

I.

THE BROCH OF MOUSA: A SURVEY BY H.M. OFFICE OF WORKS.
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The Broch of Mousa (fig. 1), in Shetland, is now under the care of the Ancient Monuments Department of H.M. Office of Works, and while certain works of repair were being carried out in 1919 the opportunity was taken to make a complete survey of this important monument.

Sir Henry Dryden visited the broch in 1852, at which date the interior was filled with accumulated debris to a height of about 9 feet. This was excavated by Mr J. Bruce of Sumburgh in 1861; thereafter Sir Henry Dryden revisited and completed his plans. These were published, along with a careful description, in *Archæologia Scotica*, vol. v. Copies of these plans were taken to the site when the Office of Works survey was made, and the purport of this paper is to correct certain errors in Dryden's plans and to add additional information, obtained by a more exhaustive excavation than that undertaken by Mr Bruce.

When work was commenced, it was found that the interior had again filled up to a height of about 4 feet with soil formed largely of droppings from the flocks of seabirds which now inhabit the broch. This was carefully cleared out and the sill of the original entrance discovered (fig. 2). A difference was noted at this point from Dryden's description, which is as follows: "The entrance from the outside to the court is on the west by south (fig. 3). It is 5 feet 3 inches high by 2 feet 11 inches wide. The roof of the passage slopes upwards towards the court. There has been some mutilation about the entrance, and there is a good deal of new work (before 1851) about the inside and outside. Midway along the passage were the usual projecting jambs, within which (eastward) the passage was wider. No bar holes are now visible."

The "roof" of what Dryden considered the passage (fig. 4) is undoubtedly the roof of a chamber over the passage, a feature common to other brochs, *e.g.* in Dun Telve, Glenelg. The floor of this chamber formed the lintel stones of the passage. The ends of some of these can still be traced, and show that the height of the passage had been 5 feet 4 inches. The doorway, as existing in 1852, could not therefore have been the original, thus accounting for Dryden not finding the bar hole, which is on the north side of the passage and approximately 4 feet 9 inches long. Whether the original doorway had been heightened in early

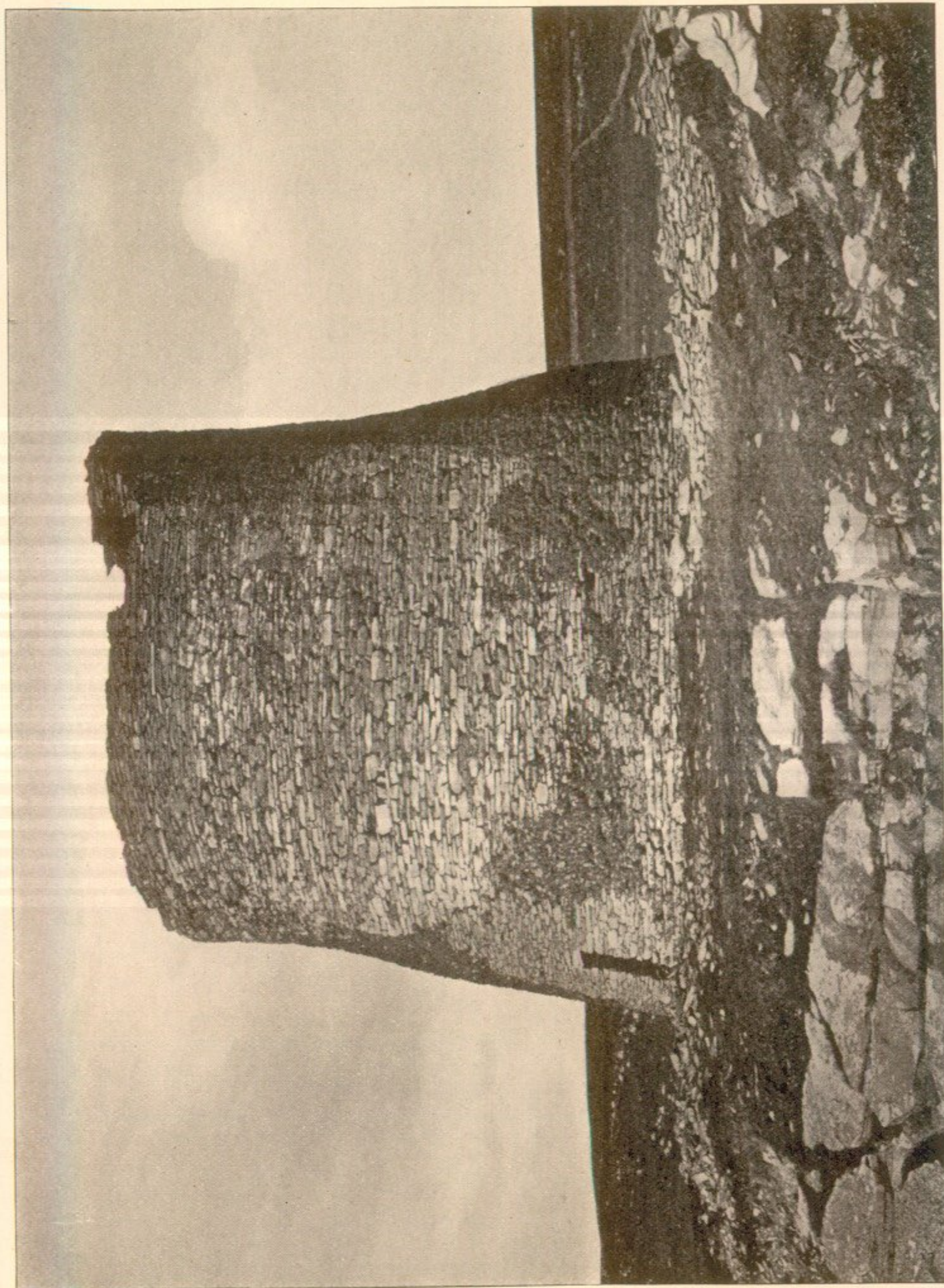


Fig. 1. The Broch of Mousa, on the Island of Mousa, Shetland. (From a photograph by Mr G. W. Wilson, Aberdeen.)

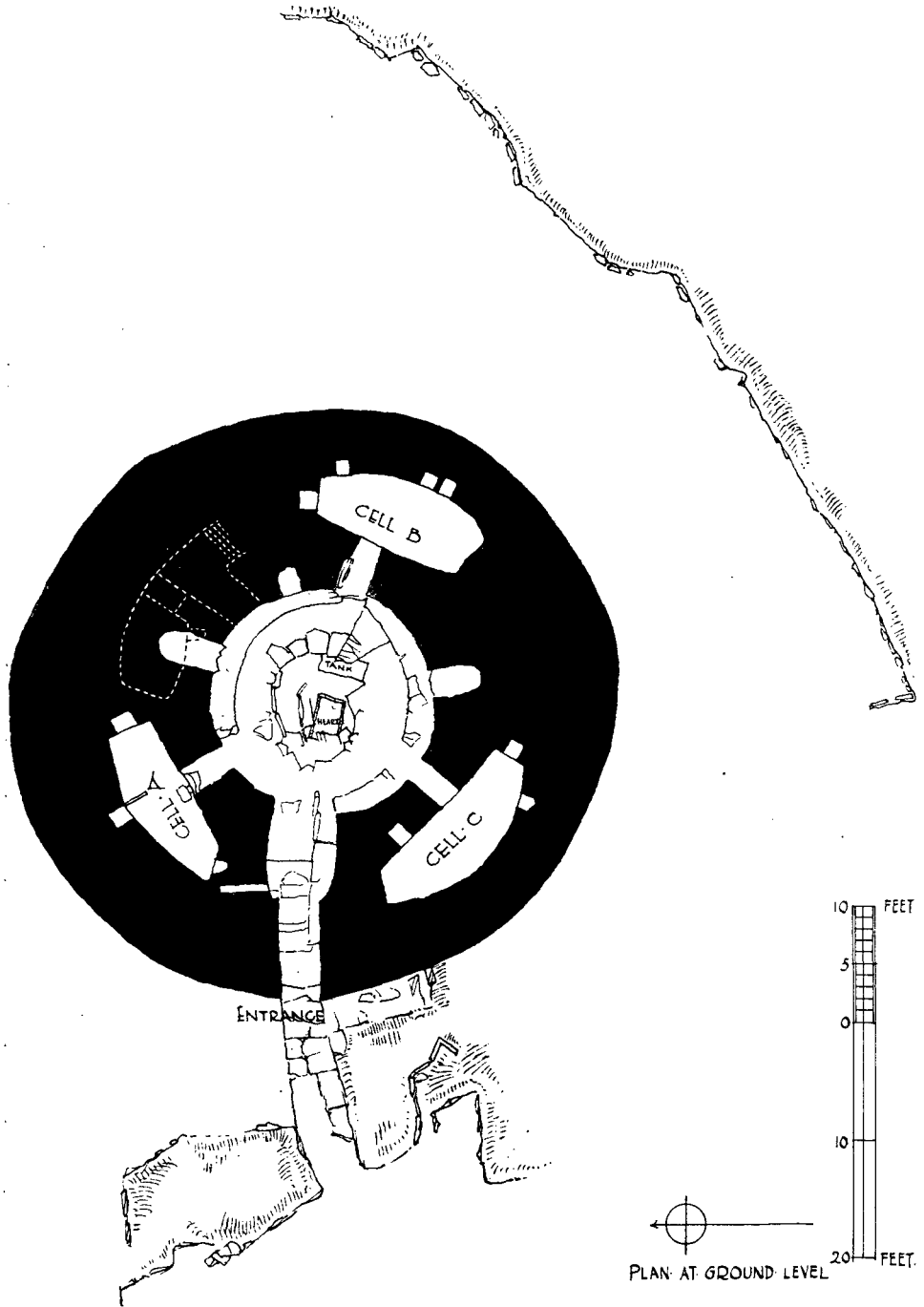
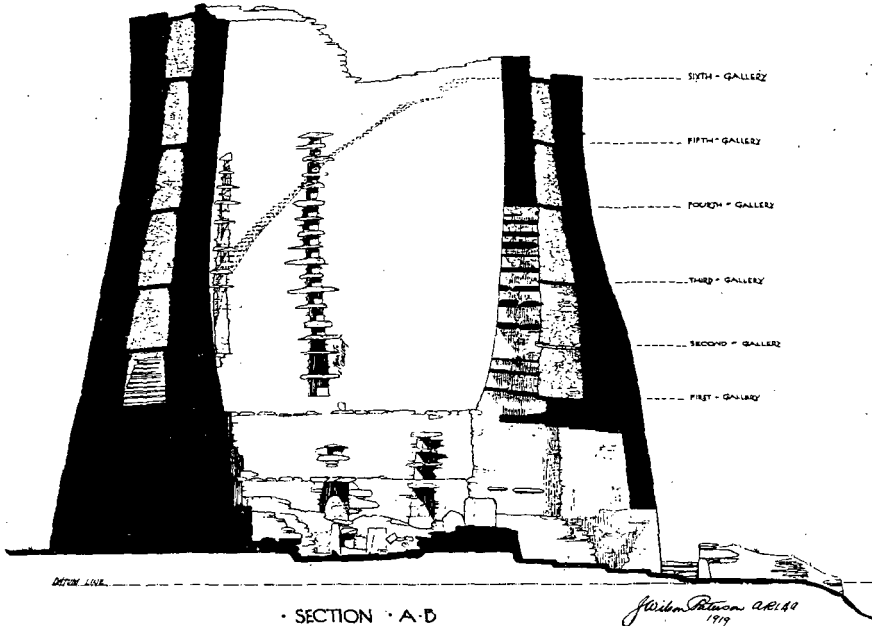
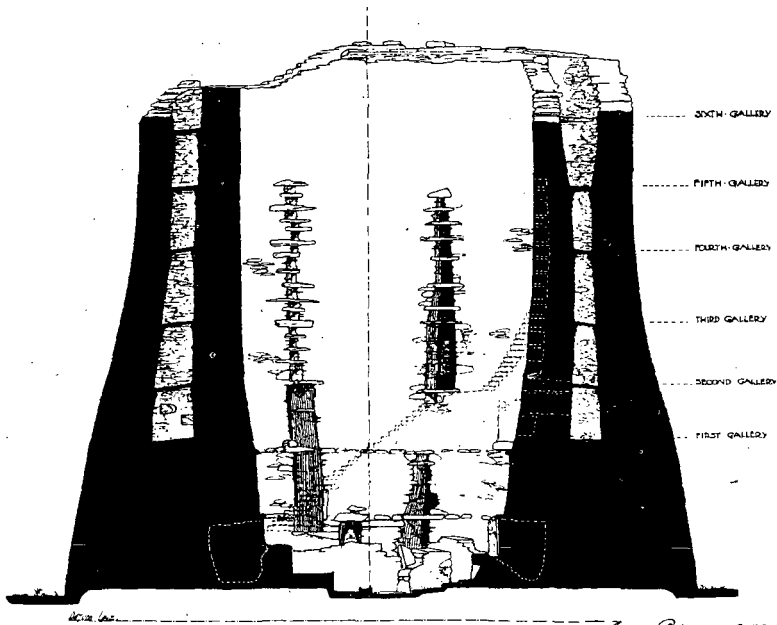


Fig. 2. Ground Plan of Broch and Outbuildings.



10 5 0 10 20 30 FEET



10 5 0 10 20 30 FEET

Fig. 4. Sections showing Galleries.

times, as well as in the past century, it is now difficult to say, although probably it was altered to some extent when the secondary works in the courtyard were carried out, and the floor level raised.

The three large cells marked "A," "B," and "C" on plan (figs. 2 and 6) were carefully surveyed and notes compared with former plans, and here again some slight differences were noted.

Dryden's original sketches are roughly to scale with figured dimensions, and when these were checked they were found to be practically correct. The parts where no sizes occur, however, are in some cases not quite accurate, and have apparently been sketched in.

The cells are entered by passages about 1 foot 9 inches above the hearth level, and Mr Bruce apparently did not excavate below the sill of the passage. It was found, however, that the floors of these cells were about 2 feet 6 inches and 1 foot respectively below the passage, and that the walls near the ground level finished with angles and corners, as shown in the sections. The corners die out about 2 feet up, at which point the walls become domical. The aumbries also were not shown in their correct position.

The projecting ledge in cell "B" is interesting, and may have supported timber beams to form a floor or shelf. In addition to the three cells there are three curious recesses of varying sizes entering from the courtyard. These are now partially blocked by the later additions to be described hereafter.

The entrance to the stair is on the north-east side (fig. 4), and at a height of 5 feet above the hearth level. The stair rises to the right, but does not run in one continuous flight as indicated by Dryden, being broken at the second gallery level by a landing about 3 feet 8 inches long. It is curious to note that the window opening at the east, immediately opposite this landing, is much wider than the other two, and that the cross ties are missing, which suggests a doorway.

On the first gallery level a number of slabs at the "landing" opposite the stairs are missing (figs. 4 and 8), and there are no signs that they existed nearer to the stair than indicated on the plan. The opening on the north-east side, like that on the second gallery level, has no cross ties, and is apparently another doorway. Two curious stones project across the gallery at the north side, partially blocking the passage.

On the third, fourth, and fifth galleries there are no special features. There is, however, a considerable narrowing of the walls and galleries on the south-west segment, especially at the upper levels. In addition to the three ranges of window openings there is a range of recesses constructed on similar lines to the window openings, but the recesses in

this case, with the exception of the second and third from the bottom, do not go through the wall, and are on the average about 16 inches deep. This curious fact is not noted by Dryden.

When the courtyard was cleared, the remains (fig. 3) were found to be much the same as those shown on the previous plans, which Dryden describes as follows: "Round the floor of the court, attached to the wall, or rather forming part of it, is a bench or ledge about 1 foot high

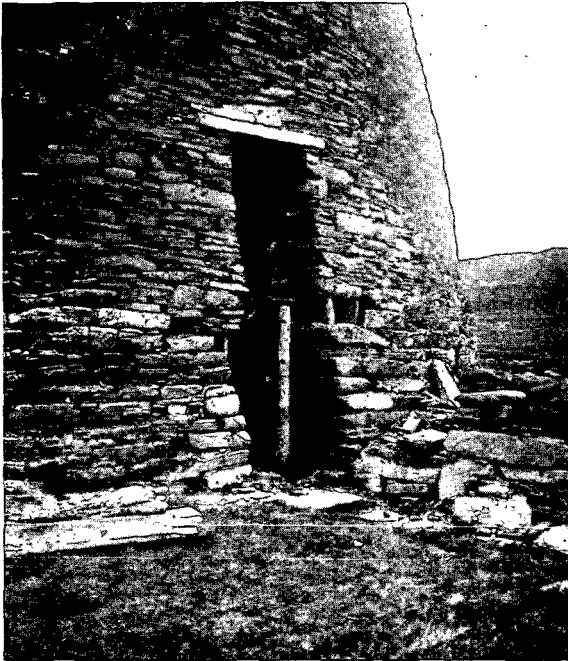
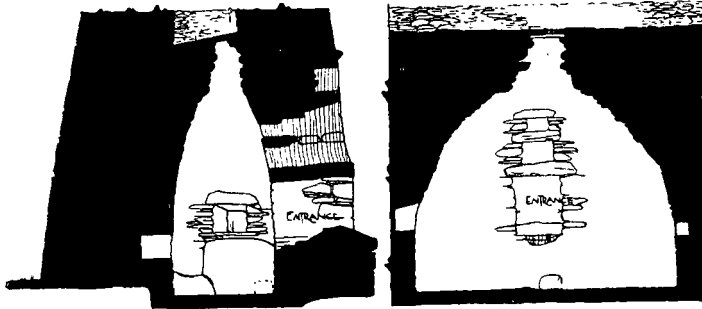


Fig. 5. Original Entrance with later Doorway above.

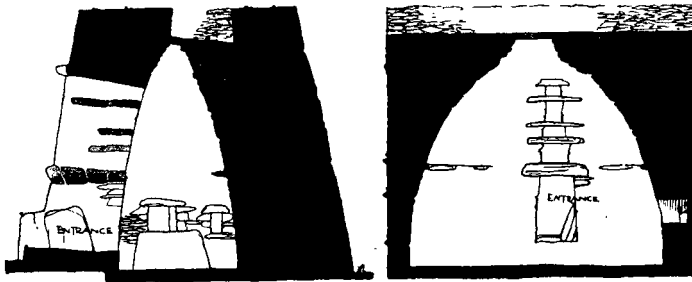
near the entrance and rising to 3 feet high at the further side. This served as the step to reach the entrance to the stairs on the north. In the court and attached to the wall of the tower are rude irregular walls and benches of stone, the use of which is not apparent; but they answer to the slabs which are more commonly found. They vary from 1 foot to 3 feet 9 inches in height, and are doubtless additions. A circular space in the court is sunk 1 foot below the portion next the wall of the tower. This possibly was to make the chambers and portion next the wall more dry. In the court is a tank, probably to

hold water, 4 feet 3 inches by 2 feet 6 inches and about 2 feet deep; partly built and partly cut in the rock. It was at least partly covered, and part of a partition wall is over it." The wall referred to is not bonded into the wall of the tower, and is irregular in height and breadth. It is impossible to say to what height it stood originally and what purpose it served. It certainly serves as a step to the entrance to the stairs, but this can hardly have been its original purpose. It also, as already stated, partially blocks the three recesses, and it appears to have completely blocked these when at its full height. A similar inner wall is also found in other examples.

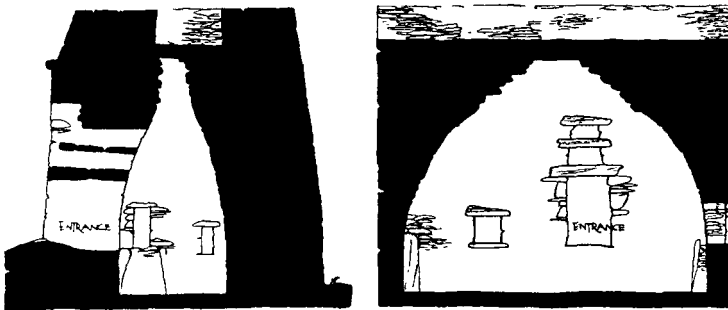
Radiating from this wall Dryden shows three low stone partitions.



CROSS · SECTION · · · · · LONGITUDINAL · SECTION
CELL · A



CROSS · SECTION · · · · · LONGITUDINAL · SECTION
CELL · B



CROSS · SECTION · · · · · LONGITUDINAL · SECTION
CELL · C

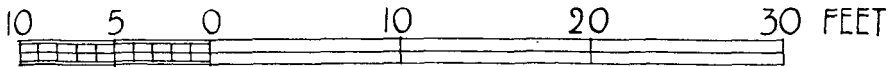


Fig. 6. Details of Cells.

Only one of these was rediscovered in 1914, viz. that on the east side. The upright stone marked "Z" on plan appears to have been the end of the one on the south, but no trace was found of that on the north except that the upright kerbing of the raised platform stops just at the point where presumably the wall would cut in. Judging by this and the general accuracy of Dryden's work, there is no reason to doubt that they did exist in 1861.

The "tank" was also found, and it is interesting to note that the bottom of this is not level but inclined, and appears to be cut in the rock.

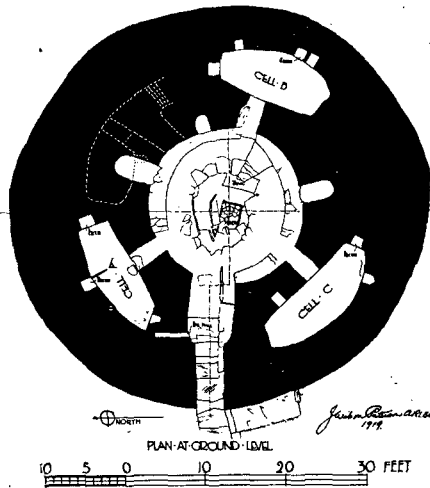


Fig. 7. Plan on ground level.

No post holes, such as were found at Dun Troddan, Glenelg, have been traced here, but it is possible that the raised portion or benching was roofed.

The partition walls might have been carried up to the first scarcement (fig. 4), or even to the second string-course level, and possibly supported wood beams to carry the roof covering. Timber, however, being a rare commodity in Shetland, even in these times, it is probable that this space was covered by stone flags and that no timber was used. We need not go far to find an excellent example of how this could be constructed. At Jarlshof, Sumburgh, not many miles from Mousa, two very fine examples of beehive chambers were discovered by Mr Bruce in 1898.¹ The larger is circular, of 20 feet diameter, practically the same as the internal diameter of Mousa, which is 19 feet. Arching chambers are built out from the main wall; these are five in number

¹ *Proc.*, xli. p. 21.

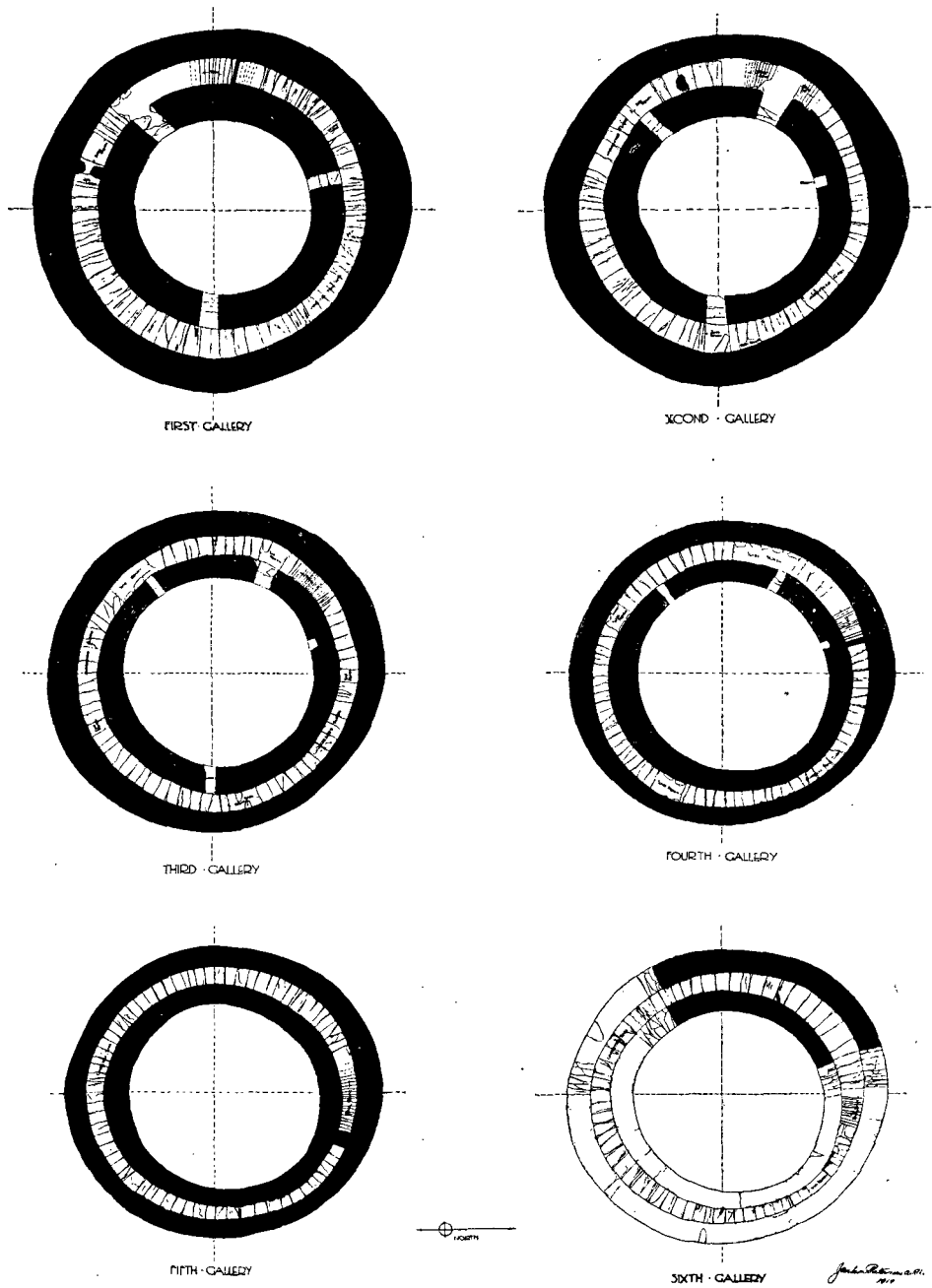


Fig. 8. Plans of Galleries.

and all regular in height, being 11 feet high, but irregular in shape, and are on plan naturally similar to the spaces between the partition walls. The space at the entrance to each chamber is about 5 feet, and the wider part at the back 7 to 9 feet. The walls gradually thicken as they rise like the beehive chamber in a broch, till finally the top is covered by a single slab about 3 or 4 feet square. The comparative distances between the partitions, at Mousa, are 4 feet 3 inches between the front ends of the walls and 5 to 9 feet at the back. There is too little height left to trace any batter, but in the construction of the base of these partitions there is also a similarity to those at Jarlshof.

Mr E. M. Nelson gives a description of these in his supplementary notes on the excavation:—

“The bases of the piers, which form the alcoves in the secondary construction, and which support the overlapping stone arrangement by which the roofing slabs are held, are of a peculiar construction. The base of the pier is faced with an upright slab; resting on this is a horizontal slab bonded into the wall; the end of this slightly projects beyond the upright stone.”

In the chamber immediately to the right of the entrance, in the beehive structure referred to, Mr Bruce describes what he calls an “oven” formed of flagstones on end, with partition and cover, the whole being 3 feet long by 1 foot 6 inches wide and 1 foot 6 inches deep.

There is at Mousa a similar object which Dryden calls a “chest” (fig. 3). In this case it is situated at the extreme inner end of the entrance passage and at the right-hand side. It is 4 feet 6 inches long by 1 foot 6 inches wide, and is about 1 foot 6 inches deep. From its end a wall extends westwards, and thus narrows the width of the original entrance.

The only articles found during the excavations were eighteen pieces of a clay pot and a seventeenth-century key. These were discovered in the small recess on the north side between the large cell and the entrance to the staircase. It is not surprising that so little was found, as a number of articles were discovered at the previous excavations and described by Dryden.

The ground round the exterior of the broch was lowered to the foundation level (fig. 2), when it was noted that the broch was built on the solid rock. The total height of the broch at the entrance is now 41 feet 9 inches, and on the east side directly opposite the entrance 43 feet 6 inches. Dryden gives the corresponding sizes as 35 feet 6 inches, 40 feet 6 inches. The slight difference in height is accounted

for by the former excavation not being carried down to the rock level. It is satisfactory to note that there has been practically no demolition of the broch during the period between the two surveys.

The hearth level is about 9 inches above threshold level at entrance, and about 6 inches below the ground level on the east.

On this east side, and about 20 feet from the broch, the foundations of a wall approximately 70 feet long were uncovered below the earth bank shown on Dryden's plans. On the west side a few remains of outbuildings and paved passage were exposed. The latter extended from the entrance to the edge of the cliff, where it disappeared, the sea having encroached and carried away the top of the bank.

On either side of the passage-way there remain traces of walls, that on the south having a narrow passage or recess 9 feet long between it and the wall of the tower.

The repairs undertaken by the Department were the pinning up of the loose stones throughout the broch, the bedding down of the top-most stones to prevent further damage, and the lowering of the lintel over the entrance doorway to its original height (fig. 4).

In studying these interesting structures the value of complete and accurate plans cannot be too strongly emphasised. Considerable credit is due to the draughtsmen, Messrs N. Fyfe and C. E. Tweedie, who made the survey; and it is hoped that the copies of these plans presented to the Society will be useful for comparison with other examples.