

II.

NOTICE OF THE EXCAVATION OF THE BROCH AT OUSDALE, CAITHNESS. By JAMES MACKAY, F.S.A. Scot.

This "broch," of which a ground plan and sections are shown (fig. 1) was carefully excavated and examined during a visit to Caithness in the autumn of 1891. It stands on a prominent eminence near the confluence of the Ousdale and Borgue burns—1 mile from the Ord of Caithness, 4 miles from Berriedale, and about 400 yards from the sea, commanding a good sweep of the latter. On one side it is protected by the steep precipice of the Borgue burn, and on the remaining sides by ramparts consisting of a well-built wall about 8 feet thick, and faced apparently with a dry ditch. The outworks surround the tower on three sides, and show signs of a second occupancy by a later and inferior race. The style of building of the hut-circles of which the outworks are composed is to a certain extent copied from that of the original broch in so far as the overlapping of the stones for the purpose of forming arches consist, and they were probably built with material taken from the tower after it had fallen into ruins.

¹ In that case it would have to be interpreted the "old people" in the sense of "ancient inhabitants," which would fit in with the fact that the Gaulish Helvetii had selected them to be conquered, if Cæsar had not intervened.

² Last conjecture: pp. 283, 310, construe "B.'s offspring N." (with *poi* nominative), and read *ipudi* in the Newton Ogam.

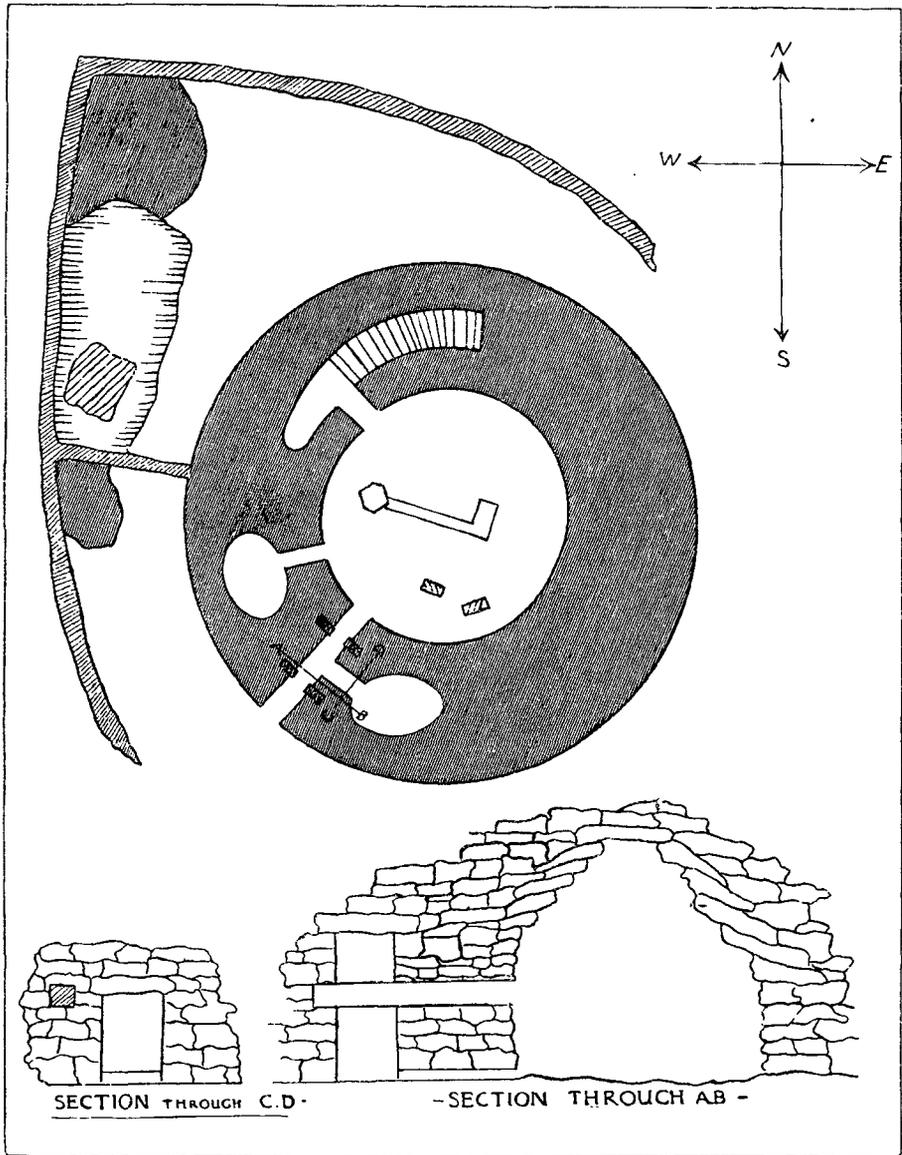


Fig. 1. Ground Plan and Sections of Broch of Ousdale, Caithness. Scale of Plan $\frac{1}{240}$; of Section $\frac{1}{30}$.

The broch presented the usual appearances of a grass-covered mound with stones cropping up over the surface. The entire diameter of the tower is 50 feet, and the diameter of the inner area or court 24 feet. The walls are 14 feet thick at the entrance, and 12 feet thick at the other side. The highest part of the wall remaining is 14 feet; and although this hardly shows sufficiently the traces of galleries, the presence of stairs shows their former existence. The inner court was completely filled up with stony detritus to a depth of 10 feet, and the remaining 4 feet consisted of charcoal and what appeared to be ashes of peat in alternate layers. The entrance to the tower faces south-west; the doorway is heavily linteled, being 5 feet in height, and 2 feet 6 inches in width. Openings appear to have existed above the entrance, and probably extended to the top of the tower, and would serve to light galleries and relieve underlying lintels. A gallery runs the whole length of the entrance-passage, the floor of the gallery being formed by lintels over the entrance, which are placed 8 inches apart, thus affording an opportunity of attacking from the gallery any enemy who may have forced the doorway. The entrance was guarded by two doors, the first being 4 feet inside the passage. The jambs or door-checks consisted of large slabs inserted edgewisæ into the wall and projecting 4 inches. The door may have been of wood, or more probably a large slab, and kept in position by a bar which could be withdrawn through an aperture 8 inches square extending from a guard-chamber in the thickness of the wall on the right to the entrance-passage, with a corresponding socket in the opposite side of the passage. The second doorway, with similar checks, is 3 feet from the inner end of the passage, and has also square bar-holes as described. Midway between the two doors in the entrance-passage on the right is an opening or doorway 2 feet 6 inches high, and 2 feet wide, leading to a chamber, ovoid in shape, in the thickness of the wall, and which no doubt was used as a guard-chamber. It is 8 feet 6 inches in length, 5 feet in width, and nearly 8 feet in height. It is arched over on a system of overlapping the stones until they nearly meet at the top, when it is closed in by one slab. In this chamber was found a cist inside the doorway, 2 feet square, covered over with a flag, and containing ashes, charcoal, and a dark unctuous clay. A similar chamber in

the thickness of the wall is on the other side of the entrance, but with its doorway inside the court, 3 feet from the inner end of the passage. At a quarter circle on the left, in the court or inner area, is another doorway leading to a stair of 15 steps to the gallery above. The stair follows the course of the wall, and is well laid and easy of ascent. The steps consist of flat stones 3 feet 6 inches wide laid above each other, with a tread of 6 inches and a rise of about the same. At the foot of the stair is the usual chamber for the purpose of guarding the same. This chamber is 6 feet 6 inches in length, and 3 feet 6 inches in width, and 8 feet in height, and is built in the usual bee-hive style with stones overlapping. Over the entrance to the stair is a narrow opening in the wall, probably for the purpose of lighting the stair. In clearing this a human skeleton was discovered, head downwards, roughly built in the aperture, and covered with small stones and a little earth. The cranium is in good preservation, the lower jaw, with teeth *in situ*, are also well preserved, but the entire right side of the skeleton is considerably decayed.

At about 4 feet above the real floor were found traces of a second occupation, probably after the tower may have been partly in ruins, several partitions of large slabs set on end being found at this level. The real floor of the central court consists of 2 feet of fine puddled clay laid on the natural bed. This floor was covered with layers of ashes and charcoal, which contained large quantities of animal bones, many half burnt, and some split for the purpose of extracting the marrow. Large quantities of shells of the limpet and periwinkle were also found, and a considerable quantity of wild-hazel nuts. The following articles were also found amongst the ashes on the floor and throughout the building. A damaged stone hatchet, with a slight groove round the centre, a granite mortar carefully hollowed out, the hollowing being 1 foot in diameter and 10 inches deep, several very rude mica schist querns, some of which are broken, stone mullers, stone hammers or "pounders," generally much abraded at one end, and sometimes at both, three mica schist discs, 8 inches in diameter, with holes 2 inches in diameter through the centre, several whorls in sandstone and steatite, a large quantity of fragments of very coarse hand-made pottery, fire

baked, some composed of a layer of black clay inside and a layer of red outside—the shapes appeared to be globularly bulging, with everted rims, part of a small cup of a finer blue clay, with flat bottom and slightly bulging sides, several specimens of whetstones, part of a wooden dish or scoop with everted rim, apparently about 5 inches in diameter and 2 inches in depth, a piece of polished lignite, which may have formed part of an armlet. On the floor, embedded in firm black clay, was found a piece of wood in upright position as if it formed one of the supports of an overhanging roof: this clearly showed traces of the tree having been felled by a hatchet, each mark of the process of felling being distinctly visible. The floor of the central court is well drained, a stone-built drain running round the area with exit towards the burn. No trace of any well was found within the building, but a built drain was discovered leading from the outside to a series of tanks on the floor level, which probably conveyed water from a well outside, or from the burn higher up. The tanks were carefully made of flags and packed with stiff clay, and were about 2 feet 6 inches square and 2 feet deep; one of the tanks had a carefully hollowed “lip” for the overflow. In the wall of the central area opposite the stair entrance was found an “ambry,” 5 feet from the floor, 3 feet in height, 2 feet wide, and 2 feet 6 inches deep. At a height of 8 feet from the floor a scarcement or ledge nearly a foot in width ran round the entire inner court; but unlike that in most brochs, it is undoubtedly part of the original building, and not a secondary construction: at the distance of 8 feet apart are large stones jutting out of the ledge, in shape of corbels; from this ledge and corbels no doubt sprang a roof, which either covered the entire central area or supported a gallery all round. Near the centre of the area, and raised about a foot from the floor, was found what may have been a fireplace, consisting of four flags set on edge forming a square, from which was a covered V-shaped conduit leading to a vat near the stair door, as shown on the ground plan: this vat is 2 feet 6 in diameter, and about the same depth, and dug out of the natural bed: it is carefully lined with thin flags, the sides, bottom, and joints cemented with a black substance which looked like peat. In the bottom of the vat was discovered a substance consisting of something like a clear green jelly, to the depth

of about an inch. A sample was submitted to Professor Japp of Aberdeen University, and the following is his report thereon:—"The gelatinous material from the vat in the Pict's house is apparently a humus formed by the decomposition of vegetable matter (very possibly peat) in contact with water. It is scarcely soluble in water, but a considerable portion dissolves in caustic soda, and is re-precipitated by hydrochloric acid. This portion consists of a nitrogenous humic acid. I mention the presence of nitrogen, as non-nitrogenous acids have also been described. In the case of the portion insoluble in alkali, the spontaneous decomposition and oxidation have not gone far enough to convert it into humic acid. The substance leaves a little inorganic ash on burning. Humic acid is of course rather a vague compound. In all probability it is a *mixture* of compounds, for which reason the formulæ attributed to it by different investigators do not agree. I therefore did not trouble to make a quantitative analysis of the present specimen. Professor Gregory described many years ago a humic acid which he obtained from a sample of decayed peat found floating in Loch Dochart. Probably this is a very similar substance."

In carrying on the work of excavation the greatest care was taken not to injure any part of the tower which is still intact, and by strengthening it at a few weak points it should stand in its present condition for many years to come. His Grace the Duke of Portland has kindly fenced it in for better protection.

For the following list of the bones, I am indebted to Dr R. W. Reid, Professor of Anatomy in the University of Aberdeen.

Human Bones.

Vault of long skull, including—

Frontal	} Sagittal suture almost obliterated.
R. parietal	
L. parietal (fragment)	
Upper part of occipital	

Left temporal bone.

Petrous and mastoid parts of 2 *right*-temporals.

Part of squamous portion of temporal.

„ horizontal part of occipital bone.

„ left side with margin of foramen magnum.

Part of lower jaw (body), left side, with canines and incisors, molars, pre-molars, crowns much ground.

Mental foramen nearer lower than upper border of horizontal ramus.

Part of R. and L. clavicles (acromial halves).

„ L. scapula, glenoid cavity, acromial end of spine and vertebral border.

Upper $\frac{2}{3}$ R. humerus—lower extremity (condyles absent).

Left radius (complete).

Left ulna in two parts (incomplete).

Part of lumbar vertebra.

„ first rib (anterior) and two others.

2 Metacarpus of thumb.

2 „ of second finger.

1 „ of third finger, with upper extremity of another.

Middle $\frac{2}{3}$ of femur.

3 Phalanges—one from each row.

Bones of Deer.

Parts of metatarsal.	Parts of astragalus.
„ femur (left).	„ dorsal vertebra.
„ tibia.	„ atlas.
„ patella.	„ axis.
„ os calcis.	

Teeth? Ribs?—pieces so small as not to be distinguishable from ribs of ox.

Bones of Ox.

Parts of femur (right).	<i>Hare.</i>
„ humerus (left).	2 scapulæ.
„ ribs.	1 femur.
„ teeth.	1 tibia.
„ metacarpus of calf.	

Lambs.

Parts of femur.	Parts of humerus.
„ metatarsal.	„ metacarpus.
„ tibia.	

Bird.

Part of shaft of one of long bones of wing of a large bird.

Some charred bones and wood.

Limpet shells (*Patella vulgaris*).