

I.

NOTICES OF A GROUP OF ARTIFICIAL ISLANDS IN THE LOCH OF DOWALTON, WIGTONSHIRE, AND OF OTHER ARTIFICIAL ISLANDS OR "CRANNOGS" THROUGHOUT SCOTLAND. BY JOHN STUART, ESQ., SECRETARY SOC. ANT. SCOT. (PLATES X.-XIII.)

In December 1857, Mr Joseph Robertson read a paper to the Society entitled "Notices of the Isle of the Loch of Banchory, the Isle of Loch Cannor, and other Scottish examples of the artificial or stockaded islands, called Crannoges in Ireland, and Keltischen Pfahlbauten in Switzerland."

This paper was not printed in the Proceedings, in consequence of Mr Robertson's desire to amplify his notices of these ancient remains. Other engagements having prevented him from carrying out his design, he recently placed his collections in my hands, with permission to add to my account of Scottish crannogs, anything from his notes which I might care to select. Of this permission I have gladly availed myself, and the passages introduced from Mr Robertson's collection are acknowledged at the places where they occur.

J. S.

*June 1866.*

The late Loch of Dowalton, or, as it is called in the Survey of Timothy Pont in Blaeu's Atlas, the Loch of Boirlant, was situated in the centre of that district of Wigtonshire called The Machars—a peninsula bounded on the west by the Bay of Luce, and on the east by the Bay of Wigton.

It was about five miles from the burgh of Whithorn, and occupied the lower end of a narrow valley of some five miles in length. It was environed by mosses on the east and west (those on the west extending a distance of four miles, under the names of Drummodie Moss, Drumscallan Moss, and others), which emptied part of their waters on the west end into the sea near Monreith, and the rest into the loch. The Moss of Ravenston is on the east of the loch, and there were rising grounds on its other sides. It was surrounded by the parishes of Kirkinner, Sorbie, and Glasserton, which met at a point in its centre. The old parish of Longcastle, now part of Kirkinner, is on its north-west side, and ruinous walls, of no determinate character, are yet to be seen on the islands called Longcastle, and Hern Isle, on the north shore of the loch. The loch was of an irregular form, about  $1\frac{1}{2}$  mile in greatest length by about  $\frac{3}{4}$ ths of a mile in greatest breadth, without any marked outfall for drainage. Sir William Maxwell has recently effected this, by making a cut at its south-eastern extremity through the wall of whinstone and slate which closes in the valley. This cut is 25 feet in depth for some distance.

The water having been partially drawn off in the summer of 1863, the island abodes now to be described became visible. In the month of August of that year, some of them were examined by Earl Percy (then Lord Lovaine), who read an account of them to the meeting of the British Association held at Newcastle in the course of that month. At that time, however, the depth of water and mud only permitted a partial examination. About a year after this, I had an opportunity of examining these remains, when on a visit to Sir William Maxwell. By this time the whole bed of the loch was exposed, and all the islands were approachable, although in many places the great depth of quaking clay rendered it somewhat difficult to walk upon, and in some deep spots, where the clay was softer than elsewhere, even dangerous, from the risk of sinking.

The rough outline sketch (Plate XI.) will give an idea of the shape of the loch, and it will be convenient to describe the islands in the order in which they there occur, beginning at the west end; in doing so, I avail myself of the details in Lord Percy's paper.<sup>1</sup>

The first is called Miller's Cairn, from its having been a mark of the

<sup>1</sup> Transactions of the British Association Meeting at Newcastle, 1863, p. 141.

levels, when the loch was drained by cuts for feeding neighbouring mills. One of these cuts is known to have been made at a remote period. It was still surrounded by water when the place was visited by Lord Percy in 1863. On approaching the cairn (Plate XI. fig. 1), the numerous rows of piles which surrounded it first attracted notice. These piles were formed of young oak trees. Lying on the north-east side, were mortised frames of beams of oak, like hurdles, and below these, round trees laid horizontally. In some cases the vertical piles were mortised into horizontal bars. Below them, were layers of hazel and birch branches, and under these were masses of fern, the whole mixed with large boulders, and penetrated by piles. Above all, was a surface of stones and soil, which was several feet under water till the recent drainage took place. The hurdle frames were neatly mortised together, and were secured by pegs in the mortise holes.

On one side of the island, a round space of a few feet in size appeared, on which was a layer of white clay, browned and calcined, as from the action of fire, and around it were bones of animals, and ashes of wood. Below this was a layer of fern and another surface of clay, calcined as in the upper case. A small piece of bronze was found between the two layers. On the top another layer of fern was found, but the clay, and the slab which probably rested upon it, had been removed. There can be no doubt that this had been used as a hearth. In one of the crannogs in Loughrea, in Ireland, the flag which formed the hearth-stone rested in the same way on a mass of yellow clay.<sup>1</sup>

Near this cairn a bronze pan was found; and opposite to it, on the south and north margins of the loch, uprooted trees, mostly birch and alder, were seen, which had all fallen to the east. Hazel branches had been much used in the formation of the island, and many hazel nuts were found among the debris. In the layers, the leaves and nuts were perfectly distinct. The bark also remained, and the fern and heather looked as if recently laid down. The fern is the common bracken, of which in many places the fronds were quite perfect. In some places innumerable chrysalides of an insect occurred between the layers of fern; they are found to be those of a dipterous fly of the genus *Dicara*, closely allied to the "daddy long-legs."

<sup>1</sup> Proceedings of the Royal Irish Academy, vol. viii. p. 421.

In the vicinity of this cairn is a ridge of rock which *might* have formed the nucleus of a superstructure, but it was not used. Miller's Cairn was much dilapidated. Lines of piles, apparently to support a causeway, led from it to the shore.

The next in order is the largest island (Plate XI. fig. 2). Lord Percy succeeded in reaching it in a boat in 1863. It appeared to him to be 3 feet below the level of the other islands, and, from several depressions on its surface, to have sunk. The progress of excavation was, however, soon checked by the oozing in of the water. On the south side of the island great pains had been taken to secure the structure; heavy slabs of oak, 5 feet long, 2 feet wide, and 2 inches thick, were laid one upon another in a sloping direction, bolted together by stakes inserted in mortises of 8 inches by 10 inches in size, and connected by square pieces of timber 3 feet 8 inches in length. The surface of the island was of stones, resting on a mass of compressed brushwood, below which were branches and stems of small trees, mostly hazel and birch, mingled with stones, apparently for compressing the mass. Below this were layers of brushwood, fern, and heather, intermingled with stones and soil, the whole resting on a bed of fern 3 or 4 feet in thickness. The mass was pinned together by piles driven into the bottom of the loch, some of which went through holes in the horizontal logs. The general appearance of the island, and of the mortised beams on its south side, will be gathered from the sketches engraved on Plate XII. figs. 2 and 3. For these sketches I am indebted to the courtesy of Lord Percy. I noticed some of these flat beams of great size and length (one of them 12 feet long) with three mortise holes in the length, 7 inches square. A thick plank of oak of about 6 feet in length, had grooves on its two edges, as if for something to slide in; and it may be noted that some of the oak beams in the Irish crannog at Dunshaughlin, county of Meath, had their sides grooved in like manner, to admit large panels driven down between them.<sup>1</sup> This island measured about 23 yards across, and was surrounded by many rows of piles, some of which had the ends cut square over, as if by several strokes of a small hatchet. Mr Chalmers, the intelligent overseer of Sir William Maxwell, pointed out to me vestiges of branches interlaced in

<sup>1</sup> Wilde's Catalogue of Antiquities in Museum Royal Irish Academy, p. 222.

the beams of the hurdles. On the north-east side, and under the superstructure of the island, a canoe was found, made of a single tree of oak. It was 21 feet in length, 3 feet 10 inches across over all near the stern, which was square. Its depth at the stern was 17 inches, or, including the backboard which closed the stern, 20 inches. The stern was formed by a plank inserted in a groove on each side, with a backboard pegged on above it. The part containing the grooves was left very thick. There were two thole-pins on each side, inserted in squared holes in the solid, which was left to receive them, and wedged in with small bits of wood. One thwart of fir or willow remained. A plank or wash-board, projecting a few inches over the edge, ran round the canoe. It rested on the top, and was fastened with pegs into the solid. The vessel was pointed at the bow, and the sketch, for which I am indebted to Lord Percy (Plate XII. fig. 1), will give a general idea of it. As I have said, it was found in the foundations of the island, with hurdles and planks above it. It was very complete, and in good order. In the mass of stuff thrown out, a piece of curiously stamped leather was found, apparently part of a shoe. Great quantities of the teeth and bones of animals were strewed over the surface of the island and surrounding mud. Bones were also found at different depths in the mass, but always below the upper layer of faggots, and towards the inside. All the bones were split, probably to admit the extraction of the marrow. Specimens of the bones were submitted to Professor Owen, who has expressed his opinion of them in the following note:—

“The bones and teeth, from the lake dwellings, submitted to my examination by Lord Lovaine, included parts of the ox, hog, and goat. The ox was of the size of the *Bos longifrons* or Highland kyloe, and was represented by teeth, portions of the lower jaw, and some bones of the limbs and trunk. The remains of the *Sus* were a lower jaw of a sow, of the size of the wild boar, and detached teeth. With the remains of the small ruminant, of the size of the sheep, was a portion of cranium with the base of a horn core, more resembling in shape that of the he-goat. Not any of these remains had lost their animal matter.—R. O.”

Other specimens of the bones presented by Sir William Maxwell are in the Museum. Regarding these I have been favoured with the following memorandum by Dr John Alex. Smith, Sec. :—

"After a careful examination of the bones now in the museum, found on an artificial island in Dowalton Loch, in which I was kindly assisted by Mr William Turner, M.B.; we find them to consist of those of small short-horned cattle—the *Bos longifrons*, I doubt not, of Professor Owen—similar to those found with Roman remains at Newstead, and presented by me to the museum—a rather small-sized pig, and the sheep; also a bone of a large bird. The mass of fern leaves forming the substratum of the dwelling consisted of the *Pteris aquilina*, the common bracken."

On one spot, a few flat stones were placed as if for a hearth. They showed marks of fire, and around them were ashes and bones. The bronze dish of Roman work afterwards described was found in the mud, near the east margin of the loch. The best saucepan was found between this island and the shore. A small circular brooch of bronze, four whetstones, and two iron hammers, were found on the island. A third iron hammer was found near it, and may have been thrown out with the debris.

Lumps of iron slag were also found on this island, and similar masses have been found on several of the Irish crannogs.

The original depth from the surface of the island to the bottom, was probably from 6 to 7 feet; but the structure was much dilapidated before I saw it.

Proceeding southward, we come to the island first examined by Lord Percy (Plate XI. fig. 3). It proved to be nearly circular, and to be about 13 yards in diameter. Its surface was raised about  $5\frac{1}{2}$  feet above the mud, and on each side of it were two patches of stone nearly touching it. These, probably, answered the purpose of the jetty or pier, formed of a double row of piles, about 8 feet asunder, which supported horizontal logs, noticed on one side of the crannog in Cloonfinlough.<sup>1</sup> On the north side lay a canoe of oak, between the two patches, and surrounded by piles, the heads just appearing above the surface of the mud. It was 24 feet long, 4 feet 2 inches broad in the middle, and 7 inches deep, the thickness of the bottom being 2 inches. Under the stones which covered the surface, teeth of swine and oxen were found. A trench was cut round the islet, and at the south end a small quantity of ashes was turned up, in which were teeth and burned bones, part of an armlet of glass

<sup>1</sup> Proceedings Royal Irish Academy, vol. v. p. 209.

covered with a yellow enamel, and a large broken bead of glass, together with a small metal ornament; two other pieces of a glass armband, one striped blue and white, were also found on the surface. These objects were found on the outside of the islet, about 2 feet from the surface. On cutting into the islet itself, it proved to be wholly artificial, resting on the soft bottom of the loch, and in its composition exactly the same as the large island already described. The whole mass was pinned together by piles of oak and willow, some of them driven  $2\frac{1}{2}$  feet into the bottom of the loch. The islet was surrounded by an immense number of piles, extending to a distance of 20 yards around it; and masses of stone, which apparently were meant to act as breakwaters, were laid amongst them. On the sinking of the mud, a canoe was found between the islet and the northern shore. It was  $18\frac{1}{2}$  feet long, and 2 feet 7 inches wide. A block of wood cut to fill a hole, left probably by a rotten branch, was inserted in the side, 2 feet long, 7 inches wide, and  $5\frac{1}{2}$  inches thick, and was secured by pegs driven through the side; across the stern was cut a deep groove to admit a backboard; in both canoes a hole 2 inches in diameter was bored in the bottom.

The next islet is about 60 yards from the last, and nearer to a rocky projection, on the south margin of the loch. It was examined by Lord Percy, and was found to be smaller; the layers were not so distinctly marked, and some of the timbers inserted under the upper layer of brushwood were larger, and either split or cut to a face. A stake with two holes bored in it about the size of a finger, a thin piece of wood, in which mortises had been cut, and a box, the interior of which was about six inches cube, with a ledge to receive the cover, very rudely cut out of a block of wood, were found. I saw this rude box, but it has gone to pieces since that time.

On the south-east side of the loch, near one of the little promontories, were several cairns surrounded by piles, of which the outline had mostly disappeared at the time of my visit. When they were first seen by Lord Percy, there were six structures of the same character as those already described, arranged in a semicircle. They were, however, much smaller than the others, and appeared to have been single dwellings. Though upon some of them charred wood was found, nothing else was discovered except a mortised piece of timber, which might have been drifted there;

and in one, inserted under the upper layer of brushwood, a large oak beam, measuring 8 feet long by 3 in circumference.

This group of small islets was close to the shore. They had, however, been surrounded by water at the time when the level of the loch reached the highest beach mark. I could not discover any causeway or piled connection with the shore.

Near the north margin of the loch, a canoe was found in the mud. It measured 25 feet in length, and was strengthened by a projecting cross band towards the centre, left in the solid in hollowing out the inside; lying under it a portion of another canoe was found. Along this shore many uprooted trees occur in the mud, mostly birch and alder; some trees also are still rooted.

The articles already found on the islets and neighbourhood are:—

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| 1. Bronze dish, with handle, of Roman work.  | 8. A bead of amber.                         |
| 2. Two bronze dishes, hammered out of the solid.   | 9. A bead of vitreous paste.                |
| 3. A smaller bronze dish of separate pieces, rivetted together.                                | 10. A small brooch of bronze.               |
| 4. A bronze ring, having attached to it a portion of the vessel of which it had been a handle. | 11. A small ring of bronze.                 |
| 5. Fragment of leather, with a stamped pattern on it.  | 12. A copper coin.                          |
| 6. A large blue glass bead.  | 13. Five querns.                            |
| 7. Two glass beads, with streaks and spots.  | 14. A fragment of bronze.                   |
|  | 15. Pieces of iron slag.                    |
|  | 16. A small earthen crucible.               |
|  | 17. Whetstones.                             |
|  | 18. Three iron hammers.                     |
|  | 19. Portions of armlets of enamelled glass. |
|  | 20. Five canoes.                            |

Most of the articles were found in the neighbourhood of the islands. It is probable that the bronze vessel found near the eastern margin, as well as other articles, may have been floated off during the period when the islands were submerged. It is plain, from the appearance of several beaches of rolled stones around the margin of the loch, that the waters had stood at different levels at different times,—at one time 6 or 7 feet above its last level, to which it was reduced by three successive cuts made to feed neighbouring mills,—one of them certainly of great antiquity



When at this height, the surface of the mosses to the west must also have been under water. Lord Percy has remarked, that at  $3\frac{1}{2}$  feet below the ordinary level, there are unmistakable appearances of a former beach, with which the top of the islet, first examined by him, coincides. Sir William Maxwell suggests, as an easy explanation of the different levels found in the loch, that the waters originally discharged themselves into the sea from the western end of the valley, and at last, in consequence of the formation of moss towards its centre, *a part* of them could only escape in that way, while the remainder was forced into the loch. On this assumption, Lord Percy concludes that the structures must be supposed to have been formed in the early stages of the growth of the moss, while the loch was so shallow as to make it easy to raise the obstructing moss above its waters, and yet deep enough to float canoes and afford the desired security from an enemy. He adds that it is difficult to conjecture the state of the loch when these edifices were formed, and whether or not they were completed at one period. The finding of the large stones in the lower layer of ferns might, he thinks, lead to the belief that they were gradually raised as the waters of the loch increased; and that the strengthening them by breakwaters might be held to prove that the loch had risen considerably before they were abandoned.

The rising of the level of the loch is a feature common to this with the Irish lochs, in which crannogs have been found. In some Irish cases there are appearances of these having been raised to meet this change of circumstances; but when we consider the compressible nature of the materials, it is more likely that the islands may, in many instances, have required such heightening from the effect of natural subsidence. The stones among the lower strata of fern were probably used to compress and solidify the substructure in the course of erection, and it seems to me most probable that the islets were wholly erected at one time.

It would appear that no islets were above the surface of the water at the time of Pont's survey, about the middle of the seventeenth century. In Blaeu's map of Galloway no islets are seen on the loch of Dowalton, while several are laid down in the neighbouring loch of Mochrum, which shows that such projections were not overlooked.

In the moss of Ravenston, a little to the east of Dowalton, five paddles

of oak were discovered lying close to a mass of timbers about 6 feet under the surface. Lord Percy was led to believe that these were the remains of a structure similar to those in the loch of Dowalton. One of these paddles forms part of the donation of Sir William Maxwell to the Museum (Plate XII. fig. 4).

In the White Loch of Mertoun (a name which reminds us of the Cluain-fin-lough in Roscommon, which is said to mean "the enclosure of the White Lake"), about three miles westward from Dowalton, there was formerly a stockaded island. The discovery of the islands in Dowalton Loch, brought to the recollection of an old man in the service of Sir William Maxwell, that when the loch was partially drained by Sir William's grandfather, he had seen a small island in it with timbers, piles, and flat stones on its surface. This led to an examination of the island, from which it appeared that it was surrounded by piles, and was constructed, like those at Dowalton, of layers of furze, faggots and brushwood, layers of fern, &c. This island, prior to the lowering of the loch, had been covered by eight feet of water.

On Dunhill, which is a rising ground a short way from the south-east end of Dowalton Loch, there remains a circular rath, surrounded by a deep ditch. The rath is about 36 yards in diameter. Similar elevations occur on the north and south-west sides of the loch, where raths may also have been placed, but if so, they have been obliterated by cultivation.

It will be remarked that no weapon or tool of stone has as yet been found at Dowalton; but no certain inference can be drawn from this, as such objects, with many others, may yet be found below the deep bed of clay surrounding the islets.

Of the bronze objects which have been discovered, one is a dish of Roman work, with a stamp (apparently *CIPICOLIE*), on the handle (Plate X. fig. 3). It measures  $8\frac{1}{2}$  inches in diameter at the mouth, and 6 at the bottom. Its depth is  $5\frac{1}{2}$  inches. The handle is 7 inches long, and there are five raised and turned rims on the bottom. It is turned in the inside, in which respect, as well as its general appearance, it resembles a bronze patella found in Teviotdale, presented to the National Museum by Dr J. A. Smith, and figured in the Proceedings of the Society (vol. iv. p. 598).

Two vessels of the same character, the one within the other, were found

in a moss near Friars Carse in Dumfriesshire, in 1790. The largest one has engraved or stamped on its handle the letters ANSEPHARR. They are figured in the *Archæologia*, vol. xi. p. 105. Another similar vessel, which formed one of a remarkable collection of ornaments of the Roman period, found in the county of Durham about the beginning of last century, now in the British Museum, has on its handle the letters MATR · FAB · DVBIT.<sup>1</sup>

Other two bronze dishes have each been hammered up into form out of a single piece, and to one an iron handle has been rivetted. They resemble bronze culinary dishes found at Rodingfield, in Essex, figured in *Archæologia*, vol. xvi. p. 364. They are about 14 inches across by 3 or 4 in depth, and one of them is figured on Plate X. fig. 1. A third is formed of two separate pieces welded together. It has obviously been much used on the fire, and bears many marks of rude mending by rivets. It has had an iron handle for lifting it, and it measures 10 inches across by 3 in depth. (See Plate X. fig. 1.)

The iron hammers have a great resemblance to those found with Roman remains at Great Chesterfield, in Essex, in 1854, and figured in the *Archæological Journal* for 1856. Iron hammers of a somewhat similar shape have been found in some of the Swiss deposits. An iron hammer was found on a fortified island in Carlinwark Loch, and specimens occur in the Irish crannogs. The axes figured on the column of Trajan are generally narrow at one end, and expand into a wide cutting edge at the other, and do not resemble those found at Dowalton.

The ring of bronze has obviously been rivetted to another object of the same metal, of which a fragment remains. It so exactly resembles one of two rings attached to a large Irish caldron, presented to our Museum by the late Mr Leckie of Paisley, and to those of another caldron, formed of plates of hammered bronze, rivetted together with pins of the same metal, found under twelve feet of bog in the barony of Farney, in Ulster, and figured in Mr Shirley's "Account of the Dominion of Farney" (p. 185), that I cannot doubt of its having been originally attached to a vessel of the same description. A similar ring formed part of the mass of bronze relics dredged from the Loch of Duddingston.

The largest glass bead has a core of bronze, and is finely milled on a projecting band of yellow glass on each neck (Plate X. fig. 4).

<sup>1</sup> *Archæological Journal*, vol. viii. p. 37.

Such beads of glass, and amber, are often found in cists, and occasionally in Picts' houses.

Enamelled glass armlets, like those found at Dowalton, are of very rare occurrence. Two specimens are in the National Museum, of which one was discovered in the Flanders Moss, in Stirlingshire, and the other was found, with a necklace of jet hanging from it, in a sepulchral cairn at Boghead, near Kintore, in Aberdeenshire.

Part of a similar armlet was recently discovered in excavating one of the hut circles at Greaves Ash, in Northumberland.

The stamped piece of leather seems to have formed part of a mocassin or shoe (Plate X. fig. 5).

All these remains seem to be associated with an early period. The copper coin is of doubtful character, but does not appear to be of great age; as, however, it may have been dropped into the loch at any time, its occurrence does not disturb any inference which may be drawn from the general character of the deposits. The coin was found near the third small island.

The general plan of construction of Scottish crannog islands, was different from that of the crannogs in the Loch of Dowalton and the White Loch of Mertoun.

The island in the Loch of Forfar, known as Queen Margaret's Inch, was discovered in 1781, on the partial drainage of the loch, when it lost ten feet of its depth. The island was formed in very deep water, by driving oak piles into the bottom, and heaping on them a prodigious quantity of stones, with a considerable stratum of earth above all. A layer of heather was laid below the stones; and the island which, about fifty years ago, measured about 450 feet in length by 150 in breadth, was surrounded by piles of oak. Dr Jamieson, who then described the structure, believed that it had been reached from the shore by a drawbridge, over a ditch which separated the island from the north side of the loch.

The drought of 1864 brought to light a sort of causeway, leading from the west end of the island. It was traced for about 100 yards; and it is supposed that it turned to the shore on one side, the popular belief being that it formed a way of escape in former times. As, however, it must have formerly been under a great depth of water, it seems doubtful for what purpose it may have been designed.

Two islands in Carlinwark Loch, in Galloway, discovered in 1765, are described as having been formed by strong piles of wood driven into the moss or marl, on which were placed large frames of black oak, covered with soil.<sup>1</sup> On inquiry, I learn that neither of them are now visible, being covered with mud, and, when the Dee flows into the loch, with water also, but that they are known to be composed of earth and stones, resting on oak beams.

The island in the Loch of Kinellan, parish of Contin, Ross-shire, is said to be formed of logs of oak, on which soil seems to have been heaped, till it emerged above the surface. It was of a nature to bear a house of strength, which came to be built upon it.<sup>2</sup>

Of this island, Mr J. H. Chalmers, advocate, Aberdeen, notes, in a letter to me,—

“The island has along the south, west, and north sides a rough facing or embankment of stones about as large as one strong man could lift. Inside this bulwark, at a distance of some feet from it, there may still be traced, more or less completely all round the island, the remains of an enclosing wall. Along the west side of the island are several wooden piles of oak driven into the bed of the loch, just outside the stone bulwark. The piles seem to have been squared; and one pile, which projected almost horizontally from the bulwark, had a hole in the end; holes also appeared in some of the vertical piles, suggesting the occurrence of mortising. Some large masses of rock, lying on the south side opposite the island, would seem to suggest that there had been a pier opposite to what was a landing-place on the island.”

The isle of the Loch of Banchory, Kincardineshire, was found to be composed of earth and stones, resting on a foundation of oak and birch trees, and was surrounded by oak piles.

The following interesting details of this crannog are taken from Mr Robertson's paper :—

“Before the recent drainage of the Loch of Leys—or the Loch of Banchory, as it was called of old—the loch covered about 140 acres, but, at some earlier date, had been four or five times as large. It had one small island, long known to be artificial, oval in shape, measuring nearly 200 feet in length by about 100 in breadth, elevated about 10 feet above the

<sup>1</sup> New Stat. Account, Kirkcudbrightshire, p. 154.

<sup>2</sup> Ibid., Ross-shire, p. 238.

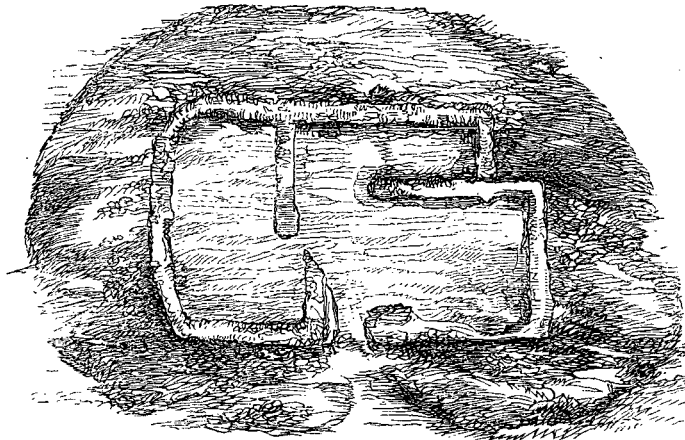
bottom of the loch, and distant about 100 yards from the nearest point of the mainland. What was discovered, as to the structure of this islet, will be best given in the words of the gentleman, of whose estate it is a part, Sir James Horn Burnett, of Crathes. In a communication which he made to this Society in January 1852, and which is printed in the first part of our Proceedings, he quotes from his diary of the 23d July 1850, as follows,—‘Digging at the Loch of Leys renewed. Took out two oak trees laid along the bottom of the lake, one five feet in circumference and nine feet long; the other shorter. It is plain that the foundation of the island has been of oak and birch trees laid alternately, and filled up with earth and stones. The bark was quite fresh on the trees. The island is surrounded by oak piles, which now project two or three feet above ground. They have evidently been driven in to protect the island from the action of the water.’



ISLE OF THE LOCH OF BANCHORY.—Fig. 1 (General View of Site).

“So far this exactly answers the description of the Irish crannog, and the resemblance is completed by the remains which were found below the surface. These were the bones and antlers of a red deer of great size, kitchen vessels of bronze, a millstone (taking the place of the quern in the Irish crannogs), a small canoe, and a rude, flat bottomed boat, about nine feet long, made, as in Ireland and Switzerland, from one piece of oak. Some of the bronze vessels were sent to our Museum by Sir James Burnett, and are now on the table. Here, too, are drawings of the place, for which I am indebted to the kindness of an accomplished lady of the neighbourhood. One shows the general appearance of the island as it now is, since the bottom of the lake was turned into corn

land. The other gives us a bird's-eye view of the surface of the crannog, which you will see had been occupied by a strong substantial building. This has latterly been known by the name of the Castle of Leys, and tradition, or conjecture, speaks of it as a fortalice, from which the Wauchopes were driven during the Bruces' wars, adding, that it was the seat of the Burnets until the middle of the sixteenth century, when they built the present Castle of Crathes. A grant of King Robert I. to the ancestors of the Burnets includes *lacum de Banchory cum insula ejusdem*. The island again appears in record in the year 1619, and in



ISLE OF THE LOCH OF BANCHORY.—Fig. 2 (Surface of Crannog).

1654 and 1664, under the name of 'The Isle of the Loch of Banchory.' Banchory itself, I may add, is a place of very ancient note. Here was the grave of one of the earliest of our Christian missionaries—St Ternan, archbishop of the Picts, as he is called in the old Service Books of the Church, which add that he received baptism from the hands of St Palladius. Along with St Ternan's Head and St Ternan's Bell, called 'The Ronnecht,' there was preserved at Banchory, until the Reformation, a still more precious relic, one of four volumes of the Gospel which had belonged to him, with its case of metal wrought with silver and gold."

The crannog in Dhu Loch, Isle of Bute, consisted of a surrounding wall, formed of double rows of piles,  $4\frac{1}{2}$  feet asunder, the intermediate spaces having been filled up with beams of wood, some of which remain. The island within this external wall was formed of turf and moss covered with shingle.

An island in Loch Tummell is formed of stones resting on a foundation of beams, with a causeway leading to it from the side of the loch. There is a fragment of a stronghold on it, said to have been erected by Duncan the First of the Clandonachaidh, in which it is believed that King Robert Bruce and his Queen were sheltered during their wanderings.

An island in the west end of Loch Rannoch is believed to be formed of stones similarly disposed, on which there is a tower, erected in the present generation. There is a causeway leading to the island from the Strowan, or south side of the loch, which is said to be fordable in summer.

In Loch Kinder, in the parish of New Abbey, there is an artificial island. It is formed of stones which rest on a frame of large oaks.<sup>1</sup>

In the Loch of Moy, Inverness-shire, is an artificial island, formed in the same way, of stones resting on piles. It is called Ellan-na-Glack, *the Stoney Island*.

The small island recently discovered in the Loch of Sanquhar was formed of beams of wood, supporting a quantity of stones, the whole being surrounded by piles. The crannog in Loch Canmor, Aberdeenshire, was formed by driving oak piles into the bed of the loch, and filling up the enclosed space with stones, crossed with horizontal beams.

Of the Irish Crannogs, we learn from Mr Mulvany, Commissioner of Public Works in Ireland, an attentive explorer of these remains, that the general constructive features are very much alike in all. They are surrounded by stakes driven generally in a circle, from sixty to eighty feet in diameter, a considerable length of the stakes projecting over the ground, and were probably joined together by horizontal branches interlaced so as to form a screen. The portions of the stakes which were above ground have been destroyed by time; but the portions

<sup>1</sup> Old Stat. Acc., Dumfriesshire, vol. ii. p. 139.



remaining below ground, particularly where the stratum is pure peat, are generally very sound at the heart, and have become as black as the oak usually found in bogs. The foundation within the stakes is generally of one or two layers of round logs, cut into lengths of from four to six feet, over which are layers of stone, clay, and gravel. In some cases, where the foundation is soft, the layers of timber are very deep. In other cases, where the ground is naturally firm, the platform of timber is confined to a portion of the island. In almost every case a collection of flat stones appears near the centre of the enclosure, having marks of fire on them, and apparently having served as hearths. In some cases several hearths have been found on one island. Considerable quantities of bones are generally found upon or around the island, being apparently those of deer, black cattle, and hogs; and, in almost every case, one or more pairs of quern stones have been found within the enclosure.<sup>1</sup>

A section of one of the crannogs in Loughrea, county of Galway, shows at the bottom squared oak beams, above which is a layer of branches, and trunks of oak trees, then large stones, above which are layers of peat and marl, and above all a surface of loose stones laid in regular order.<sup>2</sup>

A section of another crannog in Tonymore Lough, county of Cavan, gives the following arrangement,—beginning at the surface, which was of clay; then ashes, with small stones and sand; next bones and ashes, with lumps of blue and yellow clay; then a quantity of grey ashes; and lastly horizontal beams and hazel branches resting on the peat bottom.<sup>3</sup>

Dr Reeves thus describes a crannog in Loughtamand, county of Antrim,—it was found to be formed of piles, from seventeen to twenty feet long, driven into the bed of the lough. They were bound together at the top by horizontal oak beams, into which they were mortised, and secured in the mortise by stout wooden pegs. Above the piles, was a surface of earth of several feet in depth, on which a stone house, which was said to have been a stronghold of the M'Quillans, was erected. Near the island a canoe was discovered, and there was also a paved causeway of stone leading from the margin of the loch to the island.<sup>4</sup>

<sup>1</sup> Proceedings R. I. A. vol. v., App. p. xliv.

<sup>3</sup> Proceedings R. I. A. vol. viii. p. 277.

<sup>2</sup> Ibid. vol. viii. p. 414.

<sup>4</sup> Ibid. vol. vii. pp. 155-156.

While the construction of the Dowalton Islands differs from that adopted in the Irish crannogs, and in other islands in Scotland, there are many points of analogy between them. The situation of Dowalton—a loch amid marshes and embosomed in wood—is that of most of the Irish structures. The rath on the adjoining height,—probably one of a larger number,—affords also an instance of agreement with the Irish plan. The concurrence of raths and crannogs in the same neighbourhood has been so often observed in Ireland, that the remains have come to be associated with each other, and it has been supposed that the islands were used as places of retreat for the dwellers in the raths.

In Tonymore Lough, in Cavan, are three crannogs, and the rising ground on either side is crowned with a rath, while lesser raths are in the neighbourhood. In Loughrea, county of Galway, are four crannogs, with twenty-one raths in the neighbourhood.

Cloonfree, one of the three lakes containing crannogs near to Strokes-town, county of Roscommon, is close to the raths which formed the royal residence of the kings of Connaught; and around Ardakillin, another of these lakes, are three earthen raths.

It is probable that similar remains will be found in the neighbourhood of the Scotch lochs containing stockaded islands, where they have not been obliterated by cultivation; and that such island retreats are to be regarded as the centres of a neighbouring population.<sup>1</sup>

<sup>1</sup> Since this passage was written, I have selected from Mr Robertson's *Notes* the following passages, descriptive of a crannog in Loch Lomond, which show its neighbourhood to a stone cashel on the shore, and preserve a tradition which ascribes the erection of both structures to the same hands:—

Graham of Duchray, writing in 1724, tells that the founder of a cyclopean *castel* called the Giant's Castle, on the north-eastern shore of Loch Lomond, built beside it an artificial island. "This Keith MacIndoill," he says, "notwithstanding the great number of natural isles in the loch, was, it seems, so curious as to found an artificial island, which is in the loch at a little distance from the point on which the old castle stands, founded on large square joists of oak, firmly mortised in one another, two of which, of a prodigious size (in each of which there are three large mortises) were disjoined from the float in 1714, and made use of by a gentleman in that country who was then building a house." The account of Buchanan of Auchmar, who wrote about the same period, is somewhat more circumstantial. "A small isle," he says, "lying at a little distance from the north shore of that loch, near a point of

It seems obvious that the crannogs both of Ireland and Scotland were, in their idea, rather fastnesses and keeps than places of permanent residence;<sup>1</sup> as a general rule they were inaccessible except by means of a boat,<sup>2</sup> but a few of them were approached by causeways. Until a few

land called Row of Cashill, is known to be founded upon a float of timber, quich, in the summer 1715, was clearly discovered by one Walker, who, with his boat passing this isle, observed one end of a large square oak joist below the island, quich, with another of the same sort, he found means to get up, both being of a prodigious bigness; the manner of joining that large float being thus: There were in the one joist three or four large square mortises, and in the other an equal number of planks proportional to the mortises, and joined so firmly together as if all were one solid piece, upon which this isle was built. . . . Upon the row, or point of land next adjacent to this isle, is the ruin of an old building called Castle-na-fean, or the Giant's Castle. It is built of a round form, being near sixty paces in circumference. . . . The stones are of a hard blue whin, made mostly quadrangular, and of that prodigious bigness as clearly evinces the strength of the builders, seeing in place of art, all seems to be performed by main force. The inhabitants of this building seem to be those who were so needlessly curious as to build the above-mentioned island."—Mr Robertson's Notes, quoting *Nimmo's History of Stirlingshire*, pp. 593-595, edit. 1817.

<sup>1</sup> The following instructive notice extracted by Mr Robertson from the Register of the Privy Council, associates crannogs with houses of defence and strongholds:—"Instructions to Andro bischop of the Yllis, Andro lord Steuart of Vchiltrie, and James lord of Bewlie, comptroller, conteining suche overturis and articles as they sall propone, to Angus M'Coneill of Dunnyvaig and Hector M'Clayne of Dowart for the obedyence of thame and thair clanis. 14 Aprilis 1608. . . . That the haill houssis of defence strongholdis and *cranokis* in the Yllis pertaining to thame and their foirsaidis sal be delyverit to his Maiestie and sic as his Heynes sall appoint to ressave the same to be vsit at his Maiesty's pleasour. . . . That they sall forbeir the vse and weiring of all kynd of armour outwith thair houssis especiallie gunis bowis and twa handit swordis, except onlie ane handit swordis and targeis."—*Regist. Secreti Concilii: Acta penes Marchiarum et Insularum Ordinem*, 1608-1623, pp. 4, 5.

<sup>2</sup> A.D. 1436. The crannog of Loch Laoghaire was taken by the sons of Brian O'Neill. On their arrival, they set about constructing vessels to land on the crannog, in which the sons of Brian Oge then were: on which the latter came to the resolution of giving up the crannog to O'Neill, and made peace with him. (*Annals of the Four Masters*, vol. iv. p. 907.) The solitary island in Loch Earn, called Neish's Island, is said to have been surprised, in the time of James V., by the Macnabs in a similar way. The Neishes felt secure in their island from its inaccessibility, but their enemies

centuries ago, the Irish lakes in which the islands were constructed were embosomed in dense forests. The country was intersected in all directions, especially in Ulster, by bogs and morasses; so that in some cases, as at Kilknock Loch, in Antrim, the edge of the loch could only be reached on a causeway through the surrounding bog.

The early notices of crannogs in the Irish Annals are connected with scenes of strife, when, as is frequently the case, the island of the weaker party is said to have been burned down and destroyed. The term applied to them in the Ulster Inquisitions of 1605 is "insula fortificata;" and in answer to an inquiry made by the Lords of Queen Elizabeth's Council in 1567, as to "what castles or forts O'Neil hath, and of what strength they be," it was answered "that for castles he trusteth no point thereunto for his safety . . . . and that fortification that he only dependeth upon is in sartin ffreshwater loghes in his country; . . . it is thought that there in ye said fortified islands lyeth all his plate w<sup>ch</sup> is much, and money, prisoners and gages; w<sup>ch</sup> islands hath in wars before been attempted, and now of late again by the Lord Deputy, then Sir Harry Sydney, w<sup>ch</sup> for want of means for safe conduct upon y<sup>e</sup> water it hath not prevailed." (Quoted in Shirley's Account of the Territory or Dominion of Farney, p. 93.)

It is recorded of Brian Borumha, under A.D. 1013, "multa propugnacula et insulas firmis munimentis vallavit."—*Annals of the Four Masters* (O'Donovan's Edit.), vol. ii. p. 770, note.

It is plain, however, from the extensive remains which have been found around *some* of the crannogs, that they had been places of residence, and scenes of busy industry for long periods, and at various times.

The great masses of bones around and upon the large island at Dowalton, would alone have suggested that they were the remains of long occupation, or of occasional occupation frequently repeated. They are, however, not to be compared with the deposits about some of the Irish Islands, from two of which (in Loughrea) three hundred tons of bones have been collected.

There can be little doubt that in such cases, if not in all, wooden huts

carried a boat from Loch Tay over the hills, and were thus enabled to reach the island.

had been erected on the surface of the islands, although none of these have been preserved in their complete state.

The county of Monaghan, formerly Mac Mahon's country, contained many crannogs in the small lakes which occur in every district. They are particularly noticed in the early maps of the county (in the State Paper Office) as "The Iland," with the addition generally of the name of the chief who resided in each. At Monaghan, we have "The Iland—Mac Mahon's house," represented as a mere hut, occupying the whole site of a small island in one of the lakes adjoining the present town.

The residence of Ever Mac Cooley Mac Mahon, chief of the celebrated district of Farney, in Mac Mahon's country, in the reigns of Elizabeth and James I., was at Lisanisk (close to the town of Carrickmacross), and is marked in Jobson's map, made in 1591, as "The Iland—Ever Mac Cooley's house." The foundations of this ancient residence were discovered in the autumn of 1843. Seven feet below the present surface of the earth, in the little island at Lisanisk, and two feet below the present water level of the lake, a double row of piles was found sunk in the mud; the piles were formed of young trees, from 6 to 12 inches in diameter, with the bark on. The area thus enclosed, from which we may judge of the size of the house, was 60 feet in length, by 42 in breadth.<sup>1</sup>

Some crannogs in the south of the county of Londonderry were besieged in the Irish wars in the time of Charles I. One at Loughinsholin was garrisoned by Shane O'Hagan.<sup>2</sup> On his refusal to surrender, the enemy contrived to flood the island. "The garrison kept watch in *the island house*, and one of their men was killed by a cannon ball while on watch. However, they refused to surrender the island on any terms. One man in attempting to swim away had his leg broken. The enemy at length departed."

It seems plain that, in this case, the elevation of the hut on the island, saved the garrison from the effect of the flooding.

Two years afterwards, viz., in 1645, we read that the people of O'Hagan burned the Inis O'Lynn for want of provisions, and followed the general eastward.

<sup>1</sup> Mr Shirley in Arch. Journal, vol. iii. pp. 45, 46.

<sup>2</sup> Friar O'Mellan's Irish Journal of the Rebellion of 1642, quoted by Dr Reeves. Proceedings of Royal Irish Academy, vol. vii. pp. 157-8.

It is not improbable that the cabins in Mac Mahon's islands, and "the island house" just referred to, were of the same construction as a curious wooden house discovered in 1833 in Drunkelin Bog, county of Donegal, under a depth of 26 feet of bog. On an examination by Captain Mudge of the Royal Navy, who has given a description of this house, with drawings, in "Archæologia" (vol. xxvi. p. 361), it appeared to be only one portion of a collection of houses covered by the bog. It consisted of a square structure, 12 feet wide and 9 feet high, with a flat roof. The framework was composed of upright posts and horizontal sleepers, mortised at the angles. These frames contained planks laid edgewise one upon another, the lower one being fixed in a groove cut in the thick sleeper at the bottom. The marks of cutting in the mortises and grooves corresponded with the size and shape of a stone chisel found on the floor of the house.

The structure was surrounded by a staked enclosure, portions of the gates of which were discovered. A paved causeway, resting upon a foundation of hazel bushes and birchwood, led for some distance from the house to a hearthstone, on which a quantity of ashes and charred wood remained, and near to it several large logs of wood half burned, and also pieces of bog-turf partly burnt. Dr Reeves gives a notice of a crannog in Kilknock Lough, county of Antrim, on which a wooden hut was placed, constructed of oak beams. These, however, were removed, and used as part of the roof of a neighbouring barn, before any correct description of the structure was recorded.<sup>1</sup>

One of the timbers from Toneymore has a mortise cut in its centre, 8 inches by 5, and has been supposed by Dr Wilde to have formed a portion of one of the crannog-houses on the island.<sup>2</sup>

On one of the four crannogs in Lough Rea, county of Galway, an upright beam was mortised into a horizontal one. From the upright beam stakes ran away as if to form a partition.<sup>3</sup> Mr Mulvany has also reported, that in many cases, pieces of oak framing have been found with mortises and cheeks cut in them. Some of these appear to have been portions of an ordinary door frame, but others are portions of a heavy frame, the use of which does not appear so evident.<sup>4</sup>

<sup>1</sup> Proceedings R. I. A. vol. vii. p. 154.

<sup>2</sup> Ibid. vol. viii. p. 290.

<sup>3</sup> Ibid. vol. viii. p. 419.

<sup>4</sup> Ibid. vol. v. p. xlv.

Some of the the numerous mortised beams and frames of oak rafters on the island at Dowalton correspond to the descriptions of those which formed the wooden house in Drunkelin Bog; and I think it most probable that they, as well as the morticed and grooved beams described by Mr Mulvany, formed the framework of the huts which had originally been placed on the islands. At Dowalton these frames were numerous and of varying size, some of them of a length which suggested to Lord Percy their resemblance to a modern Galloway gate; and in some of them, as I have stated, there appeared traces of wattling. Such objects could hardly have been required in the construction of the body of the islands, although the position of some of them on the margin led Lord Percy to the conclusion that they had been there used as breakwaters. In Irish crannogs, wooden logs have frequently been found resting on the layers of which the under part of the islands were formed, and the mortised hurdles at Dowalton were found lying as if they *might* have been used for such a purpose. But it seems unlikely that objects requiring such an expenditure of skill and labour would have been there used for a purpose, which was elsewhere accomplished by undressed logs as a floor for any necessary superstructure.

If any of the mortised beams at Dowalton can be regarded as portions of wooden huts, their confused condition may have been the result of their violent overthrow by an agent which threw them to the south-east side. Such overthrow was occasionally the result of a tempest of wind, as we find it recorded of an Irish crannog in A.D. 990, "the wind sunk the island of Loch Cimbe suddenly, with its dreach and rampart, *i.e.*, thirty feet."<sup>1</sup>

Dr Gregor of Nairn, a fellow of this Society, has recently brought under our notice a curious wooden house, of which the walls were formed of oak beams, with a steep-pitched roof of oak rafters, in the Loch of the Clans, on the estate of Kilravock, in Nairnshire. Its foundation was surrounded by piles, and covered by a cairn of stones.

Our late colleague, Mr John Mackinlay, in describing a crannog in the Dhu Loch in Bute, remarks, that at the south-east corner of the island is an extension of it, formed by small piles and a framework of

<sup>1</sup> Annals of the Four Masters, vol. ii. p. 727. At Dowalton the prevailing winds are from the west, and the trees which have been blown down have fallen to the eastward. Most of the mortised frames were found on the south-east side.

timbers, laid across each other in the manner of a raft. It appeared to Mr Mackinlay to have formed the foundation of some wooden erection, which was destroyed by fire, as the tops of the piles were charred.

The absence of any farther definite traces of island huts cannot be used as an argument for proving that they were not originally constructed, as the natural decay of timber not under the protection of the water or mud, would be sufficient to account for their disappearance.

At the period when the islands were constructed, the surrounding piles would have projected some way above the surface of the water, thus forming a palisade which seems in some cases to have been strengthened by horizontal beams laid on it, and was probably closed by interlacing branches or wicker work, as in one of the crannogs in Lough Rea:

The use of wooden piles for defence was common among the Britons when they came under the notice of Cæsar. The *oppidum* of Cassiellaunus is described by the Roman General as being "Sylvis paludibusque munitum," and by Orosius "inter duas paludes situm, obtentu insuper sylvarum munitum." Cæsar adds, "oppidum autem Britanni vocant, quum sylvas impeditas vallo atque fossa munitur, quo, incursionis hostium vitandæ causa, convenire consuerunt."<sup>1</sup>

<sup>2</sup> When Cæsar arrived at the Thames, "ripa autem acutis sudibus præfixis munita; ejusdemque generis sub aqua defixæ sudes flumine tegebantur."<sup>2</sup> According to Venerable Bede, some of these stakes remained till his day, when they were about the thickness of a man's thigh, and being cased with lead, remained fixed immoveably in the bottom of the river.<sup>3</sup>

It seems probable that our own Kenneth Mac Malcolm, nearly a thousand years afterwards, took the same means of strengthening the fords of the Forth, as we are told in the Chronicle of the Scots, "vallavit ripas vadorum Forthin."<sup>4</sup>

Perhaps we may recognise a palisaded crannog in the description by Boece of a Scottish "munitio," in the time of the Roman conflicts in this country. In Boece's own words it is called "tumulus quidam in

<sup>1</sup> Monumenta Hist. Brit. pp. xxxiii, lxxix.

<sup>2</sup> Ibid. p. xxxii.

<sup>3</sup> Hist. Ecc. lib. i. cap. 2.

<sup>4</sup> Innes' Essay, vol. ii. p. 788.



paludoso loco, equitibus invio, situs. Cui, crebris succisis arboribus, omnes introitus, uno duntaxat excepto, præcluserant." Bellenden's conception of the passage is thus expressed, "the Romanis went forwart to assailye this munitioun of Scottis with thair horsmen; bot it wes sa circuit on ilk side within ane mos, that na horsmen nicht invaid thaim; and it had na out passage bot at ane part quhilk was maid be thaim with flaikis, scherettis, and treis."<sup>1</sup>

Palisades are found in the most ancient forts in Ireland, but there they are formed of sharp stones. Thus the cyclopean walls of Dun Ængus, and other forts in the south isles of Arran, county of Galway, are surrounded by a *chevaux de frise* of sharp pillars.

The monastic establishments of an early period consisted, like that at Iona described by Adamnan, of a church, with a number of detached huts for the monks, all within an enclosure, and we are told that the walls of these structures were of hurdle work. The early Irish and Saxon monasteries were on the same plan. Many of the former were erected within the raths which were conceded by chiefs to the Church, and St Monenna's establishments in Scotland were placed on the tops of fortified hills. Wilfrid's monastery at Oundle was surrounded "magna sæpi spinea;" several of the royal residences of Charlemagne are described as "circumdatæ cum sepe," and the enclosure as "curtem tunimo circumdatam desuperque spinis munitam cum porta lignea."<sup>2</sup>

The idea of pallsided fortifications is unquestionably a primitive one, although its use, with some modifications, was thus long continued.

Some of the Irish crannogs are placed, not on artificial islands, but on natural shallows of clay or marl, connected with the shore by piled causeways, and some of the Scotch structures are of the same character. Thus the island on which the fort in Loch Quein, Isle of Bute, is placed, is described as being of natural formation, and fenced with a wall of stones instead of palisades. Two rows of piles extend from it to the shore, on which a causeway had rested.

In the Carlinwark Loch near Kirkcudbright, are both artificial and natural islands. One of the latter, called the Fir Isle, was surrounded

<sup>1</sup> Book iv. cap. 3, vol. i. p. 117.

<sup>2</sup> Pertz. Monumenta German. vol. i. p. 179.

by a stone rampart, and was reached from the shore by a causeway of stones, secured by strong piles of oak.<sup>1</sup>

Many of the strengths in the Hebrides, in Sutherland, Caithness, and the Orkney Islands, are placed on natural shallows, surrounded by water and approached by causeways; but there, no piling appears.

In many of the larger lochs of Ireland, the crannogs are found in groups of two, three, and four. We have parallel groups of crannogs in Dowalton. There were four fortified islands in Carlinwark Loch, of which two were artificial. There were two in the Loch of the Clans. There were at least two fortified islands in Loch Canmor, of which one was artificial; and the same arrangement occurred in the Loch of Forfar.

Single crannogs have been found in the Loch of Banchory, in the Dhu Loch, and Loch Quein. In the course of 1864 a crannog was discovered in the Black Loch of Sanquhar. This is now a very small sheet of water, being about 100 yards in length, by 60 in breadth. The island in the centre is a circular structure of piles and stones, measuring from 10 to 15 yards in diameter. A causeway led from the island to the side of the loch, and a canoe, of about 15 feet in length, was found in the loch.

The objects found on the Irish islands comprehend specimens of almost everything found on those at Dowalton, and show the same combination of articles of personal ornament with such homely objects as querns and the like. Querns and hones are of almost universal occurrence.

Several pieces of iron slag were found on one of the crannogs in Tonnymore Loch. In the same crannog were found a variegated enamel bead,

<sup>1</sup> While these sheets are passing through the press, an interesting discovery, made in the Loch of Carlinwark, by Mr Samuel Gordon, of Castle Douglas, and a friend, has been communicated to me by Mr Gordon. While fishing in the loch in a boat, at a spot near to the Fir Isle, on the 21st of June 1866, they discovered in the mud a large bronze cauldron, of about 2½ feet in diameter at the top, formed of separate pieces riveted together, and patched in many places in the same manner. It was found to contain numbers of spear and dagger points, axes, hammer-heads, horses' bits, portions of chain armour (of very small links), and a lot of armourers' tools, all of iron, with some small objects and fragments of bronze.

a large irregularly-shaped amber bead,<sup>1</sup> a smaller one of enamel paste, and a small blue glass bead; several small earthen crucibles, supposed to be for gold smelting. Amber and blue glass beads were found in the crannog on Lough-na-Glack, county Monaghan.<sup>2</sup> At Ardakillan a brass bowl, hammered out of the solid, was found, and two brass vessels most curiously rivetted together. A portion of a leather sandal was found in the wooden house in Drunkelin Bog before referred to. Brooches, bracelets, and pins of bronze, were found at Ardakillan, as also buckles, some of which contained pieces of enamel and Mosaic work. A brazen pot and three brass bowls were found at Dunshaughlin; but although large bronze caldrons are frequently found in Irish bogs, I observe hardly any mention of the bronze dishes, pots, or "coffee-pot" vessels among the relics of crannogs, which are so frequently found in those of Scotland. An iron axe was found at Dunshaughlin.

These are analogous to most of the objects at Dowalton, except the armllets of enamelled glass found there; but besides these, there have been found in some of the Irish crannogs iron chains, metallic mirrors, circular discs of turned bone, whorls, shears, bone combs, wooden combs (of yew), toothpicks, and other articles of the toilet, pieces of stag's horn sawn across, spearheads of iron, a bronze pin of the same form as those found at Norrieslaw, &c.<sup>3</sup>

The circular discs of turned bone above referred to are the table-men for chess, which, with similar games, was a favourite pursuit of the early Celtic people.<sup>4</sup> On the discovery of the crannog in the Loch of Forfar by drainage, in 1781, about thirty or forty of these table-men, made of round pieces of horn, were found. One of these, perforated and ornamented, is in our Museum<sup>5</sup> (Plate XIII. fig. 5). In the same place, several silver objects, shaped like ear-rings, were found. There were found at Banchory

<sup>1</sup> een enamelled glass beads from Dunshaughlin are in the Irish Museum.

<sup>2</sup> Arch. Jour. vol. iii. p. 48.

<sup>3</sup> Arch. Jour. vol. vi. p. 102.

<sup>4</sup> Among the objects found on the crannog in Cloonfinlough were horn discs like backgammon men (Proc. R. I. A. vol. v. p. 209); and in a moss in the parish of Parton, in Galloway, at a depth of twelve feet from the surface, was found a set of seven "reel-pins" and a ball, all made of oak, which are now in the Museum of the Antiquaries. The pins were found standing just as the players had left them.

<sup>5</sup> Among the subsidies due by the Monarch of Ireland to the Chief of Farney were six chess-boards.—*Book of Lecan; in Shirley's Dominion of Farney*, p. 11.

bronze vessels shaped like coffee-pots, and others like modern kitchen pots (Plate XIII. figs. 2, 3, 4, 5). A similar bronze coffee-pot was found at Loch Kanmor (Plate XIII. fig. 6).

It must be remarked, however, that all the Dowalton relics yet discovered must be referred to the occupation of an early period; while the remains on many of the Irish crannogs afford evidence of a continued and late occupation. Thus, while on the island at Cloonfinlough there were found various relics of bronze, horn combs of great artistic merit, with a canoe, there were discovered besides, a coin of the Emperor Hadrian, coins of the English Edwards', and a coin of James II. The indications of occupation drawn from the occurrence of coins in any given locality are always liable to doubt, but are entitled to weight when they are found in connection with such objects as Mr Shirley discovered at Loch-na-Glack, viz., iron coulter of ploughs, a long gun-barrel of the sort called a calliver, part of the lock of a pistol, an earthen pot of Dutch manufacture, with the figure of a man's head below the spout, used in Ireland during the seventeenth century, and called grey-beards, with some small Dutch tobacco-pipes.<sup>1</sup>

Many notices in the Irish annals, some of which I have already quoted, concur, with these vestiges, to show that crannogs were occupied as fortified retreats in the wars of the seventeenth century.<sup>2</sup>

It has been taken for granted by some that the crannog in Loch Cannor, in Aberdeenshire, was used for a like purpose about the same time. It appears, however, that besides the crannog, or artificial island, there were other three natural islands in the loch. The largest is about an acre in extent, and on it the traditional castle of Malcolm Canmore was placed. When I first visited the spot, many years ago, I saw great rafters of black oak, with the rude mortisings which joined them, lying on the margin of the loch opposite to this island, which seem to have formed part of a pier. Wyntown, when describing the battle of Kilblene, which was fought on the neighbouring moor of that name, says—

<sup>1</sup> Arch. Jour. vol. iii. p. 48.

<sup>2</sup> A.D. 1603—Hugh Boy O'Donnell, having been wounded, was sent to Crannog-na-n-Duini, in Ross Guill, in the Tuathas, to be healed.—*Annals of the Four Masters in Ulster Journal of Archæology*, vol. ii. p. 142.

“Schyr Robert Meyhneis til Canmore,  
Went, quhare he wonnand wes before ;  
Thidder he went, and in a pele  
He sawfyt hym and his menyhe welle.”

Fordun, in describing the skirmish, says that Menzies was received “in turre sua de Canmore.”<sup>1</sup> This “pele” occurs in the investitures of the Huntly estates in the sixteenth century as the “mansion of Loch Cawnmoir,” and was obviously a place of occasional residence of the Earls of Huntly, being probably used as one of those Highland fastnesses which most of the Scottish nobles of early times found it useful to possess in the emergencies which were then frequent, such as the demolition of their more accessible castles in the low countries. In 1497 Lachlan M’Intosh of Galowye granted his bond of manrent to the Earl of Huntly “at Lochcanmor.”<sup>2</sup> In 1519 one of the earl’s vassals appeared at “lie Peir de Lochcanmor” (being the construction of which I saw the ruined materials), to have presence of the earl, and ask from him his lands of Kincairgy.<sup>3</sup> According to Sir Robert Gordon, the army of the Scottish Parliament took the Isle of Lochcannor, which the Marquis of Huntly had fortified,<sup>4</sup> and in June 1648 the Estates of Parliament ordained the fortifications of Loch Kender to be “sighted.”<sup>5</sup>

“On one of the frequent pilgrimages which James IV. made to the shrine of St Duthac at Tain, this tower received the wandering monarch within its walls, and the treasurer’s accounts preserve the expense of ‘trussing the king’s dogs in the boat when he went to Canmore, and of a payment to the boatmen for carrying them across.’”<sup>6</sup>

All these statements, however, refer to the large island on which the pele was erected, and not to the artificial island in another part of the loch.

It has, in the same way, been assumed that a castle, also ascribed to Malcolm Canmore, was erected on the stockaded island in the Loch of Forfar. But here also there were other two natural islands, besides the one of artificial construction, and the castle in question stood on

<sup>1</sup> Vol. ii. p. 321.

<sup>2</sup> Miscellany of the Spalding Club, vol. iv. p. 190.

<sup>3</sup> Antiq. of Shires of Aberdeen and Banff, vol. iv. p. 344.

<sup>4</sup> Hist. of Family of Sutherland, p. 537.

<sup>5</sup> Acts of Parl. vol. vi. p. 326.

<sup>6</sup> Proceedings of the Society of Antiquaries of Scotland, vol. i. p. 259.

one of the former. This was on the north side of what is now the town of Forfar. Queen Margaret's Inch, as the stockaded island was called, was nearly equidistant from both ends, and the third was called the West Inch. In the end of last century there remained a considerable part of a building of some sort on the Queen's Inch, and a structure which is described as "an oven," almost entire; but it was not the site of the castle of Malcolm Canmore, which is said by Boece to have been "castellum valde munitum uti ejus docent ruinæ, undique pene septum immenso lacu, ubi post deletos Pictos, Scotorum reges, loci capti amænitate, sese frequentius continebant (fol. 67).<sup>1</sup>

Queen Margaret's Inch is described in 1781 as almost of a circular figure, full of trees, and used as a garden, surrounded with water of many fathoms.<sup>2</sup> It became accessible from the north side after the partial drainage which then took place.

For the following historical notices of this "Inch" I am indebted to Mr Robertson's Notes:—

"By a charter dated at Kinross 18 July A.D. 1234 King Alex. II. granted to the monks of Cupar decem mercas annuatim ad sustentationem duorum monachorum de domo de Cupro qui perpetuo ministrabant et divina celebrabant in insula nostra infra lacum nostrum de Forfar . . . . Concessimus item dictis monachis manentibus in dicta insula ad sustentationem eorundem communem pasturam in terra nostra de Tyrbeg ad sex vaccas et unum equum. Concessimus itaque dictis monachis ut de terra de Tyrbeg rationabiliter habeant focale ad usus suos proprios et ad usus eorundem qui extra insulam predicta animalia sua conservabunt."<sup>3</sup>

"On the 24th of July 1508, the abbot and convent of Cupar in Angus, granted for life to Sir Alexander Turnbull, chaplain, their chaplaincy of St Margaret's Inch, in the Loch of Forfar (capellaniam nostre capelle Insule Sancte Margarete Scotorum Regine iuxta Forfar), taking him bound to personal residence; to see to the building and repair of the chapel, and houses, (quod diligens sit et assiduus circa structuram et reparacionem capelle et edificiorum eiusdem); to suffer no secular lords

<sup>1</sup> Monipennie, in his Description of Scotland in 1612, says, "the toune of Forfar, with an old castle, with a loch and an isle therein with a tour."—*Mr Robertson's Notes*.

<sup>2</sup> Letter from the Rev. John Ogilvy, Forfar, 26th June 1781.

<sup>3</sup> Regist. Monast. de Cupro in Angus, MS. at Panmure.

or ladies, or strangers of any sort or sex, to make their abode in the island without leave of the abbot and convent asked and given (nec dominos vel dominas temporales, aut alienos cuiuscunque generis vel sexus recipiat, ibidem permansuros, sine nostra licentia petita et optenta); to make plantation of trees within and without, and to make works of stones for the defence and safety of the loch and its trees, lest the trees be overthrown by the force and violence of the water (eciam dictus capellanus faciat plantaciones arborum extra et infra ac construet congeries lapidum pro defensione et tuitione laci et arborum eiusdem, ne arbores cum impetu et violencia aque destruentur.)”<sup>1</sup>

I have remarked that no weapon of stone or bronze has been found at Dowalton, and Dr Wilde tells us that “they do not find any flint arrows or stone celts, and but very few bronze weapons, in the Irish crannogs.”<sup>2</sup> The remains, however, described by Mr Shirley from the crannogs in MacMahon’s country include stone celts of the common type, a rough piece of flint, apparently intended for an arrow-head, three bronze celts with loops on the sides, a dagger and chisel of bronze, two bronze arrow-heads, double-pointed, the boss of a shield of bronze, bronze knives,<sup>3</sup> &c.

Dr Wilde is inclined to suggest as the probable date of the Irish crannogs a period “from the ninth to the sixteenth century.”<sup>4</sup>

This may be called the period of their *historical* existence, but if we are to judge from the character of some of the remains found on them, and other circumstances, their origin must be assigned to a period much earlier.

That they continued to be erected, and even by the English conquerors of Ireland, in times comparatively recent, we may learn from a notice in the Irish Annals under the year 1223, to the effect that “William de Lacy came to Ireland, and made the crannog of Inis Laegachain; but the Connacians came upon the island by force, and let out the people who were on it on parole.”<sup>5</sup> This is one instance of what the Statute of Kilkenny complains of, that many of the English,

<sup>1</sup> Regist. Assed. Monast. de Cupro. MS.

<sup>2</sup> Proceedings R. I. A. vol. vii. p. 152.

<sup>3</sup> Arch. Journal, vol. iii. p. 47.

<sup>4</sup> Arch. Journal, vol. vii. p. 149.

<sup>5</sup> Annals of the Four Masters, vol. iii. p. 208, *note*, quoting Annals of Kilonan and Clonmacnoise.

forsaking the English language, manners, modes of living, laws and usages, live and govern themselves according to the fashion, manners, and language of the Irish enemy.

Mr Robertson quotes the following passage from Fordun, which shows the use of an "isle" in Murrayland in A.D. 1211, as a fastness and store for goods and treasure :—

"Dominus Rex electorum quatuor millia hominum de exercitu misit, ut ipsum Gothredum [Macwillam] quaerent, ubi eum latere putabant. Quibus in campi-doctores praefecit quatuor militares, comites videlicet Atholiae et de Buchan, Malcolmum Morigrond, et Thomam de Londy ostiarium suum : qui pervenientes in quandam insulam, in qua ipse Gothredus victualia congregaverat, et thesauros suos inde asportaverat, cum Gothredicis congressi sunt; ubi utrinque ceciderunt interfecti multi; plures tamen ex parte rebellium : quorum qui remanserunt, ad proximum nemus et loca tutiora pro tempore declinarunt. Dominus autem rex, circa festum S. Michaelis, rediens inde cum manu valida, Malcolmum comitem de Fyfe Moraviae custodem dereliquit."<sup>1</sup>

"Qui Gothredus anno praecedenti. . . . venit ex *Hibernia*."<sup>2</sup>

Fordun, about the same time [1228], records that a Scot, called Gillescop, set fire to sundry "munitiones ligneas" in Moray, and killed Thomas of Thirlestane, a robber, by an unexpected night attack on his "munition."<sup>3</sup> And if these notices can be held to refer to crannogs, they are probably the last historical reference to their occupation; although, no doubt, islands in lakes may have afforded occasional retreats in troubled districts to such robbers as Thomas of Thirlestane in much more recent times. But such casual occupation has nothing in common with the systematic use of palisaded islands in early times. The use of one lake island, among the wilds of Strathspey, as a retreat amid the disorders of the seventeenth century, is preserved in an account of that country, written about 1680, in which Loch-an-Eilan is described as "useful to the country in time of troubles or wars, for the people put in their goods and children here; and it is easily defended, being environed with steep hills and craigs on each side, except towards the east."

Among other points of coincidence between the Scotch and Irish

<sup>1</sup> J. de Fordun *Scotichronicon*, lib. viii. c. lxxvi.

<sup>2</sup> *Ibid.*

<sup>3</sup> *Lib. ix. c. xlvii.*



crannogs, I may notice a tradition connected with some of them, common to both countries, which seems to have arisen from the submersion of the island houses by the rising of the waters in the lochs. In Lough Rea, county of Galway, four crannogs have already been brought to light, and heaps of regularly placed stones have been observed under water in the shallow parts of the lake, which may prove to be structures of the same kind. There is a tradition in the country about Lough Rea, that "a city lies buried under the lake."

In Carlinwark Loch, near Kirkeudbright, are two natural islands—one near the north, and the other near the south end. Around the latter was a rampart of stones, and a causeway secured by piles of oak led from the island on the north-east to the side of the loch. Close to the side of the island there was a break in the causeway, in which large beams of wood remain, and are supposed to have formed part of a drawbridge. On this island the remains of an iron forge are to be seen. The recent discovery of armour and armourers' tools near this island have been previously described.

Canoes were found in various parts of the loch, as also several very large heads of stags, a capacious brass pan, and a bronze sword.

The loch was drained for marl in the year 1765, when the two artificial islands, which had previously been under seven feet of water, emerged. A tradition has always prevailed in the parish that there was a town sunk, or "drowned," in the loch.<sup>1</sup>

The analogies between the Scottish crannogs and the Swiss pfahlbauten, or pile building, are not many. They had one common idea in their construction, in that their builders sought for security in the midst of waters. But the Swiss structures seem chiefly to have been collections of *villages* situated on platforms resting on piles along the shores of the lakes. These platforms were reached from the shore by gangways formed on piles, and on the platforms were placed the huts of the people.

In the year 1860, twenty-six such village sites had been traced in the Lake of Neufchatel, twenty-four in that of Geneva, and sixteen in that of Constance. The number of relics of various kinds found on the site

<sup>1</sup> New Stat. Account of Kelton, Kirkeudbrightshire, p. 154.

of these ancient villages is immense. Twenty-four thousand were raised from one locality, that of Concise, in the Lake of Neufchatel. The objects differ greatly in character in different villages. In some are varieties of stone implements, many of them fixed in deer-horn hafts, objects of bone and horn, a few objects of bronze, an occasional amber bead, rude pottery; and great quantities of teeth of the bear, boar's tusks, bones of the deer and wild boar, of sheep and oxen, and more rarely of a small species of horse, are found.

At the Nidau Steinberg, in the Lake of Bienne, an extensive collection of bronze relics was found, consisting of swords, spear-heads, sickles, celts, rings, and armlets, many of them covered with ornamental designs. In some cases Roman remains have appeared.

The people were not unacquainted with agriculture, if we may judge from the occurrence of grains of wheat and barley; and they had mats of hemp or flax. All the facts connected with the pfahlbauten seem to speak of their quiet, long continued occupation by a race of hunters, farmers, and fishermen, living in considerable communities. It must be noticed, that we cannot now speak of them merely as Swiss erections, as they have been found in Savoy, in the lakes of upper Italy, in Hanover, and Brandenburg, and, as some have said, in Denmark.

The idea of the Scottish and Irish crannogs is more that of occasional retreat, as the *strengths* of a people driven by an enemy from their ordinary abodes. It would seem, no doubt, from the numerous and various remains found on some of the Irish crannogs, that this necessity of retreat was in many parts of the country an abiding one; and we learn from Dr Reeves, that four crannogs in the county of Antrim were each the accompaniment or head-quarters of a little territorial chieftaincy. "They were," he says, "the little primitive capitals of the four Irish tuoghs or districts, which, being combined in pairs about the beginning of the seventeenth century, went to form two English half baronies, exactly preserving their main boundaries."<sup>1</sup> No evidence of late occupation of this kind appears in regard of any of our known Scottish examples, nor can we trace their influence in the arrangements of property and population, in the way just referred to as occurring in Ireland.

<sup>1</sup> Proceedings Royal Irish Acad. vol. vii. p. 156.

But, although in most cases the pfahlbauten were erected on platforms supported by piles, yet exceptional examples have been found in the Swiss lakes, of structures which have a good deal more in common with the crannogs of this country. At Nidau, in the lake of Biemme, where the great collection of bronze relics was found, an artificial island has appeared; encircled by piles, with horizontal planks at the bottom, to retain the stones of which it is composed in their place. Similar attempts at stone islands appear at Corcelette, and at Concise, in the Lake of Neufchatel, and still more perfect attempts at crannog constructions have been found at Inkwyl Lake, near Soleure, at Nussbaumen, in the canton of Thurgau, and Wauwyl, near Lucerne. To the construction of this last class the term of packwerk, or fascinen-bau, has been applied by the Swiss antiquaries.

Still, in the main, the use of piles in Switzerland was for the purpose of sustaining large platforms, on which whole villages were erected; while, in Scotland and Ireland, the piles were used for protecting the single solid island within them, and forming a palisade for defence round the margin of the island.

To other points of agreement between the Scottish and Irish systems of fortified islands, I may add, that canoes hollowed out of single trees are generally found near the crannogs of both countries. Besides the canoes which have been found in connection with crannogs in Scotland, and which were thus originally designed for use on the waters of the surrounding lochs, others have been discovered in positions which show that they had been used for sailing on rivers. This will appear from the following notice of the canoes discovered in Scotland, which I have prepared for the purpose of comparison, and from which it will be seen that they vary very much in size, and somewhat in construction.

Of two found in the Lochar Moss, one was 8 feet 8 inches long, by 2 feet in width and 11 inches in depth; the other was 7 feet long. One found in Loch Doon was 23 feet in length, by 3 feet 9 inches in greatest breadth. Another measured about 12 feet in length, by 2 feet 9 inches in breadth. The lesser one was square at both ends; the larger was square at the stern, with a pointed bow. The stern was a plank fitted into grooves cut in the solid wood, left thicker for receiving them.

The plank was also fastened by two strong pins of wood passing through well-cut square holes on each side.

One found in 1726, at the mouth of the Carron, under a great depth, was 36 feet long, by 4 feet in breadth.

Seventeen canoes have been found in the ancient bed of the Clyde at Glasgow. Of the first, which was discovered in digging the foundation of St Enoch's Church, at a depth under the surface of 25 feet, the length is not noted. It contained a stone celt, which may have been used in its manufacture. Of the others, one, which was formed of several pieces of oak, though without ribs, was 18 feet in length. One, now in our Museum, was found at Springfield, on the south bank of the Clyde, at a depth of 17 feet below the surface. It measures 10 feet 4 inches in length, by 22 inches in breadth at the stern, and 9 inches in depth. Another, found on the same side of the river, was  $19\frac{1}{3}$  feet in length,  $3\frac{1}{2}$  feet in width at the stern, and 2 feet  $9\frac{1}{2}$  inches midway, the depth being 30 inches. Here there was an outrigger fastened into holes in the side by pins; a cross seat at the stern, and another in the centre, resting on supports of solid wood, left in hollowing out the boat. The stern is a board inserted in grooves. Another vessel found here had a hole in the bottom, which was stopped with a plug of cork. Another was 13 feet in length.

In the Loch of Banchory a rude boat was found, about 9 feet long, made without nails, except two, now in the possession of Sir James Horn Burnett. A small canoe was also found.

A canoe, found at Castlemilk, in Lanarkshire, was 10 feet in length, by 2 feet in breadth. One found in the Moss of Knaven, in Aberdeenshire, was 11 feet long, by 4 feet broad. One found in draining the loch at Closeburn, in Dumfriesshire, was 11 feet 9 inches in length, by 29 inches in breadth at the stern, the average depth being 20 inches. The stern is a plank let into grooves on the sides of the vessel.

Of the Irish canoes, one at Derryhollagh, in Antrim, was 20 feet 9 inches long, 4 feet 7 inches broad, and 1 foot 8 inches deep. One at Ardakillin measured 40 feet in length, by 4 feet across the bow.<sup>1</sup> One at Drumal league Lough, county of Leitrim, was 18 feet long, by 22 inches broad,

<sup>1</sup> Ulster Jour. of Archæol. vol. vii. p. 194.

square at stem and stern. One at Cahore, county of Wexford, measured 22 feet in length,  $2\frac{1}{2}$  feet across at the middle, and 11 inches in depth. The stern was formed of a separate piece let into a groove. One of this size was strengthened by three projecting bands or fillets left in the solid in hollowing the inside.<sup>1</sup> One of a lesser class was found in the Bog of Ardragh, in Monaghan, and is described by Mr Shirley as being 12 feet long, by 3 feet broad.<sup>2</sup> It had wooden handles at each end, by which it could be raised and carried from one loch to another. Mr Shirley describes another, found in the Lake of Monalty, as 24 feet in length, 3 feet at its greatest breadth, and 13 inches in height.<sup>3</sup>

A canoe found in Loch Canmor was  $22\frac{1}{2}$  feet long, by 3 feet 2 inches in breadth at the stern.

Canoes are found in the Swiss lakes, but we have not many details of their measurement. In the Bienne Lake a large canoe, hollowed out of the trunk of a tree, 50 feet in length, by 3 in breadth, has been discovered at the bottom. It is filled with stones, with which it was probably freighted, as materials for one of the stone islands found in this lake; but smaller boats of the same construction are more common.<sup>4</sup>

Of the four paddles in the collection of the Royal Irish Academy, the largest measures 2 feet 7 inches in length, and is  $5\frac{1}{2}$  inches broad in the blade, the thickness being half an inch. The five paddles (or rudders) found in the Moss of Ravenstone are all of one size, being 3 feet in length, by 10 inches in breadth in the blade, the thickness being half an inch.

It may be noted, that while canoes hollowed out of single trees<sup>5</sup> seem

<sup>1</sup> Wilde's Catalogue, pp. 203, 204.

<sup>2</sup> "Dominion of Farney," where a cut of the canoe is given in the Index.

<sup>3</sup> Arch. Jour. vol. iii, p. 46.

<sup>4</sup> Wyllie in Archæologia, vol. xxxviii. p. 180.

<sup>5</sup> The mode in which canoes are formed out of single trees at the present day is thus described by the late Captain Speke:—"3d March 1858.—All being settled, I set out in a long narrow canoe, hollowed out of the trunk of a single tree. These vessels are mostly built from large timbers, growing in the district of Uguhha, on the western side of the lake. The savages fell them, lop off the branches and ends to the length required, and then, after covering the upper surface with wet mud, as the tree lies upon the ground, they set fire to and smoulder out its interior, until

to have been in universal use in the rivers and lochs by the early inhabitants both of Scotland and Ireland, there was a different kind of boat also in use by them, which is alone described by the classical writers. Pliny<sup>1</sup> says, "Etiam nunc in Britannico oceano vitiles coreo circumsutæ fiunt," and that when the Britons sail to the Isle Mictim [St Michael's Mount?] it is "vitilibus navigiis corio circumsutis;" when Cæsar had to build some vessels after the British fashion, it is said, "carinæ primum ac statumina ex levi materia fiebant, reliquum corpus navium viminibus contextum coriis integebatur."<sup>2</sup> Solinus also, speaking of the rough sea between Britain and Ireland, says that "navigant autem vimineis alveis quos circumdant ambitione tergorum tribulorum."<sup>3</sup>

It appears also from one of the miracles of Ninian, related by his biographer Ailred, that similar vessels were used on the shores of Galloway.<sup>4</sup> One of the scholars of the saint, fleeing from his discipline, sought a vessel by which he might sail to Scotland; for, says the writer, there is in use in these parts a vessel formed of wicker like a basket, large enough to hold three passengers. This, being covered by the skin of an ox, is rendered impenetrable to the water.

The currach, or vessel covered with skins, thus described, is mentioned by Adamnan as in use in his day. Another class, to which he applies the term "naves," is believed by Dr Reeves to refer to the canoes made of hollowed trees.<sup>5</sup> The building of a currach is minutely detailed in a passage in the Life of St Brandan, quoted by Dr Reeves: "Fecerunt naviculam levissimam, costatam, et columnatum, ex vimine, sicut mos in illis partibus, et cooperuerant eam coriis bovinis ac rubricatis in cortice roborina, linieruntque foris omnes juncturas navis."

The canoe which so generally accompanies the crannog may be held to mark a very early period, but the currach is said to be still in use on

nothing but a cave remains, which they finish up by paring out with roughly-constructed hatchets. The seats of these canoes are bars of wood tied transversely to the length.—"Journal of a Cruise on the Tanganyika Lake, Central Africa." *Blackwood's Magazine*, Sept. 1859 [Mr Robertson's Notes].

<sup>1</sup> Hist. Nat. in Monum. Hist. Britan. p. viii.

<sup>2</sup> De Bell. Civil. i. 54.

<sup>3</sup> Mon. Hist. Britan. p. x.

<sup>4</sup> Vita Niniani, in Pinkerton's Vitæ Antiq. Sanct. cap. x.

<sup>5</sup> Life of St Columba, p. 170, note.

the Severn and in many parts of the coast of Ireland, especially of the counties of Donegal and Clare. Some years ago I saw a currach which continued to be used on one of the upper reaches of the Spey till a time comparatively recent.

From the accounts of the early inhabitants of Britain preserved to us by the Roman writers, we may fairly picture to ourselves a settlement of one of their tribes or clans in the neighbourhood of Dowalton, mostly occupied with the chase, living, when at peace, in the wattled huts within their raths on the high grounds, and when pressed by danger betaking themselves to their fastnesses in the waters.<sup>1</sup>

Of British strengths we find various notices in the pages of a writer, whose greatness as a general and politician, has, at this long interval, suggested his *Life* as a worthy theme for the pen of an Emperor of the French.

Of one of these, Cæsar says<sup>2</sup> that it was a place among the woods, strongly fortified by nature and art, which as it seemed had been prepared beforehand for the purpose of domestic war, as all the entrances were obstructed by numerous felled trees; and he adds, they themselves rarely fight out of the woods. He afterwards speaks of the fortified town of Cassivellaunus,<sup>3</sup> in which a considerable number of men and cattle were collected, and which appears to have been an extensive enclosure like those on the hill tops at Yevering and Ingleborough in England, and the Caterthuns in Scotland, in which vestiges of hut circles are found on the extensive flat platforms on the top, protected by the surrounding walls, which would also have sheltered great numbers of cattle. In some cases, as at Noath in Aberdeenshire, there is, besides the fort on the top, another surrounding wall, some way down the hill. The space between the two walls is of a bright verdure, indicative probably of its early use for penning cattle, while the heather begins outside of this lower rampart.

To the same effect Strabo writes,—“Forests are their cities, for having

<sup>1</sup> They probably had some grain to be ground in the querns which they have left behind them, but the masses of bones about the islands, would seem to indicate that the flesh of animals was their mainstay.

<sup>2</sup> *De Bello Gallico*, lib. 5, c. 9.

<sup>3</sup> *Ibid.* c. 21.

enclosed an ample space with felled trees, here they make themselves huts and lodge their cattle, though not for any long continuance.<sup>1</sup>

It would seem that we have here described a space surrounded by a wall and ditch, and probably stockaded with trees, very much of the character of the pah of New Zealand of the present day; and it is plain that they were capable of being well defended, as the pahs proved on the assault of our own soldiers last year, for on one occasion Cæsar's soldiers of the 7th legion had to make a *testudo*, and throw up a mound against the outworks of one of these strengths, before they could take it.<sup>2</sup>

In the hilly country of the Silures, the stockaded wall and ditch were superseded by the use of stones. Caractacus fortified himself against Ostorius on a rocky height with a *vallum* or *agger* of stones: "*rudes et informes saxorum compages, . . . . in modum valli præstruit.*"<sup>3</sup>

There are many references in the books of the classical writers to the woods and marshes of the Britons.

Eumenius speaks of the woods and marshes of the Caledonians and other Picts; and Pliny describes the Caledonian forests (*Sylvæ Caledoniæ*), as "*Romanorum armis terminus.*"<sup>4</sup>

Herodian tells us that Severus, on his expedition into Britain, more especially endeavoured to render the marshy places stable by means of causeways, that his soldiers, treading with safety, might easily pass them, and having firm footing, fight to advantage. He adds, that many parts of the country being flooded by the tides, became marshy, and that the natives were accustomed to swim and traverse about in these, and being naked as to the greater part of their bodies, they contemned the mud.<sup>5</sup>

Xiphiline, when describing the Caledonians, speaks of their ability to endure every hardship; and adds, that when plunged in the marshes, they abide there many days with their heads only out of water.<sup>6</sup>

The situation of the islands on Dowalton, which combined the advantages of surrounding wood and swamps, completely answers to the Roman description of a British strength. The loch was in the midst of woods

<sup>1</sup> Geogr. lib. iv. *ap.* Monum. Hist. Brit. p. vii.

<sup>2</sup> Lib. v. c. 9.

<sup>3</sup> Tacitus Ann. lib. xii. c. 33-35.

<sup>4</sup> Mon. Hist. Brit. pp. lxi. and viii.

<sup>5</sup> Mon. Hist. Brit. p. lxiv.

<sup>6</sup> Mon. Hist. Brit. p. lxi.



mostly of birch and alder; it had on each end long stretches of swamp, while on the sides it had rising grounds, which probably were covered with the lofty oaks out of which the canoes were fashioned.

The district is indeed full of lochs, some of them in groups, and it is very probable that the site of the mosses in the neighbourhood of Dowalton may also have contained lochs in early days. If so, they no doubt contained artificial islands also, and this is rendered probable by finding paddles with portions of beams and querns in the Moss of Ravenstone.<sup>1</sup>

To the south-west is the White Loch of Mertoun, which, as we know, contains a stockaded island. In Pont's Survey, there is laid down Loch "Remistoun," a little way to the south, which may be intended for "Ravenstone," now in moss. On the west is a group of small lochs, called Loch of Aryoullan, Loch Duif, Loch na Brain. North of them is the Loch of Mochrum, Loch of Shellachglash, Kraga Loch, Loch Dyrhnyen, Loch Chraochy, Loch Dyrsnag, Loch Dyrskelby, Loch Ribben, and Loch Machrymoir. Further to the north are larger lochs, called Loch Ronald, Kerron Loch, Glassoch Lochs, Loch Mackbary, Loch Uchiltry, Loch Dornel, and Loch Mowan.

It seems probable that similar structures had been placed in these lochs, or such of them as were suitable for the purpose.

The locality may thus have been the head-quarters of a considerable population, whose presence probably determined the site of the neighbouring Roman station at Whithorn, in the same way as the position of the British strengths in Northumberland seems to have fixed the track of the Roman road called the Devil's Causeway, and other Roman works on the opposite side of the valley of the Breamish and the Till.

Islands, constructed of layers of vegetable substances like those in Dowalton and the neighbouring White Loch of Mertoun, have not as yet been found elsewhere in Scotland. It will be interesting to watch, in the light of future discoveries, whether this was a local use, or whether it depended on other circumstances, such as the depth of the loch, and the abundance of vegetable materials in the neighbourhood.

<sup>1</sup> Since this was written, I learn that marks of beaches have been found on the face of the rising grounds above these mosses, at the distance of a mile from Dowalton.

There can be no doubt that both palisaded enclosures, whether in woods or waters, and strengths formed of ramparts of stone, were resorted to by the British tribes at the time of the Roman invasion, and their use in other countries can be traced in much earlier times.

A passage (pointed out to me by Professor Sir James Simpson), in a treatise on "Airs, Waters, and Places," by Hippocrates, who lived upwards of 400 years before our era, seems to describe a structure of the same kind as those in Dowalton Loch. Speaking of the inhabitants of Phasis, a region of the Black Sea, he says, "Their country is fenny, warm, humid, and wooded, and the lives of the inhabitants are spent among the fens; for their dwellings are constructed of wood and reeds, and are erected amidst the waters." He adds, that "they seldom practise walking either in the city or the market, but sail about up and down in canoes, constructed out of single trees, for there are many canals there."<sup>1</sup>

Herodotus furnishes a still earlier account of an artificial construction among waters, used by a Thracian tribe who dwelt on Prasias, a small mountain lake of Pœonia, now part of modern Roumelia. But their habitations were more in keeping with the dwellings in the Swiss lakes than with the island crannogs of Scotland, inasmuch as their habitations were constructed on platforms raised above the lake on piles, and were connected with the shore by a narrow causeway of similar formation.

There is a peculiar interest in this small colony of Dowalton, from its neighbourhood to the site of Ptolemy's Roman town of Leucophibia, which probably suggested the site of the Saxon settlement of Whithorn, and from the circumstance that at least one object of Roman workmanship—the bronze vessel already described—has been found among the relics of the old inhabitants of the islands.<sup>2</sup>

It is only matter of conjecture how it came there, whether in the course of commerce, by gift, or by appropriation after the removal of their Roman neighbours. It seems, however, not unreasonable to regard the

<sup>1</sup> "Airs, Waters, and Places," in the genuine works of Hippocrates, by Adams, vol. i. p. 209.

<sup>2</sup> The remains of a Roman camp are said to be placed about half a-mile to the west of the town of Whithorn, and Roman coins are not unfrequently found in the grounds adjoining the ruined priory.—*New Stat. Acc. Wigtonshire*, p. 55.

occurrence of a Roman vessel at Dowalton, associated as it is with relics which are elsewhere found in early sepulchral cairns and British hut circles, as pointing to a period of occupation of the islands not later, and probably earlier, than that of the Roman settlement at Whithorn.

It seems plain, from the new bottom and the numerous mendings of one of the rude bronze dishes, that such objects were not easily procurable.

The Roman dish was doubtless much regarded, and bears no marks of use. Two vessels of the same description were found, in connection with an encircled earthen barrow, at Gallowflat, in Rutherglen. They were both white on the inside (probably from tinning), and on the broad handles of each was engraved the name of "CONGALLUS," or "CONVAL-LUS." In the mound, a flat stone, perforated with two holes, was found; and beside it three beads, one of which exactly resembles the bead of vitreous paste found at Dowalton.<sup>1</sup> The native appreciation of Roman articles may also be inferred from the occurrence, in an "Eird house," or weem, at Pitcur,<sup>2</sup> of portions of vessels of embossed Samian ware.

The absence of all relics of a necessarily later period, makes it probable that the occupation of Dowalton was not continued, either from the submersion of the islands, or from some other change of circumstances.

Among events which may have conduced to such a change was the settlement in the neighbouring Roman town, towards the end of the fourth century, of the illustrious Ninian, from whose lips the dwellers amid the woods and marshes of Dowalton would hear of a new and better hope than had yet animated them, by which they may have been led to more settled habits of life. However this may be, it is certain that Ninian erected at Whithorn a church of stone, after the Roman fashion, and that it remained two centuries afterwards, in the time of Bede, who tells us that the place took its name of "ad Candidam Casam" from this stone church. Here also, it would seem, Ninian erected a monastery, after the custom of the time, where he gathered a religious community to assist him in his missionary work, and in the education of the youths, who, as we learn from his biographer Ailred, were committed to his charge by parents of high and low degree. We gather from another part of Ailred's

<sup>1</sup> Ure's *Kilbride and Rutherglen*, p. 124.

<sup>2</sup> *Proc. Soc. Ant. Scot.* vol. v. p. 82.

work, that Ninian had a flock of cattle, which were pastured on ground at some distance from his monastery.

We do not know how long the church and monastery of Ninian lasted, but when Galloway came under the sway of the Saxons of Northumbria, a bishop's see was set up at Whithorn, and Pecthelm was the first who sat in its chair. That this prelate was a man of some note we may learn from a letter addressed to him by Boniface, the great apostle of Germany, in which he asks for Pecthelm's advice on one of the ecclesiastical points which were then agitating the Christian world. The celebrated Alcuin, the friend of Charlemagne, in the beginning of the following century, addressed one of his letters to the brethren at Whithorn.

Amid the many vicissitudes to which the See of Ninian was exposed, and while the material fabric erected by the masons whom he brought from Tours had given way to more than one successor on its site, the sanctity of the founder's name seemed only to gather strength as time went on. Pilgrimages continued to be made to his tomb down to the period of the Reformation by persons of all ranks, from the monarch to the peasant; and in a letter from James V. to Pope Innocent X., he says that the tomb of Ninian was still to be seen at Whithorn, and that it was visited yearly by flocks of devotees from England, Ireland, the Isles, and adjoining countries. For the bodily comfort of these pilgrims, James IV., by a charter to Sir Alexander M'Culloch, which is now in the charter-chest at Monreith, erected Mertoun into a burgh of barony, "*pro asiamento et hospitacione ligeorum nostrorum, extraneorumque, versus Sanctum Ninianum in Candida Casa, aliasque adjacentes partes peregrinacionis et alias negociandi causa proficiscentium et revertencium.*"

We can hardly fancy that the community of Dowalton remained uninfluenced by the neighbourhood of Roman civilisation, or that they gathered no settled habits under Roman rule, while their early knowledge of the Christian religion must have conduced to their progress in every way.

The traditions of the Scottish Church associate with Ninian the name of St Medan, who, coming from Ireland to avoid the addresses of a lover, first settled at the Rinns of Galloway, where her chapel in the rocks may yet be seen; and her persecutor having followed her to that place, she is believed, on the same authority, to have sailed across the Bay of

Luce on a stone, and effected another settlement on the sea-shore in a recess of "The Heughs," where the ruins of a church, dedicated under her name, still remain. This was the church of the parish of Kirkmaiden, which was co-extensive with the barony of Monreith, and reached to the Loch of Dowalton.

Much has been done in Ireland by Dr Wilde, Dr Reeves, Mr Mulvany, and others, to illustrate the history of the crannogs of that country. It is not much more than twenty-five years since they first attracted the notice of Dr Wilde, who described the crannog near Dunshaughlin in the Proceedings of the Royal Irish Academy for April 1840. Our knowledge of the Swiss pile buildings dates from 1853-4, when the subsidence of the lakes, through long-continued drought, revealed the piles, and led to many subsequent discoveries of the greatest interest.

It was only in the light of these that the incidental notices of artificial islands in our own Proceedings and elsewhere came to have a meaning; and the paper read to this Society by Mr Robertson, in December 1858, for the first time discussed the question in a systematic way, and claimed for our Scottish forefathers a place among the island builders of Europe.

I cannot doubt that these islands were numerous, and that many of the lochs in which they were situated were, like that at Thornhill, of very small dimensions. The gradual drainage of such sheets of water generally leaves their site as a morass, which after a time is brought under tillage. And where no outlook is kept in such a process, the remains of piles are destroyed, without any suspicion that they formed part of an ancient structure, and consequently without any opportunity of investigation being afforded. The occurrence of canoes in situations where little of the old loch remains to attest its former existence beyond a bog, as at Knaven, in Aberdeenshire, and at Barnkirk, near Newton Stewart; or where, without a canoe, great quantities of bronze vessels and horns of deer have been found,—as in a morass at Balgone, in East Lothian,—all suggest the sites of early piled habitations.

Several canoes have been found in Loch Doon, under circumstances which give reason to hope that crannogs will yet be found there. Some years prior to 1832, two canoes were discovered close to the rock on which Doon Castle stands. Soon afterwards, a great drought caused the fall of

the loch to an unusually low level, when near the same spot, parts of canoes and other large pieces of timber became visible under the water. It was found a difficult task to extricate the canoes from the debris of large stones, sand, and mud with which they were surrounded. The workmen believed that there were many more canoes lying below and across those which they raised, but although their feet rested on these when at work, yet from the great depth of the water by which they were covered, and which reached to their necks, they did not see the objects which they supposed to be canoes. It seems much more probable that these and the large pieces of timber already referred to, are portions of a ruined crannog.

Somewhat to the south of this spot is another small island, which is laid down in Blaeu's Atlas as "Prisoner's Stone," and in the Ordnance survey as "Pickman Isles."

The artificial island in Loch Canmor, in Aberdeenshire, was known as "The Prison" in the end of last century.<sup>1</sup>

Before the end of last century several canoes had been discovered in Lochwinnoch, and many have been found since that time.<sup>2</sup> One person says he saw twenty-one buried in the mud between the isle on which the pele stood, and the north side of the loch. It is much more likely, however, that what he saw was the timbers of a ruined crannog.<sup>3</sup>

The following facts, for which I am indebted to the Rev. Dr Duns, of the New College, Edinburgh, enable me to preserve the memory of a stockaded island in the loch at Lochcot, in the parish of Torphichen:—

The loch lies at the foot of the southern slope of Bowden Hill, and is now drained. An old man who belonged to Dr Duns' congregation, when he was at Torphichen, more than once described to him the appearance of the loch before it was drained—"its central island, and the big logs taken from it and burned." Horns were also found in the loch, but were neglected, and have disappeared. Dr Duns found part of a quern on an examination of the site; and on digging into a mound at a short distance eastward from the loch, he found an urn of rude type. To the south are the remains of a circular earthwork; to the

<sup>1</sup> Letter from Mr C. Innes of Balnacraig to Mr G. Chalmers, 7th August 1798.

<sup>2</sup> Old Stat. Account, vol. xv. p. 97.

<sup>3</sup> New Stat. Account, Renfrew, p. 97.

south-west, traces of what has been called a Roman camp; and to the south, a camp of peculiar form, noticed by Sibbald.

In the middle of Lochrutton is a small island of circular form. It is said to be formed of stones on the surface, and to be founded on a frame of oak.<sup>1</sup> In Loch Urr is an island approached by a stone causeway, both of which are now submerged, probably by the growth of moss at the spot through which the river finds its way from the loch. Mr Robertson notes that at Lochore, in Fifeshire, great quantities of oak timber were dug up since the loch was drained. They are believed to have formed part of a causeway connecting the Castle Island with the mainland.

In the Castle Loch of Lochmaben, on the south-west side, is a small artificial island, where there are stakes of oak still remaining on either side of it, which have been put in as a fence against the water.<sup>2</sup>

Of an artificial island in Loch Lochy, Mr Robertson gathered some particulars from "Ane Descriptione of certaine Pairts of the Highlands of Scotland,"—a MS. in the Advocates' Library, written towards the end of the seventeenth century. "Ther was of ancient," says the author, "ane lord in Loquhaber, called my Lord Cumming, being a cruell and tyrrant superior to the inhabitants and ancient tenants of that countrie of Loquhaber. This lord builded ane iland or an house on the south-east head of Loghloghae; . . . and when summer is, certain yeares or dayes, one of the bigge timber jests, the quantitie of an ell thereof will be sein above the water. And sundrie men of the countrie were wont to goe and se that jest of timber which stands there as yett; and they say that a man's finger will cast it too and fro in the water, but fortie men cannot pull it up, because it lyeth in another jest below the water." Here, obviously, we have an allusion to the mortising of one beam into another, after the fashion so common in the Irish crannogs, as well as the Scottish examples at Dowalton, Loch Canmor, and Loch Lomond.

In the midst of a morass, about half a mile north-east from the farm of Nisbet, in the parish of Culter, in Lanarkshire, is a mound, of an oval shape, called the Green Knowe, which measures about 30 yards by 40, and rises about two or three feet above the level of the surrounding

<sup>1</sup> New Stat. Account; Kirkcudbrightshire, p. 287.

<sup>2</sup> *Archæologia Scotica*, vol. iii. p. 77, note c; also "Lochmaben Five Hundred Years ago," pp. 72, 73. Edin. 1865.

bog. On penetrating into this elevated mass, it was found to consist of stones of all different kinds and sizes, which seem to have been tumbled promiscuously together without the least attempt at arrangement. Driven quite through this superincumbent mass, are a great number of piles, sharpened at the point, about three feet long, made of oak of the hardest kind, retaining the marks of the hatchet, and still wonderfully fresh. A causeway of large stones connected the mound with the firm ground. All around it, is nothing but soft elastic moss, and beneath it too, for on cutting through the bed of stones you immediately meet with moss. Near the spot are the remains of some very large trees.

The mound has long been used as a quarry, and is in the gradual course of demolition.<sup>1</sup> Mr Sim of Culter Mains, who first directed attention to this structure, states that the valley in which the Green Knowe is placed was probably well wooded in early days. In a morass at the base of Tinto Hill, a perfect forest of magnificent oak trees has been recently discovered in the course of drainage operations—some of them of great size. Mr Sim recently found an oak under the ground at Culter Mains, a branch of which was four feet in diameter. The stem was not removed. He also states that the old name of the moss, in which the "Green Knowe" is placed, was the "Cranney Moss," which may probably preserve a recollection of its early name of "Crannog." In this neighbourhood were found two gold ornaments of crescent shape (one of which was presented to the National Museum by Mr Sim); and other relics of early times, such as stone celts, are of frequent occurrence.

It is probable that the sites of crannogs may be traced through similar names in other parts of Scotland. Thus we have Crannach Bog or Crannabog, part of the barony of Carnousie; Cranna and Crannabog, part of the estate of Rothie; Cranbog and Lochlands, part of the barony of Belhelvie,—all in the county of Aberdeen. A meadow in the parish of Kilmarnock is called Cransyke. Cranberry Moss is in the parish of Kilwinning, and Cranberry in the parish of Auchinleck.

That a crannog had originally been placed in the Loch of Duddingston seemed very probable, from the discovery of many bronze weapons,

<sup>1</sup> New Stat. Account, vol. vi. p. 346.



a ring handle of a caldron, masses of melted bronze, along with gigantic deer's horns, which were dredged up from the bed of the loch, about 150 yards from the side next the Queen's Park, in a search for marl in 1778; and the following facts, which have just been brought under my notice, seem to add considerably to the probability:—Dr Thomas Thomson of Leamington, son of the Rev. John Thomson, minister of the parish of Duddingston, in answer to my inquiries, thus writes:—“ I have a distinct recollection of the piles or stakes in Duddingston Loch to which you refer; but I am sorry to say I do not so well recollect their exact or relative position, or how many there were. My impression, however, is, that there was at one time a considerable number, and that almost all of them had disappeared when I left Scotland, upwards of thirty-five years ago. They were all of a dark blackish colour, looking as if they had been charred, about from 6 to 8 inches in diameter, and some of them standing above the surface as much as two feet, while there were others only just above it, and a few quite below the surface, rendering it necessary to be careful when rowing in that part of the loch which they occupied. They were firmly fixed in the bottom of the loch, and were used occasionally when sketching or fishing to fasten the boat to them. They were all, I think, on the south side of the loch, and occupying somewhere about the middle third of its length, or perhaps a little higher up to the west end. For the most part, they were at irregular distances from each other, although in one or two instances there were two close together, and there were several not very far from the reeds.”

The drainage operations, which are so general throughout Scotland, cannot fail to bring to light more of these island structures; and I must express an earnest hope that opportunities will be afforded for their careful investigation, and that lists of them may be furnished to the Society. As yet we are very ignorant of the details and varieties of their construction; and every well-authenticated examination is a valuable contribution to the history of structures, which mark a special point in the progress of the early inhabitants of the country.

It may help to such a result, if the knowledge which we already possess of these ancient remains was more generally diffused, so that the discovery in a new locality, of any of the features found in connection

with such islands elsewhere, may lead to an expectation of their occurrence, and to increased care in the search for them.

It was the appearance of the Roman bronze dish at Dowalton, which first suggested to Sir William Maxwell that other remains of early times might be at hand. This led Lord Percy to visit the loch, where his lordship detected the appearance of piles in various places, and made a partial examination of most of the islands. Sir William subsequently bestowed long and patient care in overseeing the excavations of the islands, and the collection of the relics; and believing that such objects are only of real use in a public museum such as ours, where they can be classified and compared with like remains, he has transferred to us the whole collection, with the intention of adding to it from time to time, as fresh discoveries are made.

If such an example should be generally followed, we may be enabled ere long to give shape and body to a class of our antiquities, of which as yet our knowledge is hazy and uncertain.

For the following account of a structure in a moss in the parish of Applegarth, which in some respects has an analogy with the crannogs, but as a whole is unique, I am indebted to my friend, Dr Arthur Mitchell:—

*Curious Structure in a Peat Moss at Corncockle, in Applegarth, discovered  
by Sir William Jardine, Bart.*

"Last summer—that is, in 1863—while 'casting peats' at Corncockle, in Applegarth, from a bank of the average height of 12 to 14 feet, the labourers came upon a large number of oak trees, lying parallel and quite close to each other—forming, in short, a platform, with 6 or 7 feet of peat below, and as many above. The size of this platform is as yet undetermined, but, from the portion uncovered, it is from 20 to 30 feet wide, while the ends of the trees can be followed in the face of the bank for at least 150 feet. The platform is covered with twigs of birch, and then over these there is a layer of the common bracken, which at present grows with extraordinary luxuriance in the neighbourhood. This layer of birch twigs and bracken is about 10 inches thick, and appears uniformly to cover the platform, except at one point, where flattish whinstones are laid on as a sort of pavement over the trees—the space so covered being

an irregular circle 6 or 7 feet in diameter. On this spot fragments of burnt wood were very numerous, and beside it were found seven large bowls or cups cut out of oak, and a rude oak mallet, with a branch as a handle. The bowls were 10 to 12 inches in outside diameter.

“ The ends of all the logs indicate cutting. I know nothing but iron which could have done it. Cleaner cuts I never saw. Some of the cut faces even showed the ragged line which would have been produced by a turned point on the edge of the tool.

“ Moreover, two of the logs have mortise-holes cut in them. These were 2 or 3 inches square, and were empty.

“ The oak logs are not of great size—the largest having a diameter of 14 inches. All the branches were cut off. They are all soft and spongy, and quite rotten. They do not show the antiseptic power of the peat; and are not black. From these facts, I suppose we may infer that they had been *long felled, and partially immersed in water, before they were covered by the peat.*

“ From all I saw, I conclude that this erection has been one of these three things:—

“ (1.) A corduroy road across a morass.

“ There are, however, many things against this theory, as, for instance, the existence of the paved spot (a fire-place in all probability); the breadth of the platform; the mortising in the logs; and the want of any apparent need for crossing the morass in this way, as a slight detour would have formed a road on *terra firma.*

“ (2.) A large raft or floating island, on which dwellings were erected—a modification of the Lacustrine habitations.

“ This would involve the idea of there having been a lake at one time at the place where the platform is found, and also of this lake's having had a bottom of peat—a thing we know to be true of other lakes in the district. When the water was drawn off, the raft on this supposition would settle down on the peat. So far as the topography goes, it appears probable that at at one time there was a lake here. The moss is situated in a basin about a mile across, with an outlet in the shape of a small stream, presently delivering a considerable quantity of water into the Annan, not far from Speddling's Tower. Dam this rivulet up, and a lake could be again formed where the platform is.

"Against this theory, however, there is this important objection—the logs are not in any way bound together, and do not rest on sleepers.

"(3.) A platform erected *on* the bog, on which to build habitations, with a trench round the platform filled with water—a sort of moat—for defence.

"Against this there is, as in the last case, the want of binding together, and also the absence of *piles* to give firmness to the structure."<sup>1</sup>

I have received a communication from Sir William Jardine, in answer to some inquiries suggested by Dr Mitchell's paper. He states that no indication of driven piles have been found. As to the nature of the surface on which the beams were originally placed, he remarks that it may have been less compact than at present, but the beams of wood, with brushwood and fern above, must have been placed on a somewhat solid substructure at first.

From this we may infer that the moss was formed before the beams were laid; and it appears in like manner, that the crannog in the parish of Culter rested on a surface of moss.<sup>2</sup>

<sup>1</sup> April 9, 1864. From Dr Mitchell's Journal.

<sup>2</sup> Having, when engaged in the preparation of this paper, communicated to Dr Keller, of Zurich, my impressions of the difference in character between the crannogs of Scotland and Ireland and the pile buildings of Switzerland, I have, since it was written, received an answer from that gentleman, from which I venture to quote some passages; and I need scarcely remark, that the experience of Dr Keller, in investigating the pfahlbauten of Switzerland, added to his well-earned reputation as a sound archæologist and historian, give a special value to his statements.

"I am quite of opinion that the crannogs were different from our pfahlbauten, and that they merely served as places of refuge for single chieftains, their family, and property; whereas our pfahlbauten formed complete villages, inhabited for centuries by groups of families, which pursued their agricultural and other labours on the shore. In their lake dwellings, they fabricated their house utensils (pottery, &c.) and their warlike implements, their wearing apparel, &c. We therefore find *rows* of huts, each furnished with its hearth, weaving-loom, &c. When such villages were burnt, they were invariably reconstructed on the same site, which proves that these places were permanently inhabited. The crannogs appear to be strongholds, castles, belonging to *individuals*.

"As regards the construction of the pfahlbauten, there existed two kinds. In one of them the huts were erected on platforms, supported by perpendicular piles; in the other, the foundation was composed of horizontal layers of branches, inter-

## APPENDIX. No. I.

The following description of Loch Canmor, in Aberdeenshire, with its islands, and the relics discovered in it; was prepared by the Rev. James Wattie, Bellastraid, at the suggestion of Mr Robertson, who intended to use it in his paper on crannogs. Mr Wattie has been so good as permit me also to make use of it; and as it furnishes a detailed and picturesque account of an early island settlement, with its "surroundings," I have quoted from it at some length:—

"It is uniformly pronounced by the country people Loch Ceannor.

"It lies at the foot of the hill of Culbleen, in the parish of Tullich. It is 36 miles from Aberdeen, and half-way between Aboyne and Ballater, being 6 miles from each.

"The loch is about 3 miles in circumference. It abounds with pike and eels. It is fed by the burn of the Vat. The level of the lake was reduced a little about 26 years ago, by deepening the outlet. A second deepening, in the autumn of 1858, reduced the bed of the loch from  $2\frac{1}{2}$  to 3 feet below its original level.

"Until this last deepening, there were four islands in the loch:—1. A small island near the shore, at the north-west corner, called the Crow Island, covered with birches. 2. One at the east end, also near the shore, covered with birches and firs, called the Bramble Island. Both these islands have now ceased to be islands, having been joined to the

mixed with leaves and gravel, which were held together by upright piles. This system bears some resemblance to the crannogs, the huts standing on *terra firma*, if I may use this expression, and not [on piles] above the surface of the water.

"The pfahlbauten were always isolated, but connected by a bridge with the shore, the distance being sometimes very small, but also frequently [extending] to a thousand feet,

"We never find pfahlbauten on natural islands or promontories.

"Artificial islands are not found, but so-called Stein berge, stone hills, which consist of artificial elevations composed of gravel, which has been transported in boats from the shore to places where huts were to be erected. This was done for the double purpose of creating a solid foundation for the piles, and also in order to shorten the distance from the bottom, to the surface of the water."

mainland by the last drainage of the loch. 3. The Castle Island; and, 4. The Prison Island.

"The Castle Island is about 60 or 70 yards from the north shore. It is of an oval shape, having an area of about a Scotch acre. The foundations of the castle may be traced in the dry, parched colour and stunted growth of the grass where the walls stood. There is a rickle of loose stones around the shore of the island, many of them showing evident traces of the hammer. Some suppose this island to have been artificial, but there is not the slightest appearance of its having been so. It is evidently a natural heap of *detritus*.

"Between it and the shore there was a bridge of open frame-work of black oak. The country people say it was a draw-bridge, but it was too long for that, although without doubt part of it was so. The two piers on which the ends of the bridge rested are still to be seen—one on the island, close to a large ash tree; the other on the mainland, directly opposite. From time to time immense beams of oak have been fished up from this part of the loch, which evidently formed part of the bridge. So late as 16th June 1859, an oak beam was fished up, 23 feet 9 inches long, 16½ inches broad, and 13 inches deep, sloped or *skaired* at the ends for joining to other beams, with holes for wooden pins 14 or 15 inches apart, and some of the pins still remain. On the same day another oak plank was taken up about the same place, 22¼ feet long, 3 inches thick at the thickest side, and 2 inches at the other, and 16 inches broad. In some places it was brought to an edge, and at one place marked as if it had been fastened to a beam. It seems to have been split, and not sawn. At 8 inches from one of the ends is a hole, of an oval shape, 4½ inches by 3¼ inches. At several places it looked as if it had been charred by fire on the edge. A third oak beam is to be seen lying at the bottom of the loch, between the island and the shore, apparently about 30 feet in length, with two short pieces attached to it. A fourth oak plank stands up near the island, at an angle of 45°, and 3 feet above the surface of the water.

"Another oak beam is to be seen at M'Pherson, the turner's, near the west end of the loch, where it was taken up some years ago. It is 24 feet long, 13 inches square, and notched, sloped, or *skaired* at one end, with a view seemingly to its being joined to another beam. At M'Pherson's

also is to be seen a bronze vessel,  $10\frac{1}{2}$  inches high, with three legs and a handle, found on the beach of the Castle Island. (See Plate XIII. fig. 6.)

“The present depth of the loch, between the Castle Island and the north shore, is from 5 to 7 feet.

“On the north shore, rather to the east of the Castle Island, are the remains of what has been considered the Castle chapel, 52 feet long, and 18 feet wide within walls. There seem to have been two partitions in it, one near each end.

“On the top of a brae, called the Claggan, not far from the chapel, and opposite to the island, stood a sculptured stone, now removed to the park at Aboyne. Between the site of the stone and the loch, on the slope of the brae, is a low cairn of stones, of a crescent form, with the convex side up the brae, 70 feet long, and 24 feet wide at the broadest part.

“The Prison Island is about the middle of the loch, and about 250 yards from its north shore. It is something of an oval shape. It is 25 yards long, and 21 yards broad. It is evidently artificial, and seems to have been formed by oak piles driven into the loch, the space within the piling being filled up with stones, and crossed with horizontal beams or pieces of wood, to keep all secure. The piles seem to have been driven or ranged in a rectangular form. They are quite distinct and apart from one another. The upright ones are generally round, though some of them have been splitted. The horizontal beams are mostly arms of trees, from 4 to 6 inches thick; but there is one horizontal beam squared evidently with an iron tool, about 8 inches on the side. There are not many horizontal beams now to be seen. I remember having seen more (the ends of trees) a good many years ago. My recollection of them is, that they had been splitted. There seems to have been upright piles on all sides of the island, but least distinct at the east end, and most numerous at the west. At the west end thirty upright piles are visible. On the south side, outside the regular row of piles, is a kind of out-fencing of upright and horizontal beams, seemingly for protection against the force of the water. At the west end there are two rectangular corners, and there may have been the same at the east end, though now overgrown with grass. Outside the piles is what may be called a rough, loose causewaying of stones sloping outwards into the water; while inside is what may be called a heap of stones, arising, no doubt, from the putting into

the water of whatever building had been on it. At the west end the piles stand 18 inches above the present level of the stones, and from 12 to 15 inches apart. They are 4 inches thick at the top, and 6 inches thick where they had been under water. Scarcely any of the upright piles are perpendicular; they slope to the north on the west side of the island, and to the west on the south side. Round the heap of stones now forming this island, a clump of trees has sprung up. There is no appearance of a pier or jetty about the island, nor any mark of communication between it and the shore or any of the other islands. The present depth of the loch near the island is 7 feet; half-way between it and the Castle Island, 10 feet. On the north-west side of the island, Dr Taylor and Mr Wattie fished up, in 1859, a crooked oak spar, 12 feet long, broad at one end like the tail of a fish, and pointed at the other, rather triangular in shape, 4 inches on the broad side, and 2 inches on the other.<sup>1</sup>

"About the middle of the loch, the depth of the water to the mud is about 8 feet, but no hard bottom was found with a pole of 10 feet. On the south side of the loch, near the shore, the depth is 4½ feet.

"On the south side of the loch is a peninsula jutting into it, rather larger in extent than the Castle Island. It bears evident marks of having been fortified. It had been separated from the land by a fosse which had communicated at each end with the water of the loch, but which is now dry. Over this fosse had been a drawbridge, the site of which is distinctly visible; and the road to and from it was only taken up by the present tenant of Meikle Kinord. On the side of the peninsula next the land, are very distinct remains of a rampart, 100 paces in length, ending in an apex or angle at the site of the drawbridge.

"There are, on the top, the foundations of two small buildings; but they do not seem of any antiquity. The ground is in the natural state, high on the land side, but sloping away to a level at the side next the

<sup>1</sup> "I have been wondering of late whether the upright piles on the artificial island, being in a rectangular form at the west end, and probably also at the east end, would indicate the building on the island to have been of that form, and of the extent marked by the outline of the piles, which might have been placed in their present position as a sure foundation for the walls"—*Letter from Mr Wattie to Mr Robertson*, 3d Sept. 1859.



water, which is fringed with birches. The other part is bare of wood, and is covered partly with heather and partly with rough grass, with a few scattered bushes here and there of juniper. It has been called Gardybien by the inhabitants from time immemorial. There is no tradition in the country of its use or object. The inhabitants point out what they call the site of a chapel, and the marks of graves, on the brae above the loch, and immediately in front of the farm-house of Meikle Kinord. This may have belonged to the fortification.

“Between the farm-house of Meikle Kinord and the loch, and near the latter, Mr Wattie found a lump of a stone of coarse granite, hollowed in a cylindrical form to the depth of  $6\frac{1}{2}$  inches, 20 inches wide inside the rim, 4 to 5 inches thick at the top, but thicker at the bottom. It has a hole at the centre of the bottom,  $3\frac{1}{2}$  inches wide at the top, and  $1\frac{1}{2}$  inch wide at the bottom. One of the sides has been broken away by a fire lighted in it by boys. The use is unknown. Between Gardybien and the Castle Island, the depth to the mud in one place was 8 feet, and in another  $8\frac{1}{2}$  feet; but in neither was the hard bottom reached with a 10 feet pole.

“M'Pherson, the turner, who came to the place twenty-six years ago, remembers a range of oak piles driven into the margin of the loch at the west end, where the ground is swampy, with oak boards fastened upon them, all of which have now disappeared.

“On the 16th June 1859, there was fished up from the bottom of the loch, near the north shore, opposite to the Prison Island, a canoe hollowed out of a single oak tree,  $22\frac{1}{2}$  feet long, 3 feet 2 inches wide over the top at the stern, 2 feet 10 inches in the middle, and 2 feet 9 inches at 6 feet from the bow, which ended nearly in a point. The edges are thin and sharp, the depth irregular—in one place 5 inches, the greatest 9 inches. There are no seats nor rollocks or places for oars; but there may have been seats along the sides, secured by pins through holes still in the bottom. There are two rents in the bottom, alongside of each other, about 18 feet long each; to remedy these, five bars across had been mortised into the bottom outside, from 22 to 27 inches long and 3 inches broad, except at the ends, where they were a kind of dovetailed, and 4 inches broad. One of these bars still remains, and is of very neat workmanship, and neatly mortised in. The other bars are lost, but

their places are quite distinct. They had been fastened with pins, for which there are five pairs of holes through the bottom of the canoe, at the opposite side, at a distance of from 18 to 21 inches, the bottom being flattish. There are also five pairs of larger holes through the bottom, and also at the opposite sides, which may have been for fastening seats with pins along the sides of the canoe. There are two bars mortised longitudinally into the bottom of the boat, outside, above the seats before spoken of,  $2\frac{1}{2}$  inches broad, one at the stern 5 feet long, and the other beginning 5 feet from the stern, and extending  $7\frac{1}{2}$  feet towards the bow. The canoe looks as it had been partly scooped out with fire. The bottom is 2 feet 8 inches wide at the stern, and 28 inches wide at the middle. The stern is 18 inches thick, and somewhat worn down at the top.

"M'Pherson, the turner, says that twenty years ago a boat was taken up from the loch 26 feet long, sharp at both ends, otherwise coble built, 8 feet broad in the bottom, which was flat, made of oak planks overlapping one another, and lined under the overlapping with wool and tar.

"On the north side of the old road from Cromar to Tullich, in the hill of Culbleen, is a round hillock called 'the Earl of Marr's Board,' where the Earl of Mar, unattended, on his way to Kildrummie from Lochaber, where he had lost an army, sat and, for want of better fare, ate meal and water out of the heel of his shoe. Hence the Gaelic saying still current in the Highlands,—'Hunger is the best sauce. Meal and water, out of the heel of my shoe, is the sweetest food I ever tasted, said the Earl of Mar.'

"About  $1\frac{1}{2}$  mile from Loch Canmor, in a north-west direction, is the churchyard of Logie, where is a stone called Wallack's Stone, in memory of St Wallack. It is flat on one side, and high in the middle of the other. It is of the blue heathen kind, 5 feet 7 inches high, and averaging 3 feet in breadth. It is quite in the natural state. It stood formerly in the dyke round the burying-ground. It now stands outside the new churchyard wall. Formerly a fair, called St Wallack's Fair, was held in the neighbourhood, on the 30th of January. Hence the rhyme still repeated in the country—

'Wallack Fair in Logie Mar,  
The thirtieth day of Januar.'

At this fair a foot race was run; the original prize, given by the proprietor of Logie, being a 'twelve ell tartan plaid, and a pair of tartan hose.' When the Highland dress was proscribed, a one-pound note was substituted. Now fair and race are gone; but a social meeting of the people of the neighbourhood is still held on the night of the thirtieth of January."

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#### APPENDIX. No. II.

I am indebted to Sir Alexander Campbell of Barcaldine for the following memorandum:—

"I wish I could help you about the crannogs, but I can say little on the subject. It is now nine or ten years since I resided in the Highlands, and when I was there, my attention was not directed to the subject.

"I could not have lived there, however, without becoming aware that, in many, if not in most, Highland lochs, artificial cairns of stones exist, generally quite close to the shore in shallow water. If I directed the attention of the inhabitants to them, they did not seem generally to have any idea of them; but once or twice, I was told that some man of mark had been drowned there. In the majority of instances the depth of water precluded the possibility of this. The smallness of size generally, however, makes it improbable that they could have been inhabited. I know, however, of one Scotch example to the contrary. It occurs in Loch Tullah, in the Braes of Glenurchay. It is a large cairn of stones, evidently artificial, in deep water near the centre of the loch—where it is perhaps nearly half a-mile broad—about half or three-quarters of a mile from the south-western end of the loch, and a quarter to half a mile from the forest house of Glenurchay. If I remember aright, the water all round it is many feet deep—15 or 20 feet. It is 20 or 30 feet in diameter at the ordinary height of the water. Some soil was taken to it, and some trees planted on it twenty or thirty years since, and I think a few more trees were added fourteen or fifteen years since. I think that, on the east face, or north-east face, there was a small harbour in which a boat could enter. The stones are small, say

the size of a man's head, more or less—I mean, not great blocks of stone. Many years since, when the water one summer was very low, Peter Robertson, the head forester, informed me that he had seen, on a calm summer day, a few feet below the surface of the water, the ends of logs of wood laid horizontally under the stones. I am not satisfied that I ever saw them myself, but I have no doubt that he did, as he clearly described it to me. The tradition of the country is, that a great robber chief, called *Stalkior rioch*, lived upon this island. I do not believe that it is or ever could have been piled at such a depth of water; and if I am correct as to the depth of water, the quantity of stones must be very great, as the slope is very gradual. It is about 4 or 5 feet high at ordinary water. All this is from recollection, so I am afraid my figures would by no means stand the test of measurement, and may be very far from the fact.

“The Isle of Loch Tay is probably to some extent artificial; certainly the stones on its outside faces are artificially placed, though, of course, this may have been done after the building of the nunnery, to protect the foundations. There is, however, a small islet near the shore in the Bay of Kenmore, on the south-eastern shore of Loch Tay, within 100 yards of the head of the loch, and about 20 or 30 yards from the shore, in water a few feet deep—I am afraid to say how many—but in clear weather you can see the bottom, I think. I never was on it; but it bears the appearance of having been artificial, and is formed of stones. It is quite flat on the top, and does not rise more than a foot or two above the ordinary water-mark, and has a stunted tree or two on it. It is, perhaps, 40 or 50 feet long in the direction of the loch, but not nearly 50 broad. It is called the ‘Isle of Spry.’ There is also, if I remember rightly, one of the island cairns on the north shore of Loch Tay, within 3 or 4 miles of the western end. I cannot at this moment name the locality of others in other lochs, but I have seen many.”

The Rev. Alexander R. Irvine, of Blair-Athole, in communicating to me details of the crannog on Loch Tummel, remarks that an island near the west end of Loch Rannoch is formed of stones, and has a tower erected on it, with a causeway leading from the Strowan or south side of the loch. He adds—“I have observed in other lochs in Perthshire islands and remains of buildings; for example, Loch Freuchie, in Glen-

queach, and Loch Kinnard, in the hill above Grandtully. It is curious enough that there is also a small island, a mere cairn, near the east end of Loch Tummel, and of some of the other lochs mentioned, though, from the small extent of dry surface, it is hard to suppose what could have been the purpose for which they were put up."

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APPENDIX. No. III.

*Sites where vestiges of piling have been found, or other indications of Crannogs.*

- Loch Ore, Fifeshire—Oak timbers.  
 Balgone, East Lothian—Bronze vessels, deer's horns, bones of animals.  
 Barnkirk, near Newton-Stewart—A canoe.  
 Knaven or Kinaven, Aberdeenshire—A canoe.  
 Closeburn, Dumfriesshire—A canoe; bronze tripod.  
 Lochwinnoch, Renfrewshire—Canoes.  
 Loch Doon, Ayrshire—Canoes.  
 Castlemilk, Lanarkshire—Canoe.  
 Drumduan, Aboyne, Aberdeenshire—Canoe.  
 Baikie, Forfarshire—Bones of deer; bronze vessels.

*Crannogs—Islands artificially formed on wood, or surrounded with piles.*

- Dowalton, Wigtonshire.  
 White Loch of Mertoun, ditto.  
 Lochrutton, Kirkcubrightshire.  
 Carlinwark Loch, ditto.  
 Loch Kinder, ditto.  
 Lochmaben, Dumfriesshire.  
 Corncockle, parish of Applegarth, ditto.  
 Loch of Sanquhar, ditto.  
 Greenknowe, parish of Culter, Lanarkshire.  
 Dhu Loch, Buteshire.  
 Barein, parish of Colvend, Kirkcudbright.
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Loch of Moy, Inverness-shire.  
 Loch-an-Eilan, or Lake of Rothiemurcus, Morayshire.  
 Loch Lomond, Dumbartonshire.  
 Loch Lochy, Inverness-shire.  
 Queen Margaret's Inch, Loch of Forfar, Forfarshire.  
 Loch Canmor, Aberdeenshire.  
 Loch Tummel,<sup>1</sup> Perthshire.  
 Lochcot, Linlithgowshire.  
 Loch Tullah, in Glenurchay, Perthshire.  
 Loch of the Clans, Morayshire.

*Artificial Islands of Stones and Earth.*

Loch Tay, with causeway, Perthshire.  
 Loch Tay, ditto.  
 Loch Earn (Neish's Island), Perthshire. (Old Stat. Acc. xi. 180; Anderson's Guide to the Highlands, pp. 428, 429. Lond. 1834.)  
 Loch Rannoch; stone island with causeway, Perthshire. [Isle of the Loch of Rannoch, and fortification thereof, pertaining heritably to James Menzies of that ilk.<sup>2</sup> (Regist. Secret. Concil. Acta, 1563-1567, p. 24.) Mr Robertson's Notes.]  
 Loch Achray, Perthshire.  
 Fasnacloich, in Appin, Argyleshire.  
 Loch Borra, Sutherlandshire. Artificially constructed of stones, surrounded by a wall of stones. (Old Stat. Acc. vol. x. p. 303.)  
 Duffus, Morayshire.  
 Loch Freuchie, in Glenqueach, Perthshire.  
 Loch Kinnard, in the hill above Grandtully, ditto.

*Natural Islands which have been fortified.*

Loch Fergus, Kirkcudbright.

<sup>1</sup> On 15th March 1528-9, John Earl of Athole had seisin "terrarium de Lochtymmele cum insula et domo ejusdem terrarum de Kirktonne Strowane nuncupata le Clauchane."—Lib. Responsionum in Scaccario, 1527-1539. MS. Gen. Reg. House. [Mr Robertson's Notes.]

<sup>2</sup> The Isle of Loch Rannoch is the subject of a stanza in Duncan Laideus' Testament, Black Book of Breadalbane. [Ibid.]

Carlinwark Loch, Kirkcudbright.

Loch Urr, with causeway of stone, ditto.

Moulin—Castle on island, with causeway. (Old Stat. Acct. vol. v. pp. 69, 70.)

Macnab's burying-ground in the Dochart, near Killin, has a strong earthen rath in the middle, and the burying-ground, called M'Nab's, at the end.

Loch of Cleikimin, a freshwater loch, near Lerwick—A causeway to shore. [Mr Robertson's Notes.]

Inis-na-Cardoch, called Eilean Mhurich, now called Derry Island, a small island in Loch Ness, a fortress of Lovat's about 1467. [Local Tradition; Mr Robertson's Notes.]

Loch of Cluny, Perthshire. Enlarged and fortified by an artificial barrier of stones.

#### *Other Islands.*

Ochiltree, with the loch and isle of the samyne. (Act Dom. Conc. et Sess. vol. xv. fol. 60.) [Mr Robertson's Notes.]

Loch Finlagan Isle, with causeway, Argyllshire.

Loch Shin, Sutherlandshire.

Loch Dolay, ditto.

Loch Yetholm, with causeway, Roxburghshire.

Loch of Rescobie, Forfarshire.

Assye.—Carta Regis David II. de terris de quatuor davatis terre de Assynete una cum forcelata insule eiusdem. (Robertson's Parl. Rec. p. 89.) [Mr Robertson's Notes.]

Strathnaver, Islay, Colonsay, Tiree, South Uist, Benbecula, North Uist—Many fresh-water lakes in these localities, with islands, on which are forts.

Morall, in Stratherne, Perthshire.

“Terras meas de Port cum insula earundem vulgariter vocata Morall.” (Charter dated 8th Nov. 1580, by Wm. Drummond of Meggour to Patrick Lord Drummond. Reg. Mag. Sig. xxxv. 474.) [Mr Robertson's Notes.]

Loch Tay.—In a memorial presented to King Edward I. in 1306, by Malise, Earl of Strathern, is this passage :—

“Le Cunte d'Athoile s encourec a et dist a son Roy (Sire Robert de

Brus) pur derumpir son conduit et assigner certaine gentz ceo est asavoir Sire Niel Cambel et Sire Water de Logan a garder le Cunte que il ne se alaist et envoia sa gente d'Athoil entre Abberledene et le yle de Kenmor issy que le Cunte ne puet entrer en l yle, eux tute voies destruiant et proiant le pais."

It appears that the Earl of Strathern had his abode in an island.

"Et quant il fut prest et munte de venir a la vile de Saint Johan a Monsire Aymer donques vient Sire Robert de Brus asienger l yle ou le Cunte estoit et fist proier et destruire le pais," &c. (Sir F. Palgrave's Documents on Scot. Hist. pp. 320-321.) [Mr Robertson's Notes.]

Loch Granech, in Strowan Athol, Perthshire.—Mr Robertson notes, "on the 25th August 1451, King James II. grants to Robert Duncane-sonne of Strowane, the lands of Strowane, the lands of Romach, Glenerach, the two Bohaspikis, 'terras de Granech cum lacu et insula lacus ejusdem,' Carric, Innycadoure, Farnay, Disert, Faskel, Kylkere, Balnegarde, Balnefert, Glengary, with the forest in the Earldom of Athol and Sherifffdom of Perth, erected into the Barony of Strowane, 'pro capcione nequissimi proditoris quondam Roberti le Grahame,' " &c. (Reg. Mag. Sig. iv. p. 227.)

Lochindorb.—The castle stands on an island of the size of about an acre. "Great rafts or planks of oak, by the beating of the waters against the old walls, occasionally make their appearance, which confirms an opinion entertained of this place, that it had been a national business, originally built upon an artificial island. Tradition says, and some credit is due to the report, that the particular account of this building was lost in the days of King Edward I. of England." (Old Stat. Acc. vol. viii. p. 259.)

Loch of Moy.—An island near the middle, consisting of about 2 acres of ground, on which the Lairds of Mackintosh had a strength.

"At the distance of some hundred yards from this there is an artificial island, formed by heaping a parcel of long, round stones upon each other. This place was used as a prison, and is called Ellan-na-Glack, *the Stoney Island*." (Old Stat. Acc. vol. viii. p. 505.)

Port-an-Eilean, the harbour of the island.—"In an island of Lochvennachar, opposite to this farm, there has been a castle, a place of strength. *Port* is evidently the same word with *portus*, and has the same signification." (Old Stat. Acc. of Callander, vol. xi. p. 614.)



In a very small island of Lochard are still to be seen the ruins of a castle, supposed to have been built by Duke of Albany, uncle to James I. (Old Stat. Acc. vol. x. p. 130.)

Blairgowrie.—In the middle of one of the many lochs in this parish is a small island, with remains of old buildings on it. (Old Stat. Acc. vol. xvii. p. 195.)

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MONDAY, 10th April 1865.

JOSEPH ROBERTSON, Esq., Vice-President, in the Chair.

The following Gentlemen were balloted for and elected Fellows of the Society :—

The Rev. ROBERT RAINY, D.D., Edinburgh.

WILLIAM F. COLLIER, LL.D., Edinburgh Academy.

JAMES CHALMERS, Esq., Printer, Aberdeen.

The Donations to the Museum and Library were as follows, and thanks were voted to the Donors :—

(1.) By WILLIAM FORBES of Medwyn, Esq., F.S.A. Scot.

Celt of dark-coloured Flint, rubbed smooth on its surface, and measuring 5 inches in length, by two inches across the cutting edge; and

Two Whorls, or Buttons of Stone,  $1\frac{1}{4}$  inch in diameter. One of clay slate, is rudely ornamented round the edge and on both sides with incised lines; the other is of trap. The celt and whorls were found at South Slipperfield, near West Linton, Peeblesshire.

Six Spurious First Brass Coins of Claudius, Nero, Vitellius, &c., of modern manufacture, and Six Third Brass of Constantine the Great; purchased at the new station of the South Eastern Railway, Cannon Street, London, and stated to have been found by the navvies employed there.

(2.) By FOUNTAINE WALKER of Foyers, Esq., F.S.A. Scot.

Two beautifully formed Celts of fine grained dark-green Serpentine (?); one measures  $12\frac{1}{2}$  inches in length, and 4 inches across the cut-

ting edge; the other measures  $9\frac{1}{2}$  inches in length, and  $2\frac{1}{2}$  inches across the face; the opposite extremity of each is tapered off to a sharp point.

Cylindrical-shaped Implement of Porphyritic Stone, with the ends rounded off to blunt points; it measures 11 inches in length and  $2\frac{1}{2}$  inches in diameter.

These three implements were found several years ago, along with another smaller celt, in a cairn in a wood lying between Lochs Drumashie and Duntelchaig, in the parish of Daviot, Inverness-shire.

There is a tradition in the district that one of Fingal's battles was fought there.

Silver Signet Ring, with a large oval-shaped setting of glass paste, in imitation of red cornelian, on which is a bust of William Duke of Cumberland looking to the left, with the legend W. D. OF CUMBERLAND. It was found near Inverness.

(3.) By Admiral Sir ALEXANDER MILNE, Knt.

Portion of a Hypocaust, consisting of three sandstone pillars, each measuring 2 feet in height and 9 inches in diameter, which support a stone slab 2 feet 6 inches square, and  $3\frac{1}{2}$  inches thick. On the upper surface of this stone is a layer of concrete or conglomerate of lime, pebbles, &c., 6 inches thick. It formed part of the remains of a Roman Villa discovered at Inveresk, near Musselburgh, in the year 1783. An account of the discovery was communicated to the Society at the time by Mr Adam de Cardonell, and is printed in the *Archæologia Scotica*, vol. ii. page 160.

Mr Cardonell also presented to the Society's Museum various remains found in excavating the Villa, including two portions of red earthenware pipes, a portion of a terra cotta statue, a hand pressing grapes, roebuck horns, &c., &c.

(4.) By JAMES FINLAY, Esq., Grantown, Inverness-shire.

Slab of mica schist stone, measuring 3 feet 6 inches in length by 16 inches in breadth, and from  $2\frac{1}{2}$  to  $3\frac{1}{2}$  inches in thickness, on the face of which is incised the half of the crescent and sceptre symbol, or ornament, and the Z or zigzag ornaments, with foliated ends, of the "Sculptured Stones of Scotland." It was found near Finlarig, Perthshire.

Block of Mica Schist, measuring 4 feet in length, 10 inches in breadth,

and 9 inches in thickness. On the face of the stone is incised the figure of a red deer, measuring 8 inches from the snout to the tail, and under it there is an oblong figure, measuring  $5\frac{1}{2}$  inches in length by  $3\frac{1}{2}$  in breadth, through the centre of which a line is cut lengthways; and the upper and lower opposite corners are carried outwards in a spiral ornamental curl.

The stone was found about two feet below the surface, while trenching a small knoll called Knock-an-Fruich. It was intended to have been carted away for the purpose of being converted into the step of a stair, from which purpose it was rescued by the donor.

(5.) By WILLIAM DOUGLAS, Esq., R.S.A.

Bronze Three-legged Pot, having loops for handle projecting on each side of the mouth, and measures 13 inches in height by 10 inches in diameter across the mouth. It is ornamented on the outside with two slightly projecting parallel ribs or bands, which surround the bulging portion of the pot.

Iron Three-legged Pot, measuring 8 inches in height and 9 inches across the mouth. The body of the pot projects outwards in a globular manner below; the upper portion being straight, and 3 inches in breadth; and on each side of the mouth is a projecting loop for the handle.

Portion of Blue-coloured Glass, and a portion of Green-coloured Glass. One side of each of the pieces displays an interlaced pattern, painted in white. They were brought from the Church of St Paul, Rome.

(6.) By ANDREW JERVISE, Esq., Corr. Mem. S.A. Scot.

Circular disc of Sandstone, measuring in diameter  $4\frac{1}{2}$  inches, and  $1\frac{1}{2}$  inch thick, through which is cut a perforation  $1\frac{1}{2}$  inch in diameter. It was found near the ruins of Whistleberry Castle, Kinneff, Kincardineshire.

Octagonal-shaped Brass Medal,  $1\frac{1}{2}$  inch in length. On the obverse is a figure of St John, and on the reverse the Virgin and Child, both in relief. The medal was found while digging a piece of garden ground near the supposed site of Bishop Carusck's Tower, High Street, Brechin.

(7.) By MAJOR THOMAS, Ballantyne House, through J. NEISH, of the Laws, Esq., F.S.A. Scot.

Block of Gray Sandstone, measuring 12 inches in length by 8 in breadth, and 6 inches in thickness. On one side is sculptured in high

relief a portion of a human figure, with a flowing robe from the waist downwards; it shows also portion of an arm, and a necklace, or chain, with pendent. It was found when taking down some old walls at Bannatyne, or Ballantyne House, Newtyle, Forfarshire.

A contract is extant "for building a house at Newtyle, between Thomas Bannatyne, a Lord of Session, and John Mylne, and George Thomson," dated 1589. Lord Bannatyne was the elder brother of the well-known collector of the early Poetry of Scotland.

(8.) By Mr THOMAS HARDIE, National Gallery.

Lady's Long Glove, or Gauntlet, of yellowish coloured leather, with a richly embroidered pattern in gold thread and red silk on the flaps, or portions that cover the wrist.

(9.) By ROBERT HUTCHISON of Carlowrie, Esq., F.S.A. Scot.

Portions of Four Human Skulls, taken from long-shaped stone cists or coffins, recently discovered near the Catstane, Kirkliston. (See Mr Hutchison's Communication, page 184, Plate XIV.)

(10.) By HENRY CHRISTIE, Esq., London, and M. E. M. LARTET, Paris.

Slab of Breccia, measuring 20 inches broad by 2 feet 3 inches in length, and 3 inches in thickness, from the floor of a cave at Les Eyzies, Dordogne, France.

This breccia contains flint implements and flakes, bones of the reindeer, birds, and fish, left in the cave by the ancient inhabitants. The caves and their contents are fully described in the work by Messrs Lartet and Christie, entitled "Reliquiæ Aquitanicæ; being contributions to the Archæology and Palæontology of Périgord and the adjoining provinces of Southern France." 4to.

(11.) By ADAM B. MESSER, M.D., Royal Navy, through JOHN ALEX. SMITH, M.D., Sec. S.A. Scot.

Axe Head of Greenstone, measuring  $6\frac{1}{2}$  inches in length, and 3 inches across the cutting face; found in a Maori pah, near Rangiawhia, in the Waikāto District, New Zealand.

Wooden Handle, 15 inches long, with cross head 5 inches long; for a stone celt or iron chisel. It is formed of the branch of a tree, to which

part of the main stem is left attached at a right angle, and shaped to allow the celt or chisel to be fixed to it with cords of flax. It was found at Ngaruawahia, on the Waikāto River, New Zealand. Similar handles are still in use by the Maories, to which they often attach an English steel chisel. They are then used like an adze for excavating their canoes.

Rounded Pestle, or Pounder, of Dark-coloured Stone, measuring 10 inches in length by 4 inches in diameter at the thick end, which is bluntly rounded off; the upper portion is tapering, and slightly hollowed, so as to form a handle. It is still much used by the Maoris for crushing maize or fern root, &c. Found at Paitai, on the Waikāto River, New Zealand.

A Tomahawk or Club, formed from a bone of the whale; it measures 16 inches in length, and  $2\frac{1}{2}$  inches across at the wood or blade end, by 1 inch in thickness at the extremity of the handle, and is pierced with a square hole. It is ornamented by incised scrolls on both sides, and was found in a chief's house near Ngaruawahia, on the Waikāto River, New Zealand. This is a very rude specimen of a weapon much used by the Maories, and is made in a great variety of shapes and materials. Some of the bone clubs are beautifully proportioned, carved, and polished; red sealing wax is much admired by the natives, and is frequently put on in patches, for ornament; traces of it are seen on this club.

Implement formed of a cylindrical-shaped portion of Bone, measuring  $5\frac{1}{2}$  inches long,  $\frac{5}{8}$  of an inch in diameter, with a handle 3 inches long. A hole is pierced through at  $1\frac{1}{2}$  inches from the lower extremity, which is cupped and concave. The implement is of one piece of bone, and was found in the Maori pah at Rangiriri. It is supposed to have been used by the natives in making cartridges for their muskets.

(12.) By JOHN STRATH, Esq., Engineer, Sydney, Australia.

Bomerang of Close-grained Wood, measuring 21 inches between its two extremities, and  $2\frac{1}{2}$  inches in breadth across the middle of this curious implement.

Waddie or Club of Close-grained Wood, measuring 2 feet in length; it increases gradually in thickness, from the handle, which is  $\frac{5}{8}$  of an inch in diameter, to the other extremity, which is 2 inches in diameter.

(13.) By THOMAS BRODIE, Esq., F.S.A. Scot.

Original MSS. "List of the Poker Club, 1768," showing (opposite to

the names of the members) "the sums incurred, whereof paid, time when paid, arrears," &c., arranged in separate columns. The list of members includes the names of the Rev. Dr Alex. Carlyle of Inveresk, Dr Adam Ferguson, Lord Elibank, Baron Grant, David Hume, Professor James Russell, W. Grahame of Gartmore, Sir Adam Ferguson, the Earl of Dunmore, Earl Marischal, Lord Eliok, and other celebrated men of that date.

(14.) By GEORGE TATE, Esq., Aldwick, Corr. Mem. S.A. Scot.

Proceedings of the Berwickshire Naturalists' Club. Vol v. No. 2. 8vo. 1864.

(15.) By THOMAS JONES, Esq., Keeper of the Chetham Library, Manchester.

*Bibliotheca Chethamensis: sive Bibliothecæ Publicæ Mancuniensis ab Humfredo Chetham Fundatæ, Catalogi tomus IV.* Edidit Thomas Jones, B.A. 8vo. Manchester, 1862.

There were exhibited—

(1.) By Sir ADAM HAY, Bart., of Smithfield and Haystoune, Peeblesshire.

A Bronze Three-legged Pot, with projecting loops at the side for the handle. It measures 9 inches in height, and  $7\frac{1}{2}$  inches across the mouth. Bronze Three-legged Pot or Ewer, 8 inches in height,  $3\frac{1}{2}$  inches across the mouth, with a spout and handle. These vessels were found several years ago near Peebles.

(2.) By Mr JOHN NICHOLSON, Bookseller, Kirkcudbright.

Small Pot or Patella of yellow-coloured Bronze, measuring  $4\frac{1}{2}$  inches across the mouth, and 3 inches in depth. It tapers from the mouth towards the bottom, which is  $2\frac{1}{2}$  inches in diameter. The handle projects from the rim; it is flat, and measures 4 inches in length. The whole of the outside of the vessel, and the upper side of the handle, is covered with enamel, arranged in ornamental scrolls, leaves, &c. The colours are blue, green, and red.

(3.) By Mr THOMAS EDWARD, Curator of the Museum, Banff.

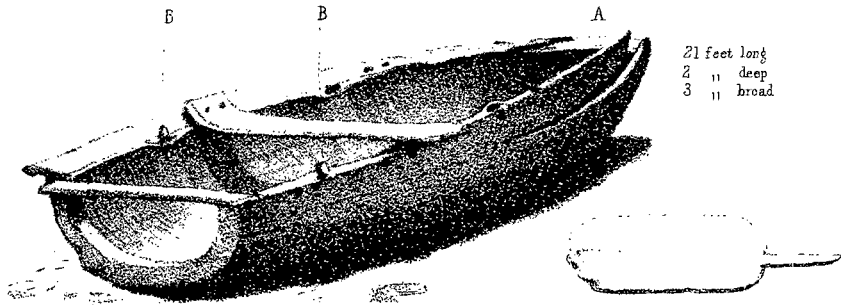
Bronze Article, in form somewhat resembling a pig's head (?), with moveable under jaw; found many years ago in digging in the parish of Deskford, Banffshire.



Fig. 3.  
Fig. 4  
(Length, 1 inch.)  
(Height, 1½ inch.)  
Fig. 2.  
(Height, 5½ inches.)  
Fig. 1.  
(Height, 3 inches.)  
(Height, 4 inches.)  
Fig. 5.  
(Length, 7 inches.)

ARTICLES FOUND IN DOWALTON LOCH.

1, 2, 3. Bronze Vessels, and a Roman Patella. 4. Glass Bead, with Metal Core. 5. Portion of Ornamented Leather Shoe.



21 feet long  
 2 " deep  
 3 " broad

Fig. 1. CANOE

Fig. 4. Paddle found in Ravenstone Moss.



Fig. 2. Form of Supposed Breakwater

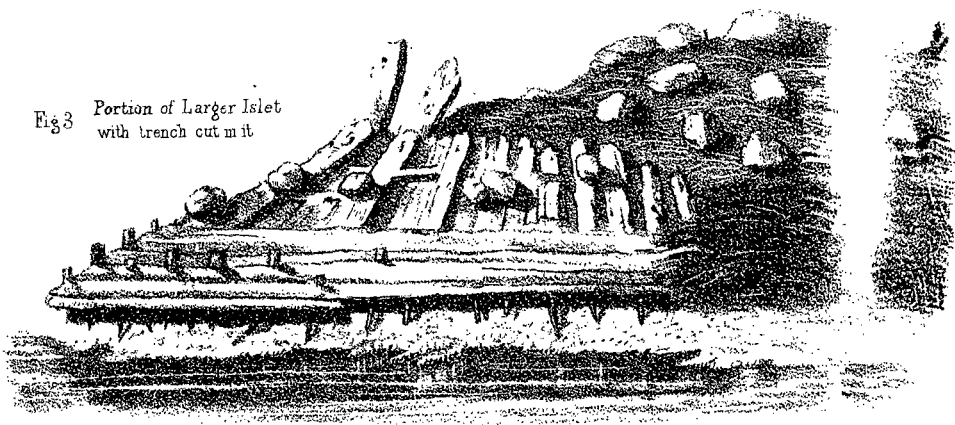
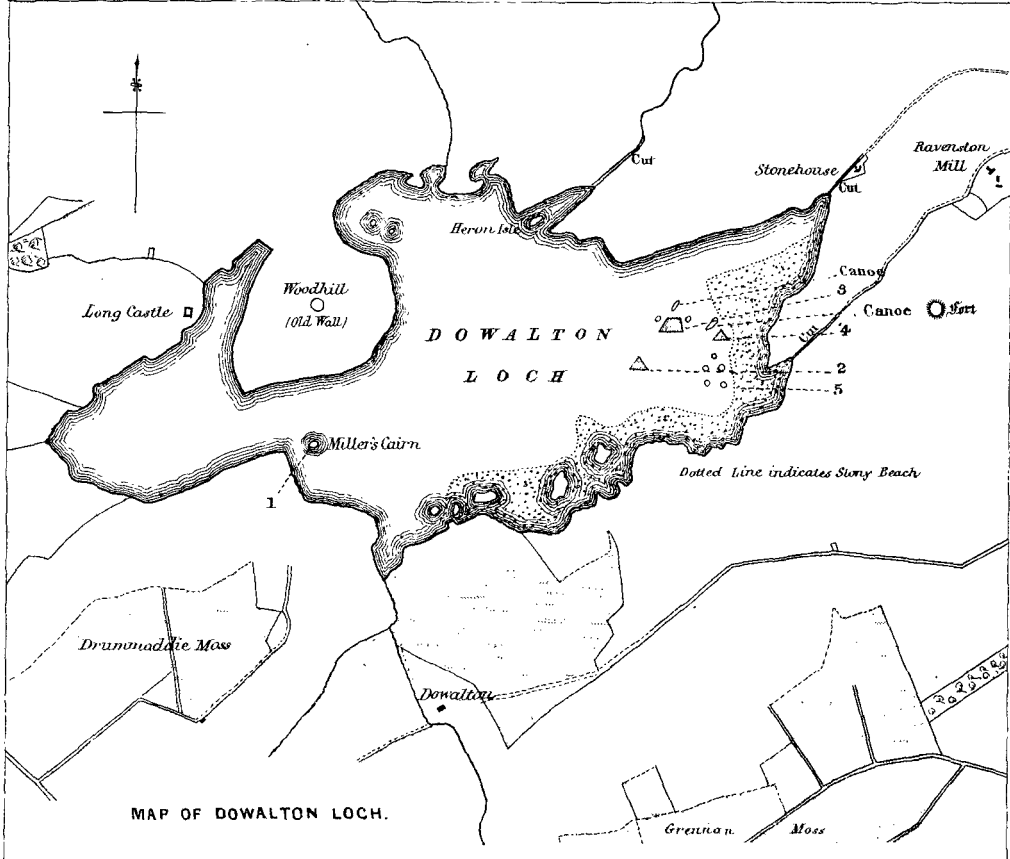
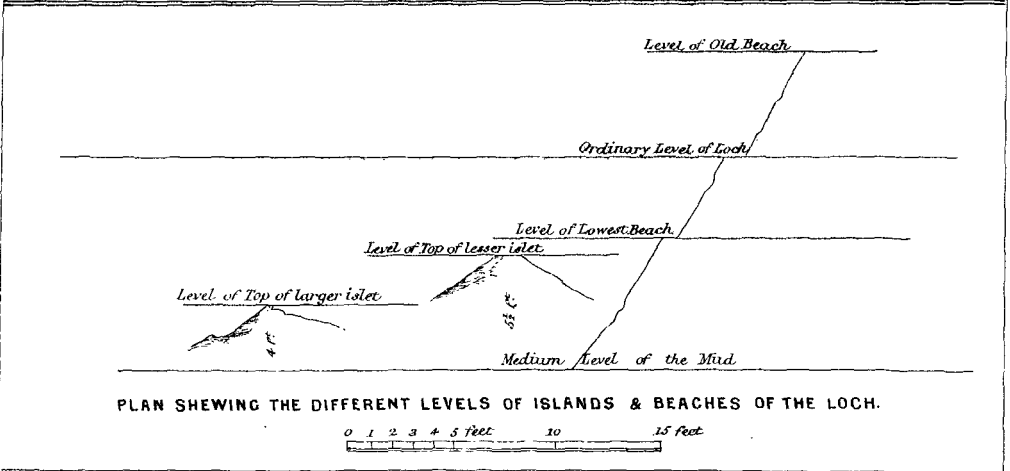


Fig. 3. Portion of Larger Islet with trench cut in it

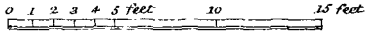




MAP OF DOWALTON LOCH.



PLAN SHEWING THE DIFFERENT LEVELS OF ISLANDS & BEACHES OF THE LOCH.



W. & A. K. Johnston.

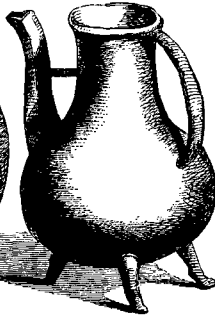
Fig. 2.



(Height, 11 inches)

Found in the Loch of Banchory.

Fig. 3.



(Height, 9 inches.)

Found in the Loch of Banchory.

Fig. 1.



(Full size.)  
Found in the Loch of Forfar.

Fig. 4.



Found in the Loch of Banchory.

Fig. 5.



(Height, 10½ inches.)  
Found in Loch Caunor.

ARTICLES FOUND IN CRANNOGS IN SCOTLAND.  
Table-man (1) and Bronze Vessels (2-6).