# PREHISTORIC FUNERARY AND RITUAL MONUMENT SURVEY BURIAL, CEREMONY AND SETTLEMENT NEAR THE GRAIG LWYD STONE AXE FACTORY: PALAEO-ENVIRONMENTAL STUDY AT WAUN LLANFAIR, LLANFAIRFECHAN, CONWY

# **Interim report**

# GAT Project no. G1629

Report No. 662



Prepared for Cadw June 2007

by Astrid Caseldine, John Griffith Roberts and George Smith



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# PREHISTORIC FUNERARY AND RITUAL MONUMENTS SURVEY 2006-7

Burial, ceremony and settlement near the Graig Lwyd axe factory: Palaeo-environmental study at Waun Llanfair, Llanfairfechan, Conwy

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Cover: Cairn F11- Cairn after removal of turf

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# **Prehistoric Funerary and Ritual Monument Survey**

## Waun Llanfair Environmental Project, Llanfairfechan, Conwy, 2006

### **INTERIM REPORT**

By George Smith, John Griffith Roberts and Astrid Caseldine, August 2006

#### CONTENTS

- 1. Introduction and Acknowledgements
- 2. Project Aims and Design
- 3. Excavation
- 4. Artefactual evidence
- 5. Interim Environmental Assessment
- 6. Discussion
- 7. References

Appendix 1 List of environmental samples

#### **ILLUSTRATIONS**

1 General location map

- 2 Trench location map
- 3 Trench 1 Wall 15944, plan and section
- 4 Trench 1 Wall 15944, photo
- 5 Trench 2 Wall 15943, plan and section
- 6 Trench 2 Wall 15943, photo
- 7 Trench 2 Wall 15943, photo
- 8 Trench 4 Burnt Mound PRN 466, plan and section
- 9 Trench 4 Burnt Mound PRN 466, photos
- 10 Trench 3 Burnt Mound PRN 467, plan and section
- 11 Trench 3 Burnt Mound PRN 467, photo
- 12 Trench 5 Cairn 11, plan and section
- 13 Trench 5 Cairn 11, photos
- 14 Trench 6 Cairn PRN 485, plan and section
- 15 Trench 6 Cairn PRN 485, photos
- 16 Cairn 470 Plans and profile
- 17 Cairn 470 Sections
- 18 Flint and stone artefacts, Burnt Mound 467 and Cairn 485. Scale 1:1

#### **1. INTRODUCTION**

The Cadw-funded Pan-Wales Prehistoric Funerary and Ritual Project has included a re-assessment of all Prehistoric Funerary and Ritual monuments. Some follow-up work was agreed and this included environmental study of one selected focus of PFR monuments in each WAT area. The area chosen in Gwynedd was Waun Llanfair (Upland meadow of Llanfair) a broad, gently sloping basin at 350-450m OD in the upland to the south-east of Llanfairfechan and south-west of Penmaenmawr. The wider upland in this area contains an unusually large concentration of prehistoric funerary and ritual monuments. These include a major stone circle, The Druids' Circle, two large ring cairns and numerous smaller cairns of various sizes and designs. Not far to the north of these is the Neolithic stone axe factory of Graig Lwyd with which this concentration of monuments may have some association. Around the edges of the Waun Llanfair basin are over twenty cairns, as well as three burnt mounds and some areas of probable prehistoric settlement, none of which have been excavated or dated. This concentration of features is difficult to understand and is set against the general lack of knowledge

about upland land use and settlement in the second millennium BC. Several of the cairns have stone cists, exposed by robbing and one has a kerbed platform. Two others are simple rings of stone. There are no recorded artefacts from any of these but an Early Bronze Age can be assumed. The most numerous cairns are simple small stone mounds of unknown date.

Three soil pollen column samples have already been taken by Astrid Caseldine. Two were from the middle of the basin and one from the plateau just above the basin. These proved to have good potential for study, with preserved pollen and dates spanning the expected period of activity for the construction of the cairns. The full analysis will be undertaken in 2007 but a summary of the preliminary assessment is included here.

As an accompaniment to this environmental sampling some measured survey was carried out in 2004. This was designed to provide an accurate plan of the many features in the area, which had been described by Bezant Lowe and by the RCAHMW but which had not previously been accurately mapped and which were so numerous as to be difficult to individually identify. In the course of this surveying a number of new features were identified, including walls and possible hut platforms (Smith, Caseldine and Roberts 2005).

The success of the environmental sampling led to a proposal for further work in 2006-7. This was designed to provide a better archaeological context for the environmental results by looking at the associated monuments themselves. This would include search for, and sampling of, buried soils for possible pollen analysis, radiocarbon dating and micromorphological analysis.

Two of the features to be studied are scheduled ancient monuments and Scheduled Monument Consent was granted by Cadw for work on these sites. These were:

1. A kerb cairn, PRN 470, SAM C349.

2. A small bank forming an enclosure around two adjoining ring cairns, PRN 473, 474 and 4710, together forming SAM C352.

#### 2. AIMS AND METHODS

This is the final year of the project and it aimed to provide some contextual background to the excellent environmental results that have so far been achieved by Astrid Caseldine. These have been produced from three peat columns, two from the basin below a concentration of small cairns and one from the plateau immediately above them.

The aim was to excavate small trenches through a selection of sites in the area to look for buried soils that could be sampled for possible environmental analysis. The hope was that even if no artefactual or radiocarbon dating evidence was retrieved, that pollen analysis might allow a fit with the continuous palaeo-environmental sequence obtained from the basin and plateau deposits.

The main programme of work was carried out in April 2006 led by George Smith and John Griffith Roberts with the help of local volunteers and second year archaeology undergraduates from Bangor University. The work was made difficult by unseasonably cold weather, including snow as well as rain. The work on one of the cairns was suspended because of flooding from a high water table. This was protected and temporarily backfilled and the excavation was then completed during drier weather in June.

The trenches were not just soil pits but were large enough to provide a reasonable understanding of the stratigraphy, generally about 3m by 1m. Six trenches were excavated (Fig. 1). The features were chosen to provide examples of those present. They comprised two cairns, two areas of ancient wall and two burnt mounds. Those across the walls were simple cross-sections. Those across the burnt mounds and cairns were positioned off centre to avoid any central features or deposits but aligned so as to provide a partial medial cross-section. The buried soils or surfaces were sampled for possible palaeo-environmental evidence from pollen. Column and individual small and bulk context samples were taken, where suitable. Charcoal for radiocarbon dating was collected from the burnt mounds but none was found in either the cairns or the walls.

General plans were made of each of the features, showing the positions of the trenches and detailed plans were made of each of the trenches. After recording the six trenches were backfilled and turfs replaced.

No excavation work was carried out on the two scheduled areas covered by the SMC because the work on the six areas took all the resources available in the time allotted. However, a detailed plan was made of one of them, the kerbed cairn PRN 470, SAM C349. A detailed plan had already been made of the other area, SAM 342 in 2004 and it is hoped that a further period of excavation work can be carried out on these areas in September 2006.

#### **3. EXCAVATION**

#### Wall 15944 (Trench 1, Figs 3-4)

Part of this wall was first recorded by the Ordnance Survey and added to the 1:2500 map, but without comment so was not added to the HER (OS Index Card SH74SW 86). A greater extent of it was discovered in 2001, visible as a low linear rubble heap, with no sign of structure, facing or orthostats. It followed a fairly straight line perpendicularly across the basin slope, continuing onto the plateau above the basin at the east, where its line eventually disappeared into a peat-filled hollow and could not be traced beyond. Similarly it disappeared into the peat of the marshy basin at the west and again could not be traced beyond the basin.

Here its course was traced as far as possible by probing. This showed that beneath the peat was a fairly level hard subsoil on which the wall seemed to be based, but the wall appeared to just gradually decrease as it got deeper into the marsh, with no clear continuation or clear termination. A trench (Trench 1) 3m by 1m, was cut across the line of the wall at the furthest point west where it could be traced beneath the peat. This showed that it consisted of a clear but casual linear heap of stones and these had become buried by about 0.4m of peat accumulation. There was thin brown silty horizon at the base of the peat that was taken to be the remains of a buried soil contemporary with the wall construction. The stones of the wall were sub-angular small boulders, 200-600mm long, of varied rock type and was be heaped up in a deliberate but not structured manner (Fig. 4).

There were no artefacts or charcoal but a column sample was taken through the peat and possible buried soil at one side of the wall. This might allow provide dates, from the peat and palaeo-environmental evidence that can be compared to that from the main column sample through the basin peat and so approximately fix the time when the wall was built, or abandoned.

The varied nature of the stones of the wall indicated that they were the result of casual clearance. They were embedded in the possible buried soil and even somewhat into the top of the subsoil. They seemed likely to have subsided through the buried soil but the peat seemed likely to have developed entirely over the wall. The wall was quite slight compared to further east where it continued up the basin slope. This, and the facts that it could not be found to continue further west beyond the basin peat indicated that it did discontinue in the peat. This suggested that the marsh formed one edge of the area that the wall bounded. The fact that it ran for some distance into the marsh also suggested that at the time the wall was built the marsh was less extensive. This accords with the development of peat over the wall.

If the point at which the wall was excavated represents the edge of the marsh at that time, then the depth of peat that developed over it indicates the time that has expired since the wall was built. By comparison with the preliminary dates from the deeper column in the basin this indicates that the wall was built some time before the date of  $710 \pm 50$  BP, calibrated at 2 sigma Cal AD 1240-1320 that was obtained at a depth of -32cm. However, since the wall had no clear termination it could have been built at some time before that date but not a great deal earlier and was unlikely to have been built later.

#### Wall 15943 (Trench 2, Figs 5-7)

This was a long wandering wall that was discovered during the initial PFRS visit in 2001 and planned in 2004 (Fig. 2). The wall consists of a low stony bank that partly follows the contours around the east edge of the Waun Llanfair basin. In two places it incorporates cairns, which both lie on slight

promontories, providing defined topographic points. It seems likely that the wall was built after the cairns but generally, the conjunction of the wall and the distribution of cairns suggests that they are associated. The wall does not form an enclosure, has no distinct ends and does not define an obvious topographic area. However, at the north it ends as it approaches a small valley and at the south it ends with a marked in-sweeping curve, which in fact follows the contours of a slight natural promontory. The limits of the wall are therefore bounded by topographic features. In terms of the topography and present day vegetation it forms a boundary along the upper edge of the basin sides, above which is moorland heath and below which, on the slopes above the basin floor, is a strip or 'flush' or grass of better grazing, presumably because of better drainage on the slope. The subsoil of the basin may also have a deposit of fluvio-glacial silt and clay, allowing grass to survive, compared to the rocky denuded upland above.

In places the wall is almost hidden beneath the peat and turf but in a few places is better exposed. In one of these, to the south, several larger slabs are laid as rough facing stones. Here a trench (Trench 2) 3m by 1.5m was excavated across the line of the wall and a wider area of the surface exposure of the wall was planned (Fig. 5). The wall was only 0.35m high and its stones lay directly on the stony subsoil with no buried soil that could be sampled. However, in the interstices of the lower stones was some greasy, peaty soil that could be remnants of earlier soil and these were sampled. The wall had a rough facing two stones deep and micro samples for possible pollen were taken from beneath one of the lower slabs. On the upslope side the stones of the wall were simply lying on the rocky hillside, that is, it was only faced on the downslope side. The subsoil was markedly different on the downslope side of the wall being silty rather than just rock and being covered by a thin but distinct layer of worm-laid 'peagrit'. This suggests that area downslope from the wall was more intensively used and better quality pasture than that above.

No charcoal was found and no buried artefacts although a pony shoe of a flat plate, Medieval/Early Post-medieval type (Fig. 7) was found between the stones on top of the wall and two WW2 rifle bullets were found in the topsoil.

#### Burnt mound PRN 466 (Trench 4, Figs 8-9)

This was a large burnt mound on the north side of a small stream to the south-west of Moelfre. It lies at the lower edge of a small sheltered valley, which is different to the rest of the area studied in that no cairns or other possibly prehistoric features have been identified there. The mound is of crescentic shape, about 12m diameter and 1m high. The inside of the crescent, where a boiling pit or trough should be, faces the stream. A trench (Trench 4), 3m long by 1m wide was excavated in the west (downslope) side of the mound, where it is at its highest.

The mound consisted of a fairly homogeneous mass of burnt fractured rock in a matrix of charcoal fragments about 0.6m deep. This consisted of two identifiable layers, 42, and 43. Both contained a proportion of reddened stone but the proportion was much greater in the upper layer. These overlay a lighter-coloured, silty buried land surface (44) about 0.10m deep, which contained relatively few stones but on the surface of which were some lenses of black material (Fig 8b). This looked like masses of fused charcoal fragments or possibly organic matter and samples were taken.

Bulk samples were taken of the mound material and two column samples taken through the buried soil horizon.

#### Burnt mound PRN 467 (Trench 3, Figs 10-11)

This was a smaller mound than PRN 466 and lay at the south side of the small hill of Bryniau Bugeilydd. It lay on the north edge of a very small stream. Over twenty cairns lie on the slopes to the north and east of the burnt mound. The mound was of crescentic shape, about 9m diameter and 1m high, the inside of the crescent facing the stream (Fig. 10a). A trench (Trench 3), 3m long by 1m wide was cut into the west edge of the mound. This showed it to consist of a mass of burnt fractured rock.0.7m high, maximum. The mound fill was of fractured rock but in a matrix of dark brown silt, in contrast to the black and charcoal-rich matrix of burnt mound 466. Some of the stone used appeared to be derived from a nearby outcrop and some was cobbles from the glacial till. The mound overlay a thin presumed buried ground surface about 0.1m deep, which overlay the clay subsoil (Fig. 10b). Bulk and column samples were taken. A small, 'thumbnail' flint convex scraper was found in spoil from the

burnt mound fill after being washed out by rain (Fig. 10c). The scraper had been burnt, which means it must have been dropped into the fire when the stones were being heated.

One radiocarbon date has so far been obtained. This was hazel charcoal and has given a date of  $3230\pm40$  BP (Beta-224978). Alder charcoal was also identified from the burnt mounds and this is in agreement with the pollen evidence from the main column taken in the basin.

#### Cairn F11, Cairnfield 495 (Trench 5, Figs 12-13)

This is part of a group of three cairns in an unusual position on the floor of a small valley at the west side of the Waun Llanfair basin. It is a small but well-defined, quite steep-sided cairn, *c*. 4.5m dia. and 0.5m high. A hollow with exposed stones approximately in the centre of the cairn is presumed to be a robbing pit. A trench (Trench 5), 2m by 2m, was cut into the south-west quadrant of the cairn. The cairn atones were revealed after removal of the turf and heather. The cairn was still surprisingly intact, with little tumble (Fig. 12a). The cairn was built mainly of smaller stones than Cairn 485 but with a few larger boulders. Although well-defined, with a suggestion of an original edge, the cairn appeared to have no deliberate larger edging or kerbing stones. The cairn stones overlay a thin grey silty horizon that appeared to be the remnant of a buried soil and a column sample was taken through this surface (Fig. 12b). There were no features in the buried surface and there was no charcoal and no artefacts.

#### Cairn 485 (Trench 6, Figs 14-15)

This cairn was one of three on a fairly level plateau area to the south of a small valley at the south side of Bryniau Bugeilydd. The cairn was approximately circular, *c*. 6m diameter and 0.5m high with a slight hollow in the centre where exposed stones could be seen, presumed to be a robbing pit although not central to the mound (Fig. 14a). The cairn was low and poorly defined, merging into the surrounding contours. A trench (Trench 6), 3m by 2m was excavated in the south-west quadrant of the cairn. After removal of the turf and heather mat the stones of the cairn were revealed. After planning the cairn surface (Fig. 14b) a smaller area of 2m by 1m was excavated through the cairn fill. The cairn itself was built of small sub-angular boulders with some smaller sub-angular stones with no real evidence of structure although one slightly larger stone was set upright at the edge of the cairn and may have been part of a wider pattern of intermittent edging stones.

The cairn stones overlay a thin grey silty horizon, about 0.08m deep that appeared to be the remnant of a buried soil and within this was a slightly darker area. On and in the buried soil were found a scatter of artefacts, including three flint scrapers, a flint knife, a broken oblique arrowhead and a small and narrow axe or pick of Graig Lwyd rock as well as several waste flakes of flint and Graig Lwyd rock. On excavation the darker area was shown to be simply a darkening, perhaps of humus, of the buried soil and not deliberate cut feature such as a pit. No charcoal was seen but a bulk sample was taken of the buried soil. A column sample could not be taken from the buried soil because of obstructing stone but three individual micro samples were taken through the depth of the soil.

#### Cairn 470 (Trench 7, Figs 16-17)

This cairn had previously been planned by the RCAHMW (1956, Fig. 124) and was quite different from the previous cairns, being larger in diameter and consisting of a platform with a kerb of orthostatic edging slabs and a central cist. It is approximately circular, 8m diameter and 0.5m high (Fig. 17a). The cist lies off-centre, to the north-east and has been exposed by robbing with the cover slab pulled to one side, but there are no records of any finds. It has an upright side slab and an end slab surviving and appears to have been about 1.8m long and 0.8m wide overall. The size within the cist walls was probably about 1.6m by 0.6m. There are two other small depressions, probably also robbing pits and some dumped stone. Some of the kerbstones are still intact an upright but several have collapsed. The absence of surrounding loose stones indicates that the cairn was built as a low platform and was never a mound, and the cist was apparently never buried. The off-centre position of the cist suggests that it may be a secondary burial, in which case the primary burial may still survive, in which case it is probably in a pit sealed by the cairn.

The excavation proved to be more complex than had been thought, even though no burial deposits of any kind were encountered. A buried soil was present and this produced a number of waste flakes of

flint and of Graig Lwyd stone. A new plan was made of the whole cairn (Fig. 16), to replace that by the RCAHMW. The buried soil was stony and environmental samples were taken with difficulty. Some charcoal was also collected and has already been sent for dating. Bulk samples were also taken for flotation and these may produce some macrobotanical evidence.

The full cairn and artefact description and interpretation have yet to be completed.

#### 4. ARTEFACTUAL EVIDENCE (Fig. 18)

#### Trench 2

SF10. 2 World War 2 rifle bullet tips, both somewhat bent from impact. From base of topsoil over wall stones.

SF12. Iron pony shoe, c. 100mm wide and 90mm long. Found at the base of the topsoil but deeply wedged between the wall stones.

#### **Trench 3**

SF13 Stone pebble of elongated shape with natural rectangular cross-section of a fine-grained metamorphic rock. Of the right shape and rock type for a whetstone but there are no signs of abrasion. However, it must be an import to the area. The only possible signs of use are slight chipping on one end which is of a natural wedge shape. This could be from use, perhaps as a flint fabricator.

SF14. Flint convex 'thumbnail' scraper. Well burnt. From the spoil derived of excavated burnt stone

Trench 4

Nil

**Trench 5** 

Nil

Trench 6

#### Raw material

The small flint assemblage is dominated by worked pieces. The three larger pieces are all of a fine flint of mottled mid-grey and mid-brown colour and the one waste flake is of the same material. All could derive from the same core. This size, colour and quality of flint are not usually seen in the local glacial deposits. However, one of the retouched pieces and the waste flake both have a small amount of pebble cortex so are not imported from a quarried source, but still may not be derived locally. The other two retouched pieces are of a plain grey flint that would be typical of a local fluvio-glacial source.

The majority of pieces are of Graig Llwyd rock but the one small flake of possible Greenstone could be an import or could derive from a fluvio-glacial source. The largest quartz fragment seems to have been deliberately broken although not actually worked or utilised.

#### **Technology**

The three larger flint tools are of similar style of manufacture being long plunging flakes with minimal retouch. They each have a pronounced bulb and the platforms are facetted.

The Graig Lwyd waste pieces consist of some larger but quite thin flakes and some quite small and thin, blade-like flakes.

#### Description

The assemblage is summarised in Table 1.

*Flint.* The three larger retouched pieces are of similar material and style. All three seem to have been used and functioned as scrapers and knives and one (SF2) also has serrations on one edge. The utilised piece is a small thick waste flake with a spur, with a small amount of retouch on the tip. The two remaining pieces are retouched, if incomplete so there is no evidence that the flint was worked on site.

*Stone.* The Graig Lwyd material is mainly of waste flakes. These consist of four larger flakes that could be primary axe-trimming flakes, and nine smaller, thin flakes. Only one of these is the kind of asymmetric invasive flake that could be a final axe-shaping flake. The others are narrow parallel-sided flakes and seem less likely to derive from axe manufacture. Certainly, none of the flakes seem likely to derive from manufacture of the one tool present (SF4). This is a very narrow axe of chisel-shape, 112mm long and 32mm wide with the butt broken off. A small chunk found separately could be the tip of the broken off butt although this cannot be confirmed because the intermediate piece that would join them is missing.

One small blade-like flake is of a dark igneous stone of an almost glassy texture.

The quartz fragments could be present as part of the natural glacial rock debris but the largest piece, 95mm long, was lying on the same surface as the flint and stone flakes and tools and seems to have been deliberately broken, although there is no evidence of use.

Table 1			
Buried soil 66			
Flint			
Retouched pieces	Oblique arrowhead 1 (SF10)		
Utilised pieces	Spurred piece 1(SF16)		
Waste pieces	Nil		
Graig Lwyd			
Worked pieces	Fragment 1 (possibly part of SF4)		
Waste pieces	Waste flakes 17		
I.	Flake fragment 1		
Other stone			
	Waste flake (Greenstone?) 1		
	Burnt local stone fragment (Granite) 1		
	Quartz fragments 3		
Feature 67			
Flint			
Retouched pieces	Convex end scraper 1 (SF 1)		
	Convex scraper/Edge-retouched knife 1 (SF9)		
	Convex scraper/Edge retouched knife/Serrated piece 1 (SF2)		
	Unidentified retouched piece frag. 1 (SF7)		
Waste pieces	Nil		
Graig Lwyd			
Worked pieces	Axe/chisel 1 (SF4)		
Waste pieces	Waste flake 1		
	Flake fragment 1		
Other stone			
	Quartz fragment 1		

#### **Comments**

The objects found were associated with the small feature 67, but not confined within it as most were scattered around it in a random way. They therefore do not seem to have been carefully placed and so seem more like casually abandoned objects than a meaningful deposit under the cairn. They also are

objects that have been used and have been made elsewhere. However, their association with the cairn is very unlikely to be fortuitous. They might have been deliberately placed but deposited as a scatter. They might also have been part of an activity area, such as a house, over which the cairn was deliberately built. No charcoal was seen but two natural stones showed signs of burning and the dark patch 67, within the buried soil horizon, could be the remains of a deposit of organic matter.

The scrapers and knives are of a similar material and workmanship and so clearly belong together. Their style indicates a Later Neolithic date but they are finer than other similar tools of that period found at the Llandegai henges, Bangor (Lynch 2004). The probable oblique arrowhead (SF10) can be paralleled widely in Later Neolithic Grooved Ware contexts but also found in Beaker contexts (Green 1984, 26-7, 33-4) and the suggested dates for the flintwork accords with the narrow stone axe. This is an unusual and not a dated type but several examples are known from the Graig Lwyd axe factory area (Wheeler 1925), where they were described as of chisel-type (Warren 1919 353-5). This one has a ground edge and seems to have also been abraded from use. These tools are no different except in width to an axe and there seems to be a range of widths of axes, grading down to the chisel type, rather than the chisel being a distinct form. Use as an axe, i.e. in a chopping rather than a hammered chisel action is most likely. These implements, although far narrower than most axes are just as long. This makes them more fragile and must have been necessitated by a similar hafting method. The narrowness of the blade might mean that they were designed for chopping out mortises in timber, rather than for cutting or shaping the outside of timbers.

#### Trench 7 Cairn 470

The buried soil beneath the cairn produced a scatter of waste pieces of flint and Graig Lwyd stone, some clearly sealed beneath the cairn kerb and some beyond the kerb. This demonstrates that the activity predates the cairn construction but could still have been associated with the builders of the cairn. It was not a deliberate deposit and could mean that there is more widespread activity close by, or it could be quite localised and created casually immediately prior to the cairn construction. The flint was of good quality and possibly imported. The presence of Graig Lwyd flakes is unexpected and suggests that a wider evaluation of use of the area needs to be made, with the possibility of more extensive activity in the area associated with the axe factory than might be imagined.

#### 5. INTERIM ENVIRONMENTAL ASSESSMENT

#### 1. Summary of work in 2004

The area was selected as possibly suitable for palaeo-environmental study because the marshy basin was identified as peat-filled. The area was therefore visited in 2002 with Astrid Caseldine for further assessment and the basin was randomly probed to test the depth of deposits. This showed that the depth of deposits was not great and it appeared that the deposits did not get deeper towards the centre of the basin as might be expected:

At a subsequent visit two columns were taken, about 150m apart, the greatest 1m in depth. Surprisingly the deposits proved to be humic silt rather than pure peat and charcoal was recovered from the vary base of the deposits. It seemed a possibility that the deposits had accumulated as a result of hill wash resulting from human activity in the area, perhaps as a result of forest clearance. The humic silt proved to have adequate amounts of preserved pollen and the initial assessment of the samples was as follows (Caseldine 2003):

'Two pollen columns were also recovered from Waun Llanfair, Llanfairfechan in the uplands south of Penmaenmawr (AW 41, 98-99). Preliminary examination of pollen from the longer column indicated that alder dominated the assemblage from the lower deposits, with lesser but significant amounts of birch, hazel, grass and sedge pollen also present. Higher in the profile the assemblage was dominated by grass pollen. Pollen from the shorter profile comprised a mixture of birch, alder, hazel and grass with the former two taxa being more abundant than the latter two. Two radiocarbon dates were obtained from the longer column. Charcoal from the lowest deposits gave a date of 6290 +/- 40 BP (Beta-186680) and organic clay from higher in the column gave a date of 3490 +/- 60 BP (Beta-186679).'

Subsequently another date has been received from a sample higher in the column and the 2 sigmacalibrated results for the dates are as follows, depths given below the present surface:

At -32cm 710 +/- 50 BP, calibrated at 2 sigma Cal AD 1240-1320. At -53cm 3490 +/- 60 BP, calibrated at 2 sigma Cal BC 1950-1670. At -65cm 6290 +/- 40 BP, calibrated at 2 sigma Cal BC 5330-5220.

#### 2. Summary of work in 2006

Base of the column in peat-filled basin on west edge of plateau to east of Waun Llanfair. The date is 3190+/-50 BP - 2 sigma calibration: Cal BC 1530 to 1390

#### 6. DISCUSSION

The occurrence of the artefacts under cairn 485 is an unusually rich deposit for this area and unexpected in that the oblique arrowhead and the axe indicate a Later Neolithic date whereas these small cairns might be expected to be of second millennium date. Four cairns were excavated above Penmaenmawr, to the north of Waun Llanfair in advance of quarrying. They were each about 6m diameter and consisted of simple heaps of stone with a few larger edging stones. No evidence of burials or associated artefacts was found and the cairns were interpreted as clearance cairns (Griffiths 1954). Two other small cairns were excavated in the same general area in 1994 as part of an assessment of the Graig Lwyd Neolithic axe factory site 1km to the north of Waun Llanfair (Williams and Davidson 1998). These were similar in size and structure to Cairn 485. One of them had no identifiable buried soil but contained a few fragments of coarse pottery. The other overlay a buried soil and a small pit both of which contained axe manufacturing debris. Charcoal from the pit produced a calibrated date of 4350-3990 BC at 2 sigma (SWAN-142). This is considerably earlier than the only radiocarbon date from any working area of the axe factory, which is 3110-2910 BC at 2 sigma (Beta-128505). It was assumed that the cairns post-dated the axe manufacturing deposits by a considerable period. They are part of a scatter of similar cairns in the area, all interpreted as clearance cairns. Associated with the cairns are a number of small hut circles as well as enclosures, stone banks and terraces. None of these are dated but can be closely compared to similar upland features excavated at Graig Fechan, Denbighshire where calibrated dates between 1255 to 820 BC were obtained (Manley 1990). A similar date may therefore be expected for the Waun Llanfair cairns. However, their individual location does not appear to indicate areas of clearance and some have burial cists so a funerary function seems most likely. It is possible that the burial monuments on Waun Llanfair have their origins in the third millennium as has been suggested for the burial monuments on the upland of Derbyshire (Barnatt 1995). Interpretation of Cairn 485 must remain uncertain because such a small area was excavated but there is great potential for excavation of the remainder of the cairn, beyond the scope of the present project.

The aims of the project were to try to put the many cairns in this area into a datable context and to try to understand why they were there and whether they might be associated with the other features there, including burnt mounds, walls and possible settlement platforms. The date of the two burnt mounds should be satisfactorily achieved by radiocarbon dating. The date of one of the two walls may be approximately fixed by dating of the peat overlying it and by comparison of the palaeo-environmental sequence with that from the deeper column from the basin. Overall interpretation must wait until the environmental work provides dating and palaeo-botanical evidence. There was disappointing lack of charcoal for radiocarbon dating and of artefacts, although the latter could not be expected. However, radiocarbon dates may be achieved for the burnt mounds. The one artefact from a burnt mound, the flint scraper SF 14, is not diagnostic of date although such small scrapers are more likely to be of the second millennium than earlier. The artefacts from cairn 485 were an unusually rich find and the objects indicate a Later Neolithic date. The objects were not in a defined feature and seemed to be scattered rather than placed so cannot easily be seen as a deliberate deposit. However, they seem unlikely to have occurred by chance just at the point where the cairn was built but is still possible that the cairn and others belong to a later period of activity. More generally, activity in the area continued after the end of the axe factory and its importance during the third millennium may have been reflected in some way in later monuments. The Druids' Circle and three other circles nearby have been excavated, two have Early Bronze Age burials and radiocarbon dates but three produced stone axes, so an earlier origin seems likely. The examination of the one larger cairn at Waun Llanfair, PRN 470,

SAM C349, will provide a contrast with the smaller cairns and the soil buried beneath it will provide a useful comparison with the evidence from the soils beneath the two smaller cairns.

The environmental analysis will be carried out as part of the Cadw scientific programme in 2007-8 so a full report on the work cannot be completed until then. However, a report on the archaeological part of the work will be produced by the end of January 2007 and it is possible that some preliminary dates and assessment of the environmental samples will be available by then.

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## APPENDIX 1

## LIST OF ENVIRONMENTAL SAMPLES

Trench	Sample	Context	Description
1	501	6	Soil column in 300mm tin at S side of wall.
2	21	27	Micro soil sample from remnant OLS.
2	22	27	Micro soil sample from remnant OLS.
2	23	27	Part of microcolumn through possible OLS.
2	24	27	Part of microcolumn through possible OLS.
2	25	27	Part of microcolumn through possible OLS.
2	26	29	Microcolumn through possible OLS.
2	27	27	Charcoal spot sample.
3	1	102	Charcoal
3	2	102	Soil. Interface of 102 and 103.
3	3	102	Charcoal spot sample for possible C14.
3	4	0	Not used
3	5	102	Bulk sample for sieving for charcoal.
3	6	0	Not used
3	7	104	Bulk sample for sieving for charcoal.
3	8	104	Charcoal spot sample for possible C14.
3	9	0	Column sample through OLS 105/104 interface.
3	10	0	Column through OLS 105/104 interface.
4	43	42	Bulk sample through upper mound fill.
4	44	43	Bulk sample through lower mound fill.
4	45	45	Column sample vertical through OLS
4	46	45	Column horizontal through OLS
4	47	44	Charcoal spot sample for possible C14.
4	48	44	Unidentified burnt black material.
4	401	44	Unidentified black burnt material.
4	405	44	Charcoal spot sample for C14.
4	406	44	Charcoal spot sample for C14.
5	51	55	Micro soil sample from beneath Basal stone A.
5	52	55	Micro soil sample from beneath centre of Basal stone
5	53	55	Micro soil sample from beneath edge of Basal stone B.
5	54	55	Micro soil sample from beneath centre of Basal stone
5	55	55	Micro soil sample from beneath edge of Basal stone C.
6	61	67	Part of microcolumn through OLS for pollen.
6	62	67	Part of microcolumn through OLS.
6	63	67	Part of microcolumn through OLS.
6	64	67	Bulk soil sample for pollen or charcoal.
6	65	66	Unidentified black material for analysis.
6	66	67	Soil micro tin through OLS for possible pollen.



Scheduled Ancient Monument

- Ж Cairn
- Kerb, platform, ring \* or complex ring cairn Mound

Monument of National Value

- . Cairn Kerb, platform, ring or complex ring cairn
- Mound

Monument of lesser value or requiring further investigation

- O Cairn
- Kerb, platform, ring 0
- or complex ring cairn
- Mound
- . Burnt mound

Fig. 1 Waun Llanfair palaeo-environmental project 2006: Location of project survey area in relation to the distribution of prehistoric funerary and ritual monuments. Scale 1:25000. Based on the Ordnance Survey 1:10,000 scale maps. © Crown copyright. All rights reserved. Licence number AL 100020895.



Fig. 2 Waun Llanfair Palaeo-environmental Project 2006: Location of sampling trenches excavated in 2006. Scale 1:4000. Orange: excavations 2006. Red: Features recorded in 2004. Green: Previously recorded HER features. Heights: metres OD. Based on Ordnance Survey data. © Crown copyright. All rights reserved. Licence number AL 100020895.



Waun Llanfair 2006 Fig. 3 Trench 1 Plan and section







Waun Llanfair 2006 Fig. 5 Trench 2, Plan and section



Waun Llanfair 2006 Fig. 4a Trench 1. Wall beneath peat, from west. 1m and 30cm scales



Waun Llanfair 2006 Fig. 4b Trench 1. Wall beneath peat, from west, showing position of column sample



Waun Llanfair 2006 Fig. 6 Trench 2. Wall general view from the west, before excavation



Waun Llanfair 2006 Fig. 7 Trench 2. Wall section after excavation, from the north. 1m and 30cm scales



Waun Llanfair 2006 Fig. 8 Trench 4 Burnt mound PRN 466



Waun Llanfair 2006 Fig. 9a Trench 4a. Burnt mound 466. Section after excavation to subsoil level, from the south. 1m and 30cm scales



Waun Llanfair 2006 Fig. 9b Trench 4. Burnt mound 466. Detail of section. 30cm scale



Waun Llanfair 2006 Fig. 10 Burnt mound 467, Trench 3. Plan and section



Waun Llanfair 2006 Fig. 12 Trench 5 Cairn 11, Plan and sections



Waun Llanfair 2006 Fig. 13a Trench 5. Cairn 11, from west. Trench exposed to old ground surface. 1m scale



Waun Llanfair 2006 Fig. 13b Trench 5. Cairn 11, from west. Trench exposed to subsoil surface. 1m and 30cm scales



Waun Llanfair 2006 Fig. 14 Cairn 485 plan, profile and sections



Waun Llanfair 2006 Fig. 15a Trench 5. Cairn 485. Trench from the west, after removal of turf. 1m scale



Waun Llanfair 2006 Fig. 15b Trench 6. Cairn 485, from the west. Detail of scatter of artefacts after removal of cairn stones. 30cm scale



Fig 1. Plan of Caim 470 and location of Trench 7



Fig 16. Trench 7 - showing larger stones of cairn body context number [74] after removal of smaller stone component and soil matrix



Fig 17a. Cairn 470, Trench 7. North facing section beneath stone B



Fig 17b. Caim 470, Trench 7. South facing section beneath stone B







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Waun Llanfair 2006 Fig. 18 Artefacts. Wall, Trench 2: 1 Pony shoe, iron. Burnt mound, Trench 3: 2 Pebble tool, stone. 4, Burnt scraper, flint. Cairn Trench 6: 3 Axe/chisel, stone. 5-7 Scrapers, flint, 8 Oblique arrowhead, flint. 9 Unidentified retouched fragment, flint. 10 Spurred/notched piece, flint. 1-3 scale 1:2. 4-10 scale 1:1





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