

## IX.

MILTON LOCH CRANNOG I. A NATIVE HOUSE OF THE  
2ND CENTURY A.D. IN KIRKCUDBRIGHTSHIRE.

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## I. THE SITE.

Milton Loch is some nine miles west of Dumfries and less than a mile SE. of Crocketford (Nat. Grid ref. 839718, and Sheet 88 of the 1-inch O.S. maps). It is a large expanse of water surrounded by gently sloping farmland, mostly pasture. In 1895 the water-level of the loch is shown on the 6-inch map (Kirkcudbrightshire, N.S., Sheet xxviii SE.) as being considerably lower than it was in 1952, and this change in level was due to the artificial damming

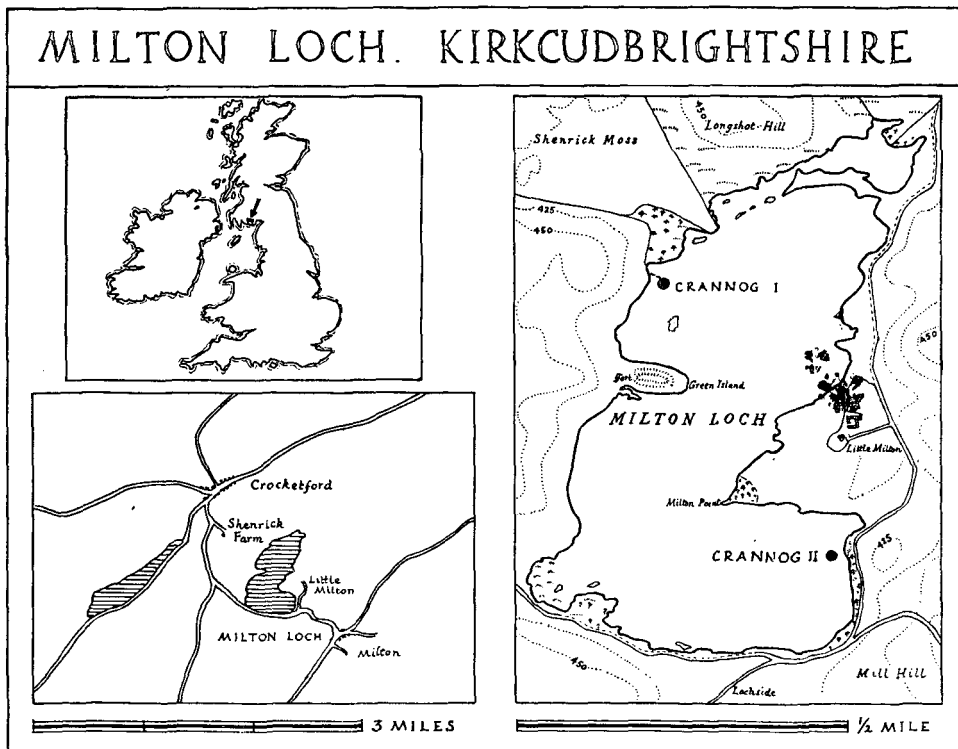


Fig. 1. Site map.

of the loch for the improvement of fishing. As late as 1909, when David Frew wrote his *History of the Parish of Urr*, the water was relatively low, and he may even have seen the crannog which is the subject of this report. For he says, "There is a rocky projection in Milton Loch, on and around which there seem to have been such lake-dwellings." The 1895 map referred to, and reproduced with additions in fig. 1, shows the greater part of this crannog as a small island. No mention of crannogs in Milton Loch is made either in the *Statistical Accounts* or the *R.C.A.M. Inventory*. After the damming the level of the water remained high until 1953, when once again it was decided to return it to its more natural height with the surface of the water about 409.6 ft. as in 1894. When this was completed two crannogs were discovered, the larger one near the N. end of the loch, no. I, being the subject of this paper, while no. II is on the S. side and only shows as a few piles sticking out of the water. Shallow water and deep black mud surround both crannogs, and both appear to have been built on mud only, since probing failed to find any sign of firm ground.

The only other notable antiquity in the immediate neighbourhood of the loch is a "Fort" on a promontory known as Green Island on the W. margin (*R.C.A.M. Inventory*, no. 491). This earthwork, which is narrow and boat-shaped, is almost certainly of Dark Age or medieval date and need not concern us here.

#### *Acknowledgments.*

The decision was made to excavate the site of Crannog I as soon as possible after its recognition by Mr William Halliday of Meiklekirklund and Mr David Trump of Pembroke College, Cambridge, who visited it during the summer of 1953. It was noticed from this time onwards that the small island was being subjected to delapidating influences of wind and rain, as well as a constantly changing water-level, and when the present writer undertook the excavations in October and November of that year, permission was kindly given by Mr Adam Barber of Auchengibbert, the owner of the site.

Thanks are due to him, and to Mr William Halliday and to Mr Dunn of Shenrick for their kind co-operation; to Mr A. E. Truckell of the Dumfries Museum for his constant help throughout the excavation; to Mr R. J. C. Atkinson, who not only kindly made the survey on which fig. 2 is based, but also most skilfully packed the plough for its journey to Copenhagen; and to those specialists whose reports are printed as an appendix to this paper.

The cost of the excavation was borne by the Society of Antiquaries of Scotland, assisted by the Ancient Monuments Department of the Ministry of Works, who kindly lent two workmen from Caerlaverock for two weeks. In addition, the writer gratefully acknowledges the sum of £15 granted by

the Stewartry Educational Trust to the Scottish Regional Group of the C.B.A.

The excavation resulted in the recovery of the greater part of the plan of the site and dating evidence for it within the 2nd century A.D.

#### THE SITE BEFORE EXCAVATION.

At the beginning of the excavation the crannog appeared as a round stone-covered island some 35 ft. across, and joined to the shore-line by a causeway represented by two approximately parallel lines of upright posts (Pl. X and fig. 2). Stumps of similar posts were protruding through the stones of the crannog itself, and beyond it into the water on the SW. On the S. side the radial arrangement of the foundation timbers was clearly visible, though on the E. these foundations were altogether absent, and had no doubt been displaced and washed away in the course of many years of exposure to the prevailing winds blowing offshore from the S. and W. Beyond the crannog on the SE. a group of piles suggested an external mole or jetty, which unfortunately at no time was sufficiently clear of water and mud to permit excavation. As can best be seen from fig. 2, an irregular collection of piled stones, mostly long and flat in shape, evidently marked the position of a retaining wall to the harbour.

From the recent shore-line, marked by a low bank, the causeway was visible from the beginning of the excavation, and measured rather over 100 ft. to the entrance of the house. The arrangement of the piles appeared to be haphazard, and can be seen in fig. 2, marking an approach, no doubt once platformed over, and about 10 or 12 ft. in width. These piles were identical with those uprights used in the foundations of the house itself.

The water-level rose considerably during the course of the excavation, and after a week's work had been completed it was no longer possible to reach the crannog by planks laid on the mud, and a boat had to be used. The rough survey of the harbour was made with the use of this boat, from which it was possible to probe for foundations which were visible on the few calm days experienced.

#### THE METHOD OF EXCAVATION.

The method of excavation was as follows. Two baulks were laid out at right angles to each other across the crannog. The loose overburden of small weathered stones and plant roots was then removed and the wooden structure beneath was planned at two levels. There was no evidence to suggest that the structure had been altered or rebuilt, and it seems most likely that the vestiges recovered represented the partially preserved floor and substructure of a round house of the 2nd century A.D.

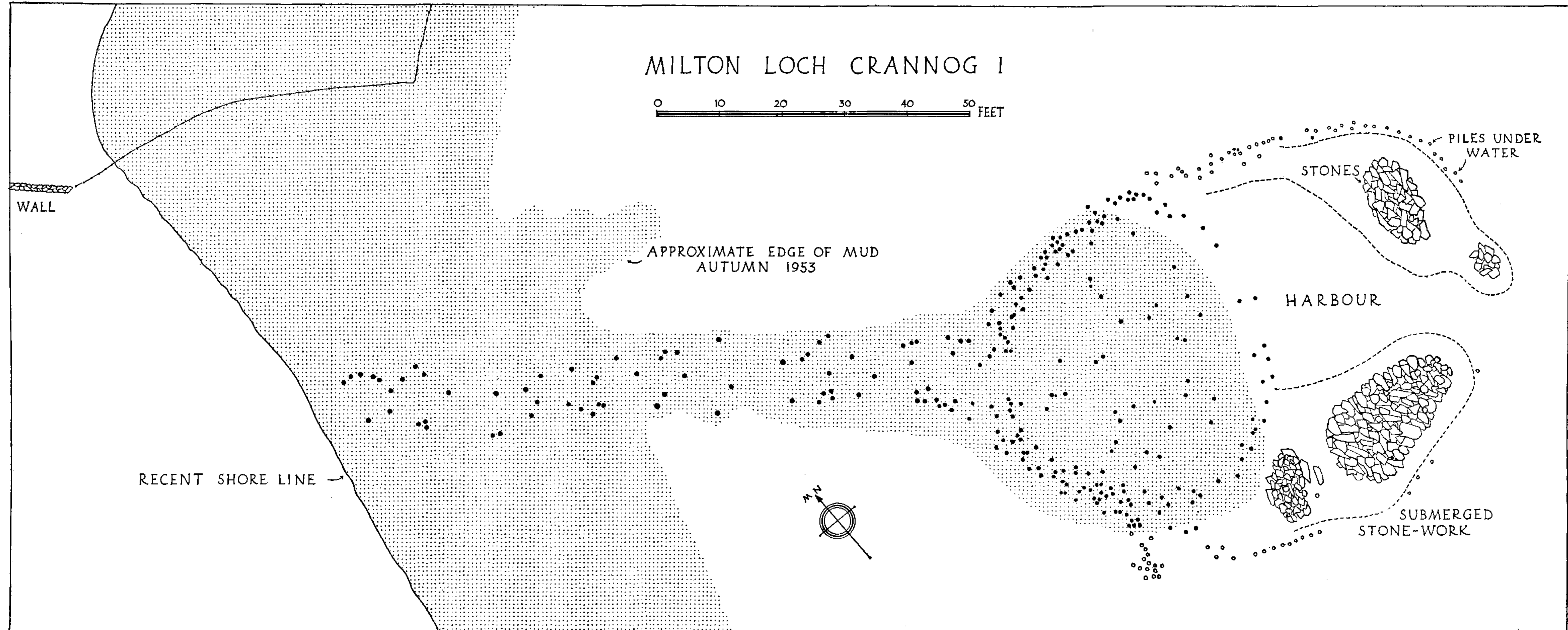


Fig. 2. The crannog with its causeway and harbour.

The actual floor was, unfortunately, at so high a level that it had inevitably been much damaged through the action of water, wind and plant roots (see section, fig. 8). It did however produce evidence of building technique which had not previously been recorded for study from Scotland.

*The Floor-level* (Pl. XI and fig. 3).

A large number of floor timbers were found *in situ* on the causeway side of the crannog. These timbers had been carefully laid side by side, and though somewhat shrunk by time and weathering, they must originally have provided a contiguous flooring. Analysis of the wood employed shows them to have been alder, which though rounded in section on the lower surface seem to have been flat on the upper side.

*The Threshold.*

Nine feet from the entrance on to the causeway remains of a threshold were discovered, leading into an inner room, the exact shape and size of which unfortunately was not recoverable, but which is discussed below. The threshold had been made by pegging beneath the floor a large piece of wood containing mortice holes for door-posts. These mortices were 5.5 ft. apart, centre to centre, and were squared. Although the under surface of this piece of wood was too rotted for tooling to be detected, the upper surface had certainly been treated to give a smooth finish, and the conclusion one was tempted to hold, though not to prove, was that this represented a much worn and obsolete fragment of a dug-out canoe. By pegging this into the substructure as shown in fig. 6, it would have been extremely serviceable for its requirements. (See also Pl. XIII.)

Inside the threshold the wood flooring became less distinct, and those pieces at right angles to the series described above were flimsier, less well cut, and in several instances were of birch, not alder, with the birch bark still perfectly preserved.

*The Hearth* (fig. 7 and Pl. XII).

Beyond this second series the remaining part of the internal room consisted of the hearth. Large flat stones had been selected from the shore and dumped into an approximately square area about 12 ft. across. This had then been daubed with clay which originally, no doubt, lagged the whole hearth into a smooth surface. From this surface, much of which had been worn away by the time of excavation, a number of seeds and fragments of food refuse were submitted for analysis, and are reported on below. Unfortunately, the bone fragments were all so burnt and powdery that no information could be got from them.

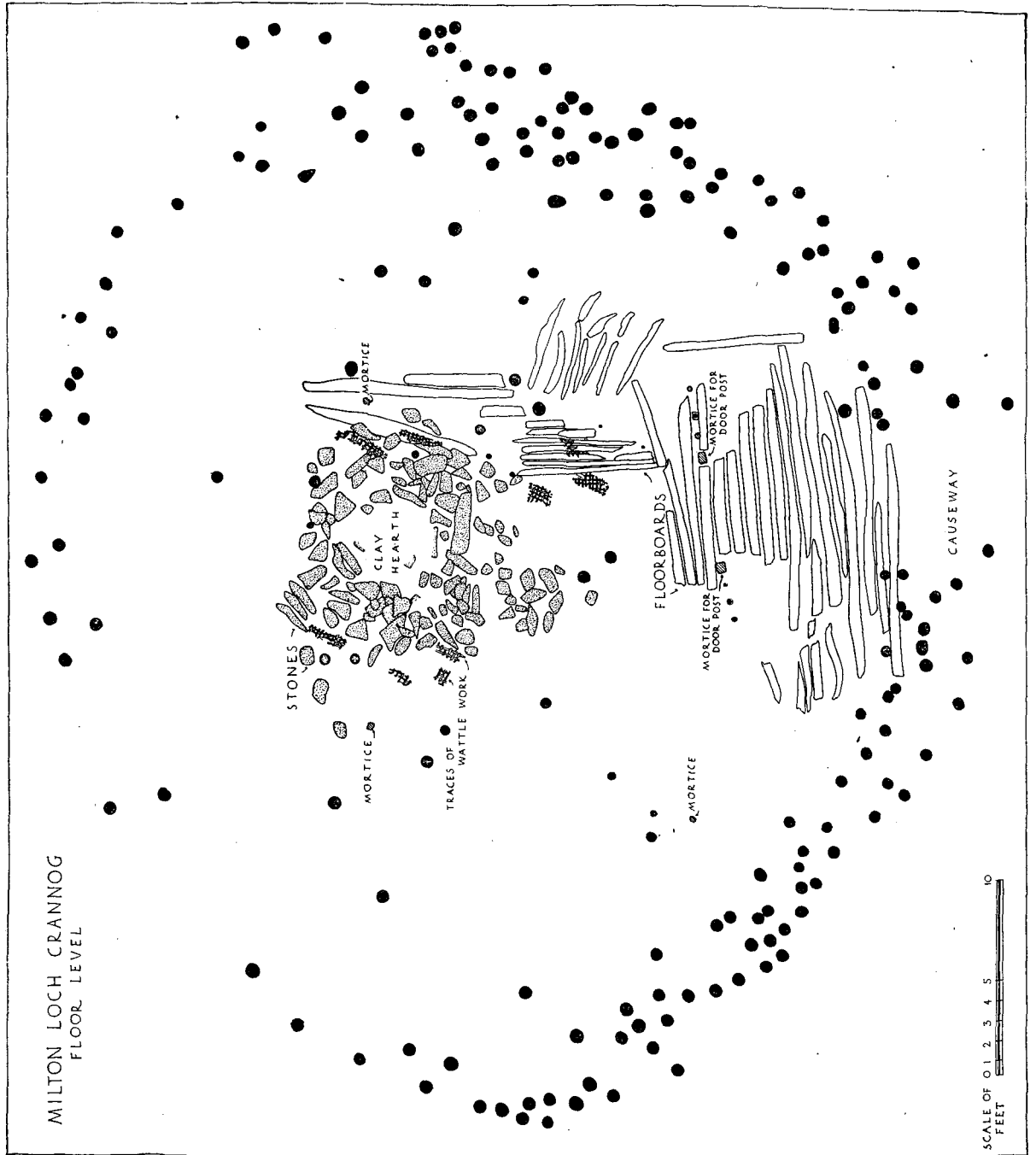


Fig. 3. Plan of floor level.

*The Wattle-work of the Internal Subdivision.*

Large patches of wattling in a very decayed condition were visible here and there, as shown in fig. 3, overlying the floor structure, and had no doubt represented a hurdle fence of unknown height surrounding the inner room. This hurdling was of very light construction, and it should be stressed that it could never have been part of the actual outer wall of the house. At least some of this hurdling had collapsed on to the hearth area, but it had not been burnt: it had evidently, but not unexpectedly, fallen after the abandonment of the house.

What can be said of the shape of this internal room? Here again, unfortunately, the answer cannot be obtained. Two alternatives have been suggested in the drawing (fig. 4) but the vital evidence was lacking. It is perhaps worth noting that it is possible to find analogues for both shapes of internal room from the native settlements of Iron Age Britain. In those examples excavated by Bersu in the Isle of Man,<sup>1</sup> the room was circular and concentric with the outer wall of the house, but on the other hand at Lochlee<sup>2</sup> the internal subdivision appeared to be squarish; though as in this case the excavation was not very scientifically conducted, it must be borne in mind that the features recovered might have belonged to more than one period of construction. In the opinion of the excavator the rectangular plan was slightly more convincing for the Milton Loch site, and has therefore been so shown in the isometric reconstruction of fig. 5 and model Pl. XV.

From the inside of this room several finds were made on the floor surface. All are described below, and their position can be seen in fig. 7. They included two wooden gorges for catching water-birds or large fish, which were near the hearth, a crudely made stone spindle-whorl, and a bronze loop enamelled in red and yellow (fig. 9). This last find fixed the date of the crannog to approximately the 2nd century A.D.

*The Roof.*

Slight evidence for the roof remained. A group of uprights round the area of the hearth evidently carried the purlins to which the rafters were fixed. Such an arrangement is shown in fig. 4. These rafters would presumably have rested on the main circular wall of the house, described below, and it is reasonable to suppose that smaller timbers covered with some form of thatching completed the roofing. As can be seen from Dr Hans Helbaek's report below, various rushes were recovered, and these were possibly at one time forming the thatch.

<sup>1</sup> Bersu, "Celtic Homesteads in the Isle of Man," in *J. Manx Mus.*, v, no. 72.

<sup>2</sup> Munro, *Ancient Scottish Lake Dwellings* (1882), pl. ii.

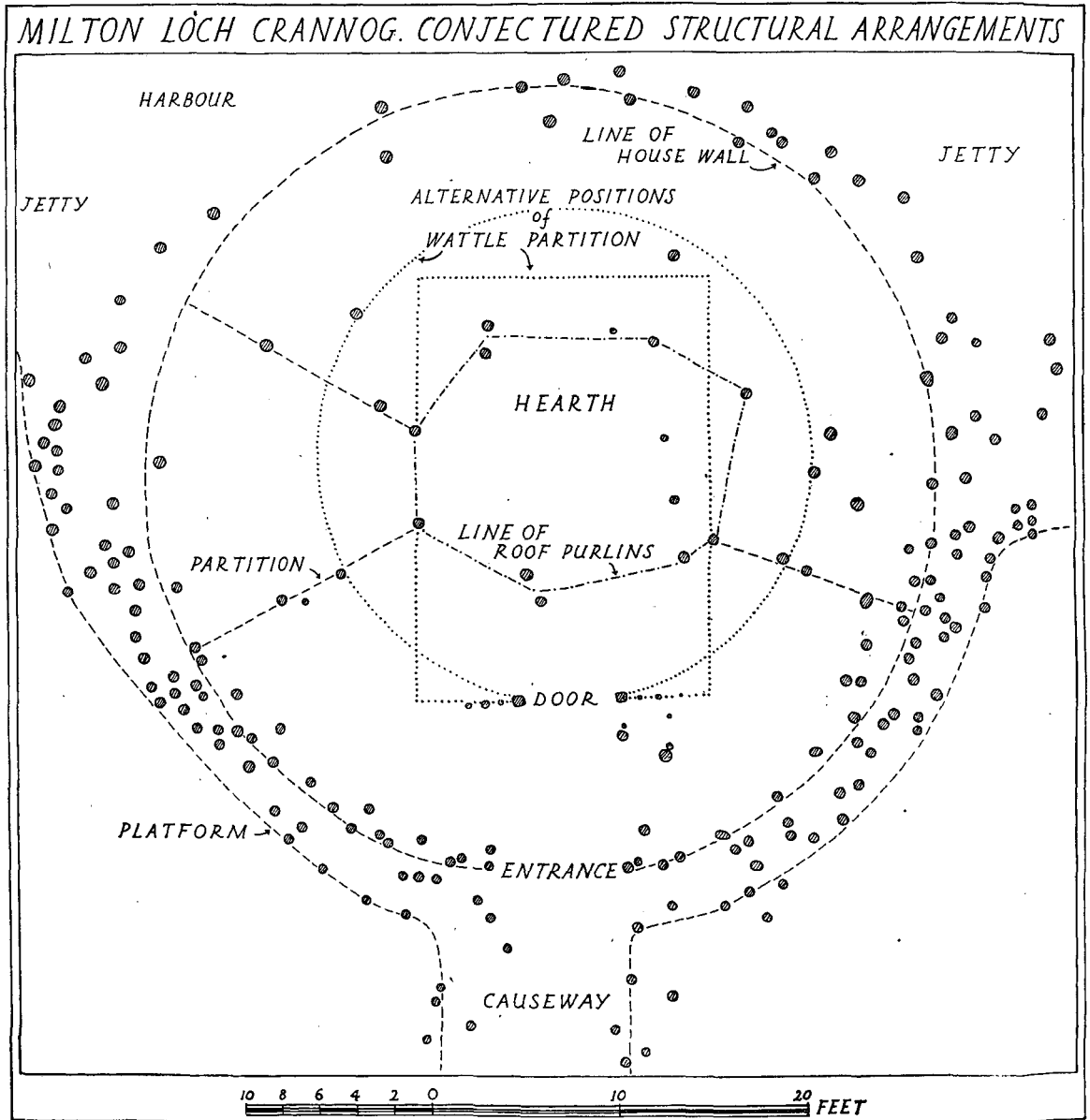


Fig. 4. Plan showing alternative internal partitions and roofing.



*The Substructure* (Pl. XIV and Plan, fig. 6).

The lower foundations, which were waterlogged, had evidently been built on a raft principle, floating on thick black mud. No *terra firma* could be found by probing, and the whole island could be made to shake by jumping

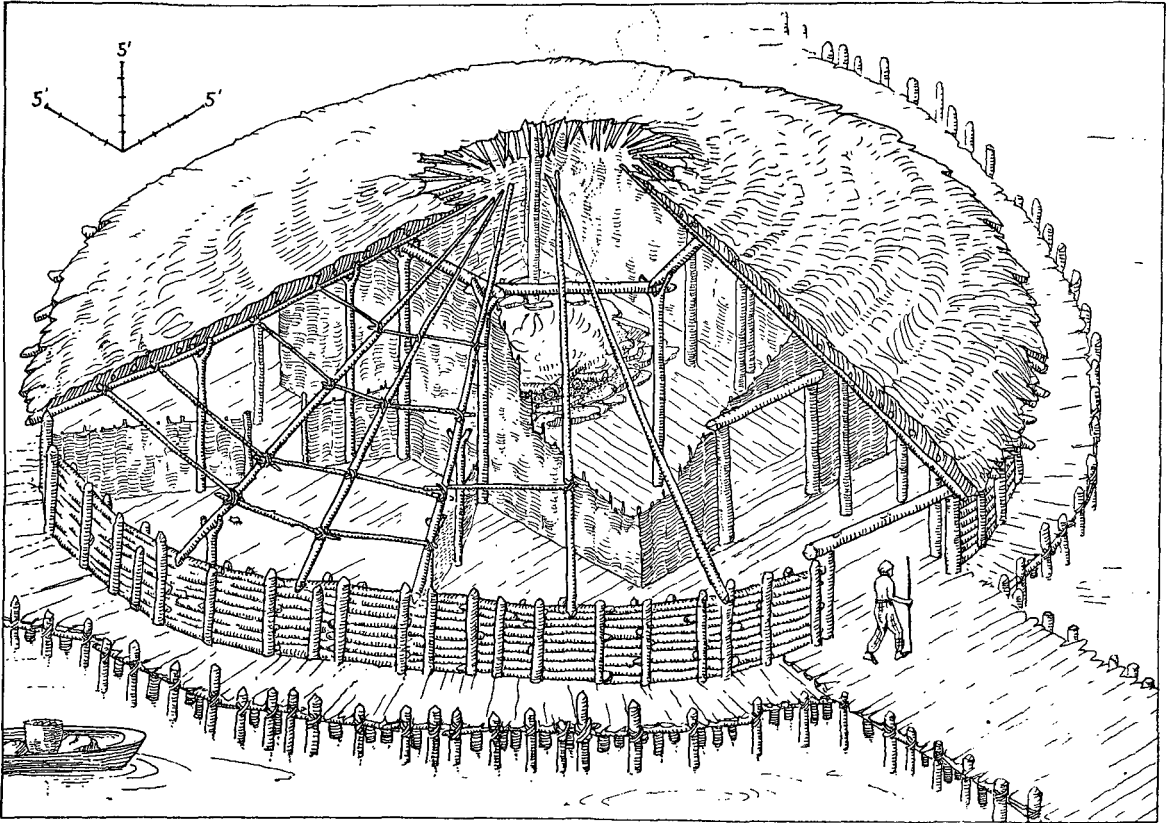


Fig. 5. Isometric reconstruction showing suggested internal divisions.

on it. Large logs, round in section and still in some instances retaining their bark below water-level, had been laid both radially and concentrically with the wall of the house, as can best be seen from the plan, fig. 6. As has already been said, much of this wood had floated away, blown loose no doubt by the prevailing wind lashing the island from the west. So much however remained that a fairly complete plan was achieved, and had the excavation been possible on a drained rather than an undrained loch, a great deal more information could have been wrung from it.



*The Outer Wall of the House.*

Though the overall diameter of the house was recoverable from the numerous uprights comprising the circumference, the actual method of construction was less certain. The question which must however be asked is whether the walls were built with some form of wattling between regularly set uprights, or whether they did not consist of horizontally laid timbers kept in position by uprights on each side of them.

The exposed position of the crannog, and the consequent necessity for building a sufficiently solid structure to stand up against considerable buffeting from wind and rain, as well as occasional storm flooding, suggests that the first alternative mentioned above could hardly provide for enough stability under such adverse circumstances. Undoubtedly greater strength could have been achieved by the horizontal log structure, and in support of this the position of one or two timbers seen on the plan (fig. 7 just above and to the left of point B) was significant in the opinion of the excavator. For at least one of these timbers not only marked the outside of the house, but had certainly been laid horizontally and wedged into position both inside and outside with uprights. So firm was this, that as it could not have got into such a position accidentally through either drifting or collapse, it is felt that it should be regarded as strong evidence in favour of the horizontal log construction. It is equally significant that no upright walling could have been built at that point, provided that this timber was *in situ*.

On the whole then the evidence, though slight, favours a wall construction made with horizontally laid timbers.

*The Surrounding Platform.*

The large number of piles set at random outside the wall of the house, as seen most clearly from fig. 4, must surely have been the supports for an external platform. Such a platform would have been a necessity not only for providing access to the harbour from the land without going through the house, but more important, it would have been a valuable space for outside work such as repairing and drying nets, tying up boats, as well as being a suitable firm stand for ladders used in roof repairs and thatching. This platform, which was about 5 ft. wide, probably led straight round behind the house on to the two stone jetties on each side of the small harbour.

## II. THE FINDS.

*The Plough Stilt and Head (Pl. XVI).*

A find of considerable interest and archæological importance was discovered at a point shown as no. 2 on the plan, fig. 7. Beneath the foundations of the crannog was found the stilt and head, originally in one piece but broken before discovery, of a wooden plough. This plough, which was

# MILTON LOCH CRANNOG I

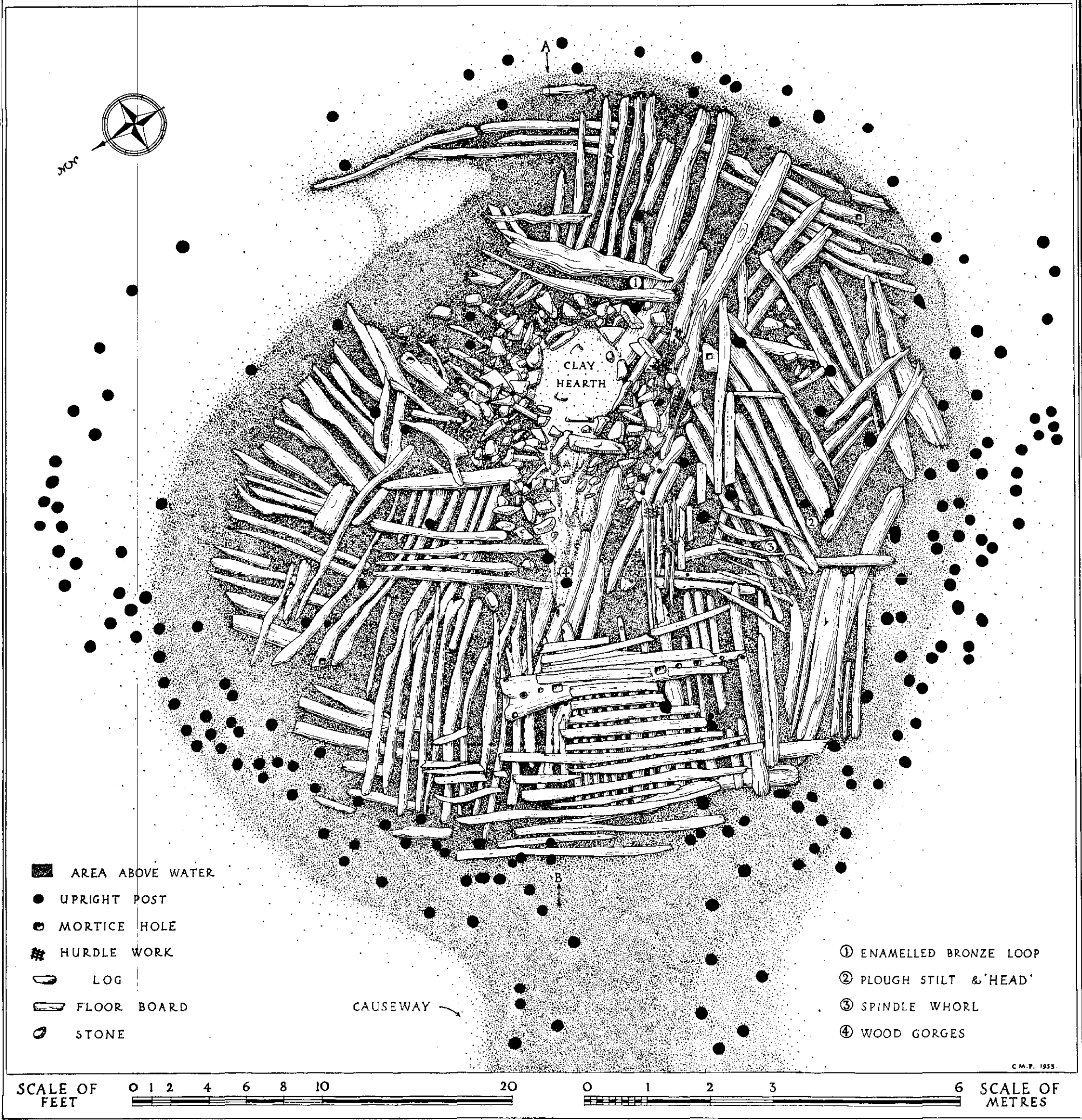


Fig. 7. Milton Loch Crannog I.

Showing structural arrangements and location of finds. (Line of Section A-B.)

briefly described with illustrations in the *Illustrated London News* for 9th January 1954, was almost certainly deposited deliberately beneath the house foundations as a ritual offering to the gods who might provide good and abundant harvests, and in this connection it is reminiscent of Scandinavian examples, not however closely dated, from Døstrup and Trollerup. The Milton Loch plough fragments have also been made the subject of a paper by Dr Burchard Brentjes,<sup>1</sup> in which he claims that it may be representative of a half-way development between a digging stick and the more developed *curved* Døstrup type. It is not the intention here however to describe or discuss this find in detail, for at the time of writing it is still being given treatment in Copenhagen, where the kind co-operation of the Nationalmuseum is here most gratefully acknowledged. After the treatment has been completed the plough can be fully described, and its significance in early agriculture better assessed, in a paper devoted to that purpose.

Attention should here be drawn to a mistake made in describing this plough in the *Illustrated London News*, and the writer is indebted to Mr F. G. Payne for kindly pointing this out. It was described as "the stilt and share of a two-piece plough" whereas in fact it is the *plough-head and stilt*. Mr Payne writes: "The size of the groove on the comparable Døstrup plough-head seems to indicate that it was intended to receive an oak share similar to the Trollerup example which has a ridge on its under surface (*Acta Archaeologica*, xvi, 99, fig. 6). Should this be so, then the plough should be at least three-piece: head and stilt, main share, beam. Probably even four-piece by the addition of the usual bar-share."

This type of plough is definitely not Roman. It is not clear how it came to be used in a part of Britain in which it is thought hoe cultivation may have been the usual practice at that time. Perhaps it was in use further south, and when rendered obsolete there after the introduction of improved Roman types, traded to the north. It is interesting in this connection to mention that a plough beam of unknown date but of a kind appropriate to ploughs of Døstrup or Milton Loch type, was found some years ago in White-reed Moss on the Elshieshiels estate north of Lochmaben. This, which was kindly brought to the writer's notice by Mr A. E. Truckell, who acquired it for the Dumfries Museum, will it is hoped be published at the same time as the full description of the Milton Loch discovery.

#### *The Bronze "Loop"* (fig. 9).

This bronze loop was found within the area of the house at a point marked 1 on the general plan, fig. 7. It retained traces of red and yellow enamel in the roundel, and doubtless originally would have been enamelled richly. It belongs to a type of ornament of which the exact use is unknown, but which may have been belt fasteners or horse harness loops. Though

<sup>1</sup> "Der Pflug vom Milton Loch," in *Wissenschaftlichen Zeitschrift der Martin-Luther-Universität Halle-Wittenberg* (1954), 667-8.

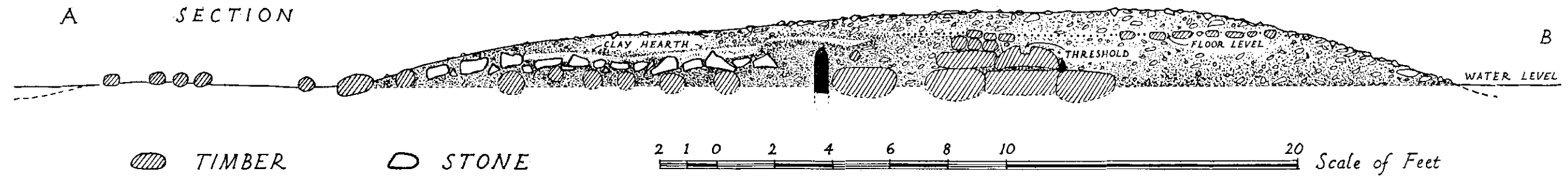


Fig. 8. Section across crannog. (For position of A-B see plan fig. 7.)

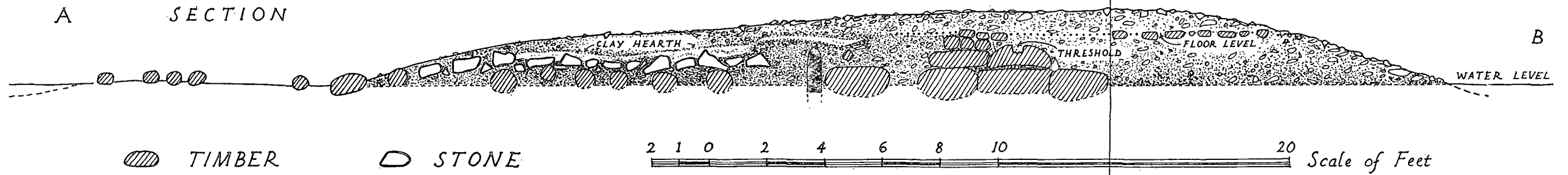


Fig. 8. Section across crannog. (For position of A-B see plan fig. 7.)

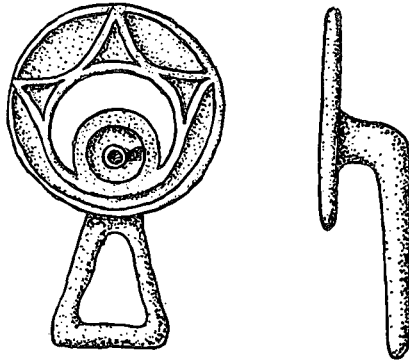


Fig. 9. Bronze enamelled loop. ( $\frac{1}{2}$ .)

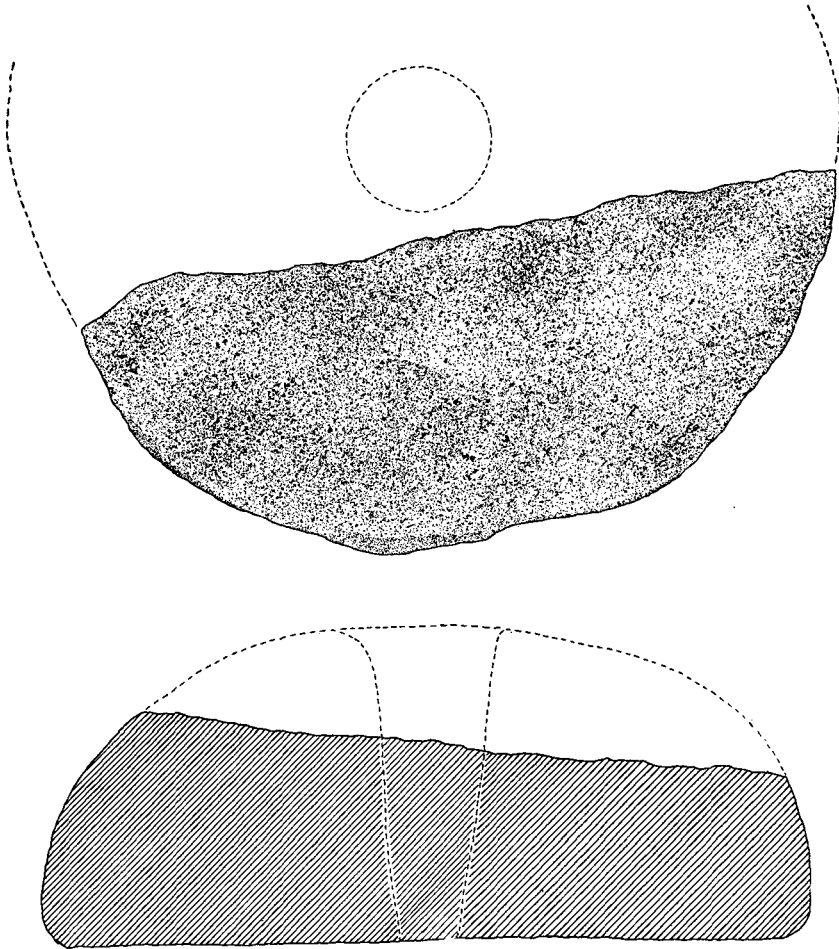


Fig. 10. Fragmentary quern. ( $\frac{1}{2}$ .)



it is difficult to find parallels for this example from Britain, there are fairly comparable examples amongst the bronzes made in Pannonia and nearby territories in the first two centuries of the Christian era (see I. Sellye, "Les Bronzes Émaillés de la Pannonie Romaine," in *Dissertationes Pannonicae* (Budapest, 1939) pl. vii). In this case, since we know that Pannonian auxiliaries were posted in North Britain, it is reasonable to suppose that the occupant of the Milton Loch house acquired it from a member of the army of occupation. (For the Pannonians in Britain see Cheesman, *Auxilia Rom. Imp. Army* (1914), 148, 176-7.)

*The Quern* (fig. 10).

A fragment of quern made of local granite was found among the surface stones overlying the crannog. Its suggested type is shown, but it was too fragmentary for this to be certain. Diameter about 12 ins.

*The Spindle-whorl* (fig. 11).

Again made of local stone, this whorl was very roughly bored with an hour-glass perforation. Found on floor-level of the house at point 3 on the general plan.

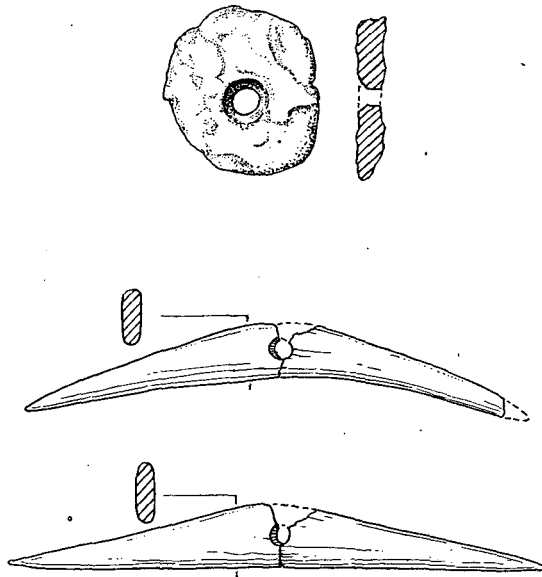


Fig. 11. Spindle whorl and wooden gorges. (†.)

*The Two Wooden Gorges* (fig. 11).

These were found together at point 4 on the plan, and nearby was a fragmentary wooden peg with which they may at one time have been associated. Floor-level.

Commenting on these most carefully made gorges, which have parallels from a few sites in Britain, including Glastonbury, Mr A. B. Duncan writes: "I cannot believe they were used for any other bird than the cormorant, which of course was presumably then as now a visitor to the loch. There is no evidence that there were pelicans in these parts at that time, and I would rather doubt the Glastonbury identification." At all events their use for catching birds rather than fish is suggested by the large size of these specimens.

#### CONCLUSIONS.

The most significant results of this excavation have been twofold: firstly, it has been possible to recover a fairly complete plan of a 2nd-century native house (the evidence of date coming from the bronze loop); and secondly, the discovery of a ritually buried plough fragment beneath the foundations of this house has thrown considerable light on the agriculture of this country and of those parts of northern Europe where similar, but undated, ploughs are known to have been in use.

During the unstable conditions obtaining in the area between the two Roman walls in the 2nd-3rd centuries A.D., it is hardly surprising to find an island refuge such as the Milton Loch site. It is indeed not an unusual type of settlement in south-west Scotland, and finds from other crannogs such as Lochlee and Dowalton<sup>1</sup> are in support of a broadly contemporary date. Unfortunately the land draining, which resulted in the discovery and excavation of other south-west Scottish crannogs, took place in the latter half of the last century, when accurate scientific observation was uncommon, and in consequence a vast deal of information which could have been obtained under modern conditions of inquiry escaped attention, and we are left with tantalisingly inadequate plans, some of which (*e.g.* Lochlee) may even represent more than a single building phase. For this reason it is not practicable to place too much reliance on the recovered facts.

The term "crannog" has been very loosely used in the past to denote almost any kind of island refuge, whether composed of stones and situated in a highland loch, or whether largely of wooden construction in a lowland loch. It seems likely that these two types are basically different, though it is very often only possible by means of excavation to discover to which type any one example may belong.

Many of the highland examples can only have been refuges, for with few wild-fowl and no land on the shore suitable either for pasture or corn growing, it would be impossible to live regularly in such places. On the other hand, in the case of the lowland lochs, not only are they surrounded by land suitable and no doubt used for agricultural practices (witness the plough

<sup>1</sup> Munro, pp. 38-50.

and quern from Milton Loch), but they are also visited by any number of water-fowl and large migrant birds, as well as being rich in a variety of fish suitable for food.

These two main types of crannog were basically different in that they were meant either for temporary or semi-permanent occupation. It is not however possible to claim a difference in date between the two groups, though on the whole the lowland sites are apparently earlier. Another unknown factor which can only be understood when more excavations have been completed, is the question of the plan of these buildings. Are the earlier ones circular, or may they sometimes be rectangular? Is there anything of dating significance in certain common features of planning? How much does this vary from one part of Scotland to another?

The inquiry is made the more difficult since throughout the medieval period in Scotland conditions of living were still so insecure that island refuges were frequently resorted to even at so late a date. There is documentary evidence for their construction and habitation as late as the 16th or 17th century,<sup>1</sup> and indeed in Timothy Pont's map of the *Sherrifdome of Wigtown wt the Regalitie of Glenluze*, published in Blaeu's *Atlas* in 1654, some of the crannogs are actually called "homesteads," thus significantly suggesting that they were still in use.

The most fruitful line of inquiry however seems to be through a study of the associated finds from the various Scottish crannogs, and their distribution. The result of such an inquiry is significant, and is summarised in the lists on p. 150 and in fig. 12. Here it can be seen that whereas the post-Roman and medieval crannogs are found almost all over Scotland, where a suitable site could be found, the contrary is the case with the Roman Period sites. These are all grouped within an area approximately bounded by the Clyde and Nith, in the tribal territories in fact of at least the Damnonii and the Novantæ, and possibly though less probably the Selgovæ as well, and contemporary sites seem to have existed in Antrim.

The political conditions providing the background for this habit of living are as yet too uncertain to be assessed, for the Roman occupation of south-west Scotland is only just beginning to be clarified. That they were native British people living in the crannogs we can be fairly sure, but against what enemy were they taking these precautions? Surely not so much against the Romans as against thieves and robbers at a time or times when the political situation encouraged such activities. Such conditions of life are just what might be expected in the lands between the two Roman walls in the 2nd century, for there is no evidence as yet to suggest that the Novantæ were as warlike and troublesome to the Romans as were the notorious

<sup>1</sup> Wood-Martin in *The Lake-Dwellings of Ireland*, p. 31, says: "In the year 1508, it is of record that a Scottish monastery granted a lease of a crannog, one of the covenants being that the occupant was to place a certain quantity of stones outside the piling in each year to protect the structure from the destructive influence of the waters of the lake."

Selgovæ. The absence of many large tribal oppida west of the Nith supports the view that these people were living in a fragmented society, individuals and refugees not welded together as a political unit, and in consequence not very potent either as friends or enemies of the Romans, and hardly worthy of a

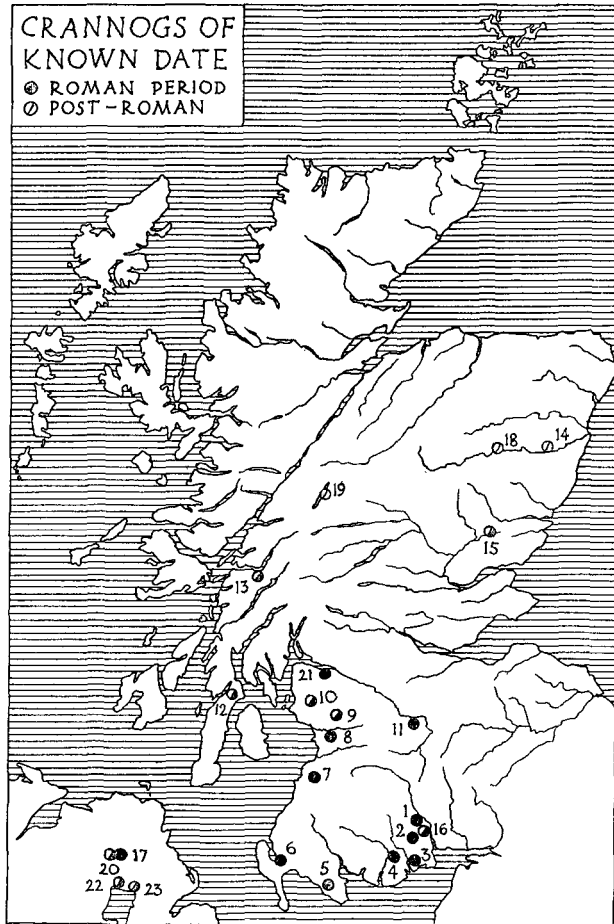


Fig. 12. Distribution of dated crannogs in Scotland.  
 (See lists on p. 150.)

major campaign. Such theories as these, however, can only be seriously tested in the future when more is known. Only then too shall we be able to hazard a guess as to how the Pannonian bronze ornament came into the possession of the owner of this crannog.

With regard to the plans of other Scottish crannogs there is but little to say, for of the various sites excavated only Lochlee, amongst those contemporary with Milton Loch I, was recovered in sufficient detail to claim that

the plan was in some way comparable. It is impossible to be sure either of the size or shape of the house, but it certainly had a squarish central element, with a hearth at the far side from the door leading in from the causeway. Hyndford<sup>1</sup> and Loch Dughail<sup>2</sup> both produced very incomplete plans, in each case of circular structures about 50 ft. across. At Buston<sup>3</sup> an excellent plan was recovered, but unfortunately this, like Loch Dughaid, was of Dark Age date and need not concern us here. An immense amount of literature has been published on the subject of crannogs in Scotland and Ireland, most of it almost worthless. In fact more excavation is needed before discussion is worth while. For later sites we have as a guide the splendid reports on

## CRANNOGS OF THE ROMAN IRON AGE (see fig. 12).

Site.	County.	Finds.	Map Number.	References.
Milton Loch	Kirkcudbright-shire	2nd-century bronze loop; plough	2	Present paper.
Loch Inch, Crindil	Wigtown	Blue/white cable glass armlet	6	<i>P.S.A.S.</i> , IX (1872), 381, 388-92.
Loch Barean	Kirkcudbright-shire	Roman bronze pots	3	<i>P.S.A.S.</i> , LXVI (1931-2), 372.
Carlingwark Loch	"	4 crannogs near site of 2nd-century hoard	4	<i>P.S.A.S.</i> , X (1873), 286.
Lochlee, Tarbolton	Ayrshire	Roman brooches, bronze and iron objects, etc.	8	<i>P.S.A.S.</i> , XIII (1879), 175-252. <i>Munro, Ancient Scottish Lake-Dwellings</i> , pp. 68-151.
Hyndford	Lanarkshire	Samian glass armlets, Roman metal objects	11	<i>P.S.A.S.</i> , XXXIII (1899), 373-87.
Friar's Carse	Dumfries	2 pateræ found 1790 close to crannog found later. Curle thought association likely	1	<i>Archæologia</i> , XI, 105. <i>P.S.A.S.</i> , LXVI (1932), 372.
Lochspouts, Maybole	Ayrshire	Bronze "loop," melon beads, etc.	7	<i>P.S.A.S.</i> , XV (1881), 107-10. <i>Arch. Coll. Ayr and Gall.</i> , IV (1884), 13-16.
Dowalton Loch	Wigtown	Roman patera, etc.	5	<i>P.S.A.S.</i> , VI (1864-5), 109-11.
Langbank	Renfrew	Early Roman decorated comb and penannular brooch	21	<i>T. Glasgow A.S.</i> , N.S., V (1908), 43 ff.
Moylurg, Craigs	Antrim	Roman-period strainer	17	Joyce, <i>Social History of Ancient Ireland</i> , II, 117.

<sup>1</sup> *P.S.A.S.*, XXXIII (1899), 373-87.

<sup>2</sup> *Ibid.*, XXVII (1893), 209-222.

<sup>3</sup> Munro, pp. 190-239.

## POST-ROMAN AND MEDIEVAL CRANNOGS.

Site.	County.	Finds.	Map Number.	References.
Lochan Dughail	Argyll	Medieval pottery	12	<i>P.S.A.S.</i> , xxvii (1893), 209-22.
Loch Rutton	Kirkcudbrightshire	Medieval pottery in Dumfries Museum	16	<i>P.S.A.S.</i> , xxxii (1888), 376.
Loch of Banchory or Leys	Kincardineshire	Bronze pots, etc.	14	<i>P.S.A.S.</i> , vi (1864-5), 126-7.
Loch of Forfar	Angus	30-40 chessmen	15	<i>P.S.A.S.</i> , vi (1864-5), 140.
Loch Canmor, Tullich	Aberdeenshire	Medieval bronze pot	18	<i>P.S.A.S.</i> , vi (1864-5), 129, 166 ff.
Loch Etive	Argyll	Early Christian Cross, etc.	13	<i>P.S.A.S.</i> , x (1872-4), 82.
Buston, Kilmaurs	Ayrshire	Dark Ages comb, gold finger-ring, etc.	9	<i>P.S.A.S.</i> , xv (1881), 110-2.
Kilbirnie Loch	„	Iron nails, Lion ewer, etc.	10	Munro, pp. 190-239. <i>Arch. Coll. Ayr and Gall.</i> , II. <i>P.S.A.S.</i> , xi (1875), 287.
Eadarloch, Loch Treig	Inverness	16th-century objects	19	<i>P.S.A.S.</i> , lxxvi (1941-2), 8-78.
Lough Tarmin, Craigs	Antrim	..	20	Wood-Martin, <i>Lake-Dwellings of Ireland</i> , pp. 165-6.
Lough Ravel, Derryhalagh	„	Dark Ages brooches, beads, etc.	22	<i>Ibid.</i> , pp. 163-4.
Randalstown	„	Many objects of various dates	23	<i>Ibid.</i> , pp. 167-8.

Ballinderry<sup>1</sup> and Lagore<sup>2</sup> for Ireland, and Eadarloch for Scotland;<sup>3</sup> but for the earlier sites it is hard to quote a single adequate excavation except those by Dr Bersu at Ballacagen in the Isle of Man. Here the site, though belonging to the early centuries A.D., was a ring-fort rather than a true crannog, and the plan recovered shows a structure altogether different from the Milton Loch site.

It seems unlikely that such a term as a crannog "culture" has any meaning. For almost certainly the type of house sometimes constructed on these artificial islands was in general use on the mainland as the normal form of farmhouse. As Hencken has observed, in connection with Ballinderry Crannog 2, "Indeed such sites in marshy country are the analogues of the earthen ring-forts found on higher ground, and of the stone ring-forts common on the hills."<sup>4</sup> The same may obtain for Scotland, and it is not impossible that some of the small earthworks in Dumfriesshire and Kirkcudbrightshire may, on excavation, prove to contain just such a house as that at Milton Loch.

<sup>1</sup> *P.R.I.A.*, XLIII, Section C, and *ibid.*, XLVII.

<sup>3</sup> *P.S.A.S.*, LXXVI (1941-2), 8-78.

<sup>2</sup> *Ibid.*, LIII, Section C.

<sup>4</sup> *P.R.I.A.*, XLVII, 3.

## APPENDIX I.

REPORT BY MRS ELIZABETH KNOX, Department of Botany.

*Peat from Milton Loch.*—The peat contains a considerable quantity of herbaceous pollen mixed with a quantity of fungal material, spores, hyphæ and fruiting bodies. Tree pollen is relatively scarce; the pollen of *Alnus* (Alder) is of most frequent occurrence, followed by that of *Betula* (Birch) and *Corylus* (Hazel), and a few grains of *Quercus* (Oak) and *Tilia* (Lime). The samples all contained a high proportion of grass pollen, both of the cereal and wild types. So far it has not been possible to determine with certainty the cereal, though it is in all probability rye. Herbaceous pollen is very varied, and represents several weeds of cultivation with many other forms. The following is the list of genera of the herbaceous plants of which the pollen has been observed in the samples; none in quantity except that of *Ranunculus*.

<i>Plantago lanceolata</i>	<i>Polygonum</i>
<i>Ranunculus acris</i>	<i>Rubiaceæ</i>
<i>Rumex acetosa</i>	<i>Calluna</i>
<i>Umbelliferae</i>	<i>Typha angustifolia</i>
<i>Compositæ</i>	<i>Pteridium</i>
<i>Empetrum</i>	<i>Polypodium</i>
<i>Potentilla</i>	<i>Lycopodium</i>
<i>Caryophylls</i>	
<i>Chenopods</i>	Fragments of Sphagnum leaves
<i>Labiates</i>	Fragments of Conifer wood
<i>Scabiosa</i>	

*The Wood from Uprights and Flooring.*—The wood submitted was in perfect condition for making watery sections, and is all *Alder*, both flooring and uprights.

## APPENDIX II.

Dr Hans Helbaek reports on the *charcoal and seeds from the hearth*.

The charcoal consisted of Oak, Alder, Willow and Hazel.

The seeds were as follows:—

*Polygonum lapathifolium.*  
 „ *persicaria.*  
*Scirpus lacustris.*  
*Eleocharis palustris.*  
*Carex panicea.*

Apart from the *Polygonaceæ* they all belong to the natural vegetation of the loch.

Large numbers of hazel nuts were also found near the hearth.



[Photo: C. M. Piggott.]

1. The crannog from the shore.



[Photo: A. Graham.]

2. The outer edge of crannog, showing radially arranged timbering.

C. M. PIGGOTT.

[To face p. 152.]





[Photo: A. Graham.

1. Floor boards: causeway in background.



[Photo: C. M. Piggott.

2. The floor boards *in situ*.



1. The hearth during excavation. [Photo: A. Graham.



2. The hearth: in the centre can be seen the remains of the clay surface.  
Harbour in background. [Photo: C. M. Piggott.



[Photo: J. C. Gair, Dumfries.

1. View of crannog during course of excavation.



[Photo: J. C. Gair, Dumfries.

2. The "canoe" *in situ* among the foundation timbers.

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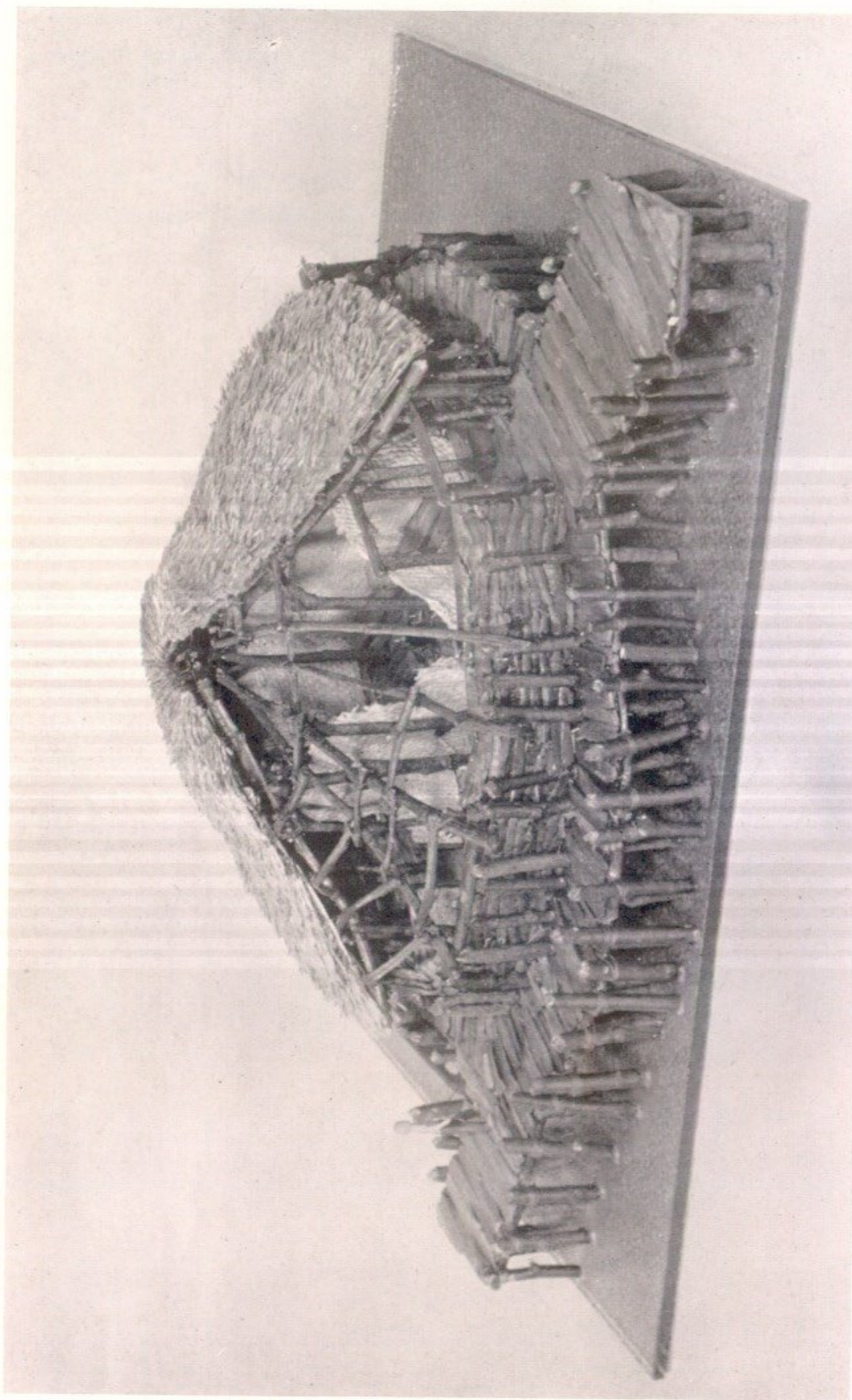
[*Photo: J. C. Gair, Dumfries.*]



[*Photo: J. C. Gair, Dumfries.*]

The foundations during excavation.

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Model of Milton Loch Crannog, made by J. and M. Scott.



[Photo: Drummond Young, Edinburgh.

Oak Plough stilt and head from Milton Loch Crannog.  
Top and side views. Length 4 ft. 2 ins.