5 and 6).

Small bone pin (fig. 15, No. 7), measuring $\frac{3}{32}$ inch in length, carefully made and cut off obliquely at the broad end.

Die of bone (fig. 15, No. 9), measuring $1\frac{5}{16}$ inch by $\frac{3}{8}$ inch by $\frac{3}{8}$ inch, with three, four, five, and six dot and circle designs on the four sides.

Spatulate implement of cetacean bone, measuring $9\frac{9}{16}$ inches in length, the under side of the point worn smooth by rubbing. One side of the object shows a hollow curve for the greater part of its length, and the other contracts in two steps to form the handle (fig. 12, No. 10).

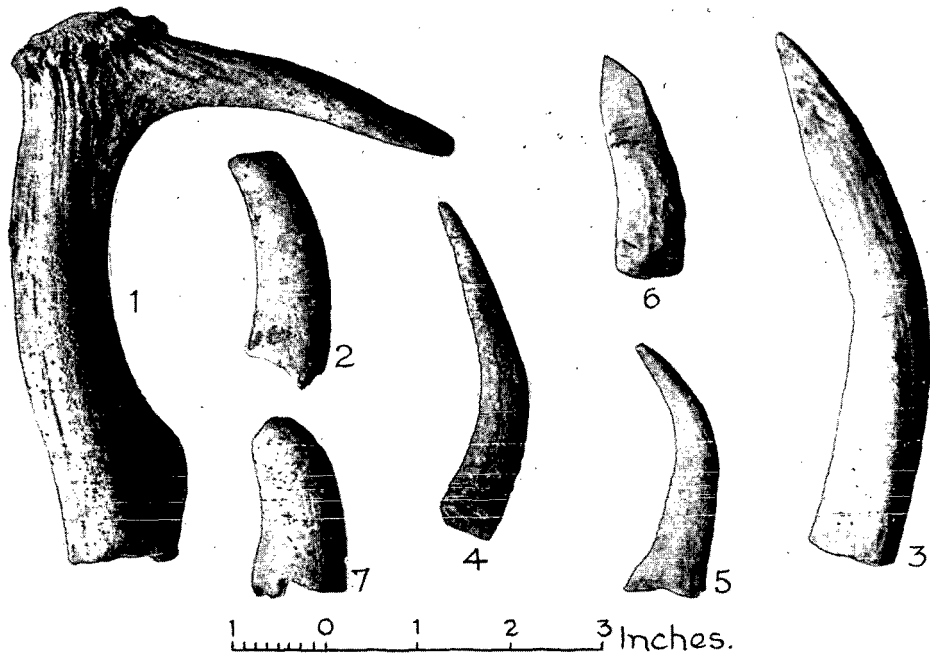


Fig. 16. Pick and Pointed Tines of Deer-horn and part of a Tooth of Morse Ivory from Bac Mhic Connain.

Dorsal bone of a cetacean.

Dorsal plate of a cetacean, with a perforation in the centre, measuring 5 inches in greatest diameter (fig. 12, No. 4).

Oblong plate of cetacean bone, with concave ends, measuring 5 inches in length and $3\frac{1}{8}$ inches in breadth (fig. 12, No. 11).

Pick of deer-horn, measuring $5\frac{7}{8}$ inches in length, showing a greenish stain at the point of the tine (fig. 16, No. 1).

Point of a tine, measuring $2\frac{1}{2}$ inches in length, the tip worn flat by rubbing, and broken off at the broad end (fig. 16, No. 2).

Tine, measuring $5\frac{3}{4}$ inches in length, sharpened at the point, and showing a shallow, conical socket at the broad end (fig. 16, No. 3).

Three points of tines, measuring $2\frac{7}{16}$ inches, $2\frac{5}{8}$ inches, and $3\frac{5}{8}$ inches in length, sharpened at the tips (fig. 16, Nos. 4 to 6).

Tip of a tooth (morse ivory), measuring $1\frac{1}{8}$ inch in length, sawn across the broad end where there is a shallow, bored socket, the point showing evidence of rubbing (fig. 16, No. 7).

Pin-head of bone of flattened spheroidal form, flat on the under side, with a large, oval, transverse perforation and a smaller one on the under side, showing the remains of the iron pin to which it was attached, measuring 1 inch in greatest diameter and $\frac{3}{4}$ inch in height.

Piece of the leg bone of a sheep, measuring $2\frac{1}{16}$ inches in length, splintered at the middle, and showing a green stain.

Thin rectangular plate of deer-horn, measuring $2\frac{1}{2}$ inches by $1\frac{1}{8}$ inch, sawn across both ends, and fragment of another, splintered at one end, measuring $4\frac{3}{8}$ inches in length.

Four small squared blocks of cetacean bone, measuring $1\frac{1}{16}$ inch, $1\frac{7}{16}$ inch, $1\frac{1}{4}$ inch, and $1\frac{5}{32}$ inch in length.

Three fragments of cetacean bone with cut marks.

Bone of a large bird carefully cut across both ends, measuring $9\frac{1}{16}$ inches in length; and part of another, measuring $1\frac{1}{2}$ inch in length, ground at one end.

Besides these, seventy bones showing cuts, one hundred and thirty pieces of deer-horn, seventy fragments of cetacean bone (including a dorsal plate of a whale, $9\frac{1}{2}$ inches in diameter), five large vertebræ of whales cut to form seats, and a large slab measuring 2 feet 6 inches long, from 7 inches to 9 inches broad, and 2 inches thick, and a boar's tusk, were recovered.

POTTERY.

Small fragment of the rim of a bowl of Samian ware.

Three discs made from shards of hand-made pottery, ground round the edge to circular or sub-oval shape and measuring $1\frac{3}{8}$ inch, $2\frac{1}{4}$ inches, and $2\frac{3}{4}$ inches in diameter.

Disc of yellow clay, burnt hard and perforated eccentrically, measuring $2\frac{7}{16}$ inches by $2\frac{1}{8}$ inches in cross diameters.

Six crucibles of clay, with triangular mouths, the bottoms fused by heat (fig. 17, Nos. 1-5). Three are complete and another nearly so, the remaining two being represented by a piece of the wall and by a basal fragment. The measurements of the height and the width of the mouth of the first four are $2\frac{1}{8}$ inches by $1\frac{3}{4}$ inch, $1\frac{3}{32}$ inch by $1\frac{3}{8}$ inch, $1\frac{2}{32}$ inch by $1\frac{5}{16}$ inch, and $1\frac{1}{2}$ inch by $1\frac{3}{32}$ inch.

Half of a clay mould for casting a triangular ornament with a circular ring at each angle, measuring $1\frac{2}{3}$ inch in diameter (fig. 17, No. 6). The runner and two projections for keying it to the other half survive.

Part of a clay mould for casting a flat ring about $2\frac{1}{4}$ inches in diameter, one of the key projections surviving (fig. 17, No. 7).

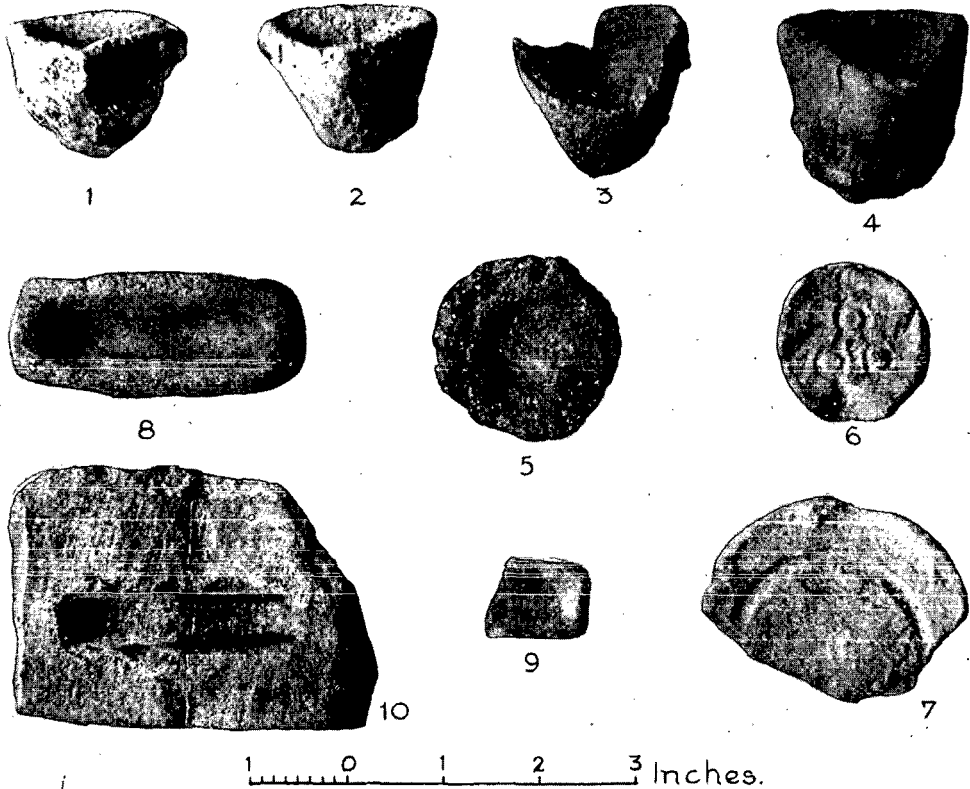


Fig. 17. Crucibles and Moulds from Bac Mhic Connain.

Oblong clay mould, measuring $3\frac{1}{2}$ inches by $1\frac{9}{32}$ inch by $\frac{31}{32}$ inch, for casting a bar or ingot, and part of another mould of similar character (fig. 17, Nos. 8 and 9).

About one-third of a carefully made flat disc of pottery with a perforation in the centre. It has been $7\frac{3}{4}$ inches in diameter and is $\frac{15}{16}$ inch thick.

Five small wall fragments of hand-made vessels of red, brown, and grey clay, each encircled with an applied wavy or zigzag moulding.

Small wall fragment of a vessel of red ware with a horizontal applied narrow band, with notches in it about seven to the inch.

Small wall fragment of a vessel decorated with a horizontal, applied, high, narrow, semicircular moulding from which springs a wavy or zigzag pattern.

Three rim fragments of brown and red vessels, two everted at the lip and one nearly vertical at the brim. One has a transverse groove on the inside 2 inches below the lip, and another a similar groove $\frac{7}{8}$ inch below the brim.

Two basal fragments of vessels, the larger measuring $3\frac{3}{4}$ inches across the base.

Vessel of ovoid shape, imperfect at the lip, of buff-coloured ware, the upper part being blackened (fig. 3). It measures 13 inches in present height, $10\frac{7}{8}$ inches in greatest diameter, and $3\frac{1}{4}$ inches across the base, the wall being $\frac{7}{16}$ inch thick.

About one hundred and fifty more shards were found, of which about one in four bore applied wavy or zigzag ornamentation.

Although the number of pieces of pottery received into the Museum forms a very small proportion of those found, it is quite clear that the vessels from this site must have been similar in general form and ornamentation to those found at Foshigarry and on other earth-house and kitchen-midden sites in the outer Hebrides.¹ The only vessel which was recovered in a fairly complete condition was the large oviform pot shown in fig. 3.

The proximity of the earth-houses at Garry Iochdrach and Bac Mhic Connain to those at Foshigarry, described in last year's *Proceedings*—they lie about two and a quarter miles apart—invites comparison, both as regards structure and relics found. All the radial cells in the western chamber at Bac Mhic Connain seem to have had domed roofs, and Mr Beveridge considered that the eastern detached chamber at Foshigarry had had a similar covering. This form of roofing is to be seen in the outer buildings in the broch of Jarlshof in Shetland. In these cases the radial walls were bonded into the outer enclosing wall. But in Garry Iochdrach and in the two intercommunicating larger chambers at Foshigarry, as in other circular earth-houses in this part of North Uist excavated by Mr Beveridge, the radial divisional walls stopped short of the enclosing wall, in which there were no signs of inward corbelling. From this it was deduced that the cells were roofed with lintels resting on the divisional walls as in the partly subterranean "wags" or galleried buildings of Caithness.

¹ See my report on the relics found at Foshigarry in *Proceedings*, vol. lxxv. pp. 342 ff.

Like the buildings at Foshigarry, the earth-houses at Garry Iochdrach and Bac Mhic Connain had a regular system of drains under the floor, and box-like receptacles.

A new feature encountered at Bac Mhic Connain was the structure supposed to have been a furnace for the melting of metals. If further evidence were necessary to prove that the working of these materials was one of the crafts carried on here, there are crucibles, moulds of clay and stone, and pieces of iron slag. The crucibles and the moulds of clay at least were no doubt used in the manufacture of bronze objects. Crucibles like those found at Bac Mhic Connain, with a triangular mouth and a conical base, have been found in the fort on Traprain Law, and in the vitrified fort, the Mote of Mark, in the Stewartry of Kirkcudbright.

An examination of the relics unearthed shows that long-handled combs, awls, and borers, of cetacean and other bone, worked tines and other portions of antlers of red-deer, hammer-stones, pot-lids and strike-a-lights of stone, pieces of pumice showing signs of rubbing, crucibles, slag, and pottery of the same kind, were found in all three earth-houses. Hammers and dorsal plates of cetacean bone, and cylindrical objects encircled with oblique grooves formed by friction (fig. 4, Nos. 2-4),¹ dice, needles, harpoons or spears, and handles of implements ornamented with dot and circle designs, of bone, were common to Bac Mhic Connain and Foshigarry, and small-toothed combs, whistle-like objects of deer-horn, and whorls to Garry Iochdrach and Foshigarry. Roman relics were discovered in Bac Mhic Connain and Garry Iochdrach, a small piece of Samian ware being recovered from the former site, and a coin of the fourth century from the latter.

Although, as we have seen, Bac Mhic Connain has produced many types of relics similar to those found at Foshigarry, the large notched implements formed of ribs of whales which were one of the outstanding features of the collection from that site,² are entirely absent, the nearest approach to them being the large spatulate implement with a rounded point worn on the underside like those from Foshigarry, but with a constricted handle without notches (fig. 12, No. 10). Nothing resembling them was found at Garry Iochdrach. Evidently these implements were used for some special industry which was carried on at Foshigarry and in none of the earth-houses so far excavated in the neighbourhood.

Quite a number of objects of exceptional interest were found at Bac Mhic Connain. These include the hollowed segment of an antler

¹ See also *Proceedings*, vol. lxx. p. 330, fig. 13.

² *Ibid.*, vol. lxx. pp. 307-9.

with deep broad cuts on opposite sides (fig. 12, No. 2), the two-pronged implement (fig. 12, No. 8), the V-shaped object (fig. 12, No. 9), the stamp (fig. 15, No. 4), the triangular ornament with the ring at the apex (fig. 14), and the knife-haft with the Ogham inscription, of cetacean bone, which so far as I am aware are new to Scottish archæology. No explanation as to the purpose of the first three of these relics has been forthcoming. As for the stamp, it is difficult to conceive any other use for it than for stamping decorative designs on pottery, but no ware showing the pattern that it would produce has yet been recorded on the innumerable shards found on Hebridean sites of its period. Although

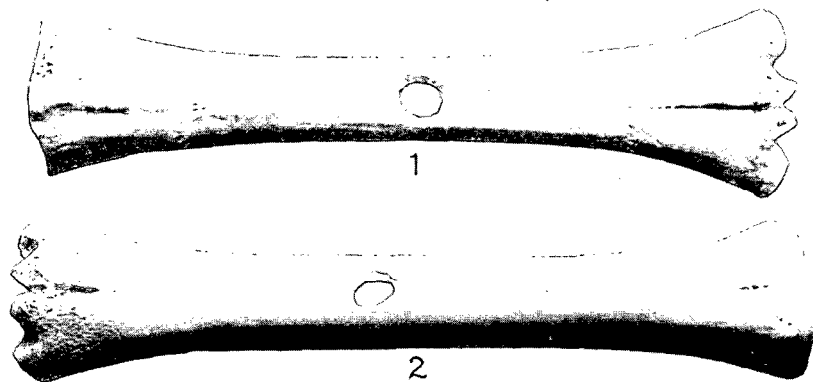


Fig. 18. Perforated Metatarsal Bones of Sheep from Bac Mhic Connain. (†)

the triangular bone ornament is the only example of its kind recorded, its double is to be found in an ornament of bronze of almost similar shape and size, which was discovered in the Lochlee Crannog, Ayrshire.¹ This object has even the transverse slit on the underside of the base, but, in addition, has a pin-hole for more secure attachment. The mouldings at the junction of the ring and the triangle in the bone ornament show an attempt to reproduce in bone the trumpet-shaped curves so characteristic of Scottish Early Iron Age ornaments, the so-called Late Celtic designs, but the craftsman who carved the object, whether from want of skill or because of the intractability of the material, had not been able to reproduce the fine curves of the bronze ornaments.

The bone die adds another to the growing list from earth-houses and brochs.²

¹ Munro, *Ancient Scottish Lake-Dwellings*, p. 132, fig. 147.

² *Proceedings*, vol. lxxv. p. 354.

Two metatarsal bones of sheep with a perforation in the centre of the shank were found at Bac Mhic Connain (fig. 18), but although we have to confess that their purpose is not apparent, such objects have been found on widely separated sites in Scotland inhabited during the time

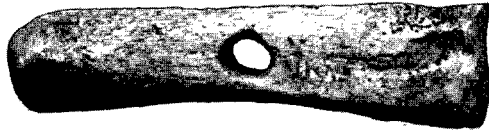


Fig. 19. Perforated Bone from Tota Dunaig, Vallay, North Uist. (†.)

of the earth-houses. Single examples were found in the Borness Cave, Stewartry of Kirkeudbright, in the extreme south of Scotland, in the Roman fort at Mumrills, in central Scotland, in the Elsay Broch and Road Broch, in Caithness, in the brochs of Lamaness and Aikerness, in Orkney, and in a kitchen-midden, probably adjoining an earth-house, at Bragar, in Lewis, in the extreme north and north-west of the country. A small example made from a bone of a sheep was discovered in an underground structure at Tota Dunaig, Vallay, North Uist (fig. 19).