

GARN BODUAN AND TRE'R CEIRI, EXCAVATIONS AT TWO CAERNARVONSHIRE HILL-FORTS

By A. H. A. HOGG

Two forts, Garn Boduan and Tre'r Ceiri, are described in detail, including the results of selective excavations. Garn Boduan shows two periods of Iron Age construction, followed by a small fort of late-Roman or post-Roman date. Tre'r Ceiri seems to have been founded shortly before the Roman conquest and to have continued in use until the 3rd or 4th century. The bearing of this and other evidence on the history of the hill-forts of Caernarvonshire is discussed.

The two forts which are the subject of this paper stand near the north coast of the Llyn peninsula (Fig. 1). Tre'r Ceiri is familiar, at least by description, to any student of hill-forts. Garn Boduan, however, is little known; until the plan which accompanies this paper was prepared in 1951, the remains had never been surveyed even roughly.

During the 1950's selective excavations were made in both forts on behalf of the Royal Commission on Ancient Monuments in Wales and Monmouthshire, continuing a programme of investigation designed to clarify the history of the hill-forts of Caernarvonshire.¹ Datable finds were extremely scarce, but a structural sequence was established which can apparently be related to those which appear at other unexcavated hill-forts in the county.

Garn Boduan is described first, as being the earlier fort in origin, and this is followed by an account of Tre'r Ceiri. Taken together, the history of the two fortresses must cover nearly a millennium, from about the 3rd or 4th century B.C. to perhaps as late as A.D. 600. In spite of the lack of early datable objects, the structural sequence provides a convenient framework for the discussion of the development of other fortresses in the area. The actual dating of the various periods at Garn Boduan and Tre'r Ceiri will also be discussed in that section.

Detailed descriptions of the excavations are given in appendices.

GARN BODUAN

This site was surveyed in 1951, and during May and June 1954 excavations were carried out with the aid of a grant of £100 from the Board of Celtic Studies.

Thanks are due to the owner, Lord Newborough, for permission to excavate; to the Ancient Monuments Department of the Ministry of Works for permission to disturb a scheduled monument and for the loan of equipment;

¹ The first fort investigated as part of this programme was that at Conway Mountain (R.C.A.M., Caernarvonshire I, mont. 201, pp. 70-72).

Arch. Camb. (1956), 49-80. The views expressed in this report, however, are those of the writer, not necessarily those of the Commission as a body.

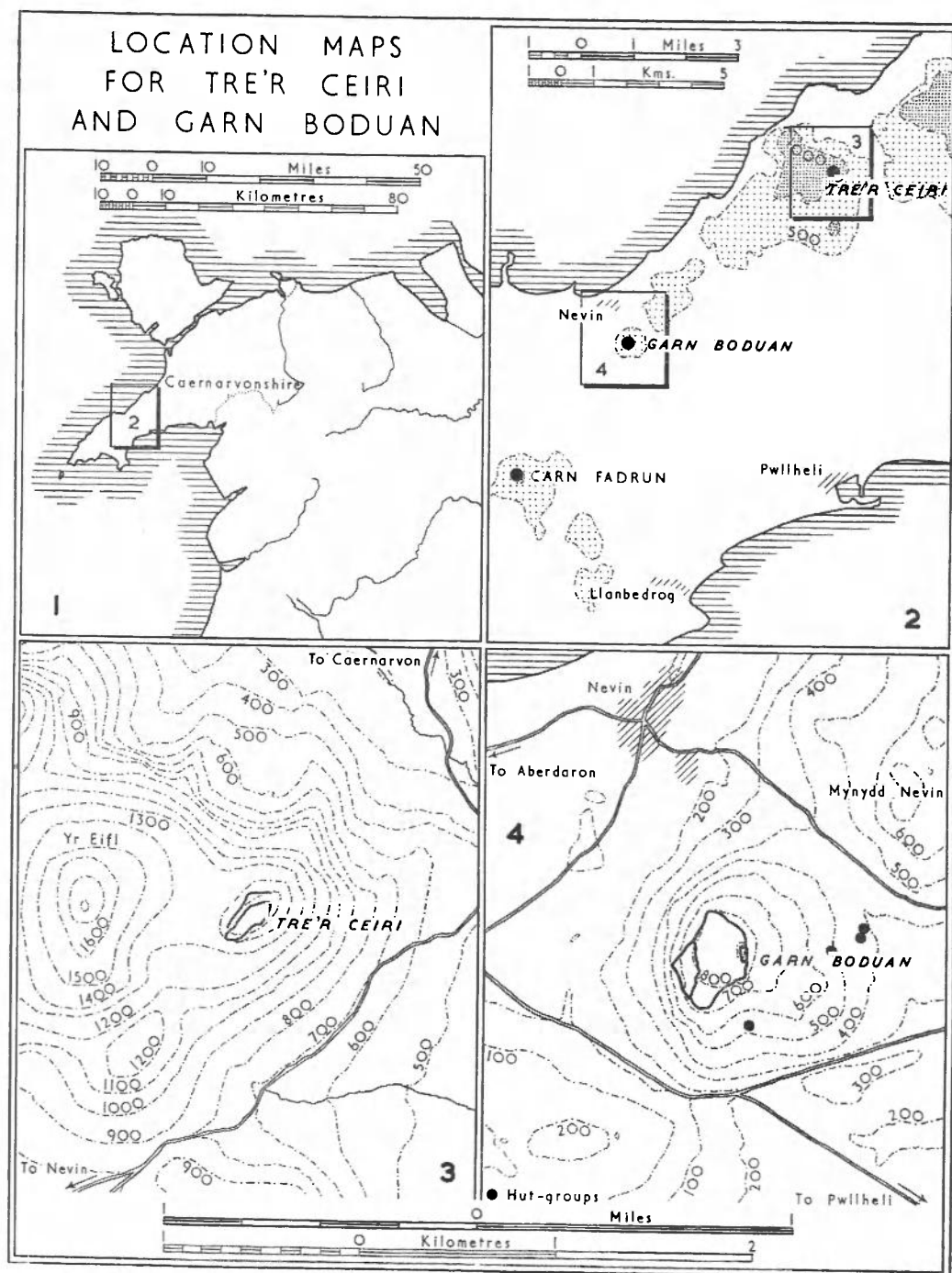


Fig. 1. Location Maps

HILLFORT ON GARN BODUAN

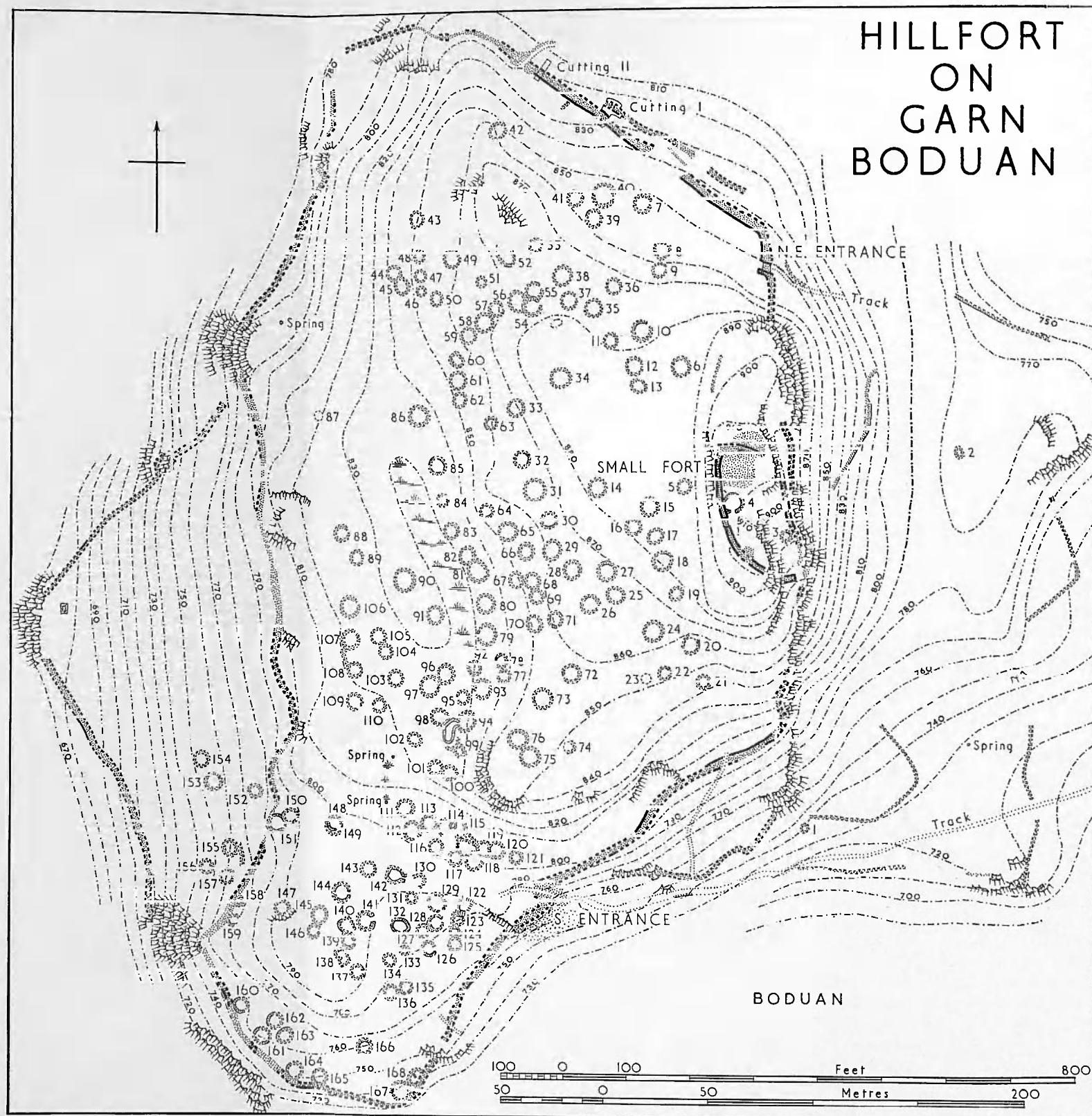


Fig. 2. Garn Boduan plan

to Mrs. R. Hindley, Mr. L. Milling, and Mr. P. Buxton for assistance on the excavation; to Mrs. C. M. Guido for examining the beads; to Mr. C. A. Raleigh Radford for drawing attention to the traditional association with Buan; to Mr. L. Alcock for comments on the pottery; and to Dr. N. Woodhead for taking and analysing samples of peat from the site (all of which, however, proved to be of recent formation). The staff of the Commission who assisted at the work were Mr. W. E. Griffiths, Mr. D. B. Hague, Mr. C. H. Houlder, Mr. C. N. Johns, and Mr. P. Smith. The finished drawings were prepared by Mr. Griffiths, mainly from surveys made by the writer with his assistance. The photography was mostly by Mr. Hague.

The hill-fort has never previously been surveyed or fully described.¹

The Site

The fort stands about 1 mile S. of Nevin (Nefyn). (Grid Ref. SH 310393; Caerns. 32 S.W.) An intrusion of igneous rock forms an isolated hill rising steeply above its surroundings. The area enclosed by the earliest rampart rises in a series of rough shelves from about 750 or 800 ft. above O.D. on the W. to a blunt summit nearly at 920 ft. Outside this rampart the ground on the N. and W. falls very steeply, and in part precipitously, to 200 ft.; on the E. a cliff below the summit falls to a broad shelf at about 750 ft., but along the remainder of this side and below the shelf a more gentle slope leads down to a col at about 450 ft. above O.D. The hill top is well suited to occupation, as it contains springs which are apparently perpetual, and shelter can be found from most winds. A spring also breaks out below the lower shelf on the E. At the time of the survey the hill was covered with the remains of a plantation partly cut down during the 1914-1918 war; the slopes outside the fort have recently been replanted.

A few small enclosed hut groups, badly ruined, occur on the lower slope of the hill. These are shown on the site-plan, Fig. 1.

The Defences (Fig. 2)

PERIOD I. The earliest rampart is very damaged and fragmentary. Where best preserved, on the N.E., it was 9 or 10 ft. thick, of rubble fill between rather poorly built rubble faces. The inner face was not invariably carried down to rock, but was sometimes built on a rubble fill levelling off the space between the outer face and the steeply sloping hillside. No surviving entrance can be associated with this rampart.

One large round hut (No. 151, 24 ft. diameter) appeared to be contemporary with this wall. About half the visible hut-foundations also probably belong to Period I, but this can seldom be established with certainty for any particular site.

¹ *Arch. Camb.* (1926), 437 has a brief but useful description by the late Dr. Willoughby Gardner, on the occasion of the Cambrians' visit. *Ibid.* (1903),

257 has a valueless account; the plan there mentioned, a copy of which is in the Commission's files, has no resemblance to Garn Boduan or to any other hill-fort.

PERIOD II. The rampart of the second period is of similar construction, but more massive than that of Period I, being 13 or 14 ft. thick where sectioned (Fig. 3). It is also much better preserved, standing to a height of 5 or 6 ft. in places when cleared (Pl. IB). Although it could not be proved to overlie the earlier wall, its relative position and preservation, together with the stratification found in section, leave no doubt that it is secondary.

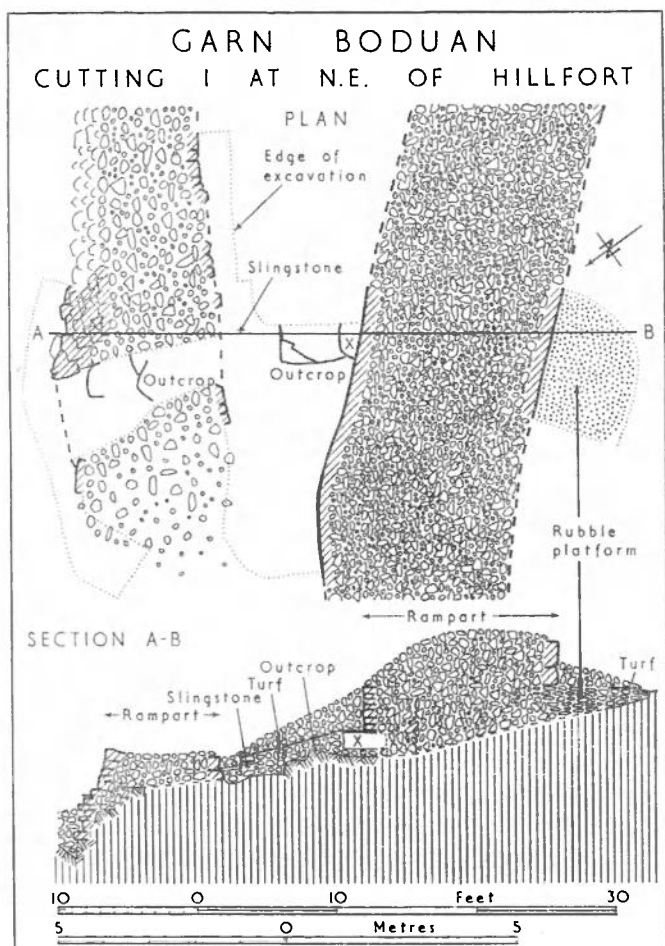


Fig. 3. *Garn Boduan* Cut 1

On the S.E. it generally follows the presumed line of the earlier defence, apart from a small deviation. On the W., however, it descends the hillside to pass over a projecting boss of rock, from which the greater part of that face of the hill can be observed. Only six huts occur within the space enclosed between the earlier and later walls.

As the rampart material has not been robbed, it is possible to make a rough estimate of its original height at the excavated section. Assuming vertical sides and a flat top, the remaining debris would correspond to a vertical outer face about 13 ft. high. Making the more probable assumption of a trapezoidal section, surmounted by a breastwork 3 ft. high and wide and with a rampart walk also 3 ft. wide, the total height, including the breastwork, would be nearly 18 ft.

The Gateways

Two entrances through the Period II rampart can be identified. That on the S.E. appears to have been the more important, but is very badly ruined and

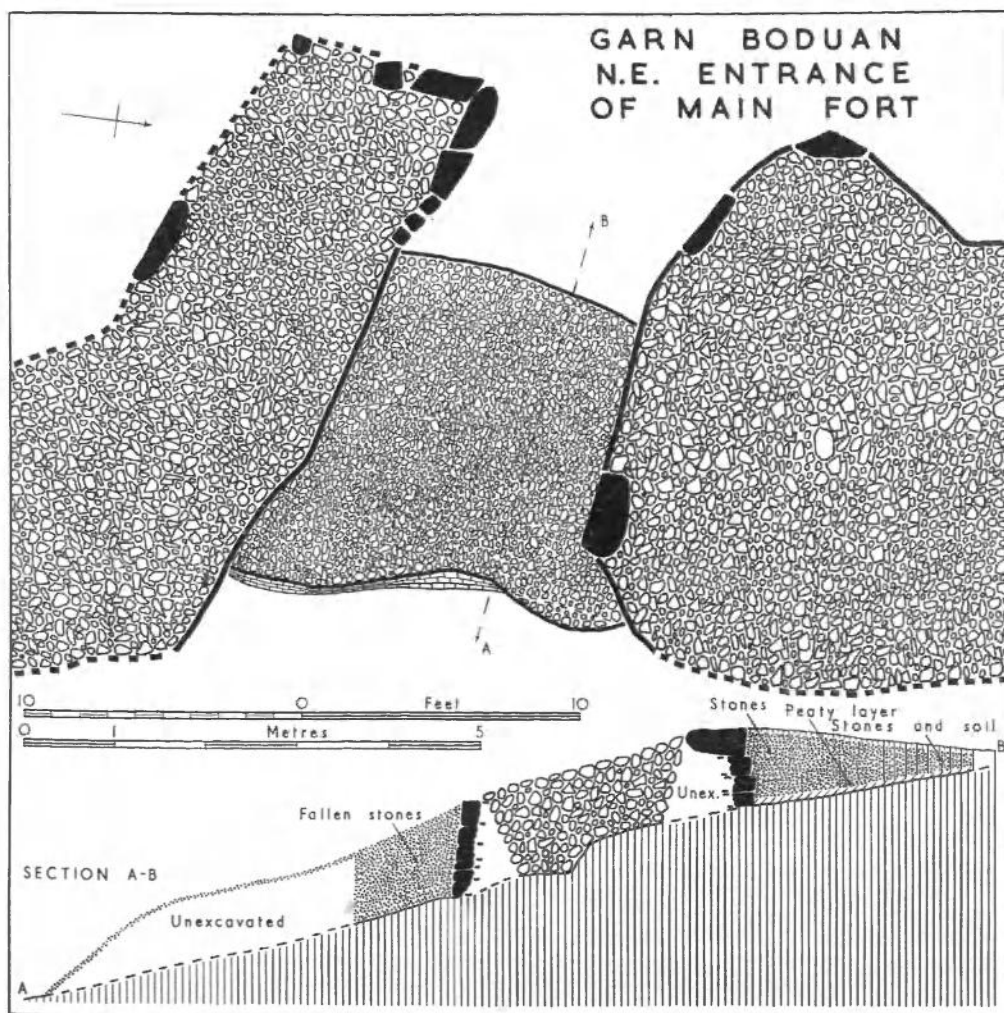


Fig. 4. N.E. Entrance

was not excavated. It was approached by a track revetted on its lower side; it seems probable that this revetment is contemporary with the fortifications.

The other gateway, on the N.E. (Pl. Ic; Fig. 4), was well-preserved, having been blocked in antiquity. Its excavation is described below (p. 26). It also was approached by a revetted track, but this was much shorter and steeper than that leading to the other gateway.

A third gap, about 500 ft. N.W. of this, appears to be a modern breakthrough.

Walls E. of the Hill-fort

On the shelf E. of the hill-fort there are some disconnected stretches of slight walling, clearly not defensive. They appear to be ancient, but there is no direct evidence as to their date. No sign of cultivation is associated with them.

The Huts

About 170 huts, all circular or nearly so, stood within the ramparts. Four of these were excavated, but produced no relics. Holes in the floor showed that the roof of Hut 90 (26 ft. in diameter, Fig. 5 and p. 26 below) had been

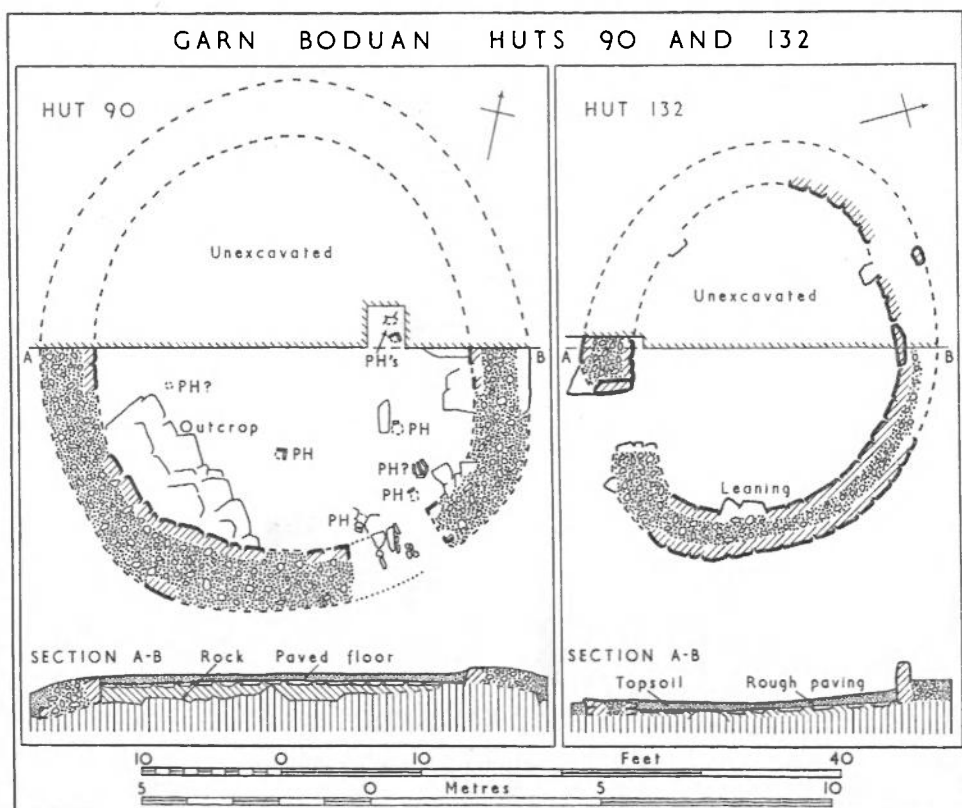


Fig. 5. Huts 90 and 132

supported on a ring of six or seven slight posts set about 6 ft. from the wall face, but the other huts provided no evidence as to their roof construction.

Huts 150 and 151, however, gave information of some interest (Fig. 6 and p. 27). Hut 151 (24 ft. in diameter) appeared to be structurally contemporary with the Period I rampart; after it had fallen into ruin, Hut 150 (19 ft. in diameter) was built over it (Pl. IA).

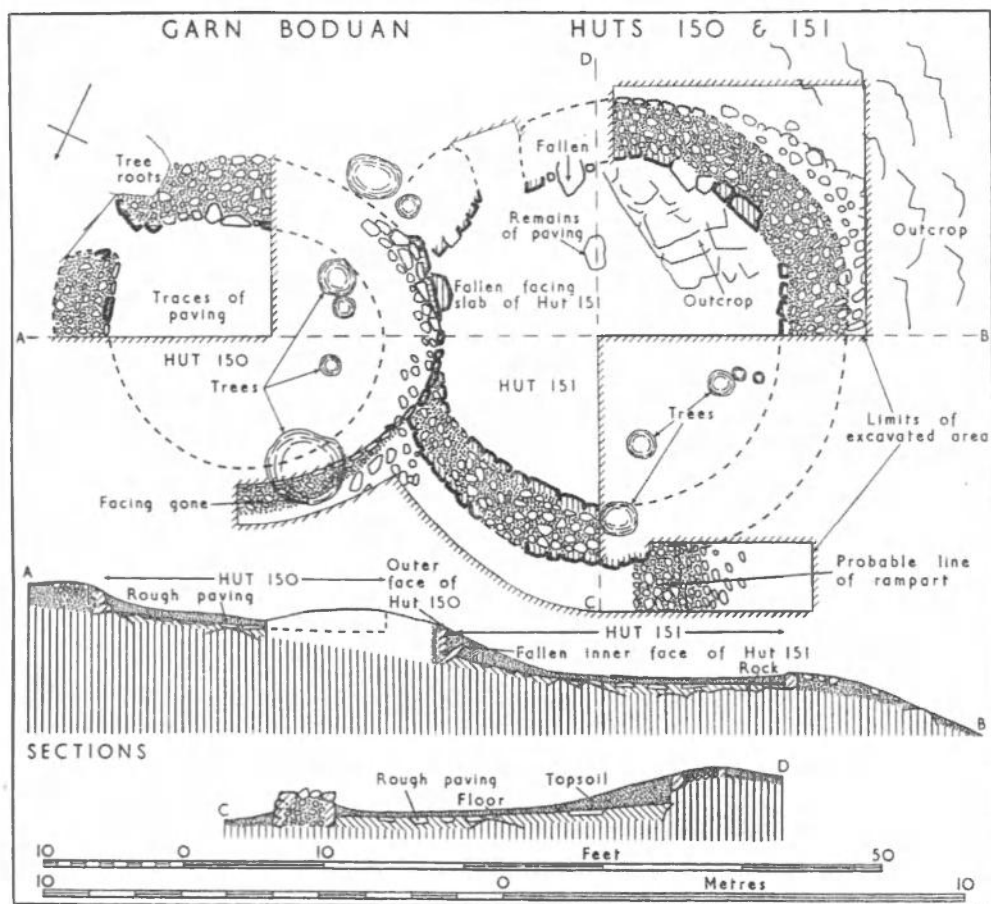


Fig. 6. Huts 150 and 151

Another example of successive construction occurs about 100 ft. E. of these where a smaller hut (No. 148) is built within a larger (No. 149). Unfortunately, a trench has at some time been dug round the space between the walls, so the pair was not investigated, as it seemed unlikely that any clear stratification would survive; but there can be little doubt that the smaller hut is the later. It may be noted, also, that the six huts on the W., between the earlier and the later walls, are all smaller than the average.

It seems likely, therefore, that the later huts were on an average smaller than those belonging to the earlier period. If that was so, however, there must have been a wide scatter on either side of the mean diameter in each period, as the size-distribution of the 155 huts for which the dimensions could be determined with fair accuracy merely gives a 'cocked-hat' frequency curve with a broad flat top; 115 of the huts have diameters of between 17 and 24 ft., inclusive.

It may be noted that there is no evidence whatever on this site to justify the assumption that the use of upright slabs rather than laid stones has any chronological significance; indeed, the walling of the huts is often a mixture of the two styles.

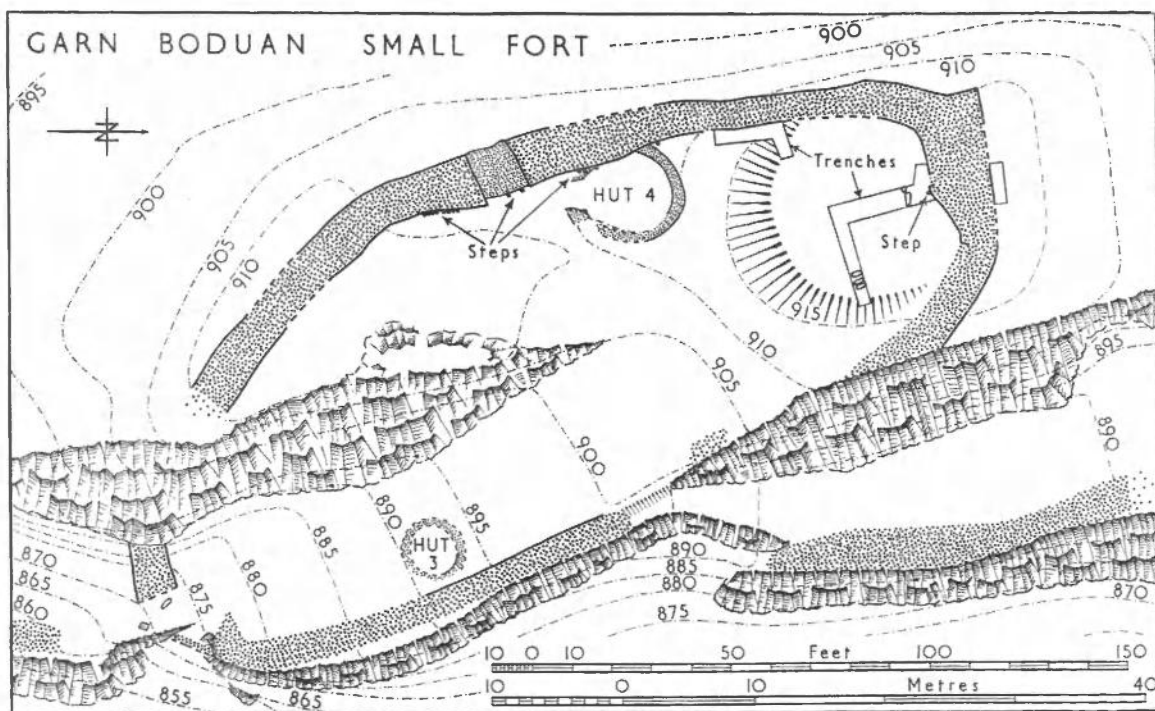


Fig. 7. Small Fort

The Small Fort (Fig. 7)

The Small Fort which crowns the summit of the hill is protected by a wall which differs in character from those of the large forts of Periods I and II, and excavation produced evidence that the structure is of late-Roman or post-Roman date.

Both faces of the rampart are well built, with a steep batter. The stones used are generally rather smaller than those of the hill-forts, and the outer face is somewhat better finished than the inner. At the N. end of the fort,



A. Garn Boduan.

W. wall of Hut
150, over ruins of
Hut 151



B. Garn Boduan.
Outer face of Period
II rampart, Cut 1



C. Garn Boduan.

Blocking of N.E.
Gateway, from
inside fort



A. Garn Boduan.
Steps within small
fort



B. Garn Boduan.
Entrance to small
fort, from W.



C. Tre'r Ceiri.
N. Rampart,
exterior

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The Controller of
H.M. Stationery Office.*

the thickness of the wall is greatly increased. Here, on either side of an opening 2 ft. 6 ins. wide, the inner facing ends in a carefully built vertical line, as if to leave an entrance to a mural chamber. There was, however, no indication of such a chamber, and the facing does not continue into the body of the rampart. There was also no post-hole or palisade slot at the foot of the gap, so it is unlikely to represent the junction of a timber wall with the rampart face. The most probable explanation is that it was a gap left during construction to simplify placing the rubble fill within the wall; if it was finally given a built facing this was not bonded into the adjacent walling and has collapsed.

Access to the top of the rampart was provided by flights of steps formed of long stones projecting from the inner face (Pl. II A).

The irregularity of the ground outside the rampart makes an accurate estimate of its original height impossible; but it is unlikely to have exceeded 10 ft.

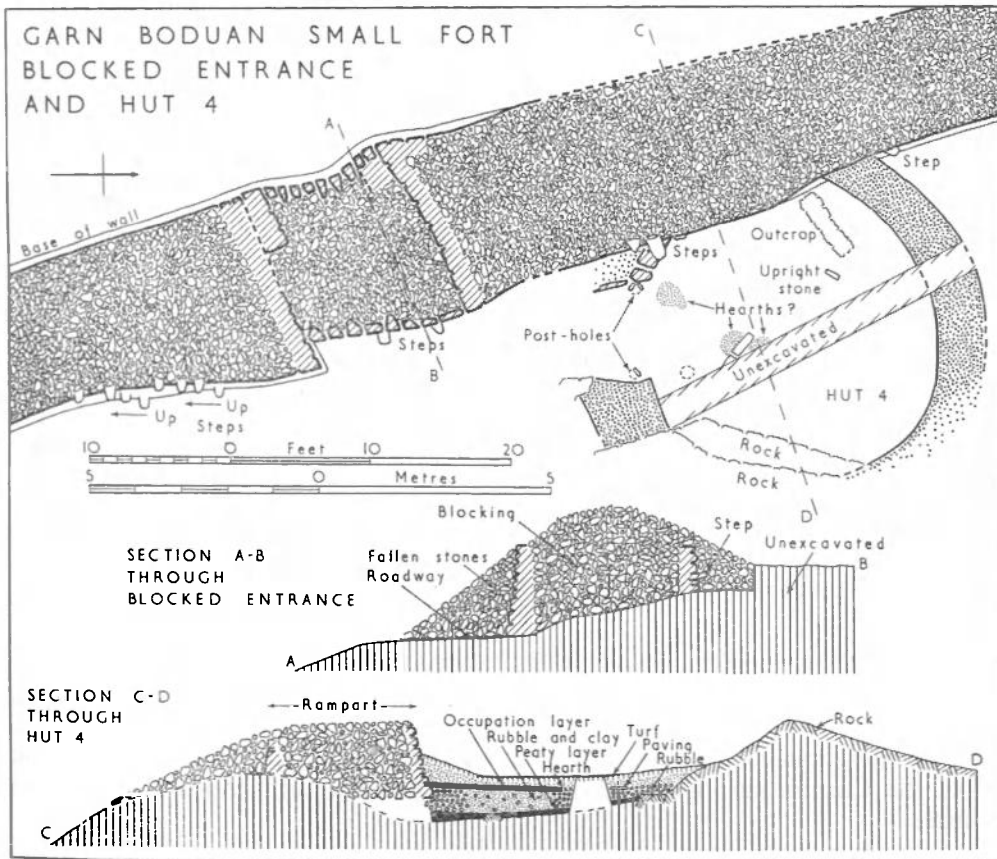


Fig. 8. Small Fort. W. Entrance and Hut 4

As originally built, the Small Fort had two entrances. That on the S. remained in use during the lifetime of the fort. It controlled access along a shelf which led upwards into the enclosure by a uniform gradient. The crags on each side, above and below the shelf, are precipitous. The gateway itself was very ruinous and little could be made out as to details of its original form, but it seems to have been a simple gap.

The other entrance, on the W. (Pl. IIB, Fig. 8, and p. 29 below), was originally a simple gap. It was then narrowed by building piers at the outer corners; there was some indication of corbelling over the angle between the S. pier and the passage wall. Finally, the gateway was blocked by a well-built wall filling the whole opening. The inner face of this blocking was provided with steps similar to those elsewhere in the rampart.

Two hut foundations are visible in the enclosure. One of these, adjacent to the W. gateway, was excavated (p. 28 below). It was of generally similar character to those in the large forts, but of slighter construction. It proved not to be earlier than the rampart, and is probably contemporary. Small fragments of very crude pottery were found on its floor.

The Small Fort produced some rather inconclusive dating evidence. Among the ruins of the rampart at the N. end were several beads, and a fragment of mortarium rim. The latter, which is much weathered, is probably of the 2nd century, and the beads could belong to any period from the 1st to the 7th century. The very coarse pottery found in the hut is not closely datable, but resembles that found in dark-age sites in the district.¹ It seems very unlikely that it would come into use until Roman pottery had ceased to be available.

It is evident from the alterations to the W. gateway that the occupation was not undisturbed by threats, and the present condition of the N. end, which has been levelled and spread over a considerable area, is clearly due to deliberate demolition. This may, however, be the work of the early Ordnance Surveyors, whose Trigonometrical Station is marked by a cairn on the site.

TRE'R CEIRI

The site was re-surveyed in 1956 and selective excavations were made in that year with the aid of a grant of £30 from the Cambrian Archaeological Association.

Thanks are due to the owner Mr. O. Owen, and to the tenant, Mr. W. R. Hughes, for permission to excavate; to the Ancient Monuments Department of the Ministry of Works; to Messrs. J. K. Knight, F. P. Jowett, A. W. Sanson, C. P. Vernier, and G. Wainwright, who assisted with the work, and to the staff of the Commission as at Garn Boduan, with the addition of Mr. W. G. Thomas.

¹ e.g., Pant y Saer, Anglesey. *Arch. Camb.* (1934), 26. The Pottery could also be Iron Age 'A', but the context renders this very unlikely indeed.

THE HILLFORT OF TRE'R CEIRI

Regular stipple indicates areas of scree
The letter R indicates position
of ramps leading to wall-walk

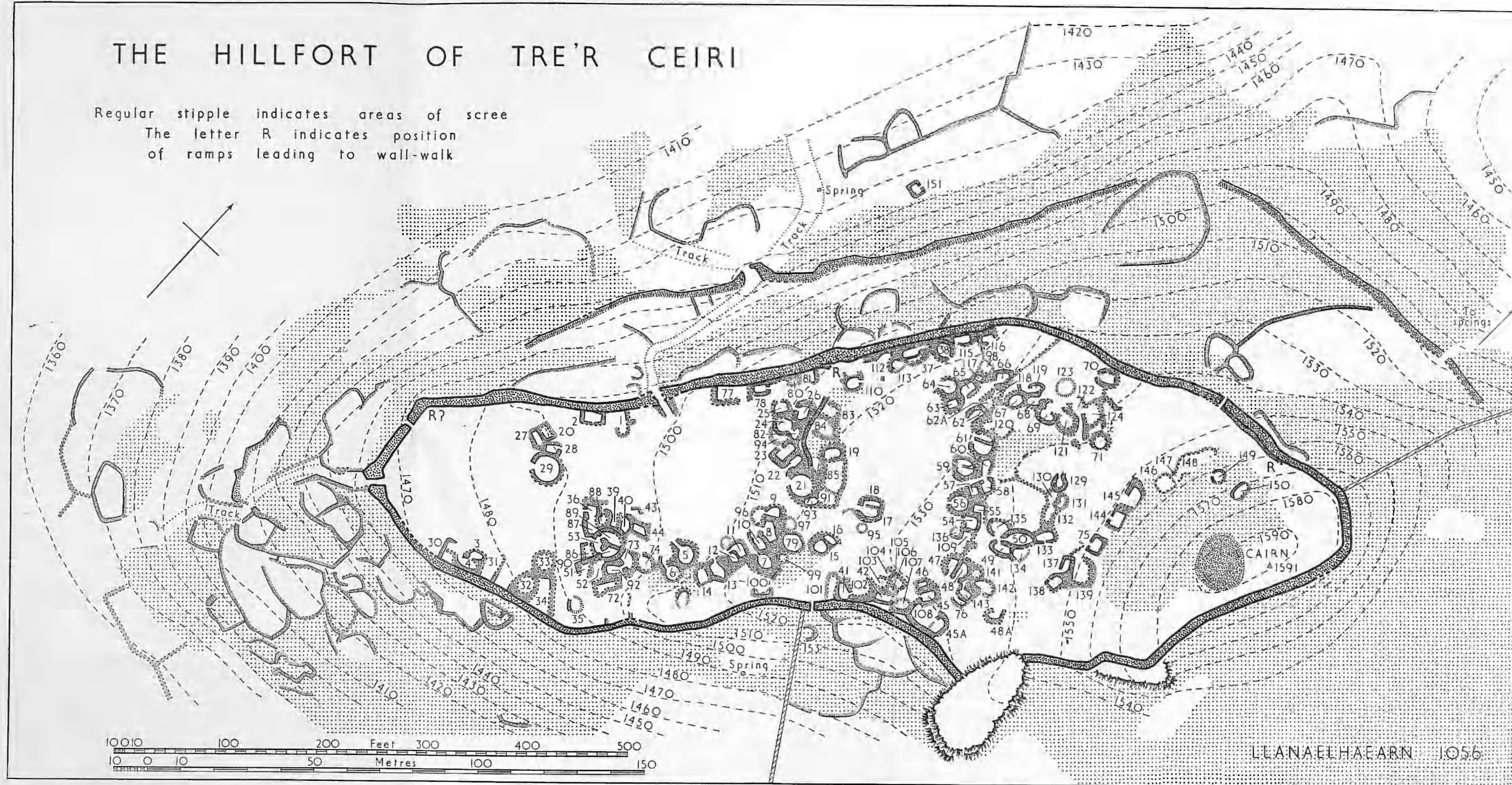


Fig. 9. Tre'r Ceiri plan

Reproduced from R.C.A.M., Caernarvonshire II, by permission of The Controller of H.M. Stationery Office.

At the beginning of this century 69 of the huts were cleared under the supervision of Mr. Harold Hughes, and the results published, with a good plan of the interior of the fort.¹ The relics found were almost all of the period 150-400 A.D. (see below, p. 39, *n.* 1). In its present form the fortress is probably unique; it is frequently cited as a typical hill-fort.

The Site (Fig. 1, Plate III)

The fortress crowns the most easterly of the three peaks of Yr Eifl, about $\frac{3}{4}$ mile W. of Llanaelhaearn (Grid Ref. SH 373446: Caerns. 25 S.E.). This mountain also is formed by an igneous intrusion, and the rock at Tre'r Ceiri splits naturally into large slightly curved slabs which form an excellent building material. The interior of the fort rises gently from S.W. to N.E., and then steeply at the N.E. end to a large cairn occupying the summit (1591 ft. above O.D.). Outside the main rampart the sides of the hill fall steeply, on the E. precipitously. The surface is for the most part covered with scree of large blocks and slabs, which forms an effective natural obstacle to rapid approach.

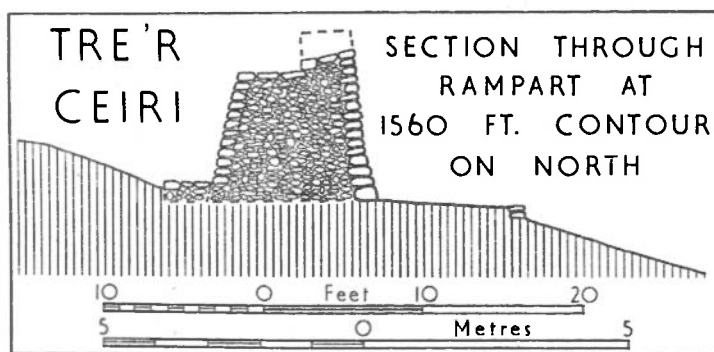


Fig. 10. Rampart Section

The Defences (Fig. 9)

PERIOD I. In its earliest form, the fortress seems to have comprised merely the inner rampart. (What huts should be associated with this period is discussed below.) This survives in an exceptionally good state of preservation, apparently because the natural rock slabs form a very stable building material. There is no indication of work of more than one period in this wall. The rampart, founded directly on the scree, is faced with large curved slabs set as headers, and filled with smaller stones. Where best preserved, on the N. and W., it varies from about 10 to 15 ft. in thickness, and stands about 13 ft. high on the outer face (Fig. 10). The inner face stands about 6 ft. high to the level of a wall-walk, which is protected by a parapet occupying about half the

¹ *Arch. Camb.* (1904), 1-16; (1907), 38-62. See also R.C.A.M., Caernarvonshire II, monument 1056, from which the plan (Fig. 9) is reproduced.

thickness of the wall and rising a further 3 ft. The inner face of the parapet is built up from wall-walk level; it does not extend downwards into the body of the rampart (Pl. IV_A).

On the S. and E. of the fort, where the natural hill slope is very steep, the rampart is slighter and seems never to have stood so high.

The Entrances

There are two main entrances through the inner rampart, one at the S.W. apex and one on the W. side, and three narrow passages on the E., W., and N.

Both the main gateways are approached by cleared trackways, that on the W. being terraced.

At the main S.W. gateway the wall is slightly thickened by a roughly semi-circular external 'bastion' on each side; the entrance passage is 18 ft. long, slightly curved, and now widening from 5 ft. (outside) to 7 ft. The W. wall, of laid masonry, stands to a height of 4 ft.; the E. wall is ruined. According to Harold Hughes, however, the passage originally had a fairly uniform width of 4 ft., perhaps narrowed to 2 ft. at the inner end.¹

The W. gateway is now much ruined, but appears to be a simple gap with the rampart slightly thickened. The floor of the gateway is below the interior of the fort, and the track ascends between rough revetment walls about 20 ft. long, not bonded into the rampart.

According to Harold Hughes,² the passage through the rampart was about 15 ft. long and 12 ft. wide externally narrowing to 9 ft. The passage between the revetment walls, however, narrowed rapidly from 9 ft. at the back of the rampart to about 2 ft. at its inner end.

The small entrances are simple straight-sided openings about 3 ft. wide. All are more or less filled with rubble, but the blocking does not seem to have been deliberate, as it is not faced. That on the E., excavated in 1956, showed no door-check or bar-hole; it was built in a slight natural hollow, and the path through it rose steeply, following the natural rock surface (Pl. VI_A).

The W. passage has its outer corners rounded, and that on the N. still retains a large slab forming a lintel at its outer end.

The walls of all entrances are of laid masonry, but with occasional upright slabs at the base.

Additional Defences

PERIOD II. About half-way down the slope on the N. and W., where the approach is least difficult, there is a strongly built outer wall. This is faced with large polygonal blocks taken from the scree (unlike the laid slabs of the inner rampart). The space between this face and the natural hillside is filled

¹ *Arch. Camb.* (1907), 58 (Fig. 17).

² *Ibid.*



Tre'r Ceiri from the Air

*Reproduced from R.C.A.M., Caernarvonsbire II, by permission of The Controller of H.M. Stationery Office.
(Air Ministry Photograph)*



A. Tre'r Ceiri. N. rampart, interior



B. Tre'r Ceiri. Outer rampart built across original trackway at W. Gate, from inside

with rubble. There is no parapet, though the top of the filling sometimes slopes down to leave a hollow behind the rampart. Generally, also, there is no inner face.

A short length of similar but rather slighter walling exists at about the 1,420 ft. contour, on either side of the track leading to the S.W. gateway.

There is no evidence that either section of this outer walling ever extended further than it does now.

Although the inner and outer walls nowhere intersect, it seems certain that the outer rampart is later, as the N. side of the main gate through it is built across the terrace which seems to represent the original line of the track descending from the W. gateway in the inner rampart (Pl. IVB); the old line of the track continues outside the outer rampart, but seems to have been replaced by a new terrace way leading to the S.W.

Supporting evidence, less conclusive, appears at two other points. At an enclosure on the N.W. of the main fort (on the plan the walls surround the number '1500' against the corresponding contour), the appearance of the outer rampart suggests that it was never completed; and the lower end of the wall which runs downhill from near the N. small gateway looks as though it has been roughly broken away when the outer rampart was built.

The Gateways

Simple gaps, much ruined, occur where the track to the main S.W. gateway passes through the short length of outer rampart and near the N.E. end of the main stretch of outer rampart below the N. small gateway in the inner wall. The latter gap seems intended to give access to springs nearby.

The main gateway through the outer wall lies across the trackway ascending to the W. gate in the inner rampart. As noted above, the original ascent from the N. was blocked when the wall was built; it was replaced by a new terrace leading from the W. The gateway is of unusual plan, with the wall thickened on the S. and turned outwards on the N. The inner N. face turns sharply inwards near the outer end of the entrance passage, as though to form a jamb 2 ft. wide and 4 ft. thick for a door opening inwards. Opposite this, in the S. flank of the passage, is a hole about 1 ft. square by 16 ins. deep, probably intended to receive the end of a timber balk.

The Extra-mural enclosures

Outside the inner rampart, wherever the scree is not too steep, irregular enclosures have been formed by building up slight walls on the lower side. Many of them have been partly cleared of stones, but they do not now retain any appreciable amount of soil. Their function is uncertain, but it seems most likely that they were enclosures for stock. Some, however, may have been garden plots, the soil having now been eroded.

It is clear from their arrangement that they are structurally later than the inner wall, and that some were probably built after the completion of the outer wall. It seems likely that they belong to a late phase in the history of the site.

It should perhaps be emphasised that they do not resemble the enclosures found E. of Garn Boduan.

Three enclosures lie outside the area covered by the plan.

- (i) Roughly oval, 75 ft. E.—W. by 100 ft., the N.E. side formed by scree. 680 ft. from the S.W. gateway at $34\frac{1}{2}^{\circ}$ W. of S.
- (ii) Similar, 34 ft. E.—W. by 28 ft., 82 ft. from (i) at 63° W. of N.
- (iii) Roughly oblong, 26 ft. E.N.E.—W.S.W. by 14 ft., 110 ft. from (i) at 79° E. of S.

The distances and true bearings are given between centres.

Possible Burials

On the saddle S.W. of the fort, there is a rectangular setting of small boulders, originally 15 ft. N.E.—S.W. by 7 ft. 6 ins. This lies 500 ft. from the S.W. gateway at 55° W. of S. It was excavated in 1906, and the stem of a pewter vessel was discovered. A second, similar, setting, 360 ft. to the S.S.W., was partly examined at the same time,¹ but this was not located in 1956. It seems likely that these settings may represent graves, and that the burial ground of the fort may have been on this saddle.

The Cairn

At the highest point within the fort is a large cairn, much ruined and disturbed; the top has been levelled. It has been suggested that the cairn incorporates at least one straight face, and that it may have been a solid tower about 40 ft. square, perhaps contemporary with the fort.² When examined in 1956, casual clearance by visitors had exposed what appeared to be sections of straight facing, but excavation showed that these did not extend either laterally or down into the body of the mound. The cairn is carefully built of naturally curved slabs laid so as to slope slightly downwards towards the centre, and owing to this it was found possible to form equally convincing lengths of 'facing' almost anywhere in the sections opened. The sides of the cairn now stand on the N. to about 3 ft. high, and on the S., owing to the fall of the ground, to about 15 ft.; on that side some of the original revetment may have survived, but there has been no attempt to form a smooth face.

The interior of the cairn was not examined, but there seems no reason to doubt that it is contemporary with similar mountain-top cairns elsewhere,

¹ *Arch. Camb.* (1907), 50-51.

² *Arch. Camb.* (1942), 95.

probably of the Bronze Age. Its presence within the enclosure of the much later hill-fort is presumably fortuitous.

The Huts

The interior of the main enclosure is occupied by about 150 huts. These show a great variation in size and shape, but can be arranged in a typological series suggesting development from a simple round hut, evolving through a round hut with central partition into D-shaped huts, and thus into small irregular or rectangular enclosures (Fig. 11).

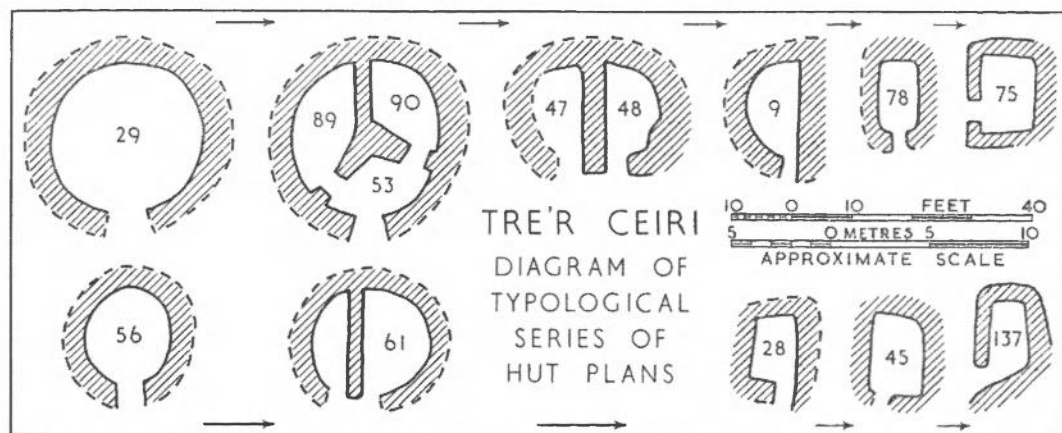


Fig. 11. Typological Series of huts

There is structural evidence that this typological series corresponds, to some degree at least, with a chronological one. Slight excavations made in 1939¹ showed that Hut 37 had been reduced from a round to a roughly rectangular hut by the insertion of a blocking wall. Further, an examination of the three compartments 53, 89 and 90 in 1956 showed that they formed a round hut apparently built with a partition, and that the adjacent irregular enclosures were later. In Hut 61 the partition was probably of one build with the surrounding wall, but the evidence was not conclusive (see pp. 34-6 below).

No evidence for actual dating was found in 1939 or 1956, but some deductions can be made from the finds made during the 1904 and 1906 excavations, though unfortunately these consisted merely of clearing out the whole contents of the huts, without attention to any possible stratification. Considering all recorded excavations, and counting divided round huts (e.g., 47-48) each as

¹ Unpublished; notes in R.C.A.M. files.

single, the results of excavation have been recorded for a total of 61 huts. The results from those in which the shape is fairly certain are summarised below.

<i>Shape of Huts</i>	<i>Total No.</i>	<i>No. excavated</i>	<i>Approx. excavated area (sq. yds.)</i>	<i>No. producing pottery</i>
Round, undivided	19	11	230	1
Round, partitioned, or pair of D-shaped placed back-to-back	8	8	210	5
Irregular, D-shaped, or rectangular	93	42	490	10

The pottery from this site is almost certainly all Roman, and it is evident from this table that it is relatively very much scarcer in the undivided round huts than in those of other forms. It seems fairly certain, therefore, from this evidence alone, that the irregular and rectangular huts, as well as the divided round huts, belong to the period of the Roman occupation. The undivided circular huts are earlier, and some at least are probably pre-Roman. There seems to be no archaeological evidence for any occupation after the end of the Roman period, though some of the huts have probably been used as casual shelters by shepherds.¹

Certainty is impossible with the evidence available, but from the discovery of pottery in one of the undivided round huts and from the evolutionary series of the hut plans it seems likely that the occupation of the fort was unbroken from its foundation until some time in the 4th century at least. Against this must be set the absence of any material (with two exceptions) which can be dated before the middle of the second century, but this argument can probably be discounted when it is realised that the Iron-age inhabitants of Caernarvonshire were apparently not accustomed to use pottery. They would therefore have no incentive to purchase Roman ware immediately it became available.

The exceptions mentioned are a gold-plated bronze brooch from Hut 10,² now dated to c. 60 A.D., and fragments of a beaded torc from Hut 41³ probably of the 1st century. (For both, see below p. 39.) It must be noted that Huts

¹ After the 1939 excavations one of the archaeologists concerned suggested that the irregular huts should be placed in the later medieval or early modern period, when the fort may have served as a temporary camp of refuge. The writer has since been told on more than one occasion that "according to tradition" there was a re-occupation of Tre'r Ceiri then, but no documentary evidence for this has been brought forward, and there is certainly no such archaeological evidence. It seems likely, therefore, that this "tradition" is a development of the last two decades.

The writer is indebted to Mr. L. Alcock for verifying that there seems to be no post-Roman pottery of any kind from Tre'r Ceiri.

² *Arch. Camb.* (1904), 9.

³ *Arch. Camb.* (1907), 40-42.

10 and 41 are both irregular, and should therefore be late if the typological argument is sound. The circumstances of the older excavation leave it uncertain whether these objects should be associated with the irregular huts or with earlier round huts no longer visible. Moreover, either object could be an heirloom, lost long after its manufacture. They cannot, therefore, be regarded as definite evidence for first-century occupation either of the huts in which they were found or of the fort as a whole.

Almost all the huts are of basically similar construction. They were formed by digging down from the sloping surface of the scree so that the floor was level with the ground on the lowest side, or sometimes even deeper. The exposed scree on the interior was revetted either with laid masonry or with upright slabs, and a wall, probably 5 or 6 ft. high internally, was carried up all round the hut to a uniform height, usually in laid masonry. The entrance was normally at the lower side.

In this method of building there is often no outer face at all on the upper side, the top of the wall being there level with the ground surface. In addition, the inner face is liable to slip with the scree behind and below it; this results in complete destruction of the line of face, as in enclosure 89.

It should be noted that the present condition of the huts, and what at first sight seems to be their very remarkable state of preservation, is usually the result of excavations, either those made by Harold Hughes¹ or others which have never been recorded. It is evident from close inspection that the earlier excavators normally cleared the huts to well below floor level and built up stones removed from the interior on to the top of the walls. This has at least the merit of giving a fairly close indication of the original height of the hut, but unfortunately the walls on to which the stones were built were sometimes the creation of the workmen, and the present plans of the huts do not necessarily represent their original form. Further, straight joints were usually masked, though sometimes made where they did not exist, and doorways were often built up and concealed. The result of this may be appreciated by comparing the plan of the round hut 53—89—90 on fig. 13 with that published by Harold Hughes,² which gives a fair representation of its appearance before its examination in 1956.

It also seems probable that many of the huts have been systematically cleared without any published record, and there has certainly been much casual digging by recent visitors,³ some of it on quite an extensive scale. The Ministry of Works has now erected notices which should discourage this activity.

¹ *Arch. Camb.* (1904), 1-16; (1907), 38-62.

² *Arch. Camb.* (1907), facing p. 38.

³ This in spite of the penalties of fine and imprisonment to which they render themselves liable under the Ancient Monuments Acts. As examples of the damage done: at a visit soon after the completion of the work in 1956, it was found that a hole 3 or 4 ft. square by about 2 ft. deep had been opened in the previously undisturbed Hut 50; and in September, 1959, it was found that half the floor of Hut 32 had been dug out recently.

THE HILL-FORT SEQUENCE IN CAERNARVONSHIRE

Most of the larger hill-forts in Caernarvonshire show two structural periods which are probably pre-Roman. In the area covered by a single county, it seems legitimate to assume that these two periods can be assigned to two phases in each of which some stimulus led to the construction of hill-forts, and if this assumption is made a reasonable and self-consistent scheme can be worked out for the development of the local Iron Age, though the actual dates in years of the phases of fort-building remain uncertain. This scheme is set out in the following table. It must be emphasised as strongly as possible that it is not applicable outside this area unless extensively modified.

It will be seen that in all six of the two-period forts the earliest period is represented by a simple stone wall, without a ditch, though Pen-y-Gaer and Conway Mountain show some exceptional features. There are no close parallels to forts such as Boduan or Fadrin in the south and east of Britain, where the 'Primary' Iron Age invaders are likely to have made their first settlements; so it seems justifiable to regard these early Caernarvonshire stone-walled forts as Secondary Iron Age works,¹ built by the inhabitants of the area in response to the threat of attack.

The exotic features at Pen-y-Gaer and Conway Mountain can best be explained as due to the influence of small groups from outside Britain who have been accepted and partly absorbed by the local inhabitants. At Pen-y-Gaer the ramparts themselves are in no way unusual, but they have been supplemented by a belt of *chevaux-de-frise* bounded on its outer edge by a small ditch; this feature can be paralleled exactly in central Spain, but not so far as is known elsewhere.² The curious bastioned layout of the small enclosure at Conway Mountain in its earlier phase³ seems to be without parallel in Britain, but although some of the Spanish forts have a comparable arrangement of their ramparts the similarity is not so compellingly close as at Pen-y-Gaer.

In the second structural period, two different types of fortification occurred. Garn Fadrin, Garn Boduan, and Conway Mountain were re-fortified in a style similar to the first-period work, though the Small Enclosure at Conway Mountain was rebuilt without its exotic bastioned arrangement. Craig-y-Dinas, Dinorwig and Pen-y-Gaer, however, were given multiple defences of ditches and revetted banks. Moreover, two forts in that style were built on apparently virgin sites close to suitable landing-places, at Dinllaen and Dinlle.

The forts with multiple banks and ditches, therefore, can be regarded as the work of sea-borne invaders, probably Primary Iron Age B from their type of fortification, entering from the west, and the second period of stonework as the reaction of the Secondary Iron Age inhabitants to this invasion.

¹ *i.e.*, survivors of the Bronze Age inhabitants who have fully adopted the use of iron (by analogy with the distinction between Primary and Secondary neolithic cultures). See *Antiquity*, XXXII (1958), 189.

² A. H. A. Hogg. 'Four Spanish Hill Forts', *Antiquity*, XXXI (1957), 31-2.

³ *Arch. Camb.* (1956), figs. 7 and 12.

PRINCIPAL HILL-FORTS OF CAERNARVONSHIRE

Fort and Grid Ref.	Reference to Inventory Nos.	Phases of Fort-Building		Later Works
		I	II	
Dinllaen (275416)	III, 1567 Forthcoming	—	Bivallate promontory fort	—
Garn Fadrun (280352)	III, 1650 Forthcoming	Single stone wall enclosing huts	Single stone wall enclosing huts	Tre'r Ceiri type huts (Roman?) and Small Fort (11th Century)
Garn Boduan (310393)	III, 1524 Forthcoming and this Paper	Single stone wall enclosing huts	Single stone wall enclosing huts	Small Fort (6th Century?)
Tre'r Ceiri (373446)	II, 1056 and this Paper	—	Single stone wall enclosing huts	Additional wall (Late Roman?)
Dinlle (437563)	II, 1211	—	Revetted bank, ditch and substantial outer bank	—
Craig-y-Dinas (448520)	II, 1281	Single stone wall (interior ploughed)	Two revetted banks and ditches	—
Dinorwig (549653)	II, 1170	Single stone wall (interior mostly ploughed, one hut remains)	Two banks and ditches with Annexe	—
Pen-y-Gaer, Llanbedr-y-Cennin (750693)	I, 315	Stone wall (perhaps two) with <i>Chevaux-de-Frise</i> , enclosing huts	Two banks (for part of circuit), enclosing huts	—
Conway Mountain (760778)	I, 201 and <i>Arch. Camb.</i> , 1956, pp. 49-80	Single stone wall enclosing huts with elaborate small enclosure at west end	As in Phase I, but small enclosure simpler	9th century tradition of occupation under Maelgwn. No arch- aeological evidence

TABLE 1

Although an attempt must be made to assign an actual date to these events, it is impossible to do so with any real confidence. The writer has very tentatively suggested some time about 200 B.C. for the *chevaux-de-frise* at Pen-y-Gaer, arguing that the refugees were driven from Spain by the wars of Hannibal.¹ Mr. Alcock's work at Castell Odo has, however, shown that Primary A invaders reached Llyn,² and their arrival would seem to provide an appropriate stimulus for the first phase of fortification. It is hardly possible to date the associated pottery at that site after 300 B.C. at the latest. There is, moreover, no compelling reason for associating the Pen-y-Gaer *chevaux-de-frise* with refugees from Hannibal, and in fact the comparable Spanish sites are dated by their excavator as 6th to 4th century B.C. The first phase, therefore, should perhaps be dated as 4th century, rather than *c.* 200 B.C. as suggested in the Conway report.

The date assigned to the second phase can hardly be much before 100 B.C. unless current views on the origins of multiple ramparts are very drastically at fault, so, keeping in mind the reservations made earlier, this may be accepted as a reasonably approximate figure. It is evident that the Period I remains at Garn Fadrun, Garn Boduan, and Conway Mountain were all badly in ruin by Period II, implying a considerable lapse of time; but the Period II work is essentially similar to that of Period I, and if the dates suggested are correct it seems surprising that no development of methods of fortification should have taken place in two centuries.

The earlier rampart at Tre'r Ceiri differs from the walling of Garn Fadrun II and Garn Boduan II not merely by the existence of a rampart-walk, which can be explained by the better preservation of the remains, but by the presence of the small gateways.³ This wall, however, is very unlikely to be later than the undivided round huts, which in their turn must be early Roman or Iron Age. Since the erection of the rampart would almost certainly not have been permitted immediately after the Roman conquest it must be pre-Roman; and since the evidence is far too slender to justify any attempt to split centuries, the work must, at least for the present, be assigned to the second phase.

The majority of the forts have produced no evidence for occupation during the Roman period, but when it is considered how sparsely the Roman material was distributed even at such a relatively productive site as Tre'r Ceiri the absence of such relics on any but a fully excavated site provides no evidence that the place was unoccupied. On the other hand, the discovery of a single sherd, as at Boduan, Dinlle,⁴ or Pen-y-Dinas (Llandudno)⁵ cannot prove continued occupation. The only forts where continued use during the Roman

¹ *Antiquity*, XXXI (1957), 32.

² *Arch. Camb.* (1960), 78-135. Mr. Alcock's report, which appeared after this paper had gone to press, produces evidence for slighting at Castell Odo. This suggests that the relatively excellent preservation of Tre'r Ceiri may be due, not to better building material, but to deliberate destruction of those forts at which the Romans did not allow occupation to continue.

³ The only site in S. Britain where comparable gateways occur seems to be Carn Goch, Carmarthenshire (For a rather unsatisfactory account see *R.C.A.M.*, *Carmarthen*, 1917, mont. 427, pp. 142-5). Recent examination by the writer identified five of these small gateways. Huts, however, are practically absent from that fort.

⁴ *R.C.A.M. Caerns.* II, mont. 1211, p. 190.

⁵ *Caerns.* I, mont. 367, p. 114.

period has been proved are Tre'r Ceiri and Braich-y-Dinas;¹ the latter was almost certainly of several periods, but has been destroyed by quarrying so this cannot now be proved. It seems probable, too, that Garn Fadrun was inhabited, as small irregular huts like those on Tre'r Ceiri are plentiful; the superficial appearance of the remains does not, however, suggest that the ramparts were maintained, and it is likely that these three forts were the only ones where occupation was at all intensive. Tre'r Ceiri type huts are not found in other forts, and although most of those in Braich-y-Dinas were round they were generally closely set in continuous rows; this feature also does not appear elsewhere in this district.

The added defences at Tre'r Ceiri cannot be dated with precision, but must have been built some time within the Roman period, probably in the latter half. As noted above, there does not seem to be any post-Roman material at Tre'r Ceiri.

The end of the Roman period seems to be accompanied by a change in the style of fortification, and by the appearance of small 'castles' as well as relatively few larger fortresses. Much light has been thrown on the larger type by Dr. Savory's excavations at the important and difficult site of Dinas Emrys,² and the unexcavated remains at Caer Carreg-y-fran³ and Cerrig-y-Dinas⁴ are perhaps of similar date. These are characterised by the selection of very craggy sites, and by rather slight and poorly-built walling which makes the fullest possible use of natural features.⁵

The small forts are relatively numerous, but discussion here will be limited to that at Boduan, which is probably one of the earliest late- or post-Roman examples. Its character has been described above, and it is clearly the fortified homestead of a powerful, though not very prosperous, local landowner. As such, its function is essentially similar to that of a small medieval castle. The archaeological evidence does not provide a precise date. The beads, which are the most distinctive finds, would not appear out of place anywhere between the 1st and 7th centuries A.D.; the mortarium rim is of the 2nd century, but it is much abraded. The small and crude potsherds from the hut, however, can hardly be regarded as anything but post-Roman. Further, it seems exceedingly unlikely that such a structure would have been permitted during effective Roman occupation. The fort is therefore almost certainly post-Roman; whether any closer dating is acceptable must depend on how much weight is given to the traditional descent of Buan, and on whether the name Boduan, the Home of Buan, was originally applicable to this particular fort.

In the writer's opinion, early Welsh traditions have generally a strong factual basis. It is surely more than a mere coincidence, for example, that Dinas Emrys has been proved to have been occupied at the period indicated by the

¹ *Caerns. I*, mont. 252, pp. 85-6, *q.v.* for other refs.

² *Arch. Camb.* (1960), 13-77.

³ *Caerns. II*, mont. 1314, pp. 216-7.

⁴ *Caerns. I*, mont. 453, pp. 130-131.

⁵ In the writer's view, these can only be related to the Scottish 'Nuclear Forts' by extending the significance of that term far beyond anything justified by Mr. Stephenson's original paper (*P.S.A. Scot.*, 83 (1948-9), 186-198).

story of Vortigern; at Boduan, also, the structure is almost certainly post-Roman, though it cannot be dated precisely. Buan was a grandson of Llywarch Hen,¹ and would have lived c. A.D. 600. It would seem, therefore, that there is a good case for regarding the small fort as of the 6th to 7th century A.D.

Size and Population

The use of stone footings for the huts makes it possible, in some of the Caernarvonshire forts, to estimate the number of dwellings within the defended area, and hence, with rapidly decreasing accuracy, to calculate the population and the time which would be taken to construct the defences. The uncertainties inherent in such calculation are obvious, but it seems worth while to make the attempt, as evidence of this kind is seldom obtainable and even a rough figure is of some value.

The results are tabulated below.

Fort	Huts		Area in Acres	Huts Per Acre	Persons Per Acre	Rampart	
	No.	Population @ 5 per Hut				Yards	Yards Per Hut
Garn Boduan I	80	400	25	3.2	16	1450	18
Garn Boduan II	80	400	28	2.9	14	1450	18
Garn Fadrun I and II added	100	500	38	2.6	13	—	—
I	32	160	12	—	—	930	34
II	68	340	26	—	—	1420	21
Conway Mountain I or II	29	150	7	4.1	21	590	20
Tre'r Ceiri I (round huts only)	19	95	5	3.8	19	700	38

TABLE 2

Notes:

Garn Boduan: it is assumed that the huts are equally divided between Periods I and II.

Garn Fadrun: most of the huts are on the hill-slopes outside the fort; it is assumed that they are to be allocated between Periods I and II in proportion to the areas of the fort at those periods.

Conway Mountain: the huts are divided equally between periods I and II; in estimating the length of rampart the inner walls and the precipice on the N. are neglected.

All figures are merely approximate.

¹ Bonedd y Saint, in *Vita Sanctorum Brit.* ed. A. W. Wade-Evans (Board of Celtic Studies, History and Law Series, 9, Cardiff, 1944), No. 17, 321.

For comparison it may be noted that in 1305 the Edwardian borough of Conway contained 109 burgages; its area was about $22\frac{1}{2}$ acres, and excluding the castle its walls extended for about 1,300 yards. Taking each burgage as representing a single dwelling with five occupants, this corresponds to a population of 550, 4.9 houses or 24 persons per acre, and 12 yards of wall per dwelling. Modern settlements of comparable size are New Radnor (population 284 at recent census) and Montgomery (863).

The most interesting feature indicated by this table is the remarkable uniformity in the estimated population per acre; it seems that this, rather than the length of perimeter to be defended, was what dictated the number of huts in the forts. It is not suggested, of course, that the first settlers on Garn Boduan counted heads and decided to set out a fort enclosing 25 acres; but it would seem that in this district some cause, probably the need for grazing cattle, tended to limit the number of dwellings to 3 or 4 per acre of fortified area.¹

Any attempt to estimate the time which would be required to build these forts introduces so many uncertainties that the result can do little more than indicate an order of magnitude. Garn Boduan II probably gives the most reliable figure for the cross-section of the rampart (18.7 sq. yds.) and, assuming that the occupants of each hut could have contributed 5 cu. yds. per day, the work would take 67 days. In Period I the cross-sectional area of the wall seems to have been about half as great, so on this estimate the time would be only about 33 days. Similar calculations for other forts, on even less reliable data, give results of the same order, the largest being 78 days for Tre'r Ceiri I. The actual rate of work would depend on many factors, not least on the degree of urgency felt, but it is safe to say that the defences of all these forts could have been made fairly effective in two or three months work, even if not completed.

The Function of the Forts

Were these structures permanently defended settlements, places resorted to seasonally, or merely refuges repaired and occupied in time of danger? It would seem that Garn Boduan and Garn Fadrun at least were permanent settlements, and by inference this probably follows for the other forts. The builders of Garn Boduan and Garn Fadrun were evidently accustomed to make substantial stone footings to their hut walls. If, therefore, Garn Boduan represents a camp hastily built for refuge, one would expect at least 80 huts of equal or greater solidity to have existed in the surrounding district. A few do exist, but nothing approaching this number, and a study of the district makes it seem most unlikely that there has been extensive destruction.

A similar argument applies to Garn Fadrun, but there the majority of huts are found on the lower slopes outside the defended area. This can be explained by the position of this fort, which would allow for ample warning of

¹ This does not necessarily apply elsewhere. At Moel Trigarn for example, the inner enclosure

contains about 100 huts in $5\frac{1}{2}$ acres (*Arch. Camb.* (1900), 190, 194).

any attack. This grouping of huts provides strong evidence that the assembly of huts into small settlements was normal, not the result of threatened danger.

These arguments do not exclude the possibility that the settlements at the forts were merely seasonal, abandoned in summer when the cattle were taken to adjacent pastures where their attendants occupied flimsy dwellings which have left no trace. But to anyone acquainted with forts such as Boduan at all times of the year, it must appear wholly inconceivable that the occupants would willingly resort to them in winter unless they represented their normal homes. Primitive warfare was almost invariably a summer activity, so there would be little need for defences when the cattle were brought back from their summer pastures. On the other alternative, that the forts represent the summer dwelling-places, it is difficult to account for the disappearance of the presumably equally substantial winter houses.

The evidence from these forts, therefore, indicates fairly conclusively that permanently occupied settlements of 20 to 80 dwellings (perhaps 100 to 400 inhabitants) were normal. These were usually enclosed within a defensive rampart and so occupied a hill-top, but in exceptionally favourable circumstances (at Garn Fadrun) most of the actual settlement might lie in a more comfortable position outside the defences. The defences, however, were not permanently maintained, but were liable to repair or reconstruction when danger threatened. Even in a ruined condition, though, their situation would make them fairly effective against casual raids.

Two other points deserve note. First, Tre'r Ceiri, Garn Boduan, and Garn Fadrun each dominate obvious natural units of territory of about 8 or 10 square miles bounded by marshy valleys, and containing no other substantial fort. Second, querns are only recorded from the forts on Conway Mountain and Braich-y-Dinas. None has been found in any of the more westerly forts (though Dinlle has produced rubbing stones). This is particularly notable at Tre'r Ceiri, where excavations have been extensive.

APPENDIX I

DETAILS OF THE EXCAVATIONS AT GARN BODUAN

THE EARLIER, LARGE, FORTS

Rampart, Cutting I (Fig. 3)

This was cut on the N.E. side where the Period I rampart is visible close to that of Period II, to examine their relationship. The Period II wall was not sectioned to its full depth.

The ramparts were both of rubble fill between facings of blocks usually laid on their largest sides. The blocks in the inner faces were generally larger than those in the outer.



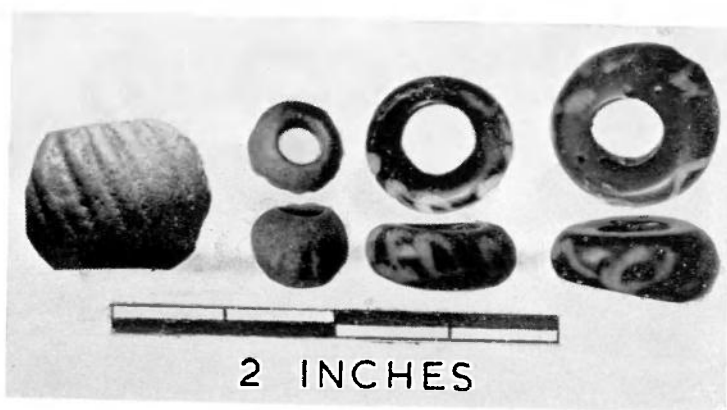
A. Tre'r Ceiri. Hut 29, S. side



B. Tre'r Ceiri. Outer face of Hut 89, from within Hut 39



A. Tre'r Ceiri. Small Gateway on E., from outside



B. Garn Boduan. Beads from small fort

The Period I (outer) wall was 9 ft. thick, founded on the natural rock. The outer face stood in places to a height of 4 ft.; it was badly ruined and bulging, but apparently had originally a considerable batter. The inner face only survived to a height of 18 inches (two courses).

Behind this wall the rock surface rose irregularly, and was covered by one or two feet of rubble. Above this, except immediately behind the Period I wall, there was a thin layer of dusty material, apparently decayed turf, on top of which lay the fallen rubble of the Period II rampart.

It was at first thought that the deposit of rubble on the natural rock represented the ruins of the Period I wall; on this interpretation the decayed turf layer, which extends under the Period II facing, would have provided clear stratigraphical evidence for the succession of periods. The presence of the large block (X) in the lower rubble layer, however, and the slope of the surface of that layer indicate that it is in fact a natural accumulation. The interruption of the turf layer behind the Period I wall presumably arises because the builders dug down to found their rampart on rock. The presence of a slingstone under the supposed old turf can be disregarded. In such loose rubble a position so near the edge of the turf layer cannot be regarded as sealed by it.

The inner (Period II) rampart was 14 ft. thick, with nearly vertical faces. The outer face (Pl. IB) rested on the turf layer, and stood nearly 4 ft. high in the section, though nearby it rose to about 6 ft. The presence of the large block marked 'X' on the line of section was fortuitous. The inner face, of very large blocks, survived to a height of 3 ft. It was built up from a levelled rubble platform which ran out on to the natural hill-slope about 7 ft. behind the face, and which if produced outwards would have cut the outer face about 4 ft. from its base.

No definite stratigraphical evidence was found either here or elsewhere to prove the relative ages of the two ramparts, but it is clear that the inner rampart has fallen naturally into ruin, whereas the outer has been robbed. As this can only have been done to provide material for the inner wall, it follows that, as their position suggests, the outer is the earlier.

A short length of the outer face of Period II, which was well preserved and appeared stable, was left exposed in this section. Adjacent to it the excavated material was built up into a buttress to prevent collapse.

Rampart, Cutting II (not illustrated)

The Period I wall could not be traced N.W. from Cut I, and a further section was therefore made 120 ft. to the N.W., mainly in the hope, not fulfilled, of finding the earlier wall embedded in the later. The trench was carried down through the Period II rampart to rock, except at the built outer face, and was extended 20 ft. beyond it. The outer face was here founded on rock, but otherwise the construction was identical with that found in Cut I; the back was ruined, but the wall seems to have been slightly thinner, about 12-13 ft.

thick. The filling was of rubble mostly laid flat, which merged indistinguishably with the rather smaller rubble of the platform on which the inner face was founded.

The N.E. Gateway (Fig. 4, Pl. Ic)

This seems to have been the less important entrance to the Period II fort. The main gateway, on the S., still provides the chief means of access, and is badly ruined; it was therefore not excavated.

The N.E. gateway was set slightly obliquely to the line of rampart, which was clubbed on the N. side and inturned for a short distance on the S. The walling was largely of laid blocks, with some upright slabs. On excavation, it was found that the gate-passage had been blocked by a well-built wall of similar character but without uprights. The inner face was in good condition, but part of the outer had tilted forward. The blocking wall was apparently erected while the gateway was in working order. There was no deposit on the rock floor of the gate-passage, and no accumulation of debris had formed against the foot of the flanking walls where the faces of the blocking wall met them. Further, there was sufficient time for some inches of peaty material to form on the rock surface within the fort on the upper side of the blocking wall before either it or the flanking walls collapsed in ruin. It is almost certain, therefore, that the blocking represents an episode in the last period of occupation of the hill-fort, not a modification made during the late- or post-Roman use of the Small Fort.

The filling of the blocking wall was removed from its N. half, so far as this could be done without destroying the facing, which it seemed desirable to preserve; no post-holes were found within the area cleared.

Hut 90 (Fig. 5)

This was one of the largest huts on the site, and its rather isolated position on a slight local rounded summit gave the impression that it might be the dwelling of someone of rather higher status than his neighbours.¹ Excavation did nothing to confirm this.

The S. half of the hut was cleared. The wall was 4 ft. thick, of small rubble between faces of laid blocks. Where best preserved, a single course of these standing about a foot high remained of the inner face; the outer face was almost entirely destroyed. The entrance also was badly ruined. This demolition presumably took place during the use of the fort, to provide material for the construction of other huts. There is no other obvious use for the stones.

The floor was partly natural outcrop, but was mostly roughly paved with small stones. Two post-holes 11 ins. deep, 4 ft. apart, were found just within the entrance, and another hole, shallower and doubtful, 2 ft. N. of the more easterly. Within the hut five further holes were found, presumably part of a

¹ During work on the site it was nicknamed the 'King's Hut'.

ring of 7 or 8 set about 6 ft. from the wall. Describing these in anti-clockwise order starting with the most westerly: doubtful, 9 ins. deep; 11 ins. deep with packing; similar to last; (just N. of section line) similar, 7 ins. deep; (1 ft. N. of last) doubtful, 7 ins. deep. All holes indicated timbers 5 or 6 ins. in diameter. There were slight traces of burning against the wall just E. of the entrance, but no definite hearth was found. The only relic was a small flake of poor-quality flint.

Hut 132 (Fig. 5)

This was a well preserved hut, apparently undisturbed. The walls, about 3 ft. thick, were mostly faced with upright slabs about 3 ft. high, save for a short length of laid stonework near the entrance. The W. side of the entrance was formed by an upright slab, the E. by laid walling. Clearance of the E. half was started towards the end of the period available for the excavation, but heavy rain reduced the peaty soil to a black sludge, and after it had been verified that the hut had a very roughly paved floor with no recognisable trace of occupation soil the work was abandoned.

Huts 150 and 151 (Fig. 6)

Surface indications suggested that a smaller hut had here been partly superimposed on a larger, and that the latter lay upon the line of the Period I rampart. The excavations were planned to investigate these relationships, although the work was to some extent hindered by the presence of substantial trees, which had disturbed the remains.

Only the interior of the S.E. quadrant of the smaller hut (150) was cleared, the remainder being inaccessible owing to standing or fallen trees. The inner wall-face proved to be of very rough and badly ruined laid stone, and the floor showed slight rough paving. No post-holes were found; a single slingstone, and a broken rubbing stone in the wall material, were the only relics.

Three quadrants of Hut 151 were cleared, together with part of the external face. Trees rendered the N.W. quadrant inaccessible. The walling, 4 to 5 ft. thick, was mostly faced with laid blocks, with a few upright slabs on the interior. On the N. side the faces stood about 2 ft. high; the blocks in the inner face were the more massive. The floor was slightly and roughly paved, and was very irregular, a mass of outcrop in the S.W. quadrant rising in places a foot above the general level. There were no post-holes in the area cleared. Twenty-six slingstones were found.

The exterior of Hut 150 on the W. was found to have been built over the ruins of Hut 151; a fallen orthostat is shown in section (Fig. 6), and its edge is visible in Plate 1A a short distance below the upright scale. It is certain, therefore, that Hut 150 was built a considerable time after 151.

The rampart adjacent to Hut 151 was badly ruined; all facing had gone, and the outer side had collapsed down the slope, so that only a foot or two of featureless rubble remained. This, however, was continuous with that forming

the fill of the hut wall, and the outer facing of the hut ended where it met the rubble of the rampart. Further, the rampart rubble did not continue into the interior of the hut or below its floor. It seems fairly certain, therefore, that the hut and rampart were contemporary.

THE SMALL FORT (Fig. 7)

The whole natural surface above the 915 ft. contour is now covered by a mass of rubble, two or three feet deep and with a fairly level top, except for the modern O.S. cairn. It is evident that this represents deliberate destruction, but there is nothing to show whether this took place in antiquity or whether it was the work of the early surveyors. The rubble was examined by an L-shaped trench cut to solid, and parts of the N. and W. wall were also cleared. Some superficial clearance was also made to trace the line of the wall.

Except for the rampart no structural remains were found within the rubble mass, though some of the stones in it were very large, particularly near the ends of the arms of the L. Near the middle of the E. arm, a blue glass bead with white markings was found on natural rock. A similar but larger bead, as well as two melon beads (one broken) and a much weathered fragment of mortarium rim, were found scattered immediately outside the N. wall among its ruins, about 1 ft. from the surface and 2 ft. above natural rock.

The N. rampart was essentially similar to that elsewhere, as described above (p. 8) though considerably thicker. The only exceptional feature was a gap about 2 ft. wide in the inner wall face, which terminated in vertical lines on either side. This did not, as was hoped, open into a mural chamber; its function remains uncertain, but it was probably a gap left to simplify filling the interior of the rampart during building.

The Rampart

Both faces of this were cleared at the N. end, at Hut 4, and at the W. gateway. The wall was well built, of slabs rather smaller than in the earlier fort but more carefully laid, particularly in the outer face. Both faces had a well marked batter, and the inner was provided at frequent intervals with flights of projecting steps. A length of the inner face S. of the W. Gate was cleared to expose two well-preserved flights of 4 steps each. These are shown in Pl. IIA. The child (height 5 ft.), has her right foot on the second step up in the more distant flight, and the upper end of the scale rests against the corresponding step in the nearer flight.

Hut 4 (Fig. 8)

In building this hut, use had been made of a slight natural hollow, the natural rock side of which formed the hut wall on the S.E. The rest of the wall was of laid masonry, of smaller stones than used in the main fort. The

wall was structurally later than the rampart, against which it formed a straight joint. The S. junction coincided with a flight of three projecting steps, the lowest of which had been broken off.

The entrance to the hut, 6 ft. wide, lay on the S.; two small post-holes were identified at its inner end.

Apart from some paving in the entrance, the floor of the hut was apparently of trodden earth. It was covered by a thin but definite occupation layer, which contained very small fragments of exceptionally coarse and poor pottery. There were two areas of burning, one of which, extending under the balk, may have been in a built hearth. A small upright slab projected about a foot above floor level in the N.W. quadrant, and near the S. end of the balk a hole 9 ins. deep filled with dark soil, resembling a post-hole, was found apparently sealed beneath the floor; it may be related to some earlier structure.

A section was cut down to rock across the hut to investigate further its relation to the rampart. It was found that before the erection of the rampart the hollow in which the hut stood had been filled to a depth of a foot with clay and rubble. The rampart was then built, and another foot of clay and rubble levelled out in the hollow to form the hut floor. As the initial filling of the hollow only saved the construction of a single course of rampart-facing for about 10 or 15 ft., which would have required much less work than the filling, it seems a reasonable inference that a hut was originally planned to stand here, although its exact position was not fixed until after the rampart, with its steps for access, had been completed.

The West Gateway (Fig. 8, Pl. IIB)

Examination of the top of the rampart S. of the hut suggested the presence of a transverse straight joint, and excavation exposed a gateway, well-preserved through having been blocked in antiquity. The faces were cleared and the interior of the blocking partly removed, down to rock in the N. half. No post-holes were found, but the gate showed evidence of modification during use.

In its earliest form it was a simple opening about 11 ft. wide, the rampart being very slightly thickened. Later, the outer end of the passage was narrowed to 7 ft. by the erection of piers on either side. Although the unbonded joint between the earlier and later work can be traced for the full height of the surviving facing, there is an irregularity about 2 ft. from the base of the S. jamb which suggests that the original gateway was showing signs of collapse. At the inner end of the S. pier, its upper courses are continuous with those of the wider passage, being roughly corbelled over the re-entrant angle; this again suggests that some rebuilding was needed. The N. pier is not preserved to sufficient height to show this.

Finally, a blocking wall similar in character to the rampart was built, with two projecting steps in the rear face.

The South Gateway

Slight excavations were made here, and the faces of the adjacent rampart were located, but the gateway itself proved to be almost completely ruined.

APPENDIX II

DETAILS OF THE EXCAVATIONS AT TRE'R CEIRI

The Ramparts

No section was cut through the wall, but slight clearance was made to enable a profile to be measured (Fig. 10, Pls. IIC, IVA). This was N.W. of the Cairn, at the point at which the 1,560 ft. contour crosses the rampart.

The Gateways

A slight clearance was made at the W. outer gate, and the S.E. postern was cleared.

The West Outer Gateway (Pl. IVB)

The base of the N. flank was cleared, verifying the superficial indications that it lay across the line of a terrace roadway. There can be little doubt that this track represents the first line of approach to the W. inner gateway, which is consistent with other indications (noted above) that the outer wall is later than the inner.

The South East Postern (Pl. VIA)

This proved to be a simple straight gap, without door-checks or bar-holes. It had been built in a slight natural hollow, and its floor was apparently native rock. The sides were formed by large slabs set on edge, with laid masonry above. The filling was apparently accidental; it had no built facing at either end.

The Internal Buildings

Four sites were examined in detail:—

Huts 28 and 29 (Fig. 12) (c. 670 ft. S.W. by W. of the Cairn). These were selected because the barely traceable surface indications of No. 29 suggested that it was a simple undivided round house, undisturbed save by a treasure-hunter's pit, with No. 28 superimposed upon it. This was confirmed by excavation. Three quadrants of No. 29 were cleared, and all except a 2 ft. balk of No. 28.

No. 29 (Pl. VA) proved to be an almost circular house, 25 ft. 6 ins. in internal diameter. The walls varied from 4 to 5 ft. in thickness, generally faced where best preserved with upright slabs, but with some laid masonry. Except under No. 28, or where isolated slabs rose to a greater height, this did not survive to above a foot, and it seems unlikely that the total height ever much exceeded

two feet. A gap on the S.W., about 8 ft. wide, represents the entrance, but seems to have been widened by robbing. No post-holes could be identified there or elsewhere; the centre of the house, however, had been destroyed by the treasure-hunter's pit.

Beneath 9 ins. of turf and peat, the floor was formed by a 6 in. layer of rubble, under which small stones merged into the natural subsoil, which was irregular with lumps of outcrop. The rubble layer, which had been placed

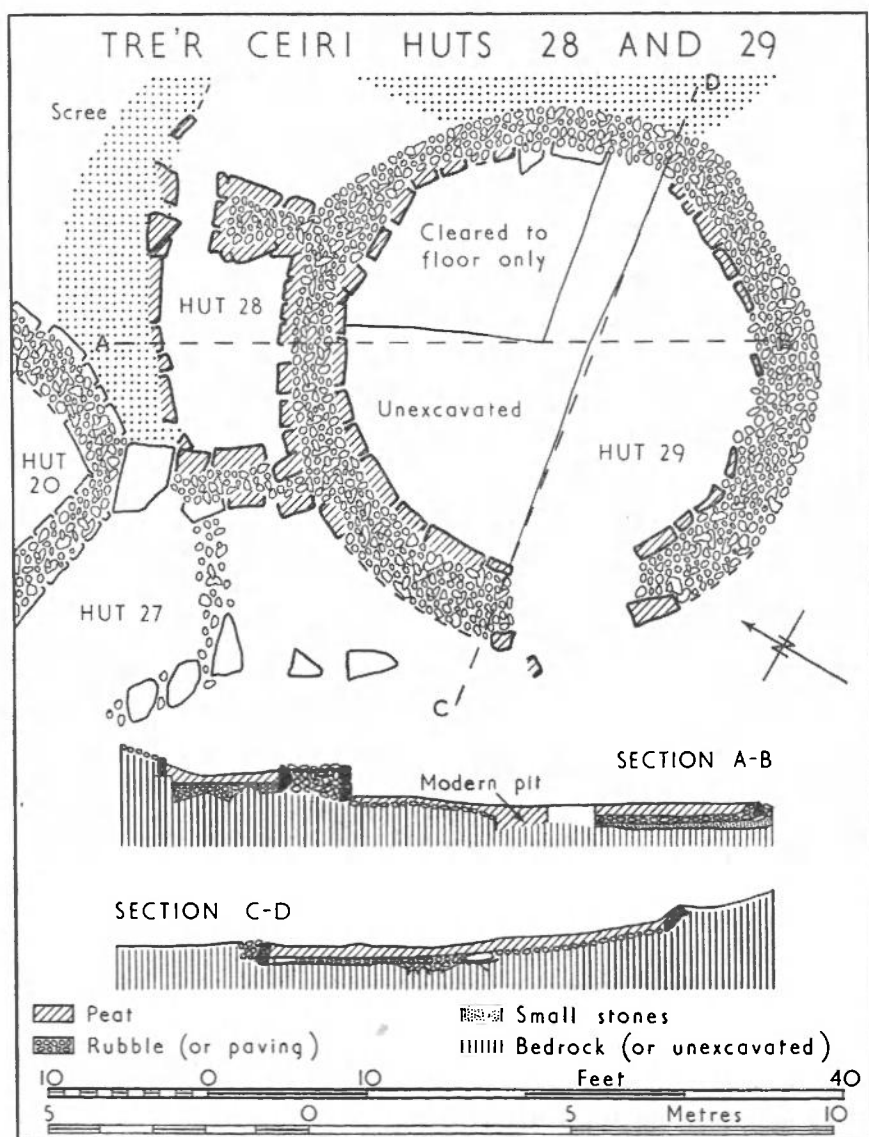


Fig. 12. Huts 28, 29

after the erection of the walls, was at first regarded as the result of destruction, but its uniformity indicates that it is in fact the bottoming for the floor. The illustration (Pl. VA) shows this layer remaining on the left (E.) side of the excavated area. In its present form the rubble would make an intolerable floor; it was presumably levelled off with trodden soil which has since been eroded.

Among the rubble were found some scraps of burnt bone and a small fragment of a shale ring, the only artifact discovered during the excavations.

Hut 28 was a small roughly rectangular building, about 11 ft. N.E. to S.W. by 8 ft. wide, with an entrance passage 2 ft. 6 ins. wide by 5 ft. long at the N. corner. The walls were rougher than those of 29, and the N.W. wall was merely facing against natural scree. As in 29, the floor was formed of rubble levelling out the irregularities of the rock surface. This rubble had been placed up against the outer face of 29, but the remaining walls of 28 were built upon its levelled surface. At the S. junction of 28 with 29 one of the outer facing stones of the latter had apparently been pulled out to form part of the outer face of 28, but at the inner face the outer facing stone of 29 continued its line beyond the inner face of 28. Owing to the large masonry, the N. junction was not investigated.

The section of walling of 29 which that building shared in common with 28 was better preserved than the remainder, suggesting that some robbing of 29 took place during the use of 28.

Huts 53—89—90 and those adjacent (Fig. 13) (c. 610 ft. S.W. of the Cairn). All these buildings had been cleared by earlier excavators, but their character was not recognised, and the walls built up at that time obscured their true nature.

Slight clearance showed that 53, 89 and 90 together formed subdivisions of an almost circular dwelling, against which small irregular buildings had been erected.

The round house, 53—89—90, measured 25 ft. from N.W. to S.E. by 27 ft. Its wall varied from 5 to nearly 7 ft. in thickness, and the original masonry still stood to a height of 2 ft. or more, with a further foot replaced by the earlier excavators. It seems likely that this gives about the original height. Both faces were mostly of laid masonry.

The interior was divided into three compartments by a wall Y-shaped in plan. The antechamber (53) was entered on the S.W. through a doorway of which the E. jamb had apparently been rebuilt during the earlier excavations, but which was at least 2 ft. 6 ins. wide. Doorways of similar width led to the inner rooms 89 and 90. The masonry forming the S.W. jamb of the doorway to 89 formed a straight joint against the outer wall (as also did the partition between 89 and 90), but the corresponding jamb of the doorway to 90 was apparently of one build with the outer wall. Unfortunately the modern rebuilding has made absolute certainty on this point unattainable. It seems very

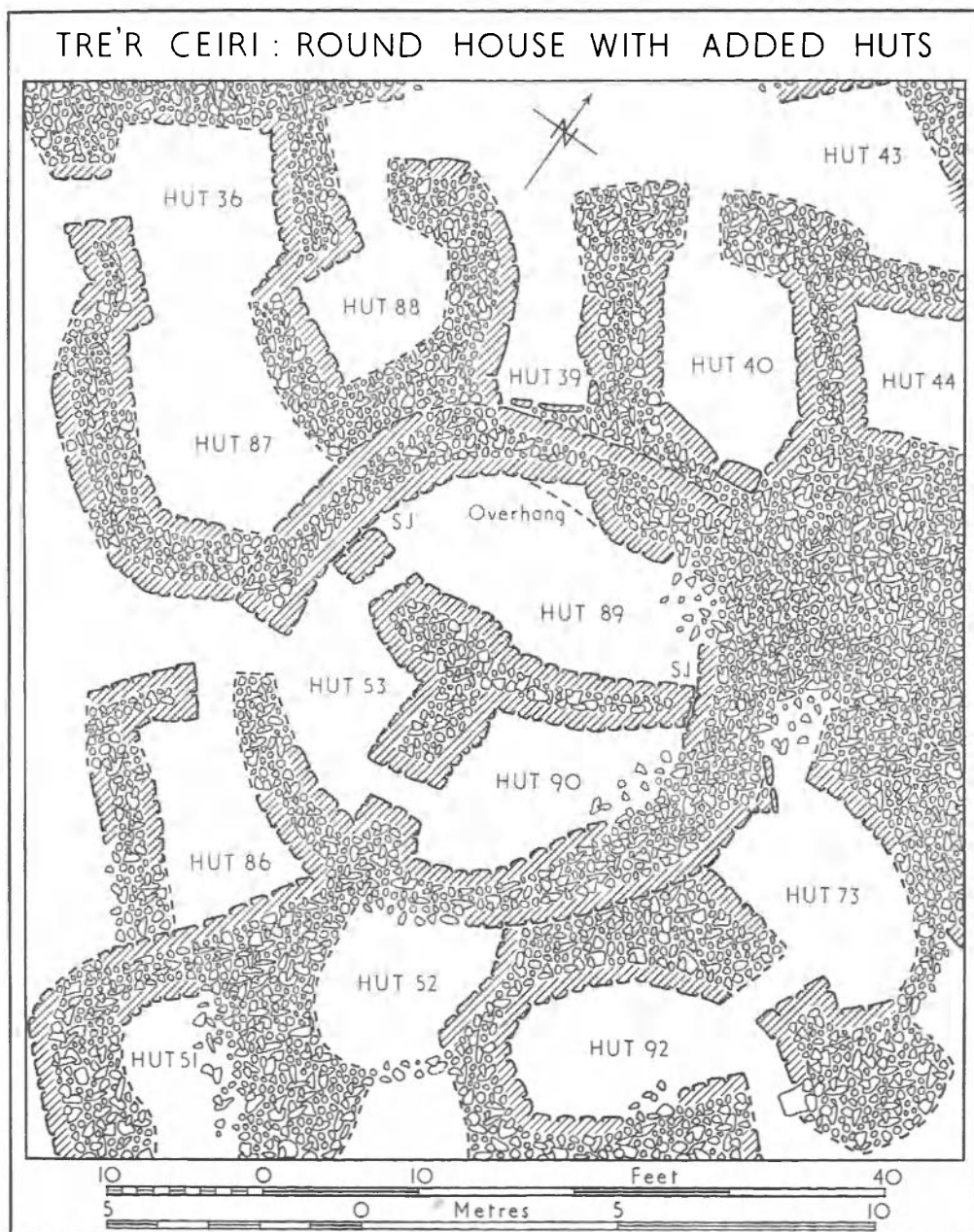


Fig. 13. Huts 53, 89, 90 and adjacent

probable indeed, however, in view of the results obtained in No. 61 (below), that the dividing walls form part of the original design.

During the earlier excavations 89 produced an iron bill-hook, not closely datable but probably of the Roman period. On re-examination, it was found that the shape of the compartment had been falsified by erecting a wall across the middle and filling the space N. of it with rubble from the excavations. Removal of this enabled the original wall to be traced for its complete circuit, except for a length of about 6 ft. on the N. where the face had been built on and against the scree, which had slipped. An irregularity in plan on the W. was apparently the result of a mistake in setting out. It was corrected at a higher level, by corbelling over the upper courses.

Compartment 90 had been cleared to its correct shape by the earlier excavators, and requires no comment.

The line of the outer facing was examined for most of the circuit, except at the junction with 52 and 86 where there had been a good deal of ruin and modern rebuilding. It was found that it had been built up from the surface of the scree, so that for about 15 ft. on the N., where the scree was level with the top of the wall, no outer facing survived.

Most of the irregular compartments built against the round house were cleared by earlier excavators, but nothing significant is recorded from them. What appears to be their original form is shown on the plan, and requires no comment. Their masonry is not quite as good as that of the round house, and includes more upright slabs.

The junction of 39 and 88 with the round house was examined in some detail (Pl. VB). The end and sides of 39 were formed of large blocks or slabs set on edge. Removal of the two at the E. end exposed, behind a fill of small rubble, the original outer face of the round house, and this could be traced behind the thicker masonry forming the E. end of 88. In the plate, the original masonry extends to the top of the scale. That above is rubble built up by the earlier excavators. The round-house wall was well-preserved, but had clearly begun to bulge towards collapse before the erection of 39 and 88. This no doubt explains why a new facing was built in these two compartments, but it suggests also that there was no very great lapse of time between the erection of the round house and that of the adjacent structures. The present appearance of the walls re-erected in 1906 suggests an interval of the order of half a century, but with of course a wide possible margin of uncertainty.

Hut 61 (Fig. 14) (c. 250 ft. W.S.W. of the Cairn). This was a round house about 22 ft. N.—S. by 20 ft., divided into two unequal compartments by a cross-wall. The S. compartment was cleared in 1906, and produced scattered fragments of a Roman pot. As the N. part seemed to be undisturbed, it was decided to examine it in the hope (unfulfilled) that sherds might be found in a significant relationship to the partition wall.

The floor of the hut was mostly formed by a thin layer of clay, but part was covered by an L-shaped patch of rough paving, above which two smallish stones set on edge projected a few inches, possibly to retain the edge of a couch. Two stones near the middle of the partition wall may have formed the packing of a shallow post-hole, but it is more likely that their position was fortuitous. No occupation soil was found on the floor.

The walls, mainly of laid stones, were about 4 ft. thick, and the original masonry stood to a height of about 2 ft., to which a further 2 ft. of modern rebuilding had been added. There were indications that the outer face existed throughout most of the circuit, but it was not followed up.

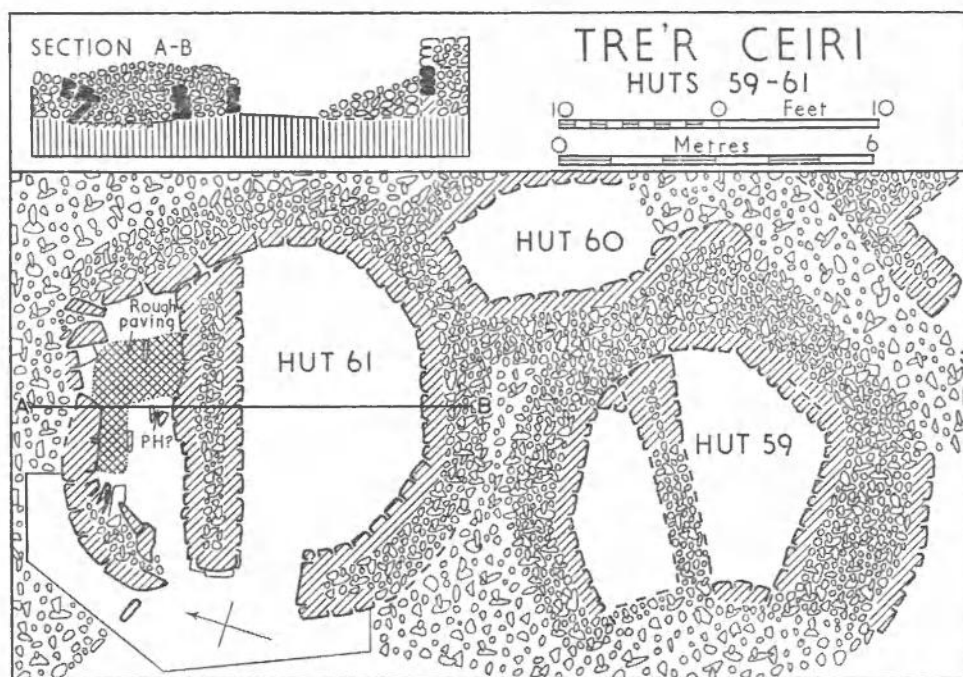


Fig. 14. Huts 59-61

The entrance was on the W. Its N. side was badly ruined, but it seems originally to have been a gap about 9 ft. wide, divided by the partition wall. The end of this was set back about 2 ft. from the outer face of the house wall, leaving openings 3 ft. 6 ins. wide on the S. and about 2 ft. wide on the N. The building thus formed in effect two separate D-shaped compartments set back-to-back, with separate entrances from a single shallow porch.

The inner face of the N. compartment was found to be very badly ruined; no satisfactory line could be established. The outer face was traced round for about 15 ft. from the entrance, but its curvature was such that if continued it would pass well within the established line of the inner face. It was found,

however, that this apparent anomaly resulted from the method of construction of the wall, and its subsequent collapse. Where the hut floor was below scree level, the wall had been formed by setting upright slabs against the excavated face of the scree, and then building up a wall of normal thickness with its inner face resting on the top of the upright slab and its outer face on the retained scree. This type of building usually collapses into a confused mass of slabs and rubble, but at the place considered the upright slabs had tilted forward and the scree behind had moved also, carrying with it the whole of the wall above for about 2 feet without much disturbance to its outer face (see section Fig. 14).

About 6 ft. of the N.E. end of the partition wall was removed, to investigate the junction with the outer wall and to look for stratified material beneath its foundations. Superficially, there was a straight joint between the end of the partition wall and the enclosing wall, but this proved to be the result of modern rebuilding.

There was no straight joint in the original structure, but the adjacent facing of the outer wall had fallen into complete ruin, so once again the evidence is unfortunately not absolutely conclusive. There can, however, be no real doubt that partition and outer walls were of one build.

The absence of any straight joint here is significant. Although the adjacent facing of the outer wall has now all collapsed, it seems very improbable that the partition would have been built after that had occurred; and once the partition had been built, it would preserve any wall-face against which it abutted. It follows therefore that the partition was of one build with the outer wall.

This is confirmed by the absence of occupation material beneath the partition, which had apparently been built directly upon the mass of small flattish stones which is characteristic of the floor left when a hollow is cleared in the scree. Once again, however, the evidence falls short of absolute proof, as there was very little trace of occupation in the compartment cleared.

A little superficial clearance was made in Nos. 59 and 60. In 59 this was mainly to verify the plan, but it became evident there had been a great deal of modern rebuilding, especially on the S. where the entrance would be expected, and that much excavation would be necessary to recover the original shape. In 60, which produced fragments of *mortarium* in 1906, it was at first thought that it might be worth while to examine the floor of the passage leading to this hut; but it appeared that the amount of work needed would be excessive relative to the information likely to be recovered.

Huts 76, 142 and 143 (Fig. 15) (250 ft. S.W. of the Cairn). These were three untouched examples of irregular huts, typologically the latest in the sequence of development from the divided round hut. The only information obtained from the excavation was the detail of their plan. Much of their walling was ruinous, but where best preserved it stood about 2 ft. high, of rather irregular laid masonry. In 142 a large slab had been set upright against

the wall, presumably to forestall collapse. The floors were ill-defined and carried no occupation material. In the section, the fallen rubble is omitted for clarity.

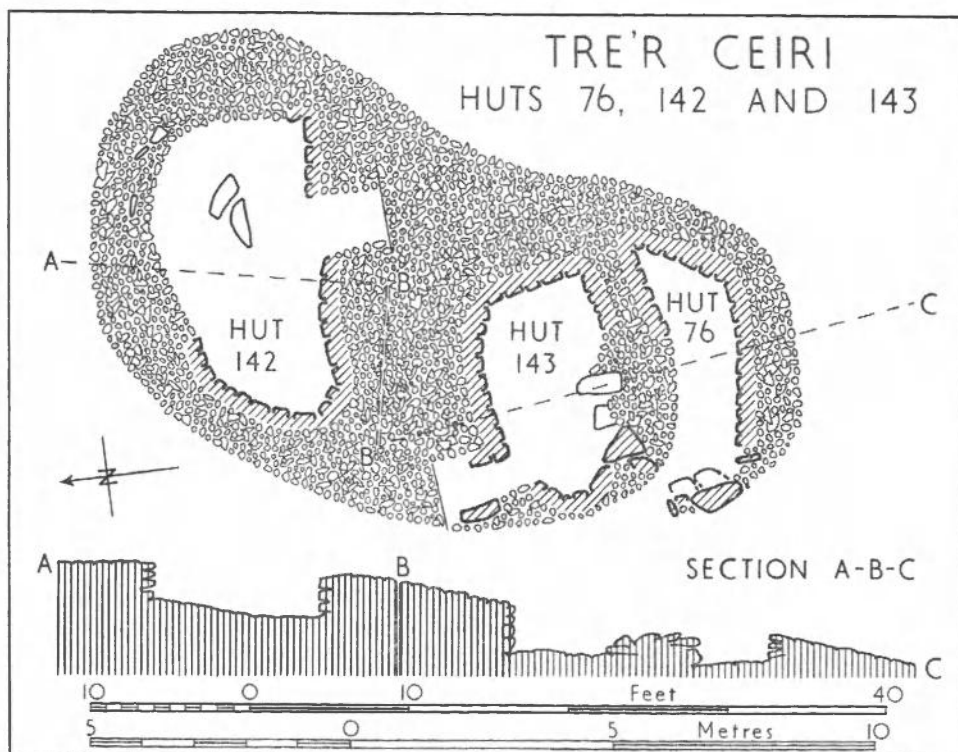


Fig. 15. Huts 76, 142, 143

Other sites: slight excavations were made into the following:—

Hut 77. Although no record exists of its excavation, this was found to have been disturbed to below its wall foundations; it was not further examined.

Near Hut 77, about 50 ft. to the S. A hollow was investigated as it resembled an undisturbed hut, but it proved to be natural.

The Cairn (see pp. 14-15 above).

THE 1939 EXCAVATIONS

The files of the Royal Commission on Ancient Monuments in Wales and Monmouthshire contain notes of slight excavations made on four days in March, 1939, under the supervision of Dr. G. Bersu, Mr. C. A. Gresham, and Mr. W. J. Hemp, then Secretary of the Commission. It seems desirable, as a record, to summarise what was done. The areas excavated are now overgrown and the accounts have therefore not been checked by the present writer, but they do not seem to be inconsistent with the more recent results.

Hut 37. This was cleared, and proved to have been round, 14 or 15 ft. in diameter, reduced by blocking to a smaller roughly rectangular hut. It had been excavated in 1906, but its character was not then recognised.

Hut 45a. Part of the inner and outer wall-faces were followed. It had previously been examined in 1906.

Hut 107. The interior was cleared. No relics and no occupation layer were found.

Hut 108. Most of the inner face of the wall was traced.

Hut 113. This hut was an addition to those previously known, and was discovered during work on No. 37. Only sufficient clearance was done to verify its existence. It appeared to be circular with a partition wall.

APPENDIX III

FINDS

GARN BODUAN

Pottery. (a) Fragment of mortarium rim, pink ware, surface partly blackened, heavily weathered perhaps burnt. Found among the ruins of the Small Fort (see p. 28 above). Roman, late 1st or 2nd century A.D. The piece is small and the beading at the inner edge of the rim is broken away. Allowing for this, the closest parallel would seem to be Caerhun No. 72 (*Arch. Camb.*, 1934; 43, 45) there dated 80-120 A.D., but the Boduan fragment is not very distinctive.

(b) Small fragments of soft red ware, c. $\frac{1}{4}$ inch thick with coarse grits, from the floor of the hut inside the entrance to the Small Fort. The material is too crushed to provide any information as to the form of the vessel, but in view of the other dating evidence the ware may be compared with that found at Pant-y-Saer.¹ On its own merits, however, it is undatable.

Flint. A single small flake (1.3 in. long by 0.8 in. wide) of poor-quality flint, now white. The edges are not worked, but show some battering. From Hut 90.

Beads (Pl. VI B). (a) A portion of large melon bead of dark bluish green paste, with greyish surface, 0.7 in. long by 0.9 in. diam., hole 0.4 in. diam.

(b) A smaller complete similar bead, of brighter blue-green paste 0.3 in. long, 0.45 in. diam., hole 0.2 in. diam.

(c) A bead of translucent deep blue glass, with a wavy white line, 0.3 in. long, 0.65 in. diameter, the hole 0.3 in. diameter.

(d) A similar rather larger bead, with plane faces not parallel, diverging from 0.2 in. to 0.35 in. Diameter 0.75 in., diameter of hole (slightly eccentric) 0.3 in. All these were found in the Small Fort, 'a', 'b' and 'c' among the ruins of the rampart, 'd' on the rock below fallen rubble (see p. 28 above).

Beads of these types may occur in any context from the beginning of the Roman period to the 5th or 6th century.²

¹ *Arch. Camb.* (1934), 26. A mid-5th century rather than a 6th century date is now preferred for that site (*ex. inf.*, L. Alcock).

² The writer is greatly indebted to Mrs. C. M. Guido for expert examination of these beads.

TRE'R CEIRI

Shale Ring 1.3 ins. internal diam., cross-section oval, 0.45 ins. radially, and about 0.35 ins. axially, but split. Found among stones in Hut 29. About one inch survives. Of no value for dating purposes.

In general, little can be added to the survey of finds from the earlier excavations published in 1921,¹ but recent work has thrown additional light on two metal objects.

The *Gilt Bronze Brooch* found in Hut 10 has been discussed in some detail by Sir Cyril Fox, and is now dated to c. 60 A.D.,² and is regarded as 'the work of an artificer outside the southern area of Roman control'.

The fragments of an object of *bronze wire strung with gilt-bronze melon beads* can also be dated with more precision, as it is evidently part of a *torc* closely similar to that found at Lochar Moss,³ also dated within the 1st century A.D.

*The Institute is indebted to Her Majesty's Treasury for the grant
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¹ Wheeler, R. E. M., in *Trans. Cymmr.* (1920-21), pp. 46-55.

² *Pattern and Purpose* (N.M.W., Cardiff, 1958), 106-7, and Fig. 70 and Pl. 41d. See also *Arch. Camb.* (1904), 9.

³ *Ibid.*, p. 107 and Pl. 29b. See also *Arch. Camb.* (1907), 40-42.