REPORT ON THE SIXTH SEASON OF THE TRE'R CEIRI CONSERVATION PROJECT JUNE TO OCTOBER 1994

REPORT NO. 143

PART 1 TEXT

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

REPORT ON THE SIXTH SEASON OF THE TRE'R CEIRI CONSERVATION PROJECT JUNE TO OCTOBER 1994

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A. Smith

PART 1: TEXT

GWYNEDD ARCHAEOLOGICAL REPORT NO. 143

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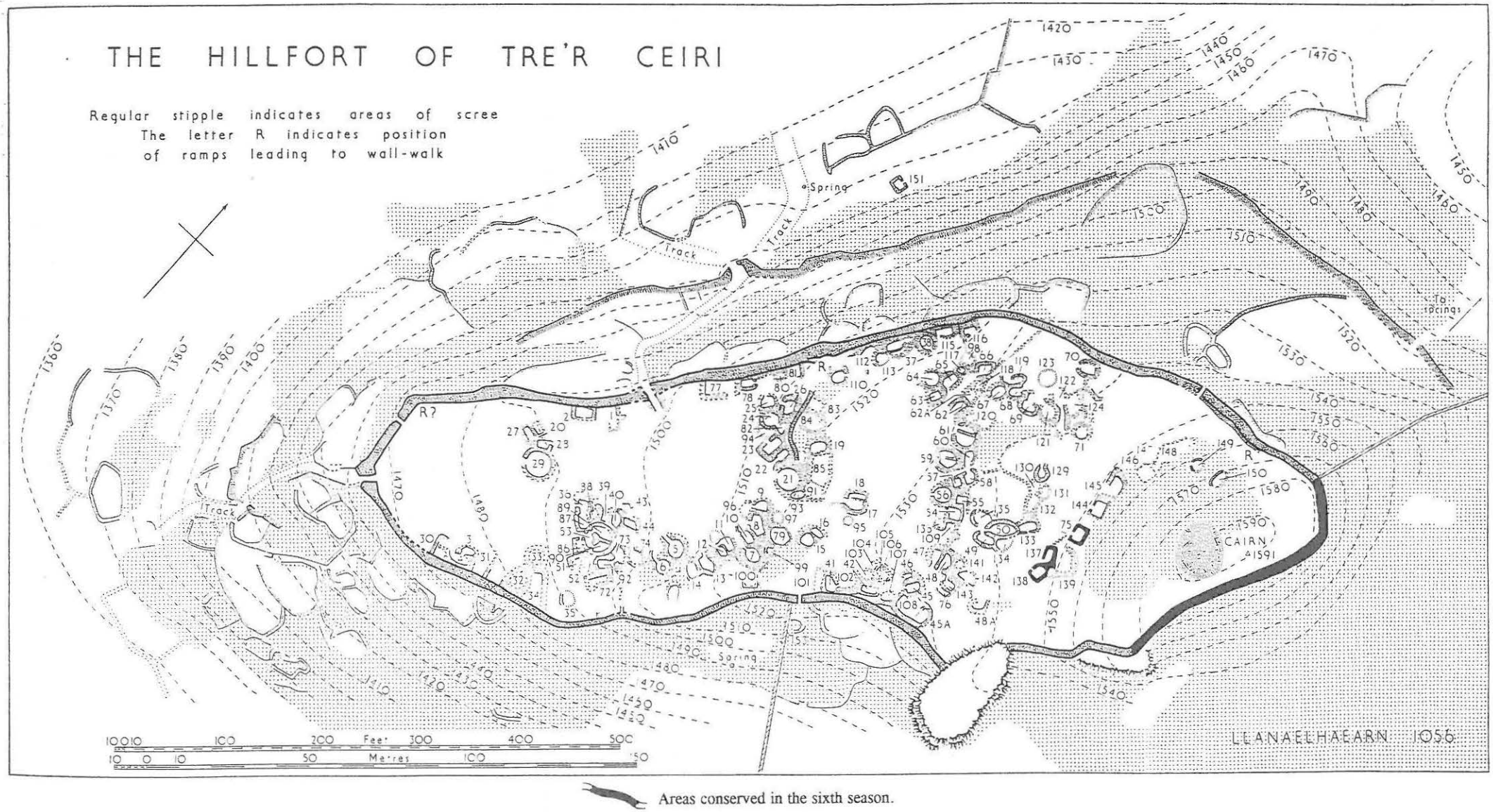

Fig. 1. General Plan (after R.C.A.H.M.W., 1960), showing areas for conservation in the sixth season.

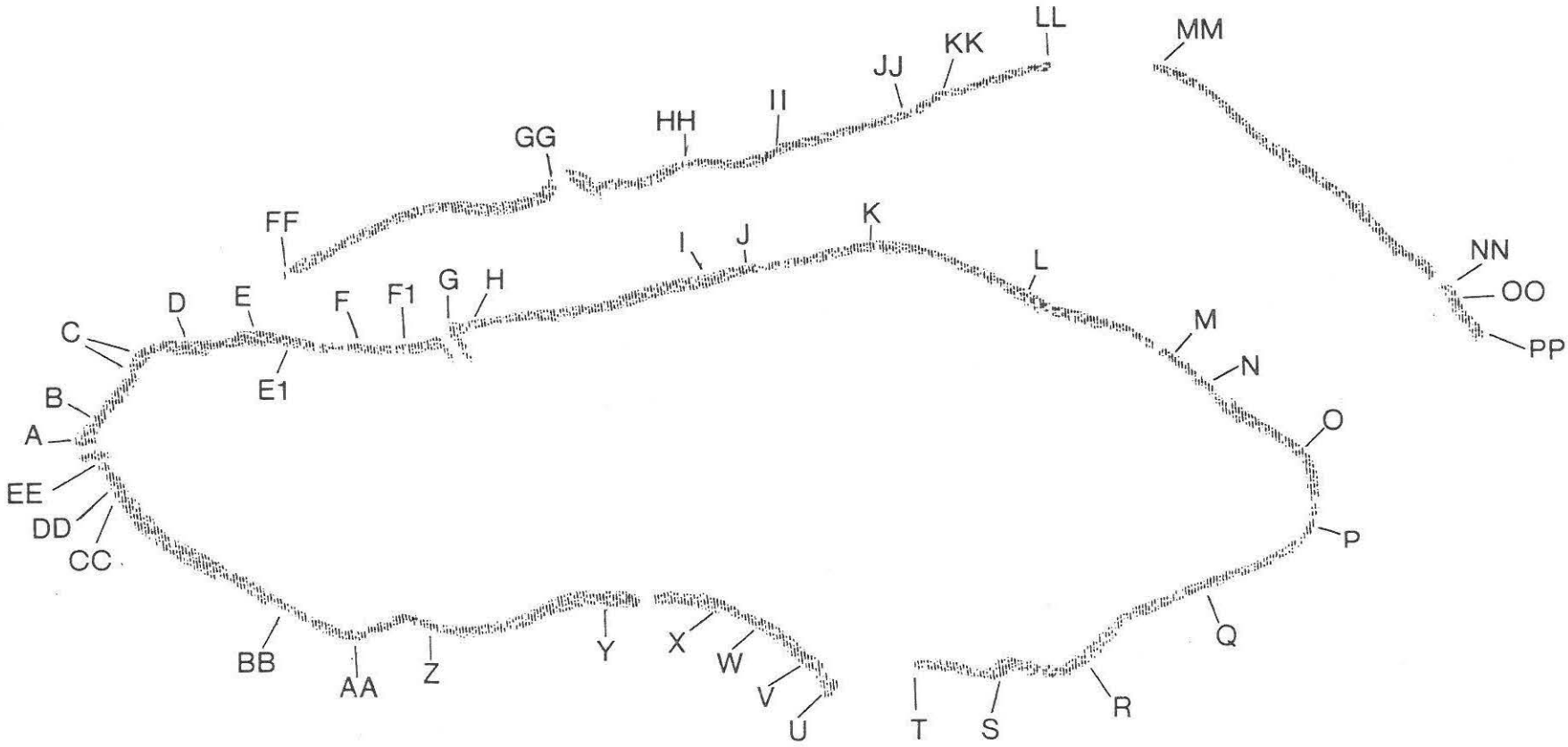

Fig. 2. The Ramparts: points of collapse (after Dallimore, 1978).

INTRODUCTION

Tre'r Ceiri (SH373446) has often been described as one of the best preserved hillforts in the British Isles. It stands at a height of 485m O.D. on the easternmost of the three peaks of Yr Eifl, on the Llŷn Peninsula. The two hectare fort (Fig. 1) is bounded by a massive, 2.3 to 3.0m thick, dry-stone wall. Unusually, due to the inaccessibility of the site and the abundance of stone on the peak very little masonry has been cleared from the site for re-use. The rampart has survived close to its original height of 3.5m in places, the best preserved portions retaining a dry-stone rampart. A further outer defensive wall stands to the north-west of the fort. There are two main entrances through the inner rampart, at the south-west and north-west of the fort with additional simple gaps in the rampart at the north, west and south. The rampart is carried over the north 'postern' by several stone lintels. The north-west entrance appears to be the main entrance into the fort with a 15m long passage leading to a terraced pathway and a further gateway through the outer defensive wall.
The interior of the fort contains the remains of about 150 dry-stone huts and enclosures exhibiting a great variation in size and shape, ranging from simple round huts to irregular and rectangular structures.

A number of excavations have been carried out on the site; in 1903 S. Baring-Gould and R. Burnard excavated 32 huts and in 1906 H. Hughes produced the first accurate plan of the fort excavated 32 huts and examined the south-west entrance. Further excavations were carried out in 1939 by W. J. Hemp, G. Bersu and C. A. Gresham, who examined five huts and a portion of the inner face of the rampart. The south-eastern 'postern', and an additional 10 huts were excavated by A. H. A. Hogg in 1956. The excavations produced finds from later in the fort's history, demonstrating that the huts were used up to the 4th Century A.D.
Descriptive surveys of Tre'r Ceiri were carried out in 1946 by W. E. Griffiths and in 1978 by K. Dallimore.

This spectacular site has been attracting large numbers of visitors for at least 100 years. Complaints about visitor damage were made by the Cambrian Archaeological Association as long ago as 1895 and erosion has become a major problem. Increasing concern about the deterioration of the remains prompted Cyngor Dosbarth Dwyfor, in conjunction with Cadw: Welsh Historic Monuments and Gwynedd County Council, to embark in 1989 on a conservation project to consolidate the site. The project ran for an initial five years. Gwynedd Archaeological Trust was commissioned to provide archaeological supervision and to record all works as they progressed. A management plan was produced at the end of the fifth season including a survey of all unconserved areas in the fort, recommendations for a further, concluding, five years' work and a long-term management strategy. Funding was subsequently agreed by Cyngor Dosbarth Dwyfor, Cadw and Gwynedd County Council for a further five year programme to begin in 1994.

The sixth season of the project began in late June 1994, work continuing on site until late October.

STAFF AND SUPERVISION

Works were again conducted by Mr W. H. Evans, Mr D. Ll. Jones and Mr I ap Llyfnwy of T.I.R. stonemasons, Penrhyndeudraeth, under the supervision of the writer. Monthly site meetings held in order to monitor the progress of the project and to arrange the work programmes were attended by the above stonemasons, the writer, Mr A. Davies or Mr T. Vowell of Cyngor Dosbarth Dwyfor, Dr M. Yates of Cadw, Mr J. Wyn of Gwynedd County Council and Mr D. Longley of G.A.T.

PROGRESS IN THE SIXTH SEASON

During the sixth season work continued on the rampart at the north-east end of the site. A 90m stretch of wall was conserved, running from modern field wall O to outcrop S (see Fig. 2). In addition works were carried out on four of the eleven huts below the cairn and the material excavated from the cairn in 1993 was reinstated. The start of the season was later than usual as the funding had to be arranged in the spring. Several days work on site were lost due to the deterioration of the weather during October.

RECORDING METHODS

Before conservation, the relevant length of rampart was surveyed with a total station. All standing rampart faces were photographed in 2.0m segments, using a 28mm shift lens to correct the verticals, from a standard distance of 4.0m. This ensures that the 2.0m segment to be recorded appears on the central 40% of the negative thus lessening the effects of optical inaccuracies produced at the edge of the camera lens. In this way an overlapping pre-conservation sequence of all consolidated areas has been produced. Approximately 10m of semi-collapsed rampart (collapses P1 and P2) was photographed in 1.0m segments from a distance of 2.0m as the scree was so steep that it was beyond the limit of correction afforded by the shift lens. This method of photographic recording was not always suitable for the huts due to the lack of space in the interiors. A shift lens was used where appropriate but as the ground is reasonably level around the huts more accurate 'Straight on' photographs were taken using a levelled camera where possible. All masonry in the huts designated for conservation was recorded in detail as above and more general views of the entire structures were taken.

It was anticipated that existing plans, Plowman Craven in particular, could be used to locate the works carried out on the huts but severe inaccuracies in the plans of huts 137 and 138 required that they had to be re-planned by hand. As this was a time-consuming process it is recommended that Total Station plans are made of all huts to be conserved in future seasons.

A detailed written and photographic record was kept of the works as they progressed, supplemented with measured drawings where photographs could not show enough detail or demonstrate relationships between features clearly.

All photographic records were taken on monochrome and colour prints, supplemented with colour transparencies for lecture purposes. At the end of the season the negatives were catalogued and stored in standard archive conditions.

DETAILS OF WORKS COMPLETED

Details follow of all conservation works completed during the sixth season. Works were conducted on the main rampart wall and the huts and can be located by reference to the numbering scheme produced by K. Dallimore in 1978 (Fig. 2) and detailed location plans, Figs. 3,6 and 11. As the works were predominantly recorded photographically, it is recommended that the relevant plates in Part 2 be consulted alongside the text. At the end of the season the edges of the collapses and any disturbed masonry were marked with discrete 10mm diameter drill holes. In addition to this, polypropylene cord was placed in the wall core and at any other relevant points in order to indicate the extent of clearance undertaken.

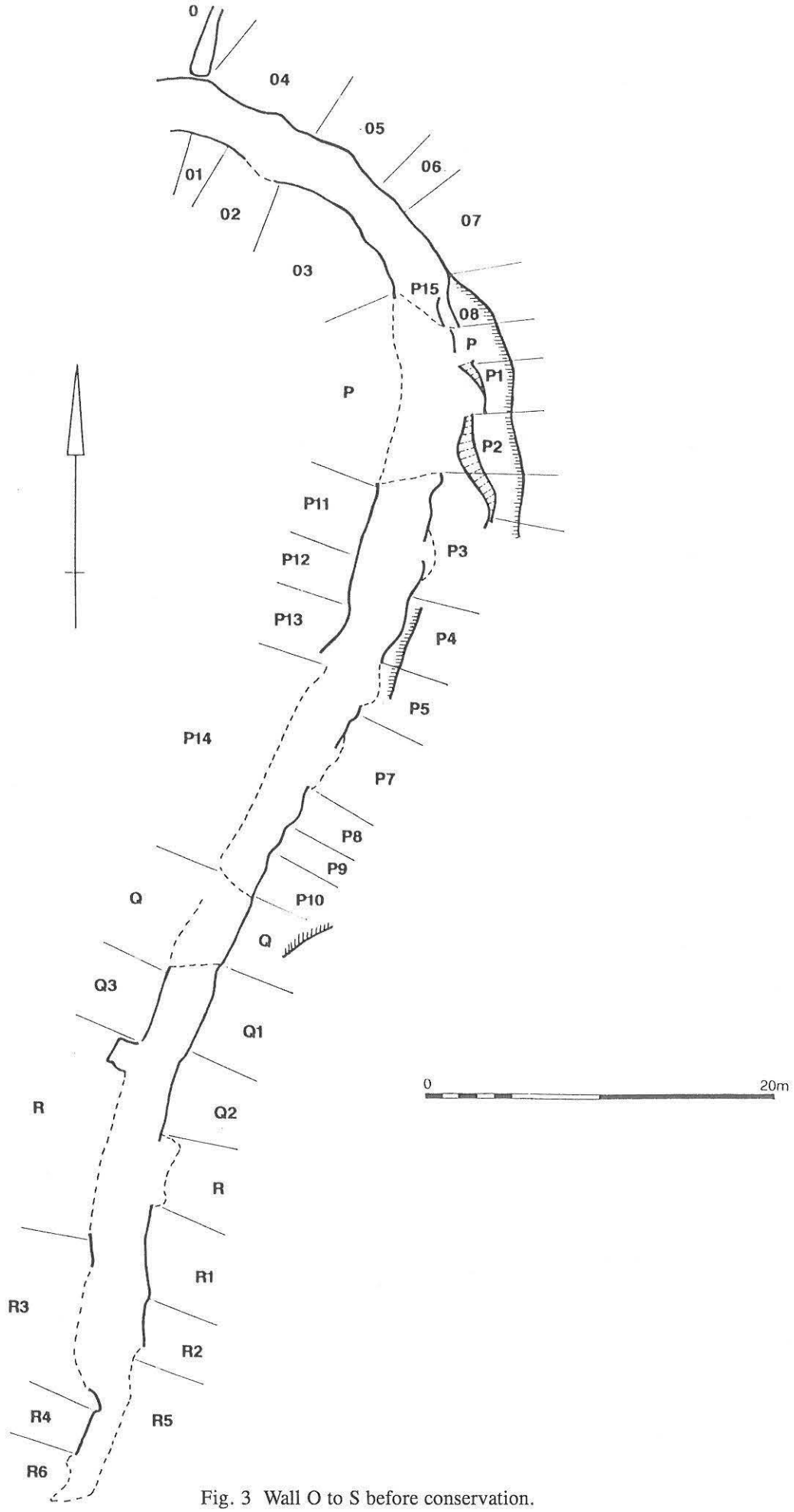

Fig. 3 Wall O to S before conservation.

The Ramparts

The 90m stretch of rampart conserved in this season (Fig. 3) was the most severely eroded area of the fort. Visitors have tended to congregate around the cairn, it being the highest point on the site, and walk on the rampart in order to admire the view. This heavy erosion pressure has been compounded by the fact that the rampart stands on very steep scree which is prone to movement and thus does not provide a very firm foundation. The outer face meanders considerably and two lengths of facing (collapses P1 and P2) are up to 3.5m off line. Almost all of the outer face shows signs of recent damage some of which is obviously the result of erosion and unstable masonry. More seriously, several lengths of stable rampart have been deliberately damaged by visitors throwing masonry from the rampart, the scree slopes below these points are littered with broken and unweathered stones. In many cases the outer face was lower than the interior of the fort resulting in a lack of support for and subsequent loss of 41m of the inner face. The majority of the inner face was in a very dilapidated condition with close to 50% of its length only visible as disturbed stones at the edge of the turf line. Thirty seven collapses were identified comprising all but 1.0m of the rampart between field-wall O and outcrop S.
Examination of the scree slope below the rampart revealed several lengths of probable revetting in the scree (see Fig. 3), most notably a 16m long step in the scree exhibiting some untidy c.0.5m high facing below collapses O8 to P3 and a 3.0m sequence of large slabs below collapse Q. A stub of facing built onto the bedrock below collapse R1 was also identified but not as yet located on a plan.

Wall O-S outer face

Collapse O4 (Fig. 3)

Collapse O4 (Plates 1, 2 and 3) ran in a east-south-easterly direction from the point where the modern field wall ('collapse' O) abuts the outer face of the rampart. A 6.9m length of upper courses appeared to have been deliberately pushed from the wall reducing it to a height of 1.2m. The stones could be seen lying on the scree at the foot of the rampart. Some lichen growth was visible on both the wall top and the fallen stones suggesting that the damage had been done in excess of 10 years ago. The remaining facing stood to a height of around 1.2m and was secure apart from a small area of instability adjacent to the modern field wall. Wall core and disturbed stones stood to a height of 0.2 to 0.3 m above this.

The instability at the south-east of the collapse was caused by 3 stones A B and C (Plate 3) which had slipped forwards. Several attempts were made to reset these in line with the rest of the face but the stones were very awkwardly shaped and could not be locked together. It was decided to re-use them elsewhere as they were the cause of the instability. Three new stones were selected from the scree and the face was rebuilt to the height of the surrounding masonry (Plate 6). Stone D (Plate 2) was very loose and was reset upside down. The rest of the collapse was secured by the addition of one or two courses of masonry, the wall top being secured by heavy interlocking slabs (Plates 4 and 5).

Collapse O5 (Fig. 3)

The 5.0 m of facing between O4 and O6 was standing to a maximum height of 1.8m falling gradually to 1.1m at the south-east and was basically sound although the upper courses were somewhat loose and disturbed (Plates 7 to 9). Stones A B and C (Plate 7) were reset within 1 or 2 cm of their original positions and the obviously disturbed stones on the wall top cleared. A course of heavy slabs was added in order to stabilise the wall top. Plates 10 to 12 show the collapse after conservation.

Collapse O6 (Fig. 3)

A failure in the base of the wall in antiquity, possibly caused by a movement in the scree, had led to a pronounced bulge in the wall. The lower 0.3m of the wall had reached a point of

stability but 0.5m of masonry above this was rather loose and tumbled (Plate 13).
A large slab at the south-east of the collapse (stone A, Plate 13) had obviously fallen from above and was reused on the wall top. A void in the centre of the collapse contained one loose stone (stone B, Plates 13 and 14) and was packed with two additional stones. No other masonry was disturbed; the loose facing was stabilised by careful packing of core behind the headers and the addition of two courses of heavy stones (Plate 14).

Collapse O7 (Fig. 3)

This well preserved 4.2m length of rampart, standing between 1.0m and 1.9m above the scree, was stable apart from some disturbance to the upper courses (Plates 15 and 16). The face turned sharply to the south at the south-east of the collapse. At this point the masonry was stable but more irregular. Collapses bulges and instabilities in the facing on the outside of curves and corners are common on Tre'r Ceiri, the wall being most stable when the headers are set at right angles to the line of the wall. The fan shaped arrangement of stones in convex masonry often leads to facing being forced outwards by the weight of the wall to either side (Fig. 4).

Fig. 4 Sketch plan illustrating the forces acting on stones in convex masonry

Stone A was pushed back and slightly rotated and the collapse was stabilised by the addition of heavy, interlocking slabs to the wall top (Plates 17 and 18).

Collapses O8, P and P15 (Fig. 3)

During the conservation process it became obvious that these areas would have to be considered together.
Collapse O8 was 3.0m long falling from 1.6m at the north to 0.6m at the south where it dropped steeply to ground level and collapse P (Plates 19 and 20). Collapse P was not described in any detail in Dallimore's report but presumably represents the 8.5 m wide seriously eroded area between O8 and P3. A 2.2m length of disturbed headers could be identified in the scree at the north of the collapse (Plate 24) but no facing close to the line of the rampart could be seen beyond this. Two lengths of severely off line facing were identified in the scree below P and reclassified as P1 and P2 (see below).

The north end of collapse O8 was stable but the southernmost metre consisted of almost completely collapsed masonry beneath several courses of unweathered stones, laid as stretchers, suggesting an obvious and rather inept modern rebuild (see Plate 19).
A 1.4m length of facing (P15), set back 0.7m from O8 could be seen standing 0.3m above the wall top (Plate 21). The facing clearly continued down into the rampart for at least 0.6m and its line suggests that it may have been continuous with the south end of O7.

It was decided to initially clear the tumbled stone at the junction between P and O8 as the line of the outer face was not obvious at this point. This revealed four courses of well defined facing at the south of O8 turning sharply towards and abutting P15 1.0m behind the current line of the outer face (Plates 22 and 23). The extant facing at the north end of collapse P followed the modern line of the outer face but was lost 0.9m from the point where O8 deviates from this line. It seems likely that P15 and O7 represent an earlier line of the rampart and that the bulge in O7 was more serious than its current appearance suggests. Collapse O8 appears to have been a later addition designed to minimise the destabilising effects of the bulge and repair any collapsing masonry. The surviving facing in collapse P (Plate 24) was presumably added to this in order to create a more even wall line. Unfortunately the line of the outer face could not be traced beyond this, apart from the somewhat enigmatic structures P1 and P2 discussed below. The area between O7 and P can be compared to collapse D where the corner of the rampart bulged out by 0.75m (Boyle, 1990) giving the appearance of a turret. The outer face to the north-east of this includes two straight joints and facing that turns into the wall core and other evidence of rebuilding. This was interpreted as a two phase entrance in the 1990 Tre'r Ceiri Conservation Project Report. In the light of the evidence for rebuilding around collapse O8 these features could be interpreted as rebuilding after the movement or failure of the sharp turn in the ramparts at this point. This would also explain the lack of evidence for an entrance in the inner face.
Most of the rough basal course surviving at the north end of collapse P (Plate 24) was left *in situ* after clearance of tumbled stone. The modern rebuild in O8 was cleared as it was unstable. The area was planned before consolidation (Fig. 5).

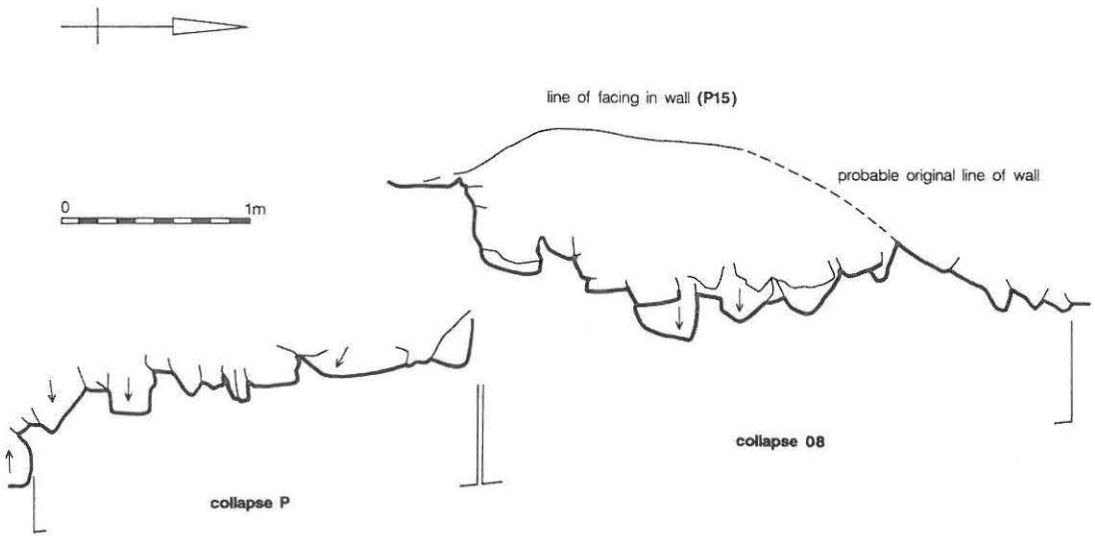

Fig. 5 Plan of collapses 08, P and P15

It was decided to consolidate O8, P15 and P by joining the end of P and the point where O8 deviates from the line of the rampart as the *in situ* facing in the inturning end of O8 was weak and there was not much space to add new masonry. A large slab (stone X on Plate 26) was used about half way up the new masonry to tie the facing together. Ideally a straight joint should have been visible in the wall at the junction between O8 and P but as it was felt that the addition of stones to the inturn would have put the original masonry at risk a stronger continuous face was built. It is possible that the original rebuild took this form as we do not know how far the earlier masonry had deteriorated before repairs were made. P15 was stabilised by the addition of a large slab to the top of the facing. A stone was also added to the wall top between O8 and P15 in order to provide additional support. The new stones are shown on Plate 28.

Collapses P1 and P2 (Fig. 3)

Two lengths of facing were recorded in the scree below collapses P and P3:
P1 was 2.6m long and curved, the north end appearing to be continuous with the facing recorded at the south of collapse P. The face could be seen to run initially at about 50° to the line of the rampart before turning to the south. It was standing about 0.5 m high and sloping backwards at about 45° at the north, gradually becoming more vertical towards the south. The base of the facing at the south was about 2.0m in front of the line of the outer face of the main rampart.
P2 was 6m long and up to 1.0m high describing a shallow S shape in plan. The face was tipped backwards; at the centre of the collapse the top was 1.0m behind the base. The base of the facing at the north of the collapse was 1.2m in front of the line of the rampart and 3.6m in front of the surviving facing in collapse P3 at the south.
The masonry in both P1 and P2 was stable but contained a number of voids. After discussion with the masons it was decided that the voids were unsuitable for packing as they were generally much wider at the front than at the back. The amount of force required to wedge stones into such voids would be liable to disturb the stable masonry. The facing was photographed in 1.0m lengths due to the steepness of the slope below and no further action was taken. An oblique view taken from the south end of P2 is shown on Plate 29.
The function and formation of these anomalous lengths of facing is not entirely clear. It is possible that they represent an attempt to stabilise the very steep slope at this point. A possible length of revetting in the scree can be seen about 4.0m in front of the rampart at this point. The most likely explanation however is that P1 and P2 are lengths of facing that have slipped down the slope and have remained reasonably intact. This is supported by examination of a length of as yet unplanned rampart built on the very steep scree close to outcrop S. There has been little recent erosion in this area and allowing a good appraisal of the mechanisms of the collapse. The western end of this collapse stands on bedrock, but the eastern end has been carried in excess of 2m down the slope by a movement in the scree. The masonry slopes backwards in a similar fashion to that in P1 and P2 and stands about 1.4m high before being lost in the tumbled stone on the slope (Plate 30).

Collapse P3 (Fig. 3)

The first facing that could be identified to the south of collapse P was represented by 2.6m length of possible disturbed headers bounded at the north by three massive slabs (Plate 34). The wall became more definite over the remaining 4.8m of the collapse but was still rather tumbled and obscured by loose stone (Plates 31 to 33). Facing could be traced beneath the rubble to a depth of 0.8m in places. The southernmost 2.5m of the collapse was more eroded, falling close to ground level.

The tumbled stone was cleared revealing stable facing between 0.5m and 0.8m in height at the centre of the collapse (Plate 35). No basal course could be traced for 0.75m at the south of the collapse. The complete lack of disturbed headers led to speculation that a narrow entrance had been discovered. In order to clarify the situation, a little more core and tumble was cleared. This revealed the cause of the collapse; an outcrop or buried boulder (stone A, Plate 36) was uncovered on the wall line, sloping forwards at about 60° from horizontal. The wall had

evidently been built on this and had slipped downhill and collapsed. The stone just to the north of this (stone B, Plate 36) perhaps illustrates the method used to overcome the problem. If, as in this case, wedge-shaped stones were used to provide a level base for the wall it seems inevitable that a collapse would occur, any movement in the scree would allow the basal course to slip off the sloping rock. A stepped platform of heavy slabs was built against the sloping stone thus producing a level base for the wall. Facing was added to the height of the surrounding masonry.
The facing at the centre of the collapse was stable but the top of the wall was overhanging the base by about 0.1m. This was not perceived to be a problem as there were plenty of long headers in the wall and it was only necessary to add 0.5m of masonry in order to support the core. Heavy stones were placed against the base of the wall to provide additional support. After the addition of the new masonry the wall top was secured with interlocking slabs. The new masonry is indicated on Plates 37 to 39.

Collapse P4 (Fig. 3)

This collapse consisted of a 3.8m length of mainly stable facing standing up to 0.8m in height (Plates 40 and 41). There was a failure at the apex of a pronounced bulge in the centre of P4, a 0.6m length of facing being reduced to close to ground level. There were several small slabs at the south of the collapse that were overhanging the rest of the facing and on the point of falling. It was noticed that there was a step in the scree about 1m in front of P4 and P5. This was very ragged and it could be interpreted as a collection of displaced stones from the wall top but it is possible that it represents an attempt to buttress the base of the wall. Care was therefore taken not to disturb this during the conservation of P4 and P5.
An attempt was made to push back the overhanging masonry but it was inherently unstable. Stones A, B, C and D (Plate 40) were marked and cleared along with the jumbled stone on the wall top. Stone A was the cause of the instability having broken in half within the wall. Stone B was very short and the masonry was obviously semi-collapsed so these stones were not replaced. Masonry was added to this area during the conservation of P5.
No other *in situ* masonry was disturbed; the dip in the centre of the collapse was filled with stones taken from the scree and the wall top at this point secured with four large slabs (Plates 42 and 43).

Collapse P5 (Fig. 3)

The outer face had apparently fallen forwards reducing this area to a 3.0m wide rubble slope (Plates 44 and 45). Clearance to the level of the base of the wall to either side indicated that the wall had failed from the base. Only one massive stone (A on Plate 46) remained in the basal course but a number of displaced headers could be seen down-slope at this level. It seems that a movement in the scree undermined the base of the wall causing the smaller headers to slip forward, the facing presumably collapsing at this time. It was decided to lay a new basal course before further clearance in an attempt to stabilise the loose core standing above the collapse. The line of the new facing was determined by extrapolation between the surviving facing to either side and the large *in situ* slab in the centre of the collapse. A little more core was cleared from the south of the collapse at this point in order to make room for new masonry. Up to 0.8m of facing was added raising the outer face to the level of the retained core and inner face (Plates 47 and 48).

Collapse P6 (Fig. 3)

Collapse P6 was reclassified as part of collapses P5 and P7. The number was not reused.

Collapse P7 (Fig. 3)
The rampart was much reduced in the centre of this collapse giving the impression that a pathway had been either eroded or excavated through the core. Facing was standing to a height of 1.0m at the south of the collapse (Plate 50), falling swiftly to a jumble of stones in the centre and rising to a ragged 0.5m at the north (Plate 49).
The central 0.6m of the collapse was cleared revealing several headers tilted forwards at 30 to

40°(Plate 51). The seriously disturbed headers were cleared revealing a reasonably intact basal course. The face appeared to turn inwards at this point but careful clearance in front of the standing masonry at the north of the collapse revealed a severe overhang of about 0.3m in the lower part of the wall, greatly exaggerating the inturn. The facing at the south of the collapse was standing on two large rectangular stones that were running parallel to the face. Masonry was added to the basal course creating a face approximately along the line of the ranging rod on Plate 52. This new facing was on the line of the surviving basal course to either side. It was not possible to build on the front of the intact basal stones E and F as they were sloping forwards. Several slabs were added to the scree in front of the stones F and G in order provide a level base to the wall (Plate 53) as stone G sloped forwards and could not be moved. Further facing was added to this raising the height of the wall to 0.6m. Stones A, B and C were cleared during the building work and could not be replaced close to their original positions. The rebuilding of the central area of collapse produced a convex length of masonry set back about 0.3m from the face to the north. Stone D was left protruding from the face as its removal would have entailed the disturbance of already frail original masonry. Plates 54 and 55 show the area after conservation. There was considerable discussion of this area during the monthly site meeting leading to an examination of the methods involved in the conservation of this type of collapse. It was felt that the appearance of the new masonry could be misleading as a deviation in the line of the wall had been created with the original and rebuilt masonry artificially merged together. It was conceded that there were a number of constraints on the building style; the first priority must be to protect and support the original masonry. The main problem with this area was that the *'in situ'* masonry had moved from its original position to form an overhang. The new masonry while following the original wall line was not constructed with a severe overhang as its primary function was to add stability to the wall. The very ragged facing at the north of the collapse was supported by interlocking the new, stable masonry with this. In order to do this a curve had to be 'invented' which must be seen as a compromise. Ideally the new masonry should have been obviously stepped back indicating a discontinuity in the face but in this case it would not have provided sufficient support. Generally, where a severe discontinuity occurs or when the basal course is lost and the wall line cannot be reliably extrapolated no attempt should be made to construct a linking face. Alternative techniques such as rough racking and the supporting of loose masonry with irregular stonework have proven to be effective. In the case of P7 the discontinuity was relatively slight and only occurred in the upper part of the facing so it was acceptable, considering the surrounding instabilities, to construct a joining face.
A further attempt was made to make the new masonry more obvious by resetting stones at the top of the wall but no improvement could be made without compromising stability. As work progressed along the rampart several meanders were noticed in the wall that were comparable in appearance to the conserved P7.

Collapse P8 (Fig. 3)

A 2.6m length of facing survived to the south-south-west of P7. This stood to a maximum height of 1.1m, falling to ground level and collapses P7 and P9. The facing was generally well preserved although the upper course was loose and disturbed (Plate 56).
The displaced stones were cleared from the wall top. No *in situ* masonry was disturbed apart from stone A which was slightly reset. The wall top was stabilised with six interlocking slabs. The additional stones are indicated on Plate 57.

Collapse P9 (Fig. 3)

Collapse P9 was another eroded 'pathway' through the rampart similar to P7. A pile of stones was present on the wall top beside the low point in the rampart suggesting that the origin of the feature was a modern excavation by treasure hunters or cairn builders. This caused a destabilisation of the outer face and has produced a point of easy access through the rampart.
The outer face was reduced to its basal course in the centre of the collapse, rising to 1.0m at either side (Plate 58). The masonry was stable but covered in places with a scatter of loose stones. These were cleared and about 0.6m was added to the facing at the centre of the

collapse in order to support the masonry to either side (Plate 59). The dip in the wall top was filled in to the level of the inside of the fort.

Collapse P10 (Fig. 3)

P10 was a reasonably well preserved 3.0m length of facing standing 1.1m high towards the north of the collapse. The facing was rather disturbed as it fell away to the south towards collapse Q. At this point the upper 0.3m of the face was no more than a jumble of recently displaced stones (Plates 60 and 61).
The disturbed masonry was cleared and two courses of stones were added to the southern end of the collapse. One slab, stone A (Plate 63), was reset at the north. The extent of the new masonry is shown on plates 62 and 63.

Collapse Q (Fig. 3)

Another pathway ran through the wall at this point, the face was reduced to 0.3m at the north of the collapse and was rather disturbed (Plate 65). The face became more stable beyond this rising to 0.9m before dipping briefly to 0.7m at the edge of Q1 (Plate 64). The upper courses at the south of the collapse were unweathered and level suggesting that stones had been deliberately thrown from the rampart.
The majority of the upper course in the low part of the collapse was loose. Most of the headers were reset within one or two centimetres of their pre-conservation positions. A large slab (stone C, Plate 66), was tilted too steeply to re-set. This was cleared revealing a void (Plate 67), which was packed. Up to 0.5m of facing was added to the northern part of the collapse bringing it up to the level of the wall to either side. It was necessary to import stone from the scree to infill the dip in the core. Stones A and B, in the southern half of the collapse were reset very close to their original positions and core was packed behind them. The dip at the edge of the collapse was filled and the top of the facing was secured with heavy slabs. The new masonry is indicated on plates 68 and 69.

Collapse Q1 (Fig. 3)

This was a 4.7m length of well preserved facing standing up to 2.0m high (Plates 70 to 72). The north of the collapse was notable for the presence of an unusually large, 1.7m long, slab laid as a stretcher in the facing. There was a pronounced bulge in the centre of the collapse, the facing was obviously displaced at this point and contained a number of voids. Many of the usually horizontal slabs were tilted and examination of the core revealed large voids formed when the facing slipped forwards. The voids in the facing were examined to check for points of weakness. Most of the wall had obviously reached a point of stability with the facing still being supported by long headers running deep into the wall. The masonry above one void (marked with an X on Plate 71) was however supported by a short slab overlapping the stone beneath by a few millimetres. This was carefully packed with two stones to give additional support. Stone A at the far south of the collapse was lying on loose core and could not be stabilised and was used elsewhere. The top of the face was secured with heavy slabs and stones B and C were reset within 1 or 2cm of their original positions. Plates 73 and 74 show Q1 after conservation.

Collapse Q2 (Fig. 3)

This was a shallow dip in the outer face in the centre of a 5.0 m length of sound facing (Plates 75 and 76). There had been recent disturbance to the wall with stones having been deliberately pushed from the top of the face in the centre of the collapse. The facing dipped from a height of 1.2m to 0.9m at this point.
The disturbed stones on the top of the face were either replaced or reset and up to 0.5m of masonry was added to the centre of the collapse. The new and reset stones are indicated on plates 77 and 78.

Collapse R (Fig. 3)

At the edges of collapses Q2 and R1 the face fell steeply to ground level leaving a 4.1m wide rubble slope (Plates 79 and 80). The scree was very steep and unstable in this area.
The loose stone was cleared from the collapse and piled on the scree (Plate 81). Very little of the basal course had survived and occasional stones could be seen in rough alignment further down the slope suggesting that the base of the wall had been fragmented and dragged forward by a major movement in the scree. A 0.4m length of *in situ* facing had survived at the northern end of the collapse. This consisted of three large stones and one smaller stone set on top of each other (A to D on Plate 82). Stone B was taking most of the weight but the front half of it was sloping forwards. Stone C appeared to have been set with much of its weight in the wall suggesting that this was an attempt to overcome the problems caused by stone B. It also suggests that this was the original arrangement of stones in the wall, an example of poor stone selection by the iron age builders. A large stone at the base of the face at R1 (stone E, Plate 83) was discovered to be broken into three pieces longitudinally. Only one piece was supporting the facing so the other fragments were removed. Plate 83 shows the collapse at this stage of clearance, the stone leaning against the cleared rubble being the largest fragment of stone E. The core contained an unusually high concentration of large stones and was very unstable. A new basal course was laid in an attempt to stop slippage of core into the work area. The new facing followed the projected line of the wall to either side. There was a problem however at the north end of the collapse where the tilted slabs A and B had been retained. These could not be reset without causing a major disturbance to the surrounding masonry and could not form a good base for building. As the collapse had been cleared to below the level of the scree it was felt that an appropriate solution would be to build a sloping buttress up to the level of the base of stone C allowing a stable platform to be constructed. This was carried out, the partly constructed buttress can be seen in the foreground of Plate 84. Further small falls of core occurred during this work revealing a little more of the underlying stone. The work in progress photograph, Plate 84, shows a number of large angular slabs, the most prominent of which are marked with an X. Careful examination showed that these were fractured bedrock, probably representing the top of the slope before the rampart was built. A face was constructed across the whole of the collapse to height of about 1.2m (Plates 85 and 86). Stone was placed against the front of the rampart in order to restore the line of the slope, effectively burying the buttress.

Collapse R1 (Fig. 3)

A 5.7m length of rampart had survived to a maximum height of 1.7m between collapse R and the edge of outcrop S (Plates 87 to 89). The facing was rather rough and contained a number of voids suggesting that it had moved somewhat in the past. The voids were not packed as there were no obvious instabilities and the packing process can lead to a loosening of stonework.
The top of the face was again loose and recently disturbed. This was stabilised by the addition of several large slabs and the resetting of loose stones in the upper course. No undisturbed masonry was moved. The new stonework is indicated on plates 90 to 92.

Collapse R2 (Fig. 3)

The face followed the top of the outcrop beyond R1 for 3.0m, with a maximum of 0.7m of rough masonry built onto the bedrock, before falling to ground level. It was not possible to photograph this facing in the usual manner as there was a near vertical drop of several metres in front of it so oblique views were taken (Plate 93). The facing was reasonably stable and it was felt that any disturbance would weaken the masonry. The drop in the height of the face at the end of R1 was compounded by a the fact that the wall runs down a slope at this point leaving the facing with no lateral support. This was stabilised by the addition of several stones to the wall top, a few centimetres behind the line of the face (Plate 94). This produced an anchor point preventing the facing from slipping down the slope.

Wall O-S inner face

Collapse O1 (Fig. 3)

The inner face could not be traced between a point opposite modern field wall O and collapse N12 (Hopewell, 1993). Collapse O1 was located to the east of the above being a 1.8 length of untidy facing standing up to 0.6m high with a shallow dip in the centre (Plate 95). The face to the east of this stepped up to 0.9m.
It was decided to fill the dip in order to provide support for the wall to the east. Stone A was sloping forwards and was pushed back into the wall. Stone B was loose, and was reset close to its original position. The dip was filled with one course of heavy headers (Plate 96).

Collapse O2 (Fig. 3)

The end of the stable facing to the east of O1 was marked by two large boulders one of which was lying in front of the wall line. No headers could be identified for 2.0m beyond this (Plate 97). The core was standing a few centimetres above the tumbled stones scattered along the wall line. The collapse was bounded at the east by one 0.7m long slab that was tilted forwards but stable.
The loose stone was cleared from the collapse but no basal course could be identified (Plate 98) . The large tilted stone was cleared at this point as it was obviously part of the collapse and not as stable it appeared to be. This revealed a large *in situ* basal stone (B) visible beneath the collapse on Plate 99. Stone A, above this, had slipped to a position 0.35m in front of the wall line bringing the masonry above with it. This was not reset as it had fallen to a point of stability. There was no obvious reason for the lack of basal course across the rest of the collapse. A possible insight could be gained by examining the inner face around the blocked western entrance where large voids had opened up beneath the inner face as a result of extensive scree movements (Hopewell 1994). The loose packing of the scree beneath O2 suggests that subsidence may have been the cause of the collapse. A grassed over heap of stones in front of the wall line indicated that the collapse was not recent.
The line of the wall could be extrapolated from the surviving facing at the east and the basal course to the west. A stable platform was constructed at the present ground level by infilling the voids in the scree and a new basal course was laid. The line of the original masonry was followed, leaving stone A protruding from the face in order to indicate that there had been a slippage at this point. The face was raised to a height of 0.6m across the whole of O2 using stones from the collapse and the scree (Plate 100).

Collapse O3 (Fig. 3)

A 9.3m length of facing beyond collapse O2 was basically stable, standing to a height of between 0.6 and 0.9m. Plate 101 shows the western end of the collapse before conservation and Plate 102 is an oblique view of the rest of the collapse. Occasional stones were loose in the upper course but most of the small stones at the top of the face appeared to have been displaced during the erosion of the rampart leaving a ragged but stable course of heavy, immovable stones. It was however, necessary to raise the lowest parts of the face in order to retain the core which was unsupported in places. The additional stones are marked on Plates 103 to 107. Stone A was reset 3 cm to the left of its original position and stone B was rotated by 45°.

Collapse P (inner face) (Fig. 3)

This is the most eroded stretch of rampart on Tre'r Ceiri. The inner face could not be traced for some 11m (Plate 108), the area once occupied by the rampart being lower than the interior of the fort. No corresponding outer face was recorded (see above) and it can be assumed that once this was lost there was no barrier to the erosion of the core and inner face. As all that remained was a steep featureless rubble slope there was nothing to conserve. This was recorded and no further action was taken.

Collapses P11, P12 and P13 (Fig. 3)

These collapses with a total length of 10m represented the severely eroded remnants of the inner face. The small stones had been lost from the face leaving rough but stable masonry supported by the remaining large stones. The southern end of P13 illustrates the main threat to this area. An extremely heavy 1.8m long stone had been undermined by the erosion of the core behind it (Plate 109), which was in turn caused by the loss of the outer face. The addition of masonry to the outer face and the associated infilling of core greatly improved the stability of P11 to 13 and no further action was taken.

Collapse P14 (Fig. 3)

The inner face could not be traced for 13.2m. The line of the face presumably corresponds to the vegetation/rubble boundary around the edge of the fort (Plate 110). The core was standing in three approximately 1.0m high heaps corresponding to three dips or paths through the rampart (eg Plate 111). These areas were consolidated during the conservation of the outer face (see collapses P5 to P10). The root cause of the erosion in this area, as in collapse P, was the lack height in the outer face resulting in severe erosion of the core and loss of the inner face. The conservation of the outer face added greatly to the stability of this area and no further action was taken.

Collapse Q (inner face) (Fig. 3)

This corresponded to another 'path' through the rampart (Plate 102 and see Q outer face, above). Occasional large stones aligned as headers could be traced across the collapse giving a rough indication of the line of the wall. There was no instability and no action was taken except for the infilling of the dip in the core during the conservation of Q outer face.

Collapse Q3 (Fig. 3)

A 4.2m length of 0.5m high, rough facing was preserved at this point (Plates 113 and 114) bounded at the south by two massive 1.8m long presumably natural blocks of stone. The facing was somewhat loose and was stabilised by the resetting of stone B, the replacement of stone A and the addition of one stone to the face (Plate 115). Additional core was packed behind the face as it was not well supported.

Collapses R and R3 (Fig. 3)

The inner face was again in a state of ruin for a length of 20m. Occasional suggestions of facing could be seen within the tumbled masonry but there was not enough information to allow any rebuilding of the face. The core was standing up to 0.8m above the inside of the fort at the north end of R3 where the rampart begins to run down hill. This was not particularly stable but it was felt that any attempt to pin the slope would destabilise more masonry than it would support. Collapses R and R3 were recorded photographically and by total station and the results retained in the archive.

Collapse R4 (Fig. 3)

A 2.1m length of 0.5m high inner facing had survived in the otherwise ruined wall on the top of outcrop S. This consisted of 14 small headers resting at the south on a 0.9m long stone laid length ways along the wall (Plate 116). The rampart runs down a steep slope at this point and the headers at the south were not supported so two large blocks of stone were laid on top of the large stone in order to grade the face down more gently. One large slab was added to the top of the facing as it was loose and several large stones were added to the eroded core behind R4 in order support the headers (Plate 117).

Collapses R5 and R6 (Fig. 3)

The remaining rampart on the top of outcrop S was marked by a loose scatter of stones. This was planned and photographed (Plate 118).

The Huts

The eleven huts grouped below the cairn were designated for conservation during 1994. Hut 138 was consolidated early in the season in order to leave time for discussion of the conservation strategies involved.

The conservation of the huts involves the examination of a number of different parameters. About 50% of the numbered huts and enclosures within the fort remain officially unexcavated and therefore potentially contain important archaeological information. It is beyond the scope of the project to undertake detailed excavation so it is imperative that no ground disturbance occurs in these huts. The clearance of collapsed masonry may in some cases be appropriate, particularly where the disturbance is recent, but a minimalist approach is dictated by the constraints on the project. A slightly more flexible approach can be adopted to the excavated huts. The majority of these were cleared down to floor level or below during excavation and not backfilled, making the interpretation of some collapses possible without excessive disturbance. The aim of the project is to stabilise the extant masonry and this is generally best achieved, as in the ramparts, by the rebuilding of collapses and resetting of loose masonry etc. The hut walls are more complex and contain in many cases multi-phase builds (Boyle 1989 and 1990) making this approach unsuitable in cases where there is insufficient or uncertain evidence of the wall line. In these cases support for weak masonry can be provided by the addition of rough unfaced masonry or the adoption of techniques such as rough racking. In all cases a flexible and considered approach is required.

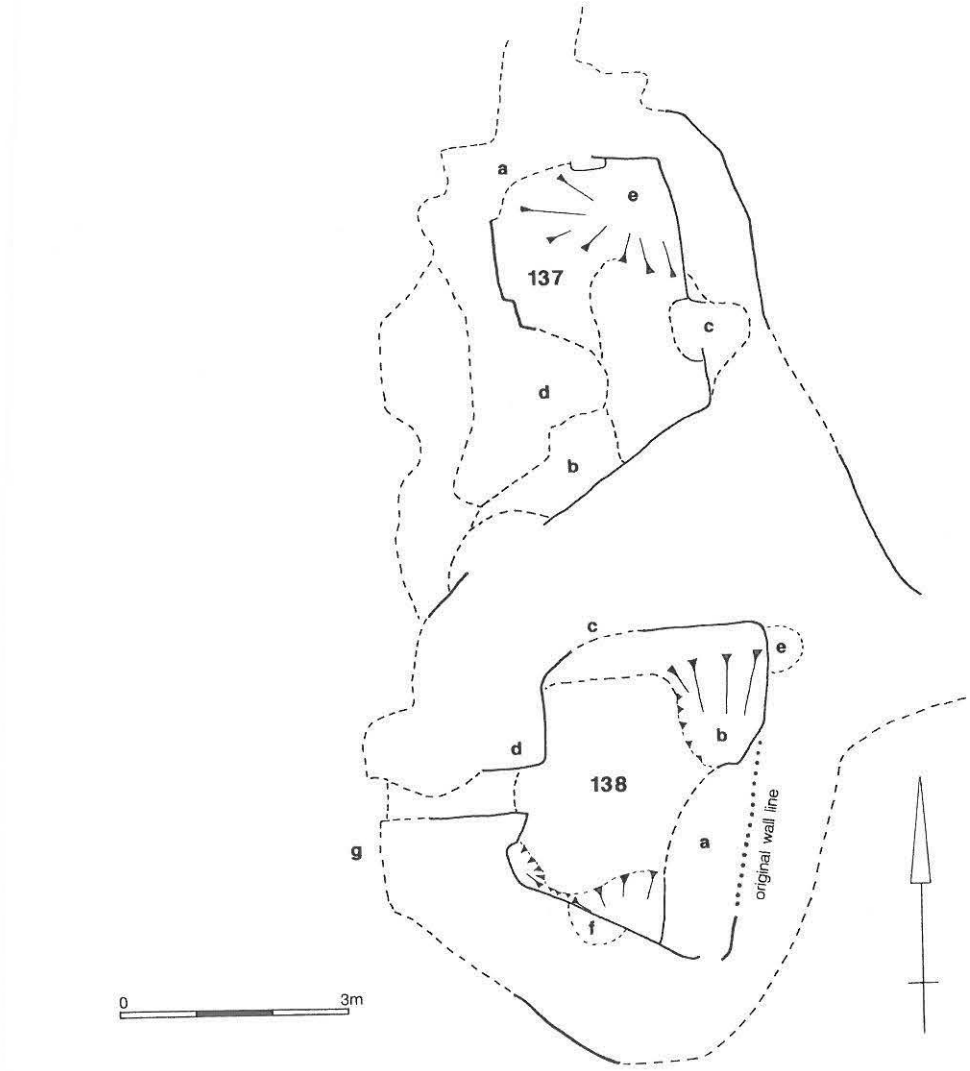

Fig. 6 Plan of huts 137 and 138g

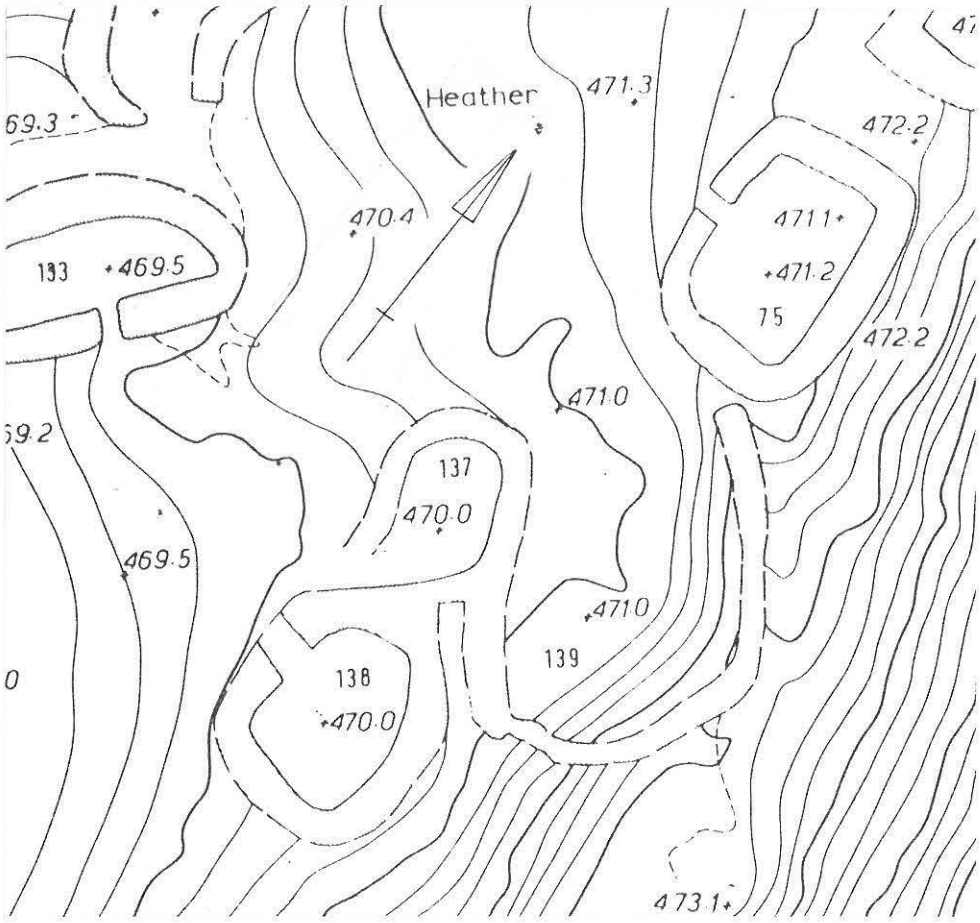

Fig. 7 Plan of huts 137 and 138 (Plowman Craven and Associates, 1980) 1:200

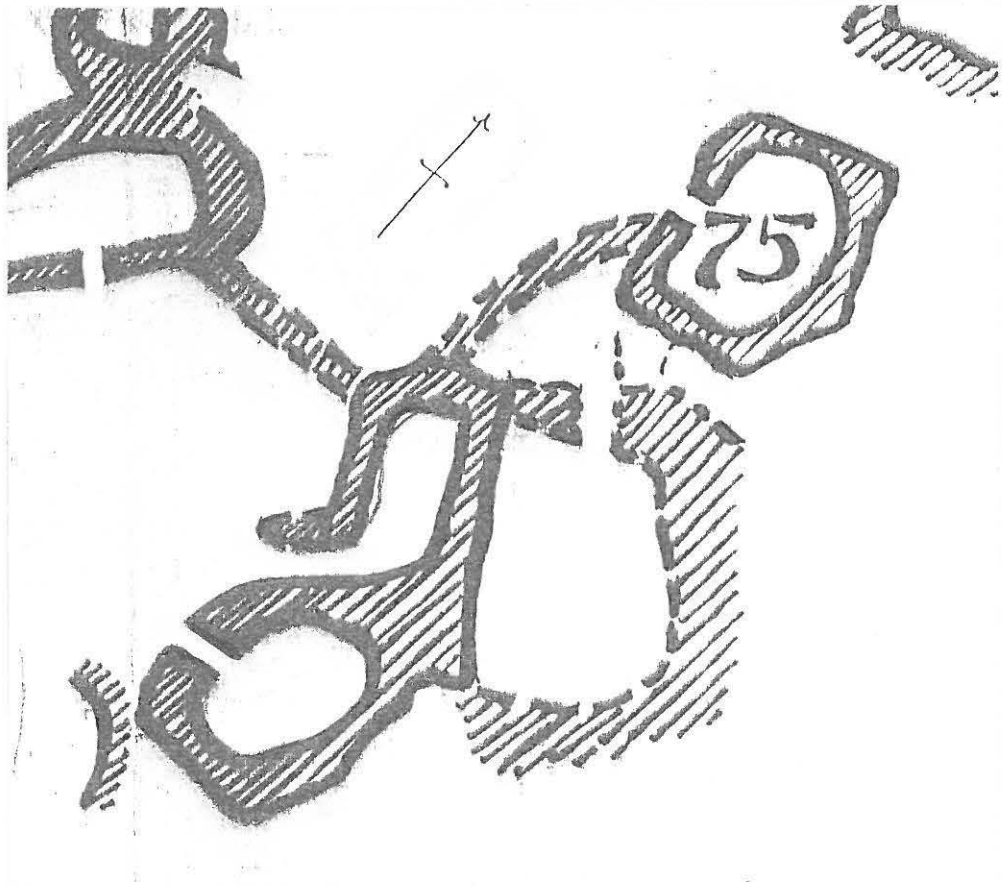

Fig. 8 Plan of huts 137 and 138 (Hughes 1906) 1:200

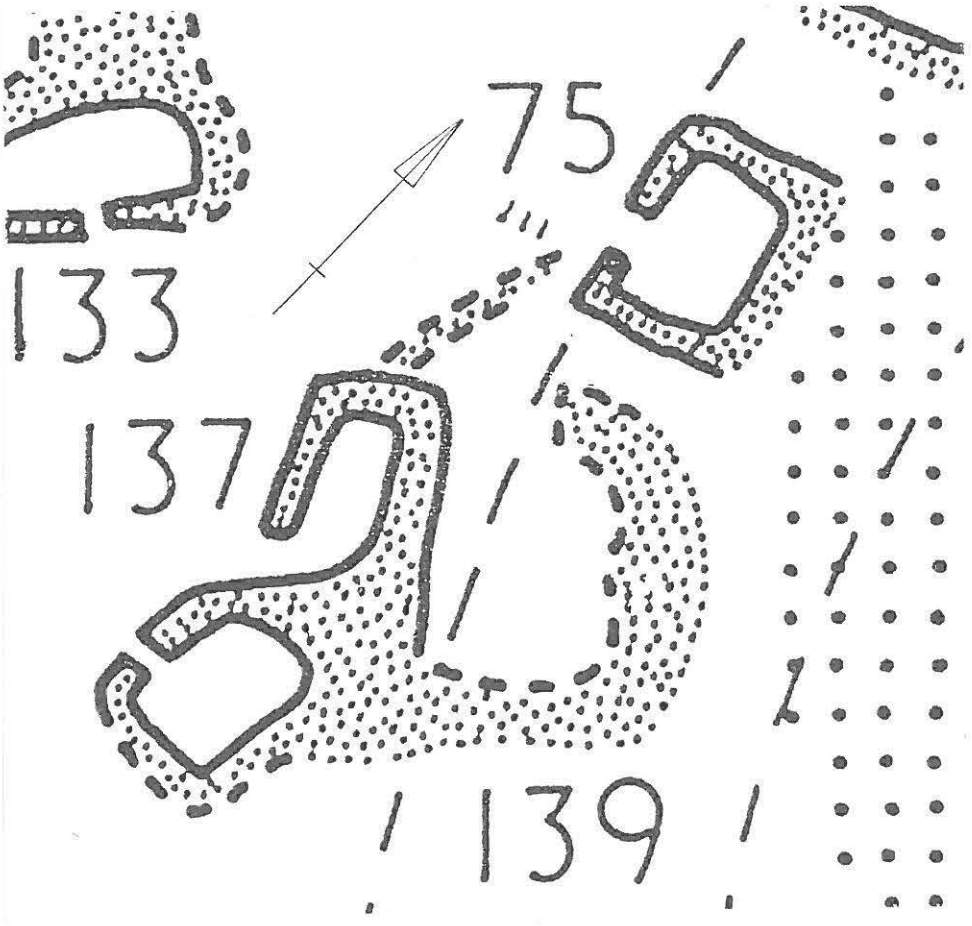

Fig. 9 Plan of huts 137 and 138 (R.C.A.H.M.W. 1960) 1:200

Hut 138 (Fig. 6)

The Plowman Craven plan was compared to the standing monument and was discovered to contain a number of serious errors (Fig. 7). The entrance was shown to be too far north and the shape of the hut was inaccurate. It was therefore decided to plan huts 137 and 138 by hand (Fig. 6). The collapses in the walls were enumerated as subdivisions of the hut number, thus: 138a, 138b, 138c etc.

Hut 138 was a fairly straight sided sub-rectangular (close to trapezoidal) hut with walls standing up to 1.5m high and a well defined entrance through the western wall. There was one serious collapse (138a) encompassing a large part of the eastern wall. No recorded excavations have been carried out in this hut but two serious treasure hunter hacks showed that the hut had been seriously disturbed. The outer face could not be traced for most of the circumference of the hut.
Hughes depicted this hut as being close to oval with a slight flattening at the south-eastern corner corresponding to collapse 138a (Fig. 8). The R.C.A.H.M. plan (Fig. 9) depicts the hut as being rectangular with a slightly rounded northern end.
Griffiths described the hut in 1946;
'A fairly good hut of irregular outline, 13 ft. X 9ft. internally, set against Hut 137 on the N. The floor is 1 ft. 6 ins. below the general ground level. The walls are about 4 ft. thick: they have poor outer faces 6ins. - 2 ft. high ; the inner faces average 2 ft. 6ins. in height,but reach 5 ft. on the N. On the SW is an entrance 2 Ft. wide.'

Collapses 138a and 138b (Fig. 6)

This was an area of collapse encompassing much of the eastern wall of the hut (Plates 119 and 120). The facing at the north end of the collapse had slipped about 15° off line due to the presence of treasure hunter hole 138b (Plate 121) dug below the of the base of the wall.
No facing was visible between this point and the southern wall of the hut. There was some confusion as to the location of the southern corner of the hut; two possible faces could be seen, one standing at the back of the collapse (stones A and B, Plate 120) and one at the front (beneath stone C). The collapse at the front had been interpreted by both Plowman Craven and presumably Hughes (although his plans often did not differentiate between edge of collapse and standing facing) as the corner of the hut even though the facing of the southern wall clearly continued beyond this point. Close examination of this wall shows that it continues as far as stones A and B which form the first part of the eastern wall. Another deep treasure hunter hole had been dug in front of the southern wall (Plate 122). The collapse would appear to be of some antiquity as Hughes did not recognise the original wall line, it is not clear however if it was precipitated by the digging of the two holes.

At the beginning of the sixth season there was a lot of unweathered stone on the collapse suggesting that it had been used as a point of entry to the hut. The proximity of the hut to the main path had probably contributed to the problem.

Treasure hunter hole 138b was filled with stones from the scree. Some of the obviously disturbed masonry was cleared from the area (Plate 123), confirming that the possible face at the front was part of the collapse. Facing could not be traced between the corner of the hut and the off-line masonry at the north of the collapse. Clearance of the tumble down to the level of the basal course may have provided more information but this would have entailed disturbance below the current floor level of the hut. Unfortunately stones A and B were dislodged during the post-clearance recording; they were subsequently reset very close to their original positions. Several stones were added at the end of and close to the line of the off-line facing above 138b in order to provide maximum support for the displaced masonry. The rest of the rubble that had been cleared from the collapse, with the addition of some stones from the scree, was used to 'build ' a stable slope in order to support the *in situ* masonry. The first attempt produced an obviously artificial slope allowing easy access across the collapse and masking the corner of the hut. This was rebuilt in a more satisfactory, irregular style (Plate 124).

Collapse 138c (Fig. 6)

A 1.0m wide collapse had occurred in the northern wall close to the north-west corner of the hut (Plate 125). The collapse was bounded to the east by a 0.7m high slab set vertically in the facing (stone A, Plates 125 and 126). The recently disturbed tumble was cleared (Plate 126) uncovering a jumble of partially collapsed facing. No definite facing could be traced below the loose stone but no further clearance was undertaken as the wall line was clear to either side. The dip was filled with rough masonry without disturbing any *in situ* facing (Plate 127). The new masonry was not butted up to the edge of the upright slab as this would have entailed the removal of the stones wedged behind it and the possibility of further disturbance. The facing was stepped back very slightly to accommodate this arrangement. One large stone was placed against the base of the upright slab to protect it from being undermined.

Collapse 138d (Fig. 6)

The entrance was well defined but partially collapsed. A large block of stone sitting on the top of the wall marked the inner corner on the north side (Stone A, Plates 128 and 129). This was standing on its own and was slightly loose. This was stabilised by the addition of one large slab to the wall top (Plate 130).

Collapse 138e (Fig. 6)

The top of the hut wall close to its north-east corner (Plate 131) was stabilised by the addition of two slabs. Stone A was loose and was reset, with the addition of two small stones, close to its original position. The additional stones are indicated on Plate 132.

Collapse 138f (Fig. 6)

Two stones, A and B on Plate 133, were added to a small dip in the hut wall after clearance of a small amount of disturbed core.

Collapse 138g (Fig. 6)

A large slab (stone B, Plates 129 and 130) had recently been levered up and left standing on end just outside the entrance to the hut. The depression where the stone was originally located was still visible so the stone was replaced. Another disturbed stone was reset behind this to give additional support to the hut wall.

Hut 137 (Fig. 6)

Hut 137 was a fairly well preserved straight sided hut. The northern end was close to rectangular with the southern wall joining the western at an angle of 60°. A partially collapsed entrance was located at the south end of the eastern wall. There were severe collapses in the western (137d), northern (137e) and eastern (137c) walls.

Hughes's plan corresponds well with the observed remains although surviving pencil marks on the unpublished original suggests that there was some uncertainty about the line of the wall in positions corresponding to collapses 137a and 137d.
The R.C.A.H.M. plan basically follows the published Hughes plan but with a sharper north-western corner. The Plowman Craven Plan depicts the hut as being almost oval.

Griffiths recorded the hut in 1946:
A very good small hut of irregular outline, about 14 ft. x 5 ft., against Hut 138 on the SE. The floor is 4 ft. below the general ground level. The walls are 4 ft. thick and have outer faces 2-3 ft. high; the inner faces are very carefully built and reach a maximum height of 8 ft. on the N and W. On the S is an entrance 2 ft. wide, partly blocked with fallen stones. The footings of a wall 3 ft. thick appear to join this hut to hut 133.

Dallimore noted that the hut was in good condition and described it thus:
Well preserved walls between 1.25m-1.75m. Interior has been severely hacked out by treasure hunters.

Collapse 137a (Fig. 6)

No mention is made of collapse 137a in either of the above. Close examination of the collapsed masonry revealed only light reddish brown lichen growth which suggests that the major part of the collapse occurred about 10 to 15 years ago, ie after Dallimore's survey. The uncertainty on Hughes's plan suggests that the corner may have been partially collapsed before this date.

No official excavations have been recorded in this hut but the north end had been cleared to below the original floor level. This action may have precipitated the collapse.

The masonry at the north-east corner of the hut was standing to a height of 1.6m at the beginning of the 1994 season falling almost vertically to the rubble of collapse 137a (Plate 134). The collapsed stone was up to 1.2m deep and was providing some support for the *in situ* wall but as the collapse was still eroding a more stable method of support was required if the unusually well preserved masonry at the north end of the hut was to be retained.

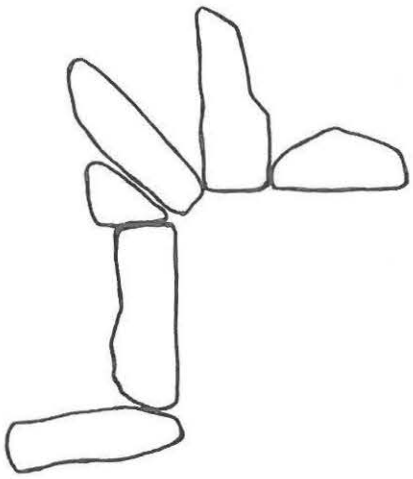

Fig. 10 Sketch plan illustrating the structure of the corners in hut 137

The *in situ* masonry to the east of the collapse was marked (stones A to K, Plate 134) and the fallen stone was cleared (Plate 135). No basal course could be traced between stones K and L (Plate 136) making it impossible to trace the form of the corner of the hut. The other corners of the hut were unusually sharp although still built as acute curves (fig 10). The evidence from Hughes's plan was insufficient to identify the form of the lost corner although if it was partially collapsed when he planned it the original must have been quite acute.
The height and the steepness of the edge of the *in situ* masonry to the east of the collapse placed serious constraints on the stabilisation techniques available. In order to provide adequate support, any sloping unfaced masonry or rough racking would require the importation of excessive amounts of stone and be archaeologically very misleading. It was decided that a continuation of the face was the only practical way to support the masonry; this entailed the building of an improvised corner. The lower courses of the new masonry were stepped in a regular and obviously atypical fashion in order to indicate that the line of the original wall was not certain. A corner was constructed (Plate 137) following the masonry style exhibited in the well preserved north-eastern corner. The resulting masonry provided excellent support for the *in situ* wall but the corner appeared to be too contrived and definite. As it was very close to the end of the season no further action was taken but it is anticipated that further work will be carried out here after discussion at the first monthly site meeting of the 1995 season. One solution to the problem would be to retain much of the new masonry, where the wall line can be reliably projected, but to build a rough uncoursed corner.

Collapse 137b (Fig. 6)

A collapse was recorded on the south-eastern side of the entrance but this had fallen to a point of stability so no further action was taken.

Collapse 137c (Fig. 6)

This was a 1.0m wide collapse in the western wall of the hut. The large slab (Stone A, Plates 138 and 139) embedded in the ground in front of the collapse may have fallen from the top of the wall top or may have been upright in the facing and moved forwards. The centre of the collapse contained a lot of loose core which was cleared to just below the level of the top of upright slab A. No facing was visible at this level but the stones behind slab A were tightly

packed. Using this as a base the facing at either side of the collapse was joined with new masonry (Plate 139).

Collapse 137d (Fig. 6)

The southernmost 2.0m of the western wall were in a ruinous state (Plate 140). This area of collapse was not threatening any extant masonry but was the only indication of the line of the hut wall. The collapsed masonry was stabilised by pinning and the addition of a few supporting stones (Plate 141). It was felt that any large scale disturbance of the collapse would necessitate a complete rebuild which was not appropriate in this case as it was likely that little informative masonry had survived beneath the tumble.

Collapse 137e (Fig. 6)

The north end of the hut had been cleared down to below the level of the base of the wall, presumably by treasure hunters (Plate 142). A hole remained in the north-east corner which was filled with stones from the scree in order to prevent undermining of the wall (Plate 143).

Hut 75 (Fig. 11)

This was a well preserved rectangular hut with a clearly defined entrance half way along the western wall. The Plowman Craven plan was accurate enough to use as a basis for locating the collapses (Fig 11)

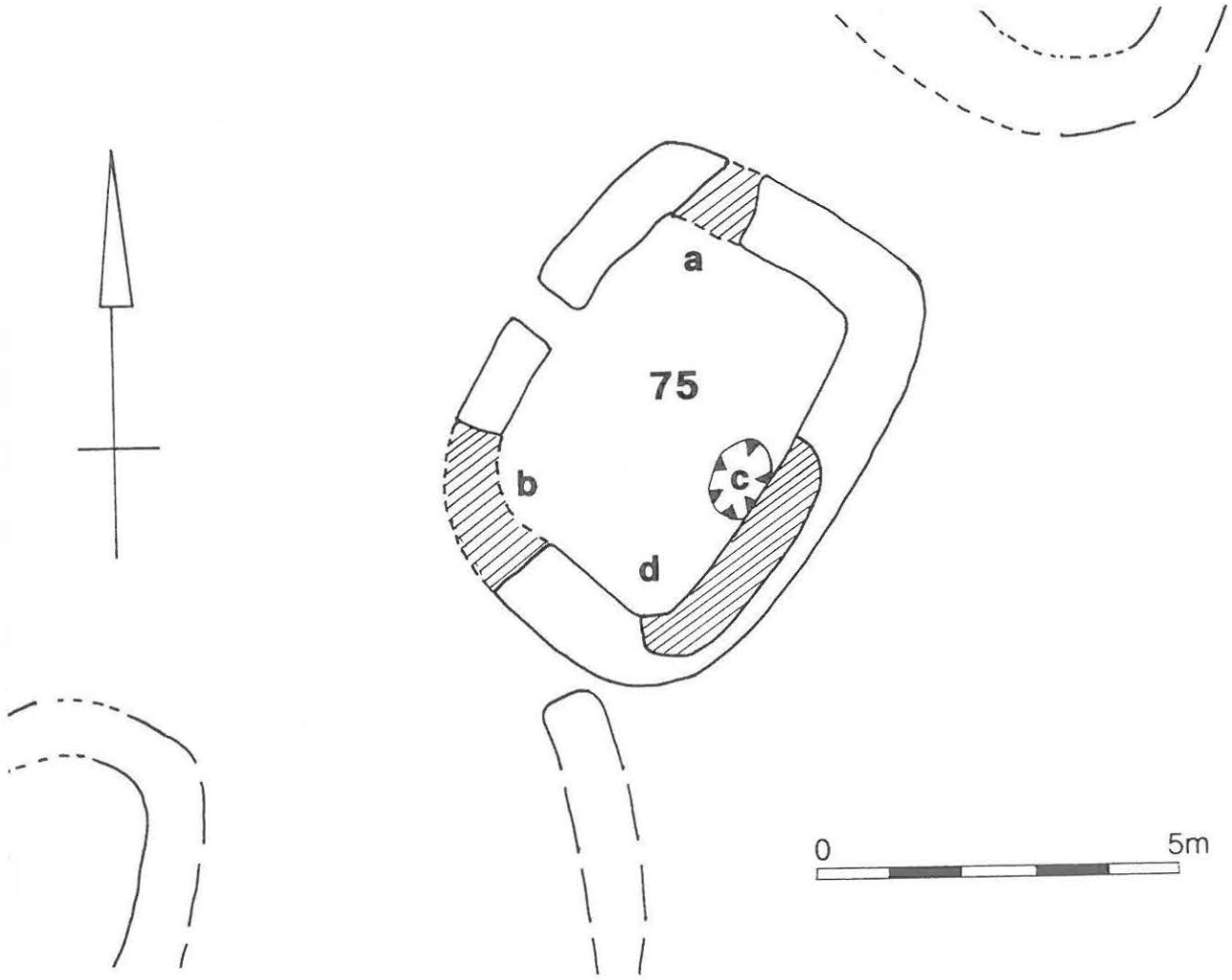

Fig. 11 Hut 75 showing points of collapse (after Plowman Craven and Associates, 1980)

The hut was excavated in 1903 by Baring-Gould and Burnard. The published report states the following:

'75. Blank. Entrance facing north-west; wall 4 ft. to 5 ft. high.'

Dallimore recorded collapses at the north-west and south-west corners of the hut and noted that the hut floor was much disturbed by treasure hunters.

Collapse 75a (Fig. 11)

The wall had collapsed to ground level at the north-west corner (Plate 144) and there was evidence of a little recent erosion. The loose stone was cleared from the collapse revealing a rough basal course (Plate 145). A large stone (stone A, Plates 144 to 146) immediately to the east of the collapse was protruding from the face by c.0.3m. It was decided to leave this in place as it was stable and supporting *in situ* masonry. A new face was constructed along the line of the basal course providing support to the masonry to either side and discouraging visitors from using this as a point of access to the hut (Plate 146).

Collapse 75b (Fig. 11)

The collapse at the south-west corner had become established as the main entrance into the hut. This area of the fort is not often visited but a faint footpath could be seen running across 75b. The inner face to either side of the collapse graded gently down to ground level and was stable. The outer face to the east of the collapse was standing to a height of 0.7m before falling steeply to ground level (Plate 147). The line of the corner was completely lost so it was decided to place a number of large stones in the gap in the wall (Plate 148) in order to provide a rough barrier. The outer face was graded down more gently by the addition of several large stones and the resetting of some of the fallen masonry (Plate 149). No *in situ* stone was disturbed.

Collapse 75c (Fig. 11)

This was a recent treasure hunter hole excavated to a depth of 0.8m against the eastern wall (Plate 150). The excavated material was put back into the hole along with a few stones from the scree (Plate 151).

Collapse 75d (Fig. 11)

A small void at the base of the wall in the south-west corner of the hut was packed with the three stones indicated on Plate 152.

Collapse 75e (Fig. 11)

The wall top along the along the southern half of the eastern wall was loose and uneven (Plates 153 and 154). A 0.2m deep dip in the facing in the centre of the collapse was filled with new masonry. Stone A was reset within 0.01m of its original position. No other *in situ* masonry was disturbed and the wall top was secured with the stones indicated on Plates 155 and 156.

Hut 139 (Fig. 9)

Hut 139 is a levelled enclosure bounded by a rough wall of piled boulders. A small treasure hunter hack in the floor of the enclosure was backfilled.

Huts 144 to 150 (Fig. 1)

These huts were designated for conservation in the sixth season. Huts 146 to 150 are enclosures with rough, unfaced walls. These enclosures are rarely visited and required no stabilisation. Huts 144 and 145 are ruinous and unstable requiring total station planning before

minimal conservation work. There was no time to do this at the end of the season so they will be included in the seventh seasons programme.

THE WORK PROGRAMME FOR THE SEVENTH SEASON.

Several additions have been made to the work programme specified in the management plan. Severe and continuing erosion has been noticed around the entrances of huts 9, 10 and 49. These are all in areas close to the main footpath through the fort and another season's erosion could obliterate some important features of the huts. The consolidation of these huts will therefore be seen as a priority in the 1995 work programme.

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