VII.

NOTES ON PRIMITIVE STONE STRUCTURES OF THE BEEHIVE TYPE, DISCOVERED BY R. C. HALDANE, ESQ., IN THE NORTH OF SHETLAND. By ROBERT MUNRO, M.D., LL.D., and The Hon. JOHN ABERCROMBY, Secretary.

Owing to some correspondence between R. C. Haldane, Esq., Lochend, and myself, with regard to primitive stone dwellings on his property, to which he directed my attention, I was induced to visit the locality in the first week of July 1902. My considerate host made arrangements to conduct some excavations during my stay, and fortunately we had two exceptionally fine days to carry out his project. I now propose to give a short account of the results of these investigations, premising that my reason for so long delaying to do so was the hope of finding leisure to treat the subject more exhaustively by instituting a comparison between these Shetland structures and analogous remains elsewhere.

In consequence of the interesting discovery made by the Hon. John Abercromby in the course of his recent excavations in Aberdeenshire, viz., that certain walled enclosures in the vicinity of the Loch of Kinnord, long regarded as the ruins of an early British town, were associated with underground dwellings, it is desirable to put Mr Haldane's discovery at once on record, so as to be available for comparative purposes should the incompleted investigations in Aberdeenshire be further prosecuted.

On the morning of 2nd July 1902, Mr Haldane, his son Mr Oswald Haldane, B.A., Cambridge, myself, and a couple of sturdy Shetlanders armed with digging tools, started for a place which bore the significant name of the "Giant's Garden." Leaving Lochend House by the road which leads almost due north to the fishing village of North Roe, we soon passed, on the left, a small fresh-water loch, merely separated from the sea by a high bank of sea-shore gravel, which stretches across the entire breadth of the little bay without any break except a small open-

ing at the west end, through which the surplus water finds an exit. This is one of several similar instances of the natural formation of lake basins which attracted my attention on the Mainland of Shetland. These gravel barriers are so well defined and limited in breadth, and have such a modern appearance, that one instinctively forms the idea that there must have been some specific natural phenomenon to account for the initiatory process in their formation. Perhaps geologists might look into the matter, and vouchsafe us an explanation of these comparatively recent topographical changes in this part of Scotland.

A little beyond the loch I was shown a very small hut, ensconced in the hollow of a burn, which contained one of those primitive Shetland mills formerly prevalent in Britain, and to which parallels may still be found in other parts of Europe, as, for example, in Scandinavia and in Bosnia. (See *Rambles and Studies in Bosnia*, etc., p. 33.)

Continuing our journey, we ascended, on the left, the steep slope of a high ridge which separates the valley and road to North Roe from the Roer Water, and, about half way up, came to a ruined beehive hut of small dimensions. Of its chronological horizon we had no date; but of its actual horizon, as seen across a wide semicircle of sea and land, extending from Colla Firth on the south to Burra Voe on the north, there was much to fascinate both the eye and the imagination. Directly below us was Housetter Loch, at the north end of which was a ruined cairn (Giant's Grave), with two conspicuous standing stones within a few yards of it.

We then crossed the ridge, and on the descending slope passed over a broad belt of angular stones, heaped together pell-mell in the most fantastic manner. Underneath some of the larger masses were roomy and well-sheltered cavities, which, Mr Haldane suggested, might have been utilised in former ages as human habitations. But as no evidential materials bearing on the point were available, *cadit quæstio*. After traversing this stony zone we came, just at its western margin, to the so-called "Giant's Garden," the goal of the day's journey.

The salient features of the situation were readily discernible under the guidance of Mr Haldane, who had already made himself conversant

with them by a few preliminary excavations. With the aid of the accompanying sketch plan (fig. 1) the main facts will be easily understood without having recourse to much descriptive detail.

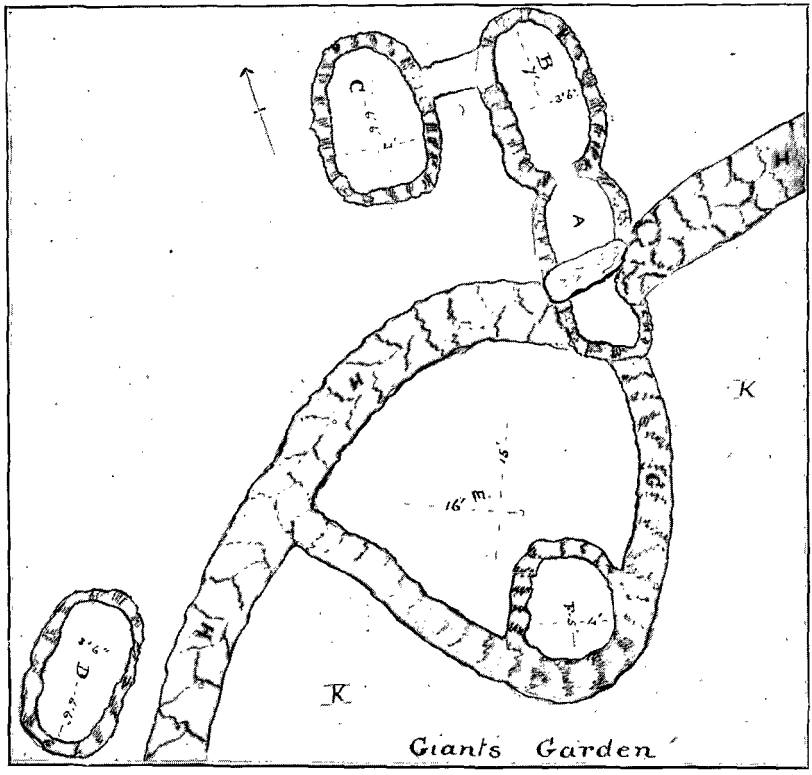

Fig. 1. Plan of structure called Giant's Garden.

(1) The first thing that caught the eye was an irregular circle of rough stones, which at some former period had evidently been an enclosing wall. The area thus circumscribed (K K) measured 30 paces by 29 paces, and lay in a slight hollow, with a considerable slope and sunny exposure to the south-east.

(2) On the north-west margin the ground stood on a higher level than the surface of the enclosed area, and here Mr Haldane recognised the ruins of four underground huts (A B C D). The first (A) communicated by a small passage with the second (B), from which access was got to the third (C) by a similar opening. The fourth hut (D) appeared to be isolated.

(3) Inside the enclosed area, and over the space adjoining the huts A, B, and C, there were the remains of a horseshoe-shaped wall, covering a space 15 by 16 feet, but so dilapidated as to give no indications of its purpose. Here, after removing away a heap of stones, we found traces of a passage into the first hut (A).

Mr Haldane had previously cleared out the *débris* from the huts B and C, but no relics of any kind were found in them. Of these huts B was the largest, measuring 7 feet in length, 3 feet 6 inches in width, and about 5 feet in depth. Their walls were built of dry stones of moderate size, none of them approaching Cyclopean dimensions, but the roofs had fallen in. Whether the latter were constructed with a vaulted roof on the beehive principle there was no direct evidence to show, but if slabs large enough to form transverse lintels had been used, none were found—a fact which, seeing that stones were not likely to have been removed for modern building purposes, suggests that the former was the method adopted. In 1898 C was covered with heather and the roof whole. Two boys, dancing on the top, caused the roof to fall in.

The chief archæological value of Mr Haldane's discovery lies in the fact, which has been undoubtedly established, that here we have a group of underground small chambers associated with a circular enclosure of undressed stones above ground. Possibly the huts were the habitations of a pastoral family, while the adjacent enclosure served as a pen for their cattle.

II. *The Roer Structure.*

Next day the scene of our operations was on the north side of a small loch from which the Roer Burn issues, and about a mile to the west of

the "Giant's Garden." This loch lies 349 feet above sea-level, and the rising ground for a considerable distance northwards is carpeted with a dense covering of heather, luxuriantly growing on a thick bed of peat. Here and there a protruding stone or the top of a rock reminded one that the peat lay over a stony substratum. After a little rough walking through long heather we came to a halt, about a gun-shot from the north shore of the Roer Water, at a small oval mound, some 25 feet in length, and entirely covered with peat and heather. The top of the mound showed a marked depression, which to the tread sounded as if it were hollow, or at least less solid than the outer portion. Attention was first directed to this mound by the fact that a shepherd's dog had found its way for some distance into its interior by a hole formed between a couple of stones partially exposed on its eastern side (see plan, at D). Subsequently Mr Haldane made some tentative digging, which exposed the small guard-chamber G and a portion of the entrance-passage F.

Such was the condition and archæological prospects of the mound when we began excavating it on the 3rd July 1902. The *modus operandi* was simple, but speedily effective. The peat was cut by the spade into rectangular masses and pulled away by sheer force—a process greatly facilitated by the long heather, which afforded a splendid grip to several hands at the same time. Moreover, the peat over the stones came away readily, while that in the centre had little bottom attachment, having apparently spread from the sides until it formed a thick uniform mass over the whole ruins, without at all penetrating into the recesses of the building. As the work progressed the structural arrangement of the underlying stones became gradually more defined, until finally the peculiar features of the building, as delineated on the accompanying sketch plan, were clearly ascertained. I regret to say that, owing to the amount of mud and stones (the latter no doubt being accounted for by the fallen roof) which lay over the central area, we were unable, for want of time, to clear away any portion of it down to the surface of the original floor. As the slope of the ground to the water's edge was fairly

steep, it seemed at first sight strange to find so much mud in the interior of the building. But, considering the altered conditions of its present physical environment, this feature may be accounted for by the fact that the structure had been originally built, and even had become a ruin, before the peat had taken complete possession of the locality. Without the obstruction of the peat, the site would have been practically quite dry. I am also inclined to think, but without being able to give any describable evidence in support of this opinion, that the abnormal growth of peat in this district is a comparatively recent phenomenon, and, for this reason, refrain from speculating on the antiquity of this curious structure, on the ground that, since it became a ruin, it has become submerged in growing peat to the extent of two or three feet. The Drumkelin wooden hut found in County Donegal, Ireland, which contained a stone axe, was buried in peat to the depth of 16 feet above its roof, which being 9 feet above a wooden flooring (*Lake Dwellings of Europe*, p. 392), made the total growth of peat since the hut was erected not less than 25 feet.

The subjoined plan of the Roer structure by the Hon. John Abercromby, who subsequently completed the investigation, though drawn to scale, only represents the inner contour of the enclosure, and the dimensions and position of a number of small covered recesses which entered from it into the substance of the surrounding wall, as the superincumbent moss and heather had not been removed from the entire area of the mound. The thickness of the enclosing wall varied considerably, but in one particular place I ascertained that it was from 4 to 5 feet. From the distal ends of the recesses it would, of course, be much less. The central space was irregularly circular, having a diameter of about $8\frac{1}{2}$ feet. As the dimensions of the recesses and other important structural details are carefully recorded in Mr Abercromby's supplementary notice of this structure, it is unnecessary to repeat them here.

The opinion which I formed at the time of my hurried investigation of the Roer structure was that it had been roofed on the beehive method, but, as will be seen in the sequel, both Mr Abercromby

and Mr Haldane are more inclined to think it had originally no roof, grounding their opinion on the fact that the stones were not in sufficient quantity to form such a roof. From the ruinous condition of the building it appeared to me that its demolition was the deliberate work of men's hands, as not only the roof of the central area (if it had one) but all the lintels over the recesses (except one which was considered to be *in situ* at the inner end of chamber G) had been removed. Some of the stones, especially the more selected specimens,

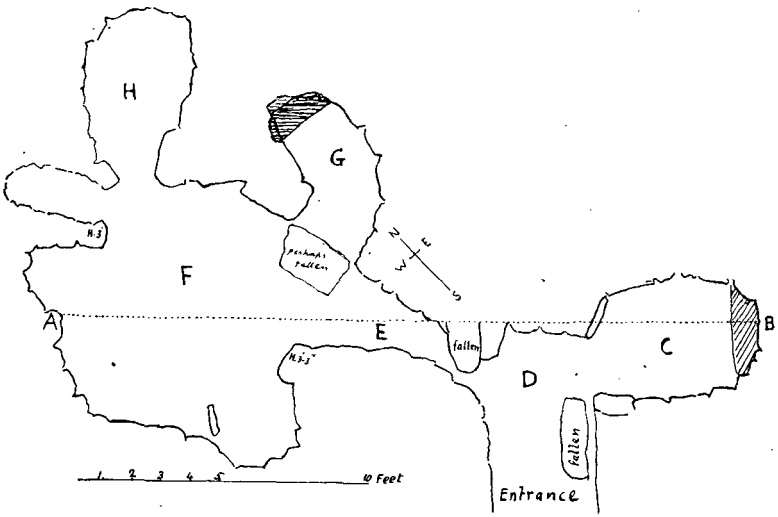

Fig. 2. Plan of the Roer Structure.

such as those which formed the roofing and lintels, might have been carried away after its demolition. Moreover, it is difficult to conceive what object one could have in making such an elaborate structure, with a guard-chamber and sleeping-berths, had the central area remained an open court like the interior of the brochs. On either supposition, there must have been more stones utilised in its original structure than are now visible on its ruined site.

NOTES ON THE ROER WATER STRUCTURE. BY MR ABERCROMBY.

On 6th June 1904 I made some further examination of this structure, most of which had been dug out by Dr Robert Munro last year. The total length along the base line A B (fig. 2), lying N.W. and S.E., is 22 feet 9 inches.

At the east end is a chamber C, 4 feet 10 inches long by 4 feet wide. To the left of this lies the entrance to the building, about 3 feet 9 inches wide. By means of an entrance, 1 foot 10 inches wide, chamber C communicates with an irregular chamber D, about 3 feet 2 inches long by 3 feet 7 inches wide, from which a passage E, 6 feet 4 inches long, 1 foot 3 inches wide at the near end, and 3 feet 3 inches at the far end, leads into a roughly-circular enclosure F, about 8 feet 7 inches by 8 feet 7 inches.

At the end of the passage, on the right-hand side, is curved recess G, 6 feet long by 2 feet 4 inches wide at the entrance, which terminates nearly in a point, and here is covered in for a length of 1 foot 3 inches by a flat lintel stone (fig. 3). In the right-hand wall, at 2 feet 6 inches from the corner, and half way up the wall, is a small rectangular recess, that might have served as an aumrie. The height of the recess below the lintel is 3 feet 10 inches.

At a distance of 4 feet 7 inches from the entrance to G is a pear-shaped recess H, measuring 5 feet 9 inches long by 3 feet 7 inches wide, which was not opened up by Dr Munro. The thickness of the wall at the back of it is at least 4 feet 8 inches.

On the left of the passage E there is a semicircular recess, with a chord of 3 feet 3 inches and a depth of 2 feet 9 inches. An upright slab, 2 feet 2 inches high and 7 inches wide, stands on one side of the entrance.

Opposite the passage there is a small recess, measuring 2 feet 3 inches across and 1 foot 3 inches deep. About 9 inches to the right is another recess, 1 foot 8 inches across and 2 feet 9 inches deep, but this can only

be measured by means of a stick, as it is choked up with stones. The wall behind it reaches back for 11 feet.

The inside face of the walls, especially in G H, is well built of good-sized stones, but is packed behind with loose stones. The wall between A I is loosely built, is only about three stones thick, and was considerably damaged by one of the workmen. The walls of C, except at

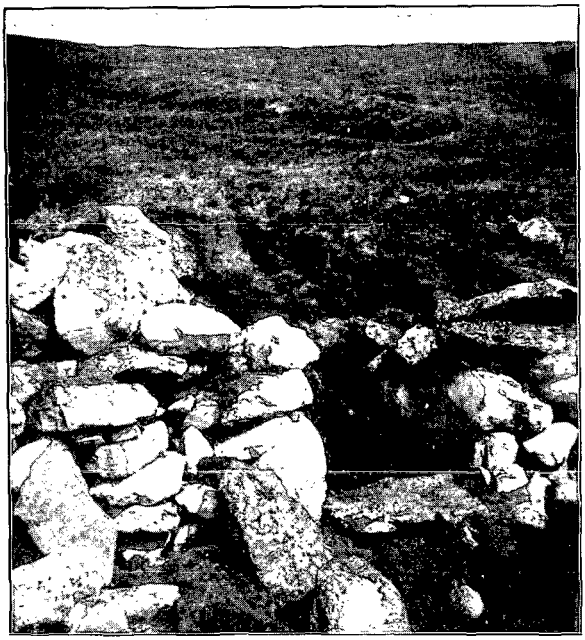

Fig. 3. Chamber with Lintel Stone in the Roer Structure.

the south-east end, and of the adjoining passage, are only a few inches above the ground, and apparently only one or two stones thick.

It was impossible to clear out thoroughly the interior space F, on account of several very large stones which could not be removed. But there seemed to be no paving at the bottom, and digging a few inches down brought up peaty water.

No traces whatever were found of human occupation or of interment.

It seemed to me that enough stones had not been removed from the central space F, with its span of 8 feet 7 inches, to have constructed a beehive roof, and so I am inclined to suppose it was or might have been hypæthral. The recesses were certainly roofed, but not the roughly-circular enclosure F. If this is so, a structure of this character is an early one in the series that gradually led up to the broch, with its hypæthral central enclosure.

III. *A Third Group of Stone Huts.*

On the return journey we deviated a little from the direct path so as to inspect another group of small huts, which in some respects resembled those at the "Giant's Garden." One of these, which before excavation had the appearance of a small cairn of stones, had been already cleared out by Mr Haldane, but, like all the others of its kind hitherto explored in this barren district, it yielded no relics. A few yards from the explored hut there was a circumscribed area containing transported stones, which, on careful inspection, were found to be the ruins of several huts connected together by drain-like passages, so small that if they were intended to give access to human beings, it would tax the ingenuity of most men of the present day to wriggle through. The group occupied a slight elevation, and appeared to have been built partly above and partly below ground.

From the above facts it will be seen that in this part of the Mainland of Shetland, within the narrow limits of a few square miles, there were at least three different groups of stone huts constructed more or less underground, and probably roofed on the beehive method—an architectural system formerly common in Britain and Ireland. It is probable that, owing to the absence of forests, this system lingered on in these northern regions long after it was superseded elsewhere in Scotland by the use of timbers in the construction of dwelling-houses.

That the principles adopted in the construction of these primitive dwellings are capable of producing more imposing results we have ample

evidence in the brochs, the remains of which are so abundantly found in Shetland, which may be regarded as the highest outcome of their most skilful application to dry-stone buildings. A beehive chamber on a large scale can only be constructed under ground, or within a massive artificial structure of stone or earth, because the pressure of the surrounding materials is essential to prevent the stones from falling inwards. Each overlap of the roofing stones must be counterpoised by at least a corresponding weight or pressure, the perpendicular direction of which must be outside the floor of the chamber. Hence the beehive chamber in the wall of a broch, if correctly built, never falls in until the surrounding support crumbles away. The discovery of underground dwellings associated with protective enclosures above ground seems to me to be of some archæological importance, inasmuch as it suggests that this special combination of two protective methods was formerly widely spread within the British Isles. That the fact has not hitherto been recognised may be explained by the readiness with which the above-ground structures could be removed, in the interests of agriculture or otherwise, when the system began to be superseded by crannogs, moated castles, and other more convenient habitations. In these circumstances the very sites of the underground dwellings, such as are now and again found in cultivated lands, having lost their superficial landmarks, would in the course of a few generations be entirely lost sight of. In Ireland, where souterraines are by no means uncommon, they are often found inside stone forts, raths, and other analogous enclosures. Although the present data are insufficient to formulate any generalisation on the subject, it is advisable that the above facts should be recorded, so as to be accessible to archæologists interested in this obscure class of antiquarian remains.