

Dun Troddan. He represents the latter as standing erect to a height of 33 feet, presumably above ground level, with its circumference almost complete, except for a gap in the upper part of the wall at one side. Pennant visited the sites in 1772 in the course of his voyage to the Hebrides. He found the height of Dun Troddan to be only 24 feet 5 inches, not much exceeding what that dimension is at the present day (fig. 2); and his illustration shows that whereas the total bulk of the ruin



Fig. 1. View of Dun Troddan, looking up the glen.

has probably been reduced, the elevation has suffered but slightly since that date. It is of interest to note his remark that he could perceive no traces of the winding stairs mentioned by Gordon: "but as these buildings have suffered greatly since that gentleman saw them, I have no doubt of his accuracy"—an expression of faith since justified. Both brochs have been placed under the charge of His Majesty's Office of Works, and with a view to effect their better preservation they have been excavated.

The excavation of Dun Troddan, which had been under way for some time, was completed in the late summer of last year (1920), and I was privileged to superintend the final stage, with somewhat happy results. The broch conforms to type, and, while it remains complete on ground plan, for only about one-third of its extent does its elevation

exceed a few feet (fig. 3). The high portion, however, rises to nearly 25 feet, and shows the remains of three galleries. The entrance is towards the south-west, and looks down the glen. Likewise it faces in the direction of a small rivulet not many yards away, which must have afforded the occupants a never-failing supply of water. To bring the level of the solum beyond the entrance to that of the floor of the passage a pavement has been laid on the outside, measuring some

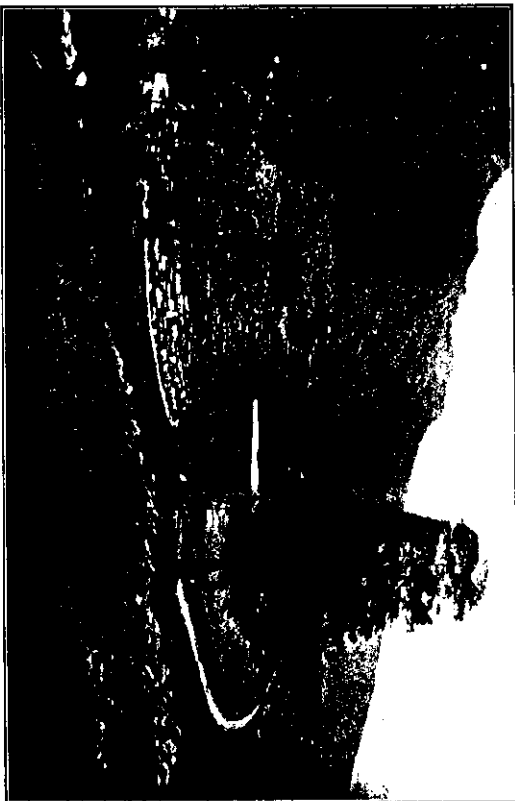


Fig. 2. View of Dun Troddan, looking down the glen.

20 feet in length and 6 feet in breadth. On the right-hand side of the entrance this pavement only extends for 1 foot past the door jambs, but on the left it extends for a distance of 15 feet, running into the level of the foundation. An opening 2 feet 9 inches wide forms the outer end of a passage leading inwards for a distance of 4 feet 6 inches, at which point it expands to 5 feet, thus forming checks for a door, 6 inches wide on the left and 2 feet on the right. This wider portion extends inwards for a farther distance of 9 feet, making the entire passage 13 feet 6 inches in length. The wall of the broch—here at its narrowest—at other parts of the periphery expands to 15 feet. At 4 feet in from the door-check on the left is the entrance, 2 feet 7 inches wide, to a guard chamber, built in the thickness of the

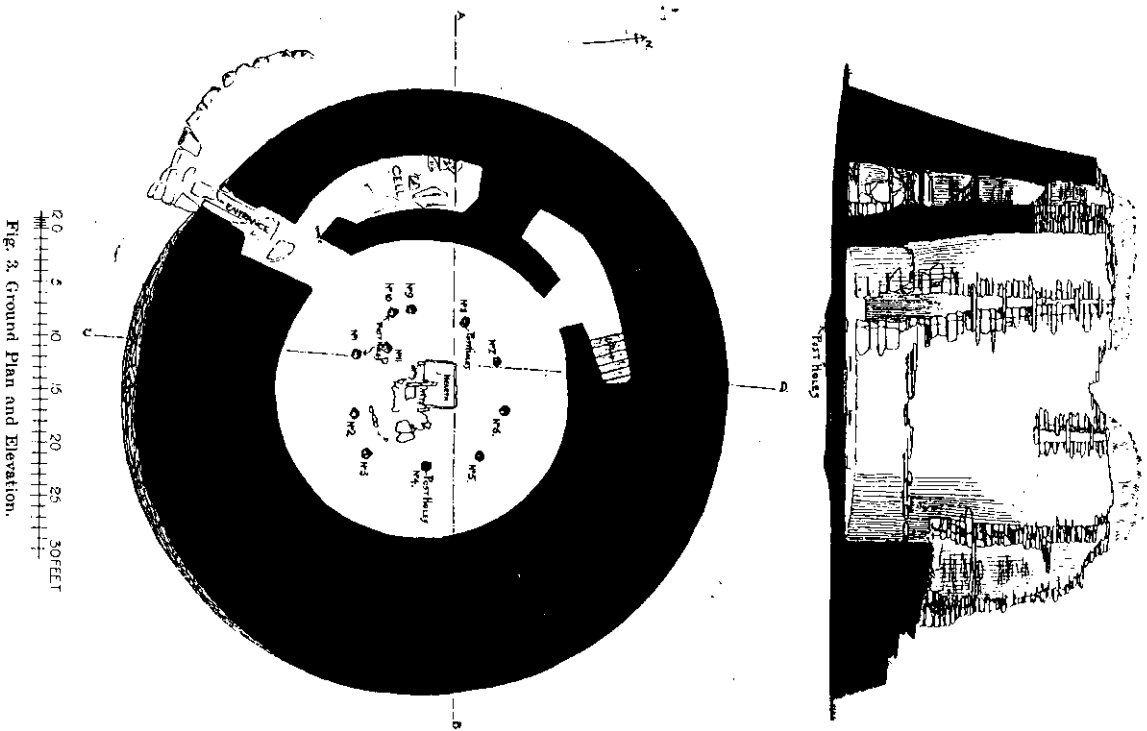


Fig. 3. Ground Plan and Elevation.

THE BROCH OF DUN TRODDAN, GLEANN BEAG, GLENELG. 87

wall, and nearer to the inner than the outer face, with a breadth at ground level of 5 feet, and extending inwards following the curve for 17 feet 9 inches. The greater portion of the roof of this chamber is gone. The floor of the entrance passage lies at a lower level than the floor of the court, and on entering the interior there is a sharp rise of 1 foot 6 inches from the edge of a small circular area into which the passage opens. The interior court has a constant diameter of 28 feet. One quarter of the way round the periphery to the left from the entrance, is a doorway 3 feet wide, which gives access to the stair rising to the right, and to a chamber extending for 6 feet to the left of the opening. This chamber is covered with a beehive roof. With nine steps the stair leads up to a landing on the first gallery, along which, at a distance of 18 feet 6 inches, it has evidently risen again, but of this portion only one step remains. Above the entrance from the courtyard which gives access to the stair the opening has been carried upwards as high as the wall remains, in diminishing breadth from 2 feet 6 inches to about 6 inches, crossed at irregular intervals by long slabs tying the opposite wall faces. The lowest of these ties has evidently occurred at the level of the first gallery, and the next at that of the second, but above this their occurrence is irregular, and there is not one directly opposite the floor of the third gallery, the nearest being some 8 or 9 inches below. Commencing at the level of the last-mentioned slab, and 11 feet farther round the periphery, occurs another similar opening only about 1 foot 6 inches wide at the bottom, likewise diminishing upwards, and crossed by slabs at intervals of about 2 feet. Of the three galleries which remain, as shown in the section in fig. 3, the lowest has a height of 5 feet and a breadth of 3 feet 6 inches on floor, diminishing upwards, while the gallery above has a height of 6 feet 6 inches and a breadth at floor level of 2 feet 9 inches. The uppermost gallery has apparently had a height of 5 feet 6 inches. The sides of these galleries appear to be more carefully finished than those of the galleries in the lower broch. The broch wall shows the customary batter. On the interior face, at a height of about 6 feet, occurs a ledge or scarrement formed by an intake of the wall above.

The masonry is of the usual character, formed of large blocks, some of them boulders that have been purposely split, with the interstices neatly filled with spalls.

Before excavation the soil had accumulated to a height of 5 feet on the outside, and the mass in the interior was at least 4 feet deep. On visiting the broch in the latter half of August, I found the excavation had been completed, but for a heap of soil which remained in

the centre of the courtyard measuring some 9 feet by 7 feet, and 4 feet in height. Immediately to the north of this, and between it and the entrance to the stair, there had been laid bare on the very bottom, on the gravel subsoil, a well-formed rectangular oblong hearth measuring 4 feet 6 inches by 3 feet, paved and neatly surrounded by kerb-stones (figs. 4 and 5). Its main axis lay practically east and west, and while its position was almost equidistant



Fig. 4. Plan and section of the two lower hearths.

from the wall of the broch on the east and west, it was 3 feet nearer to the face of the wall on the north than it was to it on the south. The reason for this will become apparent later on. The mass of soil showed no definite stratification, but we proceeded to remove it in horizontal layers from the top, noting any peculiar features that presented themselves. Throughout there were remains of numerous fires in the shape of charcoal and peat ash, showing that there had at all times been shelter here for the fugitive and the vagrant. Some 6 inches below the surface there occurred a layer of flat stones with charcoal and a certain amount of burnt bone on the top of them; 4 inches lower, more flat stones were met with, having charcoal and small particles of burnt bone above, and, at about this level, we found a small oblong piece of

shaped bone measuring 1 $\frac{1}{2}$ inch by $\frac{1}{16}$ inch with a perforation towards one end. At 2 feet 6 inches above the bottom we encountered another thick layer of charcoal-unassociated with paving, and found adjacent a small disc of stone about 6 inches in thickness. Underneath this was a layer of peat about 6 inches in thickness. Beneath this again occurred a thick band of tumbled stones which possibly correlated the fall of the upper part of the broch, whenever that had occurred. Below this, at 2 feet 1 inch above the floor of the original hearth, appeared the upper edges of two stones set on edge, evidently portions of another hearth. The subsequent removal of the soil disclosed a similar arrangement of stones at right angles, and another parallel, these

being the one end and part of the two sides of the hearth, the other end of which must have been unwittingly cleared away in the earlier conduct of the excavation. This hearth was so oriented that it crossed the original hearth at an angle of about 45°. The breadth over all was about 2 feet 6 inches, and 2 feet 1 inch within the kerbs. The paving that formed its floor, a small portion of which remained, was some 13 or 14 inches above the ground level. A bed of peat ash 4 inches deep



Fig. 5. View of part of the interior showing hearths and post-holes.

covered it. A small piece of iron, probably a nail, was found on the floor; also a perforated bone disc about the size of a halfpenny.

Immediately beneath this hearth, and placed so as to cross the original hearth at right angles, were the remains of another, one end of which had also been carried away in the earlier excavation (figs. 4 and 5). A long slab of schist, 3 feet in length, formed the west side, while two shorter ones amounting in length to 20 inches formed the east. The back kerb was gone, but the paving remained, and lay at a level of 11 inches above the bottom of the primary hearth. The width over all was 33 inches, and inside the kerbs 25 inches. As far down in the mass of debris as the level of this second hearth there occurred a certain amount of displaced building material, including a few largeish channel stones of from 8 to 10 lbs. weight, as well as small flat pieces which had probably been employed in the building.

The second hearth was left undisturbed, but the remainder of the mass of debris around it was removed. In this, some 9 inches above floor level, there were found at one or two places small deposits of bright yellow clay. From the same level came a segment of the upper stone of a quern showing a perforation on the upper surface to hold a handle. Alongside lay a flat oblong pebble about 6 inches in length, slightly abraded at one end.

Throughout the mass at various levels we got egg-shaped pebbles, evidently, from their uniformity, specially selected, and of such a size as could comfortably be held in the palm of the hand. None of them were fractured or showed signs of having been in a fire. As none above the ground level could have come naturally into the brooch, and as they were certainly not building material, they must have been brought in for some other purpose, possibly to be used as missiles.

In order to settle a question regarding the original levels at the inner end of the entrance passage, I had the inch or two of discoloured soil removed which was covering the top of the gravel subsoil within the court. In the course of this operation I observed, as the gravel surface was cleared, at a spot somewhat in alignment with the western end of the primary hearth, a band of discoloured soil about 7 inches wide and extending to 7 or 8 inches in depth into the gravel, lined with stones on the sides. This we followed to the southward for a distance of 18 inches, and found it led into a small pit with a diameter of about 2 feet, lined with four slabs and filled with wet discoloured silt. The lining slabs were rather irregularly placed against the sides, and on the bottom, 1 foot 9 inches below the surface, lay other two slabs, one on the top of the other. These lay on a clean gravel bed 2 feet 1 inch below the surface.

The full significance of this discovery did not dawn on me at once. The channel leading into the pit and the black silt-like contents of the latter heavily charged with water, suggested drainage, especially as the pit (No. 1 on plan, fig. 3) was on the lower side of the court. After a night's reflection, however, the presence of the flags in the bottom gave me the clue, and I returned to the brooch, found the centre, took a radius from there to the pit, and drew out a circle with the point of a pick on the surface. On this line, 4 feet 9 inches to the eastward of the first pit, we struck a second at the same distance as the first, 6 feet 6 inches, from the inner face of the wall. Thereafter, either on or to one side or other of the line of the circumference we located ten others. Though brown spongy matter was observable in several, actually in one hole, No. 6, which had been sealed on the surface by a large stone, the remains of decayed wood, recognisable by its fibrous character, were still visible.

The post-holes were eleven in number, about 1 foot 9 inches deep and 1 foot to 14 inches in diameter. With the exception of one post-hole almost opposite the entrance they were placed at distances of from 6 feet to 7 feet out from the wall face. The distances apart are less constant. Between the holes Nos. 1 and 2 there is a distance of 4 feet 3 inches. No. 3 is only 3 feet beyond No. 2, but between Nos. 3 and 4 we have a space of 5 feet; between 4 and 5, a distance of 4 feet 6 inches; a space of 4 feet between 5 and 6; 3 feet 9 inches between 6 and 7; 4 feet between 7 and 8; and 4 feet 3 inches between 8 and 9. When we come to regard the positions of the post-holes opposite the entrance we have a different state of matters. No. 10 is only about 9 inches apart from No. 9; and while No. 11 is 2 feet 4 inches away from No. 10, it is placed a couple of feet nearer the centre of the court than any of the other post-holes. It is also only 2 feet distant from No. 1. From the positions of these post-holes it is evident that some special circumstances controlled the arrangements of the posts in the neighbourhood of the entrance. The purpose of these holes was obviously to hold posts intended for the support of the front of a roof, the back of which rested on the scarpment which, as mentioned above, ran round the inner face of the wall at a height of about 6 feet from the ground. A corridor or gallery was thus formed around the court, leaving an area in the middle open to the sky.

The meaning of the arrangement of the post-holes in front of the entrance is a little difficult to understand; but if we may assume that the corridor was closed in between the posts, and on either side of the entrance, and was not a mere colonnade, a suggestion presents itself. The orientation of the primary hearth is peculiar. It is unlikely that it was placed by chance, not only eccentrically but also anglewise to the two principal features of the interior, the main entrance and the entrance to the stair. The position of such an important structure as the hearth was, I have no doubt, carefully considered, regularity and method being characteristic of the brooch-builders' erections. The west end of the hearth is placed practically in alignment between posts 7 and 11, and equidistant from either. Now, post No. 1 is only 2 feet distant from No. 11, and so placed as to allow of an increased space between the hearth and the front of the corridor on the south. If we imagine a gate or door giving access to the interior between these two posts, then we can understand the reason for the position and orientation of the hearth—the former to allow more free space to those entering, and the latter that it might lie parallel to the line of entrance. But this extra space only exists in relation to the three post-holes, Nos. 1, 2, and 3, on the south arc of the circle. This

suggests to my mind that the actual entrance into the corridor was between posts 2 and 3, which are placed more closely together than any other pair on the circumference, except those at the entrance, they being only 3 feet apart. It will be observed that there is a post-hole almost directly in front of the entrance to the stair; whence, if the front of the corridor had been open, one might have expected an unimpeded access to the hearth. As for the post in No. 10, its purpose would be mainly to support the roofing between it and No. 1, as the span between 9 and 1, being only 5 feet 6 inches, would not be too great for such a beam as could be obtained. I make this suggestion with due reserve, for I quite recognise that a weak point in it is the absence of post-holes between the inner ends of the passage walls and the adjacent post-holes, Nos. 10 and 1. There ought to have been posts against the wall. Unfortunately, the soil on both sides was broken down, probably in the later occupation, and any evidence that might have existed had been removed, there being, it will be remembered, a depression into which the passage opened. The point, however, should be borne in mind by future excavators of brochs. The existence of a ledge or scarpement at about the level of the first gallery around the interior wall face of almost every broch, which still exists to a sufficient height, has long convinced me that the hypethral or roofless theory of the broch interior was a false one. If my suggestion as to the character and arrangement of the front of the corridor be correct, it may help to confound another theory which I believe to be equally false, namely, that into the interior court cattle and flocks were driven for protection. It was interesting to see in a comparatively recent issue of the *Illustrated London News* a fanciful illustration of this very broch of Dun Troddan showing cattle and sheep in the interior keeping company with killed savages supposed to be its occupants.

I am unable to say what the shallow trench was that directed me to the first post-hole. Possibly it originally held a beam or tree trunk, the sill of the supposed door.

The relics which this broch has yielded are singularly few. They include seven stone whorls, two perforated discs of schist, $4\frac{1}{2}$ inches and $7\frac{1}{2}$ inches in diameter respectively, the stone pounder mentioned above, a small waterworn pebble worn at the edges by use as a polisher, a curved object shaped out of whalebone $6\frac{1}{2}$ inches in length along the outer curve, a small yellow discoid bead of vitreous paste $\frac{3}{16}$ inch in diameter, and a large number of ovoid pebbles. There was not a trace of pottery.

The primary hearth in its rectangular oblong form at once reveals the hearths laid bare in our excavations on Traprain Law. Now, hearths

of this type, as a rule, do not belong to the lowest level of occupation there, but are of frequent occurrence on the levels of the post-Roman period. One does not know exactly when the circular form of hearth gave place to a rectangular one, but if it was not in common use till subsequent to the second century on Traprain Law, the presumption is it was at least as late at Glenelg. The small discoid bead of yellow vitreous paste is of a style that has been found in the broch of Dun-an-lardhard in Skye, also associated with Roman remains on Traprain Law, and similarly associated with second-century relics in the Fort of Castlehill, Ayrshire.¹

The paucity of relics within this broch surely implies that it was not used over any considerable length of time for continuous occupation, and the fact of the existence of the three hearths each overlying the other supplies us with evidence of the discontinuance of the occupations over a period sufficiently long for the soil and debris to have accumulated and to have concealed the construction of the earlier occupants. As long as the broch remained intact and suitable for defence, so long probably was the central position of the hearth rigidly adhered to; but, as I have pointed out, the amount of building material in the mass, the excavation of which I supervised, immediately overlying the uppermost hearth, points to a serious ruination having occurred during or immediately subsequent to the occupation which that hearth denotes.

Interesting as the discovery of these post-holes is in the elucidation of the broch construction, the interest it evokes does not stop there. The arrangement at once recalls the plans of the wags or galleried dwellings in Cairtness, and the structures to which the late Mr Erskine Beveridge gave so much attention in North Uist. In both these regions timber is scarce, and stone pillars, etc., were consequently employed as a substitute for carrying roofs. The plan of the earth-house on Machair Leathann in North Uist (fig. 6), here reproduced from Mr Erskine Beveridge's *North Uist*,² gives a fair idea of what the interior of Dun Troddan was probably like, and it will be observed that there the chambers are closed towards the interior. Such an arrangement may possibly also have existed in some of the larger hut-circles, many of which are to have been spanned by a roof; and may not the last survivor be the hearth in the middle of the floor of the fast-disappearing Highland black house, with the hole in the roof for the escape of the smoke?

For the benefit of any future excavator of a broch, I would like to emphasise the fact that, provided the periphery of the broch is complete, every stone or relic within it that wind or water could not bear thither

¹ *Proc. III.* p. 128.

² *North Uist*, p. 121.

has been so brought by the hand of man either for building material or for some other purpose, and that consequently every stone must be carefully considered. By so doing we may yet learn how the walls

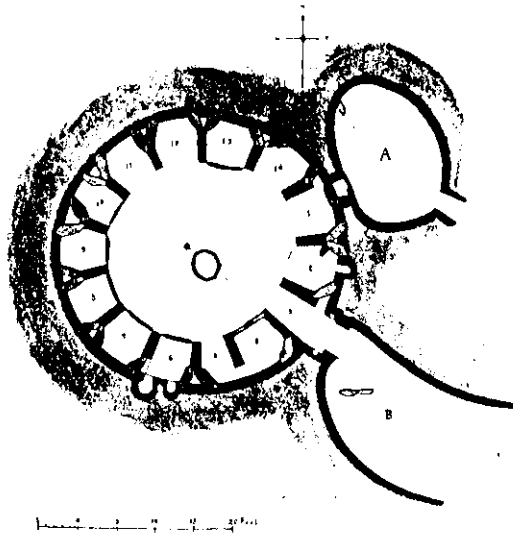


Fig. 6. Plan of Earth-house on Machair Leathann, North Uist.

were completed on the top, and elucidate other facts which perhaps have hitherto been overlooked.

In conclusion, I desire to acknowledge the services of Mr Gregor, the Office of Works foreman, in the intelligent execution of his duties; and to express my thanks to Mr J. Wilson Paterson for the loan of the admirable plans used to illustrate this paper. My thanks are also due to Mr R. W. Sayce, of the University College of Wales, Aberystwyth, for the photograph showing the hearths, from which fig. 5 is reproduced.