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DECEMBER 2002

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Prepared for

GWYNEDD COUNCIL

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Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

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Introduction

Tre'r Ceiri (SH373446) is an exceptionally well preserved hillfort standing at a height of 485m on the easternmost of the three peaks of Yr Eifl, on the Llyn Peninsula. The two-hectare fort 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 up to 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 defended 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-east. The rampart is carried over the north 'postern' by several stone lintels. The north-west entrance appears have been 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.

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 1894 (Cambrian Archaeological Association 1895). The erosion and general deterioration in the condition of the site 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 program which commenced in 1994. Local government reorganisation in 1996 led to the formation of a new unitary authority, Gwynedd Council, who took over the management of the project from C.D.D. again with financial help from Cadw. The tenth season of the project was managed by C.D.D. and funded by Cadw. Work was completed in mid November 1998.

A strategy for the long-term management of the site was agreed during the latter years of the project and a management plan was produced (Hopewell 1999). The masonry on the site had been stabilised but remained somewhat vulnerable to erosion by the increasing numbers of visitors. Study of previous damage to the site had shown that the most efficient way of conserving the masonry is to consolidate damage soon after it has occurred thus ensuring that any areas of instability do not spread into the surrounding masonry.

It was therefore agreed that two monitoring visits should be carried out per annum. These visits would allow minor stabilisation work such as the backfilling of metal detector holes and the replacement of occasional stones to be carried out. A contingency budget was also put in place allowing a team of 3 stonemasons to be contracted for three days per annum to allow for the conservation of any more serious problems. Regular monitoring visits have been carried out by G.A.T. since the end of the conservation project. The second monitoring visit of 2002 was carried out on 15th May. Weather conditions were reasonably good with clear skies after recent rainfall.

Results of the monitoring visit

All masonry on the site was inspected for damage and points of instability. Provision was made for photographic, drawn and written recording.

The following minor areas of damage were identified and were marked onto a plan of the site (Fig. 1). Written records were kept of all works.

The Huts

1. Hut 6. The large slab on the corner of the south-western flanking wall of the entrance to hut 6 had been pushed from the wall. The slab was intact and was replaced in its original position.

2. Hut 5. A shallow 1.2m x 0.4m hole had been dug in the hut floor along the base of the wall. The stones had been piled on the hut wall. The stones were taken from the wall and used to fill in the hole.

4. Hut 3. A substantial amount of damage had been done to the floor of hut 4 as recorded in the previous monitoring report (May 2002). Stones had been removed to a depth of between 0.2m and 0.3m from the eastern end of the hut and neatly piled on top of the walls. The damage compromised the stability of the eastern wall and was very unsightly. Reinstatement required reference to the 1997 photographs and report. The material was therefore not reinstated during the May monitoring visit. The photographs were consulted and the stone was reinstated during the December visit.

The Ramparts

Seven areas of instability were identified.

3. The following problem was first recorded in the previous monitoring meeting in May 2002. A flat edge-set stone at the base of the wall in the north postern had been pushed forwards by the weight of stone behind it. The stone is at the base of the wall, 1.2m from the inner end of the western side of the unroofed part of the passage (stone A Figs 2 and 3, Plates 1-3). The stone had pivoted from its southern end and the northern end was about 0.2 metres out of alignment. By December the stone was further out of alignment and was loose in the wall. The stone can be seem in its original alignment on plate 1 which was taken during conservation work in 1989. Stone A was originally held in place by stones B and C which rested on top of it. Fig. 3 shows the arrangement of the stones in May 2002. Stone B had fallen behind stone A and stone C was still resting lightly on stone A. There had not, however, been any substantial slumping of the wall above. A large slab (stone D) runs deep into the wall. The weight of the stone on the inner end has produced a cantilever effect, thus supporting the face above the outer end. Stone A was not supporting any weight and stones A, B, C and E were loose in the wall. It was likely that stone A would fall out of the wall entirely if no action was taken. This would have left a large unstable void in the wall base. Core material was falling forwards and if this was allowed to continue it was likely that the stones supporting stone D and the face above it would be displaced causing a substantial collapse in the passage. This would have been serious from both an archaeological and a health and safety viewpoint.

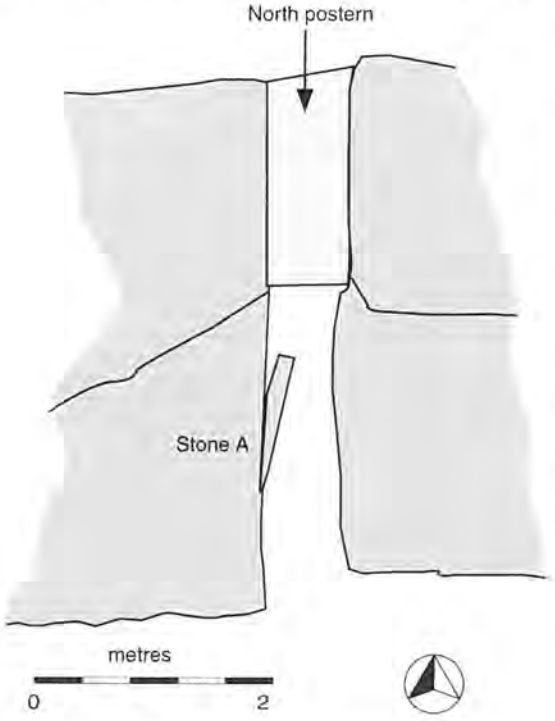

Fig.2 Collapse 3

It was obvious by December that stone A was no longer supporting any weight and that the wall when inspected was reasonably stable. The main danger was loss of core from the lower part of the wall. It was felt that any further loss of material combined with frost action in the winter could further destabilise the facing. It was therefore decided to stabilise this area during the December monitoring visit. Stone A had moved forwards sufficiently to allow the displaced core to be cleared away. Stones

B C and E were therefore marked and removed from the wall and the core was cleared. Stone C was found to have broken in the wall and was unsuitable for reuse. Stone A was pushed back to its original position and core was packed behind it. Stones B and E were replaced close to their original positions but could not be wedged into the triangular profiled hole without the addition of another stone. Stone L was therefore added to the wall, displacing stone E slightly to the right, in order to wedge the three stones tightly between stones A and D (see Plate 4). A large void remained where the broken stone C had previously rested on stone A. Stone C was replaced with a flat slab (I) and a further stone (J) was introduced into the wall. This was carefully selected from the scree and was fitted into a gap in the inside of the wall as a header thus tying the face into the core. A further smaller stone H was wedged between stone J and the original masonry (stone H) in order to lock the face together. The new masonry was deliberately not built to a regular face in order to blend in with the adjacent irregular wall base. Stone A was still liable to be pushed forwards again because the floor in front of it consisted entirely of small loose stones. These were therefore cleared away and a single wedge-shaped stone (F) was tightly fitted into the floor in front of a large immovable slab (G plates 3 and 4) thus producing a small lip in front of stone A. This area will be carefully monitored during site visits in the future.

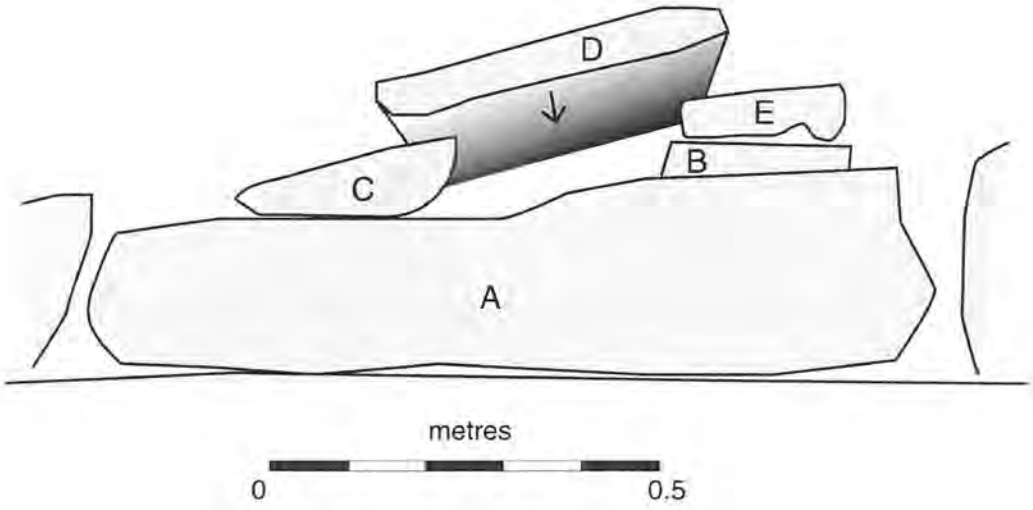

Fig. 3 Collapse 3 showing the arrangement of the individual stones

5. Two stones had been kicked or pushed from the top of the passageway facing. They were replaced in their original positions.

6. A small header had fallen from the top of the inner face. This was replaced in its original position.

7. Two headers on the top of the inner face had begun to slip forwards presumably as a result of visitors walking on the wall top. They were pushed back into place.

8. A large header had been, presumably deliberately, pulled from the top of the outer face and was lying on the wall top. This was replaced in its original position.

9. The wall core had become loose at this point and was threatening the stability of the inner and outer faces. A large stone in the core was reset and the core was repacked thus providing support for the rest of the wall.

10. A single large header (c. 0.6m long) had been thrown from the top of the outer face of the rampart. This must have been deliberate damage because the masonry at this point is stable and the amount of force needed to remove a well-bedded large stone from the wall rules out accidental damage. The stone could not be replaced for health and safety reasons at the time of the monitoring visit. The stone is very heavy and the ramparts are over 2m high at this point and it could not be lifted safely. The

stability of the wall is not threatened so it is anticipated that the stone will be carried to a lower part of the ramparts during the spring visit when the scree will hopefully be less wet and slippery.

General observations

All three notice boards were still standing and in reasonable condition. Much of the conserved masonry is now showing signs of grey lichen growth and is beginning to blend in with the original masonry.

Discussion

This is the second year running, since the completion of the conservation project, that significant damage has occurred to the monument. Collapse 3, in the north postern, is an example of natural deterioration of the masonry and it must be expected that occasional points of instability will occur. The damage to the ramparts and to huts 5 and 6 is more worrying, although it is difficult to see what can be done about this kind of petty vandalism apart from providing a site warden. The regular monitoring of the site and repair of the damage does however prevent long term deterioration of the monument.

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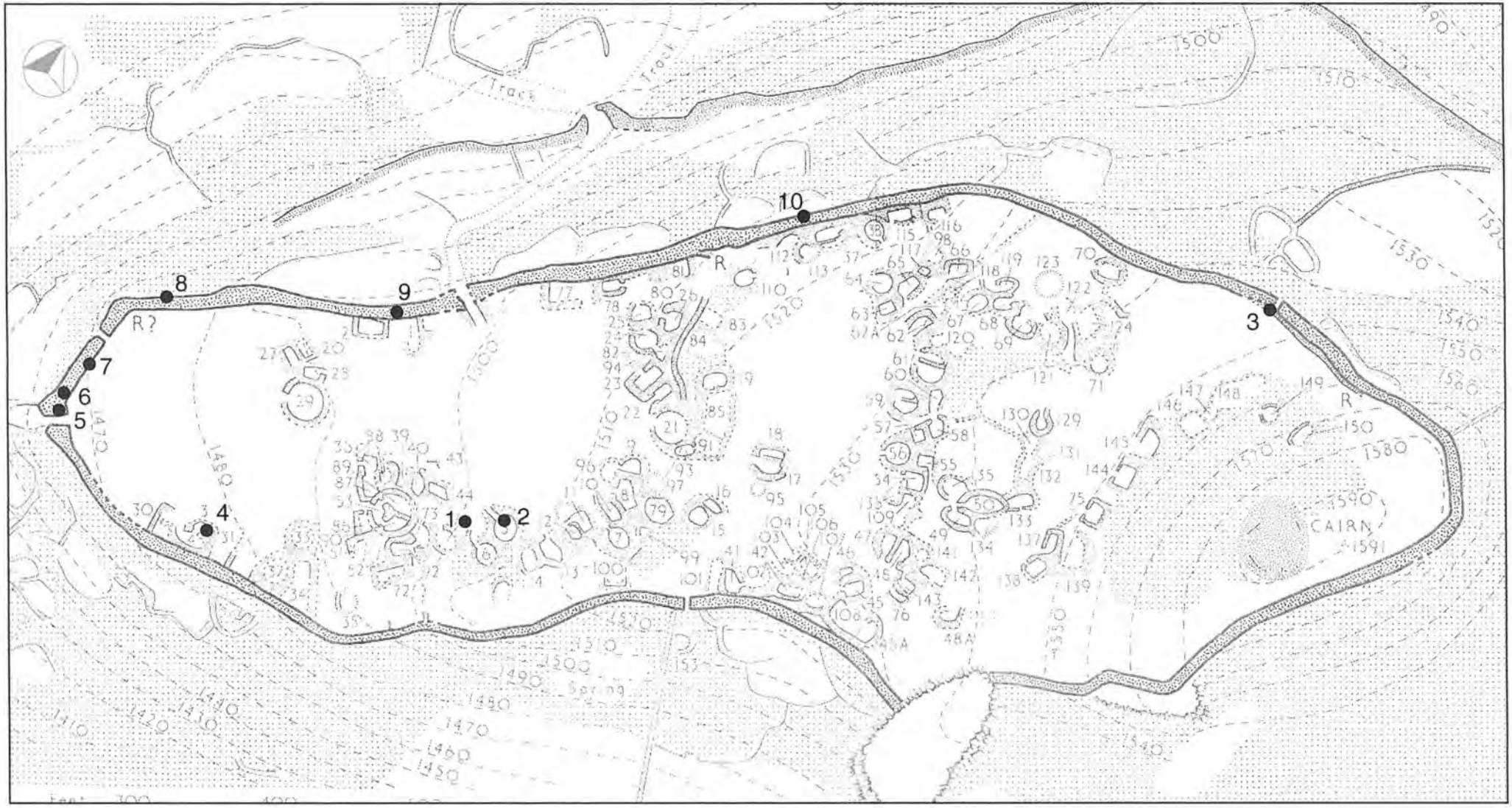

Fig. 1 Tre'r Ceiri showing points of collapse identified in the December 2002 monitoring visit (after R.C.A.H.M.W. 1960)

Plate 1 Collapse 3 in 1989, from the south-east

Plate 2 Collapse 3 in 2002, from the north

Plate 3 Collapse 3 in 2002, from the south

Plate 4 Collapse 3 in 2002 after conservation, from the south-east