CONWY MOUNTAIN HILLFORT RE-EVALUATION EXCAVATION, 2008.
FINAL REPORT

GAT Project No. 1770CS
Report No. 1059
July 2012

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Gwynedd Archaeological Trust
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Cover picture:
The western part of Caer Seion hillfort from the south,
showing the small fort with its eastern external rampart and quarry ditch.
Photo: David Longley

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CONTENTS

ILLUSTRATIONS

1. SUMMARY

The re-excavation of two trenches at Conwy Mountain hillfort, commonly known as Caer Seion, the subject of extensive excavation in 1951-2 (Griffiths and Hogg 1956) was carried out to identify dating material to provide a chronology for the separation between the first and second phases of construction of the defences. This was made difficult by the existence of a flat point in the radiocarbon calibration curve during the second half of the first millennium BC. However, wood charcoal provided three AMS dates. The earliest suggests that the fort was in existence by at least 400 BC. Two other dates showed that the fort was in occupation around 400-200 BC and that the later phase of the fort was constructed within or soon after this date range. The date for the latest occupation of the fort is still unknown.

2. INTRODUCTION

Conwy Mountain hillfort, sometimes known as Caer Seion or Caer Lleion is a substantial fort of *c*.3 hectares (7.5 acres) with a commanding position overlooking Conwy Bay and estuary and over an ancient track that followed the coastal ridge, which continues westwards towards Anglesey and eastwards to the River Conwy (Fig. 1). It may be significant that the fort would have been intervisible with other strong forts at Pen-y-dinas (Great Orme) and Pen-y-corddyn (Llanddulas).

The earliest excavations at the fort were carried out in 1906 and 1909 but these produced little useful evidence (Picton 1909). More extensive excavations in 1951-2 investigated several roundhouses and parts of the defences (Griffiths and Hogg 1956). No pottery or other datable artefacts were found but the work did produce numerous sling stones, spindle whorls, rubbing stones, fragments of saddle querns and some iron fragments, including possibly part of a pair of tweezers. The presence of saddle querns, but no rotary querns, and the absence of any Romano-British material were interpreted as an indication that the fort was occupied during the Middle to Late Iron Age, about 300 BC to 1st century AD and perhaps abandoned when the Romans conquered North Wales in 78 AD.

The fort had two phases of defences (Fig. 2). In the first period a single stone wall of 3 to 4m width encircled the whole hill top apart from at the steep north side where no defence was needed. It had one entrance, at the south side, which would have had a timber gate (Fig. 2, A). The greater width of the wall where it adjoined the gate suggests that it had a ‘fighting tower’ over it. Within the fort were over 50 timber round houses, many just behind the rampart at the south side (to shelter from the wind) and they are visible as circular platforms terraced into the hill slope. They varied in size from about 4m to 8m diameter and traces of walling survive at some of them. In one place there is a possible corn-drying kiln.

In the second period a smaller and stronger fort was constructed at the west end of the hill (Fig.3). The older fort may still been occupied but there was no access between the two, except that a causeway running along the crest of the hill close to the north-east bastion of the small fort suggests that there may have been ladder access between the two at that point. The smaller fort had somewhat wider walls and a strong gateway protected by flanking bastions and probably a ‘fighting tower’ (Fig. 2, B). Comparison with similar forts suggests that the wall would have been about 3 to 4m high with a walkway and breastwork wall on top. The defences were further reinforced by the addition of deep ditches at the north-east, west and south-west sides and an outer rampart at the east side, where the relatively level approach made it more vulnerable. The entrance into the small fort was protected by an ‘outwork’ – an outer wall that made rapid approach to the entrance impossible and exposed any attackers to missiles from the defenders on the overlooking inner walls. The entrance through this outwork was later neatly blocked, making the approach to the main entrance probably even more difficult.

The excavations carried out in 1951 found a hearth inside one house in the small fort as well as spindle whorls and a saddle quern. In the large fort the house immediately next to the entrance contained over 400 sling stones, so perhaps was a 'guard chamber'.

The absence of Roman period finds from the fort suggested that it was not occupied after the Roman conquest, and it may have been destroyed and abandoned at that time. However, there is a poem of the 9th century that links the fort with Maelgwn Gwynedd in the 6th century and it has been suggested that the small fort was an addition in that period, although the tale may be no more than poetic imagination.

Several parts of the stone-built defences of the fort are subject to considerable erosion due to trampling by visitors, particularly along the north wall of the small fort, which forms part of a path through the fort and along the ridge. In 1991 a survey of the condition of the fort was carried out by Peter Crew, then archaeologist for the Snowdonia National Park Authority. An assessment report was produced, after which a programme of consolidation work was carried out for Cadw (Crew 1991). This included reinforcing of vulnerable parts of the walls, establishment of new path lines to divert foot traffic from vulnerable areas, clearance around the entrance of the small fort to provide interest for visitors and placing of two small interpretation panels in the small fort. In the assessment report Peter Crew noted that the 1956 excavation report had identified specific charcoal-rich layers and that these could be targeted for future research. It was this suggestion that instigated the work described here.

The 2008 excavation was carried out as part of a wider hillforts project in the Conwy area, itself part of a pan-Wales hillfort survey project being carried out for Cadw. The hillfort is a Scheduled Ancient Monument and consent was obtained from Cadw for the excavation work. The work was carried out between 7th July to 21st July 2008 to coincide with the Council for British Archaeology National Archaeology Week and school and public visits were arranged to view the fort and the excavations.

3. PROJECT OBJECTIVES AND DESIGN

The agreement was to re-excavate parts of the trenches excavated and backfilled in 1951-2. The positions of the 1951 trenches were measured in from fixed points identifiable on the original detailed site plans and this proved to be quite accurate (Figs 3, 4 and 5). The excavated material was stored on plastic sheets during the work, with the vegetation stored separately and this was all replaced after the work.

Two of the 1951-2 excavation trenches were chosen for re-excavation, in both of which the earlier report had described layers containing charcoal and from which, therefore, it might be possible to obtain radiocarbon dating samples. The first was in a round house within the small fort, called Hut 4 in the earlier report, where a distinct layer of charcoal was recorded sealed beneath the hut wall (Fig. 5). The second was a trench through the outer rampart at the east side of the east wall of the small fort where a buried 'occupation horizon' containing charcoal was described as sealed underneath the rampart bank (Figs 4 and 6).

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4. BACKGROUND

Previous interpretation of the periods of use of Caer Seion was hindered by the lack of dating evidence despite two excavations having taken place. However, the actual lack of such evidence could be used since most hillforts and roundhouse settlements in the north-west have produced some Roman material, of pottery or coins, whether by excavation or casual finds, demonstrating at least continued use, whatever their origins might be. The absence of Roman material at Caer Seion was therefore taken to mean that the fort was abandoned at the time of the Roman incursion and never re-settled. It was even suggested that because several other forts did continue to have settlement that the Caer Seion defences might have been deliberately demolished. The walls are exceptionally ruinous, but this may be more to do with the impact of trampling as it is a popular walking destination. On the other hand there is a large roundhouse outside the fort and downhill from it at the south-east. This has a very large boulder lying within it, which must have derived from the fort wall above and which is likely to have been deliberately moved. Possibly it even fell while the house was still standing.

5. EXCAVATION RESULTS

TRENCH 1 (Fig. 5)

The whole of the interior of Hut 4 had been excavated in 1951 and a detailed plan and section were included in the 1956 published report. The 2008 excavation was limited to a one metre wide strip across the interior. The 1956 report described first finding a layer of stone slabs in the hut interpreted as a floor. Removal of this floor then revealed the subsoil into which a number of features had been cut. These comprised several post-holes, possible post-holes and possible hearths (Fig. 5d). The 2008 excavation also had to first clear a layer of stone slabs, probably placed in the hut as backfill to stabilise it during the 1991 conservation works. The remainder of the hut was filled with a more mixed layer of stony backfill from the original excavation.

The subsoil surface of mid-orange gravely clay was re-exposed, through which bedrock protruded in places. The 1951 excavations had removed some areas of subsoil during the investigations so not all the features recorded in the earlier plan survived. In the interior two post-holes, [14] and [16] were identified of the five possible post-holes recorded in 1951. The position of the others had been removed in 1951. Post-hole [14] was approximately circular, 0.18m diam. and 0.45m deep below the top of the subsoil (Fig. 10). Some post-packing stones still remained *in situ* as well as some of the original fill but there was no charcoal that might have been used for dating. Post-hole [16] was 0.26m diam. and 0.18m deep below the top of the subsoil, but no original packing stones or fill remained.

Within Hut 4 the 1951 excavation also recorded two areas marked as hearths. It was hoped that some fill of these might remain to provide a radiocarbon date for the latest occupation of the hut. However, nothing remained of the fill of either (Fig. 5a), not even evidence of burning, such as heat-altered soil or rock.

The main objective of Trench 1 was to re-expose a layer of charcoal recorded in 1951 as occurring beneath the roundhouse wall at the west side, where the wall butted against the rampart wall. This charcoal layer (19) was still quite clearly evident as a thin lens of almost pure charcoal where the face of the hut wall was exposed (Fig. 5b and Fig. 9)). Where the hut wall met the rampart wall it could also be seen to butt up against the rampart (Fig. 5c). The charcoal layer overlay a thin layer (20) that in turn overlay another thin layer (21), which included some charcoal fragments and appeared to continue under the rampart wall.

Charcoal layer (19) was quite extensive and clearly pre-dates the hut wall and post-dates the rampart wall, which at this point was used as the hut wall and on which the roof timbers must have rested. The extent of the charcoal suggests it derived from clearance prior to construction of the hut, which could therefore be dated by the charcoal. However, the sequence is not so simple or at least so certain. The inner rampart wall was taken to be continuous with the hut wall, when excavated in 1951 so was in effect both contemporary and earlier than the hut (Fig. 5d). However, the 1951 description noted that the hut wall at the south-west, between the incorporated outcrop and the rampart wall, was different than the rest. This part was built of small laid stones, whereas the rest was of orthostatic facing infilled with rubble. It might be that the hut itself was from an early phase of the fort and that for some reason the south-western part was re-built at a later date. Certainly the 1951 excavation showed that there were round houses within the area of the small fort that pre-dated it as the remains of one hut was found where it would have obstructed the small fort entrance. The charcoal layer (19) may therefore derive from destruction or damage to one of these early houses when it was repaired or re-built, perhaps when the small fort was built, but not certainly so. Excavation and partial dismantling of the inner rampart wall would be needed to help determine the relationship with the house wall. The 1951 excavation also suggested that the part of the inner rampart wall adjoining the hut at this point was a secondary re-build or strengthening of the main rampart wall (Fig. 5d).

TRENCH 2 (Fig. 6)

The trench was excavated cautiously until the backfill of the 1951 trench had been certainly identified and was then cut back to the original trench sides. The 1951 trench outline was found to be exactly as measured in. This trench was 8m by 1.6m and included a complete section across the outer rampart and its ditch, which consisted of a conjoined line of quarry pits (Fig. 4). The sides of the trench revealed the rampart fill still standing but the deeper south face across the quarry ditch must have collapsed during the earlier excavation and only backfill was revealed in the 2008 trench side, except for some thin deposits on the base.

The rampart quarry pit was cut into the blocky bedrock and must therefore have produced mostly large pieces of rock. The rampart bank however, was made of mainly small pieces of broken stone in a matrix of silt. In the lower part of the bank were lenses of darker humic silt that must represent the remains of the topsoil thrown up during the initial construction of the bank. There was no evidence of any use of larger stones in the bank or in a facing or revetment even though numerous large slabs of rock lay in the backfilled quarry pit (Fig. 6c), which came out of the trench during the 1951 excavation and were suggested to be fallen facing stones (Fig. 6d). Much of the bank seems to have been made of superficial silt deposits above the bedrock and some of the quarried slabs perhaps were used in construction of the small fort wall to the west.

The profile of the subsoil and bedrock shows that the line of quarry pits lay within a shallow ditch about 1m deep, where the superficial deposits had first been removed. The quarry pit excavated was about another 1m deep (Fig. 6c and Fig. 13). These together, *c*. 2m deep fronted a bank, eroded to a height of 1m that must originally have been about 2m high, together producing a massive defensive obstacle and one that would have funnelled any potential attackers to a narrow approach at either end.

At the base of the ditch were three thin lenses of material that appeared to be *in situ* silts left in during the 1951 excavations. These were sterile iron-panned silts with no artefacts or visible charcoal. Later environmental processing produced no charred or preserved botanical remains.

The bank fill overlay a distinct buried soil (9) of dark humic silt containing a scatter of charcoal fragments (Fig. 14). This buried soil was quite deep and appeared mixed and

disturbed throughout as opposed to a natural soil profile that might have had a developed turf horizon at its top. This was the same as the 'occupation horizon' described from the 1951 excavation. Individual wood charcoal fragments were collected for identification and possible radiocarbon dating and a bulk sample was taken for assessment for carbonised macro botanical material. A soil column for pollen analysis was also taken by Astrid Caseldine. The 1951 excavation report described the buried soil as 'about 4 inches thick …. containing some crushed and burnt bone and much charcoal.' (Griffiths and Hogg 1956, 63). The soil was from 10-20cm (4-8ins) deep but no bone was seen and possibly its presence was mistaken fragments of cream-coloured weathered bedrock.

Two pits were recorded here [4] and [6] that were described as possible post-holes in 1951. Both were very similar, oval in plan approximately 0.85 by 0.75m and 0.55m deep and both showed evidence that they were indeed post-holes. Pit 4 still contained a good deal of *in situ*, unexcavated fill, within which were vertically-set post-packing stones. The base of the pit also had a horizontal pad stone set in a shallow post-butt socket, indicating a post of about 0.35cm diameter (Fig. 11). Pit 6 had been almost completely emptied in 1951 but some material still remained on its sides, in which were two vertical post-packing stones (Fig. 12). This pit had a fairly level base with no post-butt socket. The 1951 report suggested that the pits might be the post-holes of a roundhouse indicated by a shallow curving gully and this feature was found again in 2008. It was about 18cm wide and 6cm deep, cut into the top of the silty subsoil, curving in a regular arc, which, if continued, indicated a circle of about 4m diameter (Fig. 6b). In appearance it was more like the slot for a timber roundhouse wall than an outer or inner drain. However, in plan it did not obviously respect the position of the post-holes. The 1951 excavation report also stated that the gully delimited the spread of charcoal-rich occupation deposit. However, more of the charcoal-rich soil was found over the top of the fill of pit 4 (Fig. 6c), i.e. beyond the arc of the gully/slot but did not spread far beyond the position of the pit.

Interpretation of these post-holes as belonging to a roundhouse seems credible since the buried land surface here is almost level and this terrace could have been artificially created (Figs 6a and 6c). However, the buried soil around the post-holes is quite deep and humic with no evidence of any internal or external floor surface. This suggests that if the post-holes were part of a building then this had been removed and a soil had then developed. In the first phase of the small fort it is likely that any earlier houses that lay close to the rampart wall would have been demolished because they would have hindered its defensive function. If the excavated area had been larger then the layout of the posts may have become evident and showed whether they did or did not continue in arc. The position of the holes does not seem to relate to the line of the defensive bank but it is an outside possibility that they were revetting for the bank. Certainly the post-holes are somewhat larger than that within Hut 4, but that may just indicate a different style of construction, perhaps a larger house with more substantial internal supports.

6. ARTEFACTS

Trench 1: From the 1951 backfill were 3 possible sling stones and one burnt fragment of a possible rubbing stone. In the buried soil (19) was another possible sling stone.

Trench 2: From the 1951 backfill (3) came 6 possible sling stones and one larger smooth flat pebble of 'soapy' stone - a possible smoothing stone with multiple fine scratches in various directions (see the Stone Petrology Report, Appendix 7).

7. ENVIRONMENTAL EVIDENCE by Astrid Caseldine and Catherine Griffiths

The results are summarised here. The full reports are included as Appendices 4-6.

Charcoal Identification
A limited amount of charcoal was identified both from hand-picked and bulk samples (Appendix 4, Table 1). The sample from layer (19) beneath the roundhouse wall in Trench 1 contained charcoal of birch, alder, hazel while that from charcoal layer 21, which underlay the buried soil below layer 19 and continued under the rampart, produced alder, hazel and cherry/blackthorn. Charcoal from the buried soil (9) in Trench 2 comprised alder, oak and hazel as did charcoal from the fills of one of the post-holes (4). Birch pollen (see below) was also recorded from the buried soil (9). The evidence from both trenches indicates a similar type of woodland in the area. The presence of some round wood pieces may also suggest that coppicing was taking place.

Charred Plant Remains
The carbonised plant remains, recovered by flotation and sieving, were relatively plentiful (Appendix 5, Table 1). In Trench 1, the soil (19) beneath the roundhouse wall produced emmer/spelt wheat grain, spelt chaff, an oat caryopsis and several weed seeds of cultivated or disturbed ground, including corn spurrey, redshank and sheep's sorrel, probably representing crop processing waste. The layer (21) beneath the rampart wall yielded only one grain and one glume base of emmer or spelt wheat and a few weed seeds indicative of cultivation or soil disturbance. The most frequent remains were heather flowers, possibly indicating clearance before construction after a period of site abandonment or the sample could represent fuel waste. In Trench 2 the dark, organic layer at the base of the ditch produced no plant remains. The buried soil (9), previously interpreted as an 'occupation horizon', produced wheat, barley and oat grain, wheat chaff, including spelt glume bases, and oat chaff confirming that at least some of the oat was wild rather than cultivated. In addition hazelnut shell fragments and seeds and other remains of species associated with arable cultivation, disturbed ground, grassland or heathland were present. The latter included fat-hen, ribwort plantain, heath grass, sedge and bracken. The scatter of charcoal in layer (9) was confined to a limited area and therefore may represent a single event. Overall the sample suggests waste from one or more domestic fires which included crop processing waste. The assemblage demonstrates that crop processing was taking place at the hillfort and that wheat, including spelt wheat, and barley were being grown in the area during the Mid Iron Age. The evidence is consistent with that from a roundhouse at Parc Bryn Cegin, Bangor, where crop plants included spelt wheat, emmer wheat, naked wheat, barley and oat (Kenney 2008, Schmidl *et al* 2008). The recovery of plant remains from deposits dating to the Mid Iron Age at Caer Seion is a particularly useful addition to the record for crop husbandry in Wales, given the relatively limited evidence available for this period

Pollen Analysis
Pollen was identified from a column through soil (9), buried beneath the rampart in Trench 2, outside the small fort (Appendix 6, Table 1). Pollen was scarce, in a poor state of preservation and difficult to interpret because the buried soil had probably been mixed and trampled. However, the pollen indicated a heath and grass dominated open environment, not too dissimilar to that of today. Spores were also well represented, indicating the growth of bracken and polypody ferns in the area. Bracken favours dry acid soils and is commonly associated with heathland. Equally, polypody ferns like acid soils but will also grow on rock outcrops or walls. The occasional cereal type pollen grain may reflect cereal brought onto the site, demonstrated by the charred cereal remains found in the occupation deposit, but could also reflect cultivation nearby. Charred heather and bracken remains from the buried soil/'occupation horizon' might also indicate that some of the pollen from these taxa was derived from plant material brought onto the site, but they might have been growing locally and reflect local burning to clear the site. Tree and shrub pollen was very scarce but consistent

with the charcoal record which confirms that hazel, alder and birch woodland was present in the local area. The pollen record dates to a period of activity at the hillfort prior to the construction of the rampart of the smaller fort and associated with a date of 750-680 cal BC, 670-610 cal BC and 600-400 cal BC Whether the construction of the earlier hillfort, or activity during the Bronze Age or Neolithic, had already led to woodland removal in the immediate area of the site is unclear from the evidence, but by the time of construction of the smaller fort an open grass-heath environment clearly existed in the locality

8. DATING AND DISCUSSION

The main objective of the excavation was to allow better interpretation of the hillfort by producing material for radiocarbon dating from significant stratigraphic positions. Three radiocarbon dates were produced as part of the work, one from Trench 1 and two from Trench 2 (Appendix 1). Sampling of the buried soils also produced environmental evidence, summarised above (Appends 4-6).

In Trench 1 the object was to re-expose a layer of charcoal described in the 1956 report. This layer (19) was found to still exist and was a thin layer of fairly pure wood charcoal, not a scatter of charcoal in a soil layer, and so probably derived from a single event. It lay directly under the wall of Hut 4 and so represented an episode at or closely prior to its construction. Moreover it could also be shown to butt against the wall face of the inner rampart, indicating that the rampart wall was already there when the roundhouse was built. One piece of charcoal was selected for dating, this was of birch round wood (Caseldine, Appendix 4, below), which produced an AMS date of 2240 +/- 40 BP (Beta – 254607) with a 2 Sigma calibration Cal BC 390 to 200. The context of this date shows quite closely when the wall of Hut 4 was built. This house was one of those in use when the small fort was in use and shows that the small fort itself had been built and was in use by at latest the end of the 3rd century BC.

The two AMS dates from Trench 2 came from wood charcoal derived from individually collected pieces. One, from the buried soil (9) was of alder round wood with bark (Caseldine, Appendix 4, below). This produced a date of 2420 +/-40 BP (Beta –250542) with a 2 Sigma calibration of Cal BC 750 to 680 and Cal BC 670 to 610 and Cal BC 600 to 400, with the latter being the most likely result.

The other was from the fill of post-hole 4. It was a small discrete piece of charcoal, not from a charred *in situ* post and was of hazel round wood (Caseldine). This produced a date of 2320 +/-40 BP (Beta –250543) with a 2 Sigma calibration of Cal BC 410 to 360.

The scatter of charcoal in layer (9) was in a restricted area so may have derived from a single activity. However, it was not a discrete lens but mixed within the soil layer, and the soil layer itself appeared mixed, perhaps through trampling prior to dumping of the overlying bank material. Although the relationship of the soil as it overlay post-hole 4 suggests that the charcoal in post-hole 4 might have derived from the same activity, perhaps dropped into the post-hole after removal of a post prior to dumping of the overlying bank material the considerable difference in the dates suggest that the charcoal from (9) was residual in the buried soil. It does indicate that the larger fort was in existence probably some time between 600 and 400 BC and that the rampart over the buried soil was built no earlier than and possibly soon after 410 to 360 BC. This defensive bank is part of the defences of the small fort, but considered to be possibly a later addition to it.

The radiocarbon dates give useful evidence of the period of occupation of the larger fort, which is surprisingly early, although the date of construction is still unknown. The house within the small fort is likely to have been built some time after the construction of the dump rampart, although the date ranges overlap. Some charred material was retrieved from Trench

1 in a context (21) that appeared to be sealed by the wall of the small fort (Figs 5b and 5c). This could be used to try to provide a date for construction of the wall of the small fort. The date for the end of occupation at the fort is still unknown. As previously suggested, the lack of artefacts of the Roman period indicates that the fort was not occupied then but there is also a possibility that the fort was abandoned before the Roman incursion. It was hoped that something would survive of one of the hearths in the roundhouse in Trench 1, to provide a radiocarbon date from its last use, but nothing remained. However, this question could be pursued by excavation of the interior of one of the roundhouses in the small fort not previously excavated, where it should be comparatively easy to locate a hearth to produce material for dating.

The lack of datable pottery from Iron Age sites in North Wales has meant that this period has been a vacuum in knowledge and open to speculation. There have been few excavations and only three of these have produced radiocarbon dates, at Castell Odo (Llŷn), Pendinas (Bangor) and Bryn y Castell (Meirionnydd). Excavation at several hillforts elsewhere has shown origins in the Later Bronze Age. There is no certain evidence that this was the case in north-west Wales but there have been some casual finds from hillforts that support that possibility. These comprise an Early Bronze Age flat copper axe from Tre'r Ceiri (Llŷn), two Early Bronze Age halberds from Tal y Garreg (Meirionnydd), a Middle Bronze Age looped spearhead from Braich y Dinas (Conwy) and a Middle Bronze Age looped palstave from Garn Fadryn (Llŷn).

There are a number of small, lightly defended forts with single banks or walls and these might be early in the sequence of hillfort building, although there has been no evidence to confirm that. The only exception is on Llŷn where there is a group of sub-circular, lightly defended hill-top enclosures. The excavation of one of these, at Castell Odo, near Aberdaron, showed several phases of occupation beginning about the 6th century BC as an undefended hill-top settlement (Alcock 1960 and Undated; Johnstone 1989). At Caer Seion, there is a possibility that the large fort may have been a successor to a small, lightly defended fort at Dinas Allt Wen, which lies only 1.5km to the west (Fig. 1). Several forts elsewhere show the addition of bank and ditch ramparts to original walled defences, as at Caer Seion, but when this took place is unknown.

The period of construction and phases of occupation of most forts are uncertain. Excavations before the availability of radiocarbon dating, as at Caer Seion have produced few finds, mostly limited to stone objects such as querns, spindle whorls and sling stones. Castell Odo was the exception, producing some pottery, of a simple and undatable style, of the Late Bronze Age or Early Iron Age as shown by radiocarbon dates. Elsewhere, Garn Fadryn (Llŷn) produced a bead of Middle Iron Age type, and Din Silwy (Anglesey) an iron ring-headed pin of Middle Iron Age type and Dinas Emrys (Gwynedd) some bronzes of Late Iron Age type. Two more recent excavations have produced radiocarbon dates. Excavation of part of the rampart at Pendinas, a small, well-defended fort at the mouth of the Ogwen Valley, near Bangor showed a single phase of construction associated with a radiocarbon date of 2nd to 1st centuries BC (White 1992). Extensive excavation within the small, single walled hillfort of Bryn y Castell (Meirionnydd), on the edge of high moorland, has shown that its inhabitants were smelting iron on a considerable scale from towards the end of the first millennium BC until mid 1st century AD. The fort was unusual in the variety of artefacts found, suggesting wide contacts and some personal wealth (Crew 1986). In England and the Borders the latest forts are the 'developed' forts with complex, sophisticated entrances. None of the forts in north-west Wales were of this type, the nearest being at Pen-y-Corddyn (Llanddulas, Conwy). This lies east of the Conwy River, which probably formed a boundary between two cultural or tribal areas.

The response to the Roman invasion in AD 44 would have caused re-actions further north and could have included strengthening of fort defences, perhaps by building additional ramparts

and ditches, as seen at Caer Seion, at Caer Euni (Meirionnydd), Caer Bach (Conwy) and Dinas Dinorwic, Pen y Garreg and Craig y Dinas (Gwynedd). The actual attack on north-west Wales in AD 60 must have been dramatic although full control was not achieved until AD 78. A few forts have been identified that may have been deliberately demolished, including Caer Seion and Caer y Twr (Anglesey). A few forts, including Pendinas (Bangor) and Caer Euni (Meirionnydd) have evidence of burning of the ramparts, although this could have occurred in earlier local disputes. Several forts have artefactual evidence of use during the Roman period, presumably non-defensive but may also have shown some acceptance by the Romans of local authority and the need to provide defence against other adversaries, perhaps Irish raiders. At the fort of Tre'r Ceiri (Llŷn), excavation has shown that the main entrance was re-built during the 2nd century AD (Hopewell 1993). This defensive use of forts may have been a later phase of re-use because only one fort, that of Braich y Dinas (Conwy), has produced Roman artefacts of the 1st century AD. Similarly, forts, such as Caer Seion, that have produced no Roman material have been thought to be those that were abandoned after Roman subjugation.

The strengthening of Caer Seion by the addition of the small fort could be seen as a reaction to an imminent Roman threat. However, the radiocarbon dates from the present excavation indicate otherwise. The large fort, with over fifty houses, was a considerable community and may well have been in existence by about the 6th century BC. The small fort, with only six houses, was more strongly defended and represented a fundamental change in social character, representing a very small element of the community. The outer rampart was built about the 4th century BC and about the same time one of the latest roundhouses was built within the small fort.

It is often an assumption that all the major hillforts were in existence at the same time, which may give some idea of local social groupings and territories. In north-east Wales, along the Clwydian hills however, there is a series of forts quite close together, which is difficult to explain if all are occupied simultaneously. In north-west Wales the larger hillforts are quite well distributed around the fringes of the upland, often set at the entrance to the major valleys, suggesting some territorial function related to control of access between the uplands and lowlands. Caer Seion lies on a hill of stony heathland, suitable only for grazing, but close by, to the south, are fertile fields providing an arable resource. The 2008 excavation provided botanical evidence of mixed woodland in the vicinity and of cereal crop processing, while the 1951-2 excavations found fragments of saddle querns, as well as spindle whorls, all indicating a mixed farming economy. The lack of rotary querns could indicate that occupation ended prior to the 1st century AD. Although there is no date for the latest use of Caer Seion there is a strong possibility that it fell out of use as a focus of settlement prior to the 1st century AD. This could have happened if there was a long period of stability when the focus of settlement moved to the lowland, while only a small social 'elite' resided in smaller forts, such as that at Caer Seion or at Caer Bach, 6km to the south. There are two small areas of roundhouse settlement just outside Caer Seion to the south and there is a larger, unenclosed settlement at Gwern Engan, only 1km to the south-west (Fig. 1), although none of these have been excavated to provide dates of occupation. The excavation at Caer Seion provides the possibility of one more radiocarbon date, from charred material from context (21) that appeared to be sealed by the construction of the wall of the small fort, or a re-facing of it, which in turn was butted by context (19) that predated the roundhouse wall. Research excavation is needed at various settlements in the area to provide a fuller picture of the nature of society and its changes over the first millennium BC. The work needs to focus on stratigraphy and the radiocarbon dating of the commencement and end of occupation. Although animal bones do not survive charred botanical remains can be used to illustrate the local environment and land use (Gwilt 2001).

9. REFERENCES

Alcock, L. 1960. Castell Odo: An embanked settlement on Mynydd Ystum, near Aberdaron, Caernarvonshire, *Arch. Camb.* CIX, 78-135.

Alcock, L. Undated. Radiocarbon dates for the pottery from Castell Odo, Unpublished draft, offprint, PRN 767, Gwynedd HER, Bangor.

Crew, P. 1986. Bryn y Castell hillfort – a late prehistoric ironworking settlement in north-west Wales. In Scott, B.G. and Cleere, H. Eds, *The Crafts of the Blacksmith*, Belfast: Ulster Museum, 91-100.

Crew, P. 1991. *Conservation survey of Conwy Mountain Hillfort for Cadw*. Copy, Gwynedd HER, Bangor.

Griffiths, W.E. and Hogg, A.H.A. 1956. The Hill-Fort on Conway Mountain, Caernarvonshire, *Arch. Camb*. CV, 49-80.

Gwilt, A. 2001. Understanding the Iron Age: towards agenda for Wales. In C. Briggs 2001, Towards *a research agenda for Welsh archaeology: Proceedings of the IFA Wales/Cymru Conference, Aberystwyth 2001*.

Hopewell, D. 1993. Tre'r Ceiri Conservation Project, *Archaeology in* Wales 33, 49050.

Kenney, J, 2008 'Recent excavations at Parc Bryn Cegin Llandygai near Bangor, North Wales', Archaeologia Cambrensis 157, 9–142.

Johnstone, N.M. 1989. *Gazetteer of Excavated Late Prehistoric and Romano-British Hut Groups in Gwynedd*, unpublished B.A. dissertation, UCNW, Bangor.

Picton, H. 1909. Caer Seiont, Conway Mountain, *Arch. Camb*. 1909, 500-4.

Schmidl, A., Carrott, J. and Jacques, D. 2008 Appendix XIV: The Biological Remains. In Kenney, J., *Recent Investigations at Llandygai, near Bangor, North Wales: full report.* GAT Report 666 (site code G1857).

White, R.B. 1992. Pendinas, Llandygai, *Bull. Board of Celtic Studies*, XXXIX, 159-66.

APPENDIX 1

RADIOCARBON DATING RESULTS

BETA ANALYTIC INC.
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REPORT OF RADIOCARBON DATING ANALYSES

Mr. George Smith

Report Date: 11/7/2008

Gwynedd Archaeological Trust

Material Received: 10/17/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 250542	2400 +/- 40 BP	-23.9 o/oo	2420 +/- 40 BP
SAMPLE : G1770CS11			
ANALYSIS : AMS-Standard delivery			
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid			
2 SIGMA CALIBRATION : Cal BC 750 to 680 (Cal BP 2700 to 2630) AND Cal BC 670 to 610 (Cal BP 2620 to 2560) Cal BC 600 to 400 (Cal BP 2560 to 2350)			
Beta - 250543	2320 +/- 40 BP	-25.0 o/oo	2320 +/- 40 BP
SAMPLE : G1770CS12			
ANALYSIS : AMS-Standard delivery			
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid			
2 SIGMA CALIBRATION : Cal BC 410 to 360 (Cal BP 2360 to 2310)			
Beta - 250544	1960 +/- 40 BP	-25.6 o/oo	1950 +/- 40 BP
SAMPLE : G1629TT110			
ANALYSIS : AMS-Standard delivery			
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid			
2 SIGMA CALIBRATION : Cal BC 40 to Cal AD 130 (Cal BP 1990 to 1820)			
Beta - 250545	2290 +/- 40 BP	-24.3 o/oo	2300 +/- 40 BP
SAMPLE : G1629TT111			
ANALYSIS : AMS-Standard delivery			
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid			
2 SIGMA CALIBRATION : Cal BC 410 to 360 (Cal BP 2360 to 2300) AND Cal BC 290 to 240 (Cal BP 2240 to 2180)			

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-23.9:lab. mult=1)

Laboratory number: **Beta-250542**

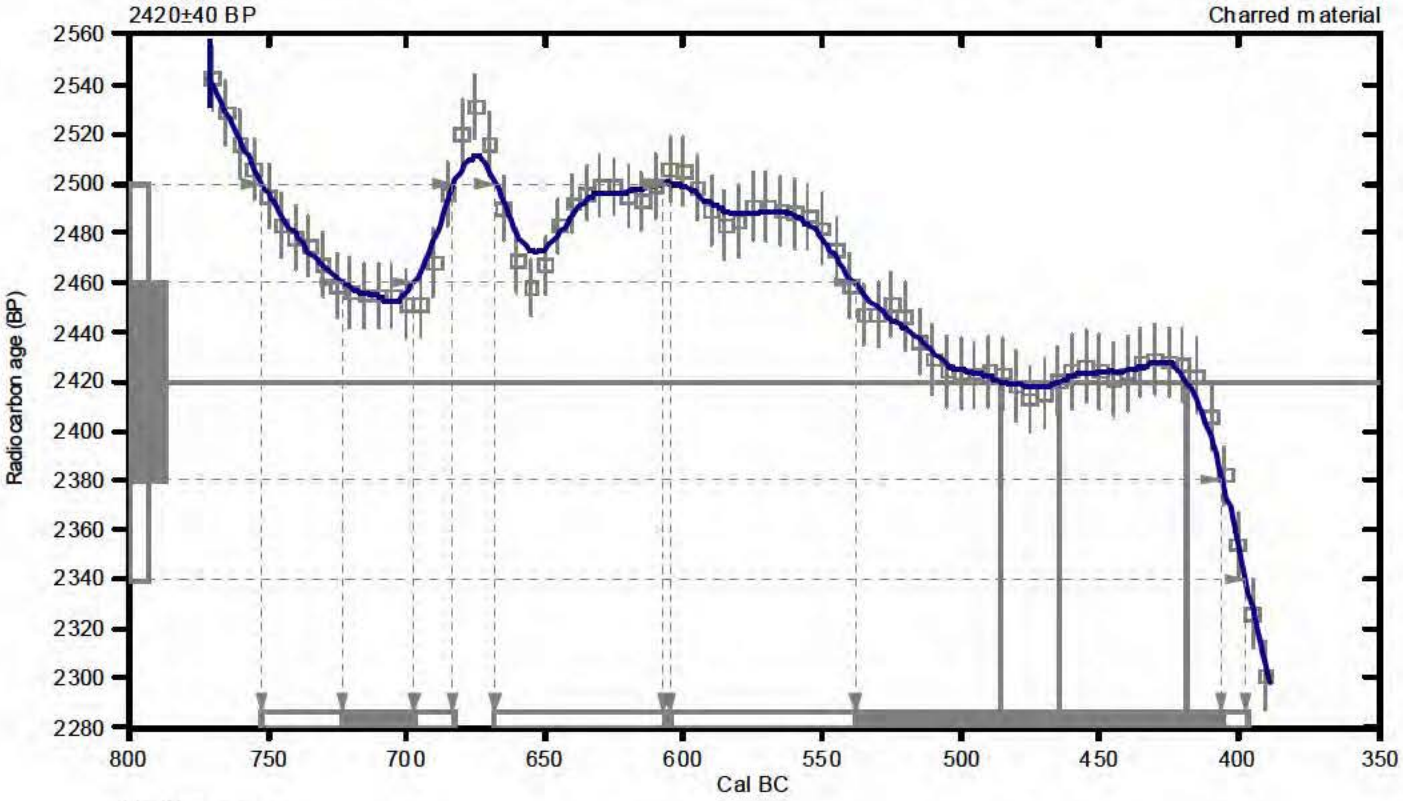
Conventional radiocarbon age: **2420±40 BP**

2 Sigma calibrated results: **Cal BC 750 to 680 (Cal BP 2700 to 2630) and**
(95% probability) **Cal BC 670 to 610 (Cal BP 2620 to 2560) and**
Cal BC 600 to 400 (Cal BP 2560 to 2350)

Intercept data

Intercepts of radiocarbon age with calibration curve: Cal BC 490 (Cal BP 2440) and
Cal BC 460 (Cal BP 2410) and
Cal BC 420 (Cal BP 2370)

1 Sigma calibrated results: Cal BC 720 to 700 (Cal BP 2670 to 2650) and
(68% probability) Cal BC 540 to 410 (Cal BP 2490 to 2360)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

Beta Analytic Radiocarbon Dating Laboratory

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25:lab. mult=1)

Laboratory number: **Beta-250543**

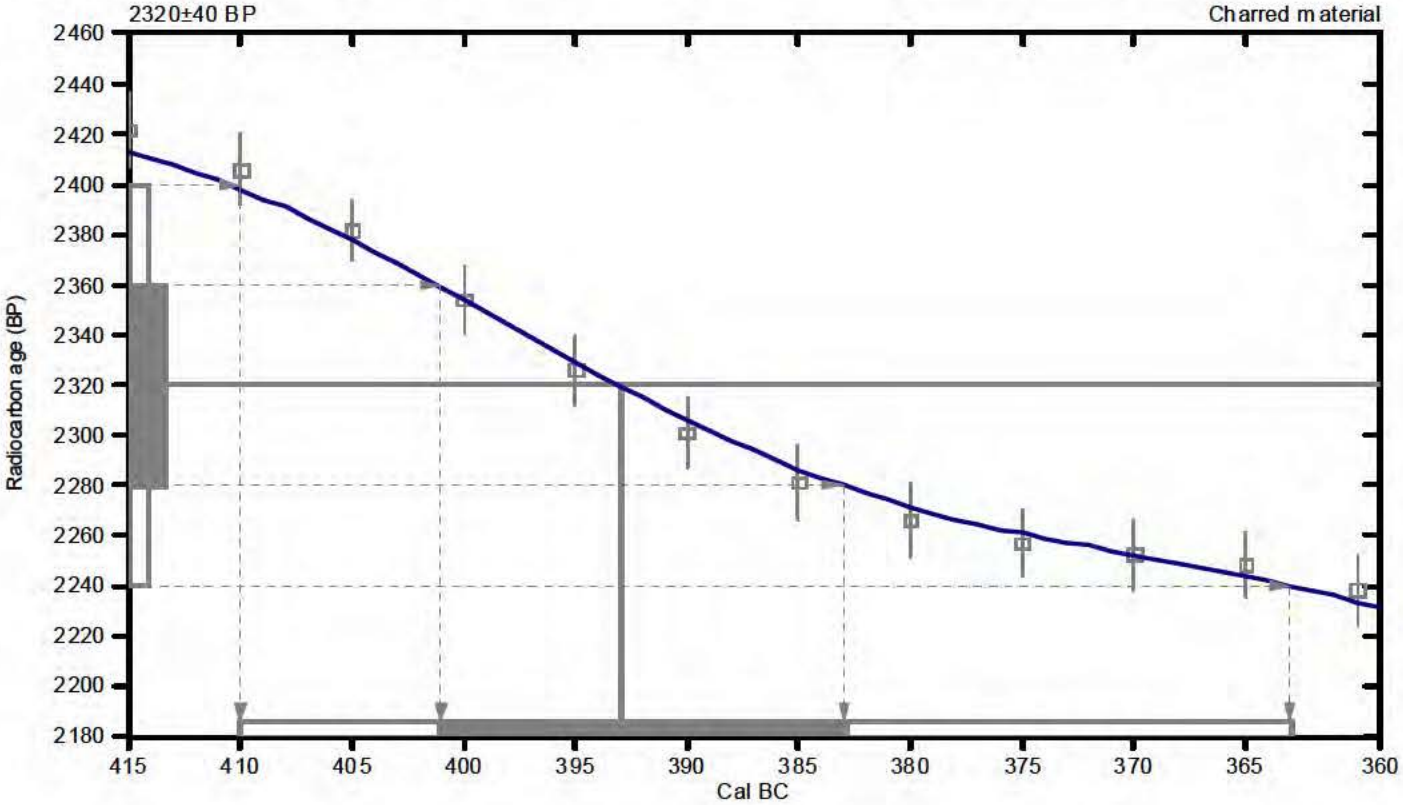
Conventional radiocarbon age: **2320±40 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 410 to 360 (Cal BP 2360 to 2310)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 390 (Cal BP 2340)

1 Sigma calibrated result: (68% probability) Cal BC 400 to 380 (Cal BP 2350 to 2330)



References:

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INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

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REPORT OF RADIOCARBON DATING ANALYSES

Mr. George Smith

Report Date: 2/9/2009

Gwynedd Archaeological Trust

Material Received: 1/14/2009

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 254607	2280 +/- 40 BP	-27.5 o/oo	2240 +/- 40 BP

SAMPLE : G1770CS13
ANALYSIS : AMS-Standard delivery
MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid
2 SIGMA CALIBRATION : Cal BC 390 to 200 (Cal BP 2340 to 2150)

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "*". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-27.5:lab. mult=1)

Laboratory number: **Beta-254607**

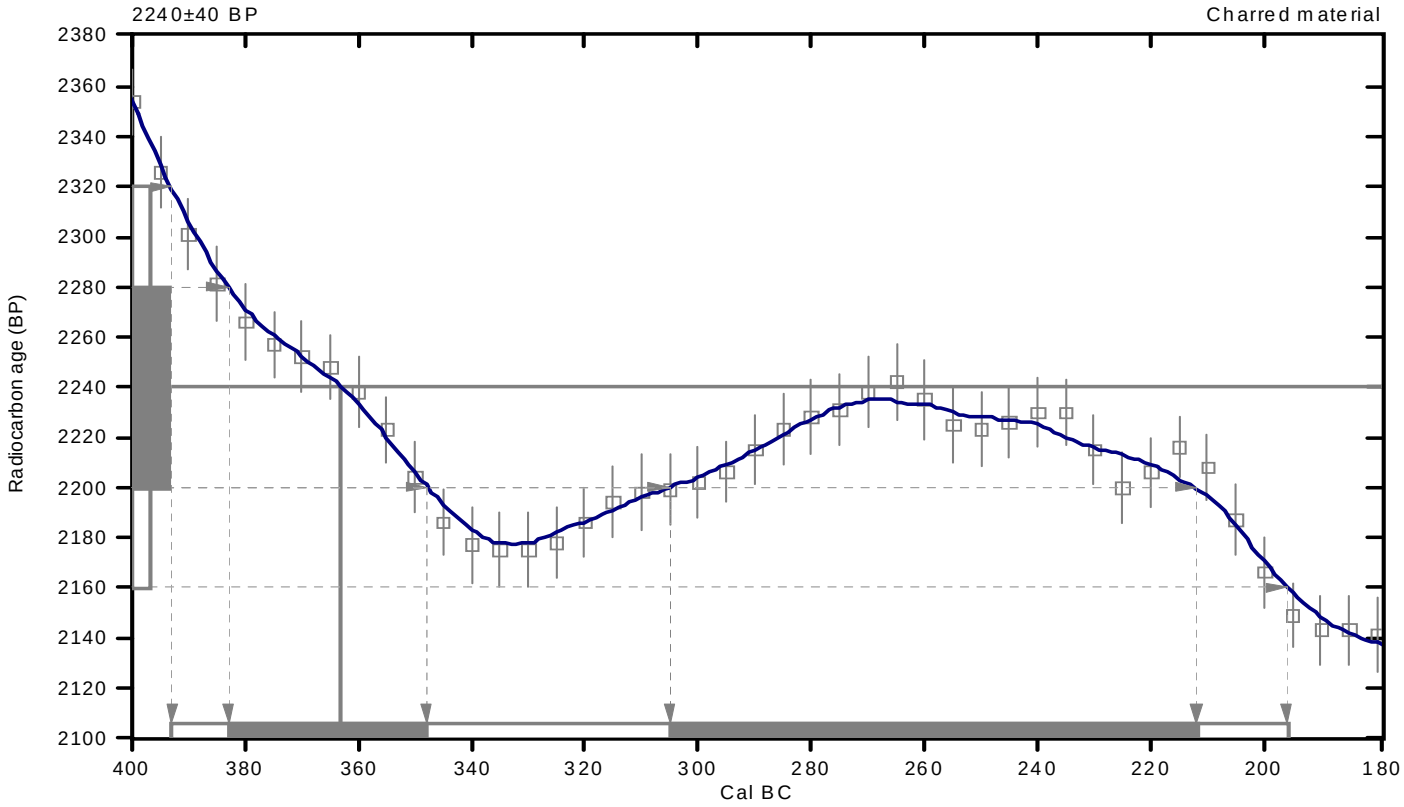
Conventional radiocarbon age: **2240±40 BP**

2 Sigma calibrated result: (95% probability) **Cal BC 390 to 200 (Cal BP 2340 to 2150)**

Intercept data

Intercept of radiocarbon age with calibration curve: Cal BC 360 (Cal BP 2310)

1 Sigma calibrated results: (68% probability) Cal BC 380 to 350 (Cal BP 2330 to 2300) and Cal BC 300 to 210 (Cal BP 2260 to 2160)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

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APPENDIX 2

G1770 CAER SEION SAMPLE INDEX

Sample No.	***Context No.***	***Sample Type***	***Description & Purpose of sample***	***Quantity***	***Sent to/date***
1	8, 9	Soil	Column through buried OLS. Assessment for pollen analysis	20cm column	AC
2	23	Soil	Lower, humic ditch fill. Flotation for macrobotanical analysis	1 x 2l bag	
3	9	Column	Bulk sample from buried OLS. Flotation for macrobotanical analysis	1 sack	Sub-sample AC
4	19	Column	Charcoal-rich lens for ID and possible C14	1 x 1l bag	AC
5	21	Soil	Lens below house wall for sieving for possible charcoal for ID and C14	1 x 1l bag	AC
6	5	Charcoal	10 singly bagged pieces. 2 small bags mixed.	1 small bag	AC
7	9	Charcoal	17 singly bagged pieces 1 bag possibly mixed.	1 small bag	AC
8	10	Charcoal	5 singly bagged pieces	1 bag	AC
9	27	Charcoal	7 singly bagged pieces	1 bag	AC
10	30	Soil	Bulk sample from buried OLS. Flotation for macrobotanical analysis	3 sacks	
11	9	Charcoal	1 of sample 7 for C14	1 bag	Beta
12	27	Charcoal	1 of sample 9 for C14	1 bag	Beta
13	19	Charcoal	1 of sample 4 for C14	1 bag	Beta

APPENDIX 3

CAER SEION ARTEFACT INDEX

Trench	Context	Context description	Description	Dimensions
1	3	1951 general trench backfill. Possible slingstones	2 sub-angular pebbles	40 and 50mm max length
1	3	1951 general trench backfill. Possible slingstone	1 sub-rounded pebble	55mm max length
1	3	1951 general trench backfill	1 burnt sandstone frag	140mmx70mmx55mm
1	19	Buried soil beneath hut wall. Possible slingstone	1 sub-rounded pebble	60m max length
2	1	1951 Bank backfill. Possible slingstones	5 sub-angular pebbles	30-60mm max length
2	2	1951 ditch backfill. Possible slingstone	1 sub-rounded pebble	30mm max length
2	7	1951 backfill of post-hole 6. Possible rubbing stone	1 sub-angular pebble of soft stone with multiple scratches	100mmx 80mmx35mm
2	7	1951 backfill of post-hole 6. Probably natural	1 sub-angular frag of smooth slate	42mm long
2	7	1951 backfill of post-hole 6. Imported pebble	1 sub-rounded pebble of limestone	60mm long

APPENDIX 4

G1770 CAER SEION CHARCOAL IDENTIFICATION

Astrid E. Caseldine and Catherine J. Griffiths

A limited amount of charcoal was identified both from hand-picked charcoal and from bulk samples from Caer Seion hillfort to gain some information about woodland in the surrounding area. Identified charcoal was also sent for AMS dating.

Trench 1
Sample 4 (Context 19) – charcoal-rich lens below roundhouse wall.
Sample 5 (Context 21) – charcoal lens from soil layer under rampart wall.

Trench 2
Sample 3 (Context 9) – bulk sample from buried old land surface.
Sample 6 (Context 5) – hand-picked charcoal from upper fill of post-hole 4.
Sample 7 (Context 9) – hand-picked charcoal from buried old land surface.
Sample 8 (Context 10) – hand-picked charcoal from lower fill of post-hole 4.
Sample 9 (Context 27) – hand-picked charcoal from post packing of post-hole 4.
Sample 10 (Context 30) – bulk sample from buried old land surface above post-hole 4.

Methods
The charcoal was broken to produce clean sections in three dimensions (transverse, transverse longitudinal and radial longitudinal) and examined using a Leica DLR microscope with incident light source. Key characteristic features of the wood anatomy were used to identify the charcoal using identification texts (e.g. Schweingruber 1978, Schoch *et al* 2004). Nomenclature follows Stace (1995). The results are presented in Table 1.

Results and discussion
Only a few fragments of charcoal were recorded from each of the samples examined.
The samples from the charcoal lenses associated with the roundhouse and rampart in Trench 1 produced birch (*Betula* sp.), alder (*Alnus glutinosa*), hazel (*Corylus avellana*) and cherry/blackthorn (*Prunus* sp.). Both the samples from the 'occupation layer' (9) below the rampart in Trench 2 yielded alder and the larger sample also contained oak (*Quercus* sp.). The remaining three samples were from the fills of post-hole 4 and the charcoal consisted of one or more of hazel, oak and alder. Oak and hazel occurred in the buried soil (30) overlying the post-hole. The samples are too small to draw any conclusions about differences between the assemblages.

The charcoal suggests the presence of alder, hazel and oak woodland with some birch and wild cherry/blackthorn in the area. The presence of birch and absence of oak in the sample dated to 390-200 cal BC from below the roundhouse in Trench 1 and the absence of birch and presence of oak in the samples from the buried soil and post-hole 4 beneath the rampart in Trench 2, both of which gave slightly earlier radiocarbon dates, although the dates do overlap with that from Trench 1, could indicate a change in the woodland in the area. It is possible that the clearance of oak might have led to an increase in secondary birch woodland in the area but this is highly speculative given the small size of the charcoal assemblages and the apparent difference may simply be due to the small size of the samples. Birch pollen was recorded in the pollen column from the buried soil in Trench 2. A number of the charcoal fragments were of round wood and might reflect coppicing in the area.

Bibliography
Schoch**,** W., Heller, I., Schweingruber, F.H., Kienast, F. 2004. *Wood Anatomy of Central European Species*. Online version: www.woodanatomy.ch
Schweingruber, F.H. 1978. *Microscopic Wood Anatomy*.
Stace, C. 1995. *New Flora of the British Isles*. Cambridge, Cambridge University Press.

Table 1 Charcoal identifications from Caer Seion hillfort

Trench	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**Total**
Sample	**4**	**5**	**6**	**3**	**7**	**8**	**9**	**10**	
Context	**19**	**21**	**5**	**9**	**9**	**10**	**27**	**30**	
Quercus spp. (Oak)	-	-	-	1	-	1	3	1	**6**
Betula spp. (Birch)	1*	-	-	-	-	-	-	-	**1**
Alnus glutinosa (L.) Gaertner (Alder)	2	1	-	9	5*	3	-	-	**20**
Corylus avellana L. (Hazel)	2	3	4	-	-	1	2*	4	**16**
Prunus sp. (Cherries/blackthorn)	-	1	-	-	-	-	-	-	**1**
Total	**5**	**5**	**4**	**10**	**5**	**5**	**5**	**5**	**44**

*includes charcoal used for AMS dating.

APPENDIX 5

G1770 THE CHARRED PLANT REMAINS FROM CAER SEION

Astrid E. Caseldine and Catherine J. Griffiths

Whereas there have been several excavations which have resulted in the recovery of charred plant remains from farmsteads and enclosures of Iron Age and Romano-British date in north-west Wales there has been little evidence from hillforts (Caseldine forthcoming). The excavation at Caer Seion therefore provided an opportunity to recover samples which, potentially, would provide information about the agricultural economy and activities associated with crop processing at the hillfort and add to the archaeo-botanical record for this part of Wales. The provenance of the samples is as follows:

Trench 1
Sample 4 (Context 19) – charcoal-rich lens below roundhouse wall.
Sample 5 (Context 21) – charcoal lens from soil layer under rampart wall.

Trench 2
Sample 2 (Context 23) – lower, humic ditch fill.
Sample 3 (Context 9) – bulk sample from buried old land surface.
Sample 10 (Context 30) – bulk sample from buried old land surface.

Methods
The charred plant remains were recovered by flotation and sieving. The finest sieve mesh used to retain the flot and the residues after sieving was 250µm. The samples were sorted and identified using a Wild M5 stereomicroscope. A modern reference collection and identification texts (e.g. Jacomet 2006, Schoch *et al* 1988) were used to identify the material. Nomenclature and ecological information is based on Stace (1995). The results are presented in Tables 1.

Identifications
The presence of twisted as well as straight barley grains indicated the presence of six-rowed barley (*Hordeum* sp.). Most of the wheat grain was not identifiable to species but the presence of spelt wheat (Triticum spelta) was confirmed by the presence of glume bases. Other chaff was not sufficiently well preserved to identify it to species level and glume bases and spikelet forks were assigned to an emmer/spelt category. The occurrence of pedicels of wild oat suggests the oat grains were from wild rather than cultivated species

Results
No remains, not even identifiable wood charcoal, were recovered from sample 2 from the lower ditch fill. Although the number of remains recovered from charcoal lenses under the roundhouse wall and rampart wall and from one of the samples (10) from the buried soil were relatively few, the concentration of remains in these samples was high. The remaining sample (3), which was also from the buried soil but was a larger bulk sample, produced the greatest number of plant macrofossils although the concentration of remains was slightly lower.

Trench 1
The remains from sample 4 from the charcoal layer (19) directly beneath the wall of roundhouse 4 probably represented an event at or shortly before construction of the wall. The assemblage consisted of a little grain, chaff and several weed seeds. The presence of spelt wheat was confirmed by a glume base. An oat caryopsis was present and the absence of chaff means that it is uncertain whether this was wild or cultivated, although the presence of pedicels of wild oat in other samples suggests it is more likely it was wild. Weed seeds such as corn spurrey (*Spergula arvensis*), redshank (*Persicaria maculosa*), knotgrass (*Polygonum*

aviculare), sheep's sorrel (*Rumex acetosella*) and ribwort plantain (*Plantago lanceolata*) are typical of cultivated and disturbed or open ground but can also be found in other habitats. For example sheep's sorrel is found in heathland and the presence of a heather (*Calluna vulgaris*) flower provides further evidence for the presence of this vegetation community in the area. The remains probably represent waste from domestic fires which included cereal processing waste. An AMS date from birch charcoal from this deposit indicates that the charred plant remains relate to activity in the small fort sometime during the period 390-200 cal BC, immediately before construction of house 4.

Cereal evidence from sample 5 from a soil layer (21) with charcoal from under the rampart wall was very scarce, only an emmer/spelt glume base and grain. A few weed seeds indicative of disturbed ground and arable habitats include fat-hen, knotgrass and cleavers were present. Heather flowers were the most frequent remains recovered from the sample. They may indicate that heather was used for roofing or flooring or possibly that peat was burnt as fuel at the site. Alternatively, they might reflect former vegetation at or close to the site that was used as fuel.

Trench 2

The largest assemblage of plant remains recovered from the site was from sample 3 from the 'occupation deposit' buried soil (9) from below the rampart of the small fort. The assemblage contained a mix of cereal grain, chaff, weed seeds, hazelnut shell fragments and other remains. The majority of the cereal remains were of wheat and included spelt but there was no definite evidence for emmer wheat, although a number of grains and glume bases could only be assigned to an emmer/spelt category. A few grains of barley suggest that barley as well as wheat was being cultivated in the area but a pedicel of wild oat suggests that the oat grain was probably from wild rather than cultivated oat and was probably a weed contaminant. The chaff and weed suggest crop processing was taking place at the fort.

The weed seeds include a number of species, several of which have already been mentioned, which are commonly associated with arable and disturbed ground. Other taxa, although they could be associated with the former habitats, are also indicative of grassland and heathland. Ribwort plantain, vetches (*Vicia* sp.) and medicks/clover (*Medicago* sp./*Trifolium* sp.) typically grow in grassland or on rough ground. Of note is the occurrence of heath grass (*Danthonia decumbens*). This species occurs in plant assemblages of Iron Age and Romano-British date from other sites in Wales such as Cefn Graeanog (Hillman 1981), Cefn Du and Melin y Plas and Cefn Cwmwd (Ciaraldi forthcoming) in north Wales and Troedyrhiw (Caseldine and Griffiths 2007) and Dan-y-Coed (Caseldine and Holden 1998) in southwest Wales. The presence of heath grass (*Danthonia decumbens*) could indicate cultivation on poor, acidic soils as today it occurs in acid grassland but it has been suggested that the association of heath grass with poor soils today may be due to an inability to compete with other species on more fertile soils (Van der Veen 1992). However, the occurrence of heather remains in this and other samples clearly demonstrates heathland and acidic soils in the area contemporary with the hillfort, although not necessarily that they were being cultivated. Sedge (*Carex* spp.) nutlets may also indicate moorland or the presence, and perhaps cultivation of, damp ground. Charred remains of bracken (*Pteridium aquilinum*), which is typical of acidic, but dry, soils, in the plant assemblage may indicate its use for bedding at the fort. Hazelnut shell fragments suggest the continued exploitation of wild resources, although there is always the possibility that they simply represent incidental collection along with wood for fuel. It seems likely however that such a food resource would not be wasted and would be used to add variety to the diet. Overall the sample suggests waste from one or more domestic fires which included crop processing waste. The scatter of charcoal was confined to a limited area and therefore may represent a single event.

Alder charcoal from the buried soil dates the activity to 750 to 680 cal BC, 670 to 610 cal BC and 600 to 400 cal BC. A date of 410 to 360 cal BC from hazel charcoal from a post hole (4)

below the soil may relate to the same activity. The cereal remains represented in sample 10 from the buried soil (30) associated with post-hole 4 are similar to those from sample 3 but differ in there being almost no weed seeds, only one dock (*Rumex* sp.) seed and a grass (Poaceae) caryopsis. Apart from wheat chaff and grain, there was evidence for wild oat. Hazelnut shell was present and the sample again appears to represent domestic waste.

Discussion

In northwest Wales, as in other parts of Wales, there is generally more plant macrofossil evidence available for the Late Iron Age and Romano-British periods than the earlier Iron Age (Caseldine forthcoming), so that the recovery of plant remains from deposits dating to the Mid Iron Age at Caer Seion is a particularly useful addition to the record for crop husbandry in Wales. The charred plant assemblage from Caer Seion demonstrates that crop processing was taking place at the hillfort and that wheat, including spelt wheat, and barley were being grown in the area during the Mid Iron Age. The evidence is consistent with that from a roundhouse at Parc Bryn Cegin, Llandygai, where crop plants included spelt wheat, emmer wheat, naked wheat, barley and oat (Kenney 2008, Schmidl et al 2008). The evidence for cultivation at the late prehistoric enclosures of Moel y Gerddi and Erw-wen, Ardudwy, is scanty but wheat, probable barley and oat were recorded from the sites (Williams 1988). The concentration of remains in the samples is greater at the hillfort than these other sites. This might be due to the nature of the contexts examined but also might relate to the social status of the hillfort. However this could only be resolved by further investigations at the hillfort and the investigation of other settlement types in the local area.

Bibliography

Caseldine, A.E. (forthcoming). *The Environmental Archaeology of Wales*. 2nd Edition

Caseldine, A. E. and Griffiths, C.J. 2007. The Charred Plant Remains from Troedyrhiw Defended Enclosure. Unpublished report prepared for Dyfed Archaeological Trust.

Caseldine**,** A E and Holden, T G, 1998. The carbonised plant remains. In Williams, G. and Mytum, H., *Llawhaden, Dyfed: Excavations on a group of small defended enclosures, 1980-4.* (Ed K Blockley). BAR British Series 275, 105-118.

Ciaraldi, M. (forthcoming). Charred plant remains. In Davidson, A., Hughes, G. and Cuttler, R. (eds), *Excavations along the A55 Dual Carriageway*, Oxford: Oxbow Monographs.

Kenney, J, 2008. 'Recent excavations at Parc Bryn Cegin Llandygai near Bangor, North Wales', Archaeologia Cambrensis 157, 9–142.

Schmidl, A., Carrott, J. and Jacques, D. 2008. Appendix XIV: The Biological Remains. In Kenney, J., *Recent Investigations at Llandygai, near Bangor, North Wales: full report.* GAT Report 666 (site code G1857).

Van der Veen, M. 1992. *Crop Husbandry Regimes. An archaeobotanical study of farming in northern England, 1000 BC-AD 500*. Sheffield, Collis

Williams, D. 1988. Plant macrofossils. In Kelly, R.S., Excavations of two circular enclosure sites at Moel y Gerddi and Erw-wen, near Harlech, Gwynedd. *Proceedings of the Prehistoric Society* 54, 142-144.

Table 1 Charred plant remains from Caer Seion hillfort.

Trench	**1**	**1**	**2**	**2**	**Habitat preference**
Sample	**4**	**5**	**3**	**10**	
Context	**19**	**21**	**9**	**30**	
Volume (litres)	**0.5**	**0.5**	**6.7**	**0.4**	
Hordeum sp. - grain (straight) (Barley)	-	-	1	-	A
Hordeum sp. - grain (twisted)	-	-	1	-	A
Hordeum sp. - grain	-	-	1	-	A
Triticum dicoccum/*spelta* - spikelet forks (Emmer/spelt wheat)	-	-	12	-	A
Triticum dicoccum/*spelta* - glume bases	-	1	29	10	A
Triticum dicoccum/*spelta – grain*	4	1	7	1	A
Triticum spelta - glume bases (Spelt wheat)	1	-	24	2	A
Triticum sp.- glume bases (Wheat)	-	-	4	-	A
Triticum sp. - rachis frags.	-	-	7	-	A
Triticum sp. – grain	-	-	1	1	
Cerealia indet.	2	-	19	1	A
Corylus avellana L.) - nut shell frags. (Hazel)	-	-	20	5	W
Chenopodium album L. (Fat-hen)	-	5	8	-	A, D
Atriplex spp. (Oraches)	-	-	5	-	A, D
Chenopodiaceae indet.	-	-	2	-	
Spergula arvensis L. (Corn spurrey)	1				A, D
Cerastium spp. (Mouse-ears)	1	-	1	-	G, A, D,
Caryophyllaceae	-	-	2	-	
Persicaria maculosa Gray (Redshank)	2	-	-	-	A, D
Persicaria lapathifolia (L.) Gray (Pale persicaria)	-	-	1	-	D, A, w
Persicaria minor (Hudson) Opiz (Small water-pepper)	1	-	-	-	Gw, B
Polygonum aviculare L. (Knotgrass)	4	3	2	-	D
Rumex acetosella L. (Sheep's sorrel)	2	-	5	-	A, G, H
Rumex spp. (Docks)	1	-	2	1	G, D, A, M, B
Calluna vulgaris (L.) Hull (Heather)	-	-	2	-	H, M ,W
Calluna vulgaris (L.) Hull) - flowers	1	33	6	1	H, M ,W
Brassica sp./*Sinapis arvensis* (Cabbages/charlock)	1	-	1	-	D, A
Vicia sp. (Vetches)	-	-	1	-	G, W, D, H, A
cf. *Vicia* sp.	1	1	-	-	G, W, D, H, A

Medicago sp./*Trifolium* sp. (Medicks/clover)	-	-	1	-	G, D,
Plantago lanceolata L. (Ribwort plantain)	1	-	3	-	G, O
Galium aparine L. (Cleavers)	-	1	-	-	A, O, W
Carex spp. - biconvex (Sedges)	-	-	5	-	B, H,M, W, Gw
Carex spp. – trigonous	-	-	3	-	B, H, M, W, Gw
Avena sp. – caryopses	1	-	5	1	A, D
Avena fatua L. - pedicel (Wild oat)	-	-	1	1	A, D
cf. *Danthonia decumbens* (L.) DC. (Heath grass)	-	-	1	-	A, H
Poaceae (Grass)	-	-	14	1	G, H, M, W,
Pteridium aquilinum (L.) Kuhn - leaf frags. (Bracken)	-	-	2	-	W, H, M
Rhizome frags.	-	-	13	-	G
Tree buds	1	2	3	2	W
Total number of items	25	48	224	29	
Items /litre	50	96	33.4	72.5	

Habitat preference: A - arable; B = bank side, pond margins; D = disturbed ground; G = grassland; H = heaths, moorland; M = marshes, fens, bogs; O = open ground; W - woods, hedgerows, scrub; w = wet

APPENDIX 6

G1770 THE POLLEN EVIDENCE FROM CAER SEION

Astrid E. Caseldine and Catherine J. Griffiths

A pollen column was taken through the base of the rampart bank and the underlying buried soil, a dark humic silt containing charcoal fragments, in Trench 2. The latter was equivalent to the 'occupation horizon' identified during the 1951 excavation by Griffiths and Hogg (1956). The bank incorporated darker humic material that probably represented topsoil thrown up during bank construction.

Methods

The samples were prepared using standard procedures (Moore *et al* 1991) including treatment with hydrofluoric acid to remove silica and acetolysis to remove cellulose. Minerogenic material was also removed using micro-sieving. *Lycopodium* tablets were added to enable pollen concentrations to be assessed. Pollen was scarce and the pollen count was based on 300 *Lycopodium* spores. The samples were mounted in silicone oil. A magnification of x 400 was used for routine counting with magnifications of x 630 or x 1000 used for critical determinations. Identification was by comparison with type slides and reference to identification atlases (e.g. Moore *et al* 1991). Nomenclature is modified from Moore *et al* (1991), based on Bennett *et a*l (1994). Percentages have not been calculated owing to the low pollen counts. The results are given in Table 1.

Results and interpretation

Pollen was scarce and generally in a poor state of preservation. The likelihood of mixing by soil fauna and differential preservation, along with the low pollen counts, further limits the interpretation. The appearance of the 'occupation horizon' deposit also suggested trampling prior to dumping of the material that made up the bank. However a few observations can be made, although the results and interpretation must be treated with a degree of circumspection.

There is little difference between the pollen from the bank, which included topsoil, and the pollen from the occupation horizon. Relatively large amounts of Ericaceae pollen and, to a lesser extent, Poaceae pollen suggest a heath and grass dominated open environment, not too dissimilar to that of today. Spores of *Pteridium* and *Polypodium* are comparatively well represented, indicating the growth of bracken and polypody ferns in the area. Bracken favours dry acid soils and is commonly associated with heathland. Equally, polypody ferns like acid soils but will also grow on rock outcrops or walls. The occasional cereal type pollen grain may reflects cereal brought onto the site, demonstrated by the charred cereal remains found in the occupation deposit, but the pollen could also reflect cultivation nearby. Charred heather and bracken remains from the buried soil/ 'occupation horizon' might also indicate that some of the pollen from these taxa was derived from plant material brought onto the site, but they might have been growing locally and reflect local burning to clear the site. Lactuceae pollen may indicate dandelions or similar taxa around the site, but this is a fairly robust pollen grain and the lack of other weed pollen types is noticeable, possibly reflecting differential pollen preservation. A more extensive list of weed species was recorded in the plant macrofossil record. Tree and shrub pollen is very scarce but is consistent with the charcoal record which confirms that hazel, alder and birch woodland was present in the local area. The absence of oak pollen may be a result of differential pollen preservation or indicate that oak woodland in the immediate vicinity of the fort had already been removed. The lack of pollen at 12 cm and occurrence of cereal at 16 cm possibly reflects trampling and mixing of the soil before dumping of the bank material.

The pollen record dates to a period of activity at the hillfort prior to the second phase of activity and construction of the rampart of the smaller fort. Charcoal from the buried soil (9)

gave a date which calibrated to 750-680 cal BC, 670-610 cal BC and 600-400 cal BC and pre-dated construction of the rampart. A date of 410-360 cal BC was obtained from charcoal from the fill of a post hole (4) overlain by the buried soil beneath the rampart. The charcoal dated from the post hole is considered possibly to date from the same period of activity with removal of the post before construction of the rampart. Whether the construction of the earlier hillfort, or activity during the Bronze Age or Neolithic, had already led to woodland removal in the immediate area of the site is unclear from the evidence, but by the time of construction of the smaller fort an open grass-heath environment clearly existed.

Evidence from Llyn Cororion, on the Arfon Plateau, suggests a significant impact on the landscape from the middle-late Bronze Age onwards, particularly after *c* 750 cal BC (Watkins 1990, 1991, Watkins *et al* 2007). From this time forest clearance, accompanied by an increase in herbaceous taxa, coincides with a continuous charcoal record and a rise in mineral input into the lake which suggests an increase in fires in the catchment and erosion of soils as a result of clearance and agriculture. Arable and pastoral indicators indicate mixed farming. A more marked decline followed during the Romano-British period, but woodland still persisted in the area.

Although later in date, a largely deforested local environment was recorded from the lowland Romano-British farmstead at Bush Farm (Chambers *et al* 1998), near Bangor. As at Caer Seion, cereal pollen might attest to local cultivation or have been a result of on-site crop processing. Evidence from Bodandreg Bog, 1km to the east of Bush Farm, suggests a marked impact possibly in the late Iron Age and/or Roman period, but this is based on an extrapolated date and it may have occurred slightly earlier. These sites however, in contrast to that at Caer Seion, are in the lowlands.

Bibliography

Bennett K.D., Whittington, G. and Edwards, K.J. 1994. Recent plant nomenclatural changes and pollen morphology in the British Isles. *Quaternary Newsletter* 73, 1-6.

Chambers F.M., Lageard J.G.A. and Wilshaw I.C. et al 1998. Pollen analysis of samples from Bush Farm and a nearby shallow valley mire at Bodrandreg. In Longley D., Johnstone N. and Evans J., Excavations on Two Farms of the Romano-British period at Bryn Eryr and Bush Farm, Gwynedd. *Britannia* 29 240-242

Griffiths, W.E. and Hogg, A.H.A. 1956. The Hill-Fort on Conway Mountain, Caernarvonshire. *Archaeologia Cambrensis* 105, 49-80.

Moore, P.D., Webb, J.A. and Collinson, M.E. 1991. *Pollen Analysis* (2nd edn.) Oxford, Blackwell Scientific Publications.

Watkins, R. 1990. The Post-glacial vegetational history of lowland Gwynedd - Llyn Cororion. In Addison, K., Edge, H.J. and Watkins, R. (eds.), *The Quaternary of North Wales: Field Guide*. Quaternary Research Association, Coventry, England 1990, 131-136.

Watkins, R. 1991. *Postglacial vegetation dynamics in lowland North Wales.* Ph.D. dissertation, University of Wales, 389 pp

Watkins, R, Scourse, J.D. and Allen, J R M, 2007. The Holocene vegetation history of the Arfon Platform, North Wales, UK. *Boreas* 36, 170-181

Table 1 Pollen evidence from Caer Seion hillfort, Conway Mountain.

Depth	**1cm**	**4cm**	**6cm**	**8cm**	**9cm**	**12cm**	**16cm**	**20cm**
Taxa								
Betula	-	-	-	-	-	-	1	-
Alnus	1	2	-	-	1	-	-	-
Fraxinus	-	-	-	-	-	-	-	1
Total Trees	1	2	-	-	1	-	1	1
Corylus avellana type	1	1	-	-	1	-	6	-
Total Shrubs	1	1	-	-	1	-	6	-
Ericaceae	8	8	15	1	13	-	5	2
Total Dwarf shrubs	8	8	15	1	13	-	5	2
Poaceae	1	2	7	1	5	-	3	1
Cerealia type	-	-	-	1	-	-	1	-
Cyperaceae	-	1	3	-	2	-	-	-
Lactuceae	3	1	1	2	1	1	-	1
Plantago lanceolata	-	1	-	-	-	-	-	-
Total Herbs	4	5	11	4	8	1	4	2
Total Pollen	14	16	36	5	23	1	16	5
Pteridium	3	2	7	1	7	-	6	1
Polypodium	8	20	5	2	3	-	3	
Pteropsida monolete indet.	-	-	-	-	1	-	1	2
Sphagnum	1	-	-	-	-	-	-	-
Total Spores	12	22	12	3	11		10	3
Indet.	5	-	4	4	4	-	5	2
Total	31	38	52	12	38	1	31	10

APPENDIX 7

STONE PETROLOGY REPORT

Dr David Jenkins

G1770CS Caer Seion hillfort, Conwy Mountain, 2008

From 1951 backfill of excavated roundhouse; context (3). Associated radiocarbon date Cal.BC 390-200.

The single sample comprises a cylindrical cobble with rounded orthogonal fractures. It is composed of a fine/medium grained dolerite with a mesh of fine plagioclase feldspar laths. Such dolerite (though generally coarse in grain size) occurs some 3km to the south of Conwy Mountain at Bwlch y Ddeufaen, but would not be likely to occur in the local glacial deposits at Caer Seion which could, however, contain dolerite from other (northern) glacial sources. (BGS 1994; Howells, 2008) Otherwise this sample may have been selected and brought to the site due to its distinctive shape.

References

British Geological Survey 1994. *The rocks of Wales: Geological map of Wales, 1:250,000* NERC.
Howells, M.F. 2008. *Wales: Regional Geology Guide. New Edition*, British Geological Survey.

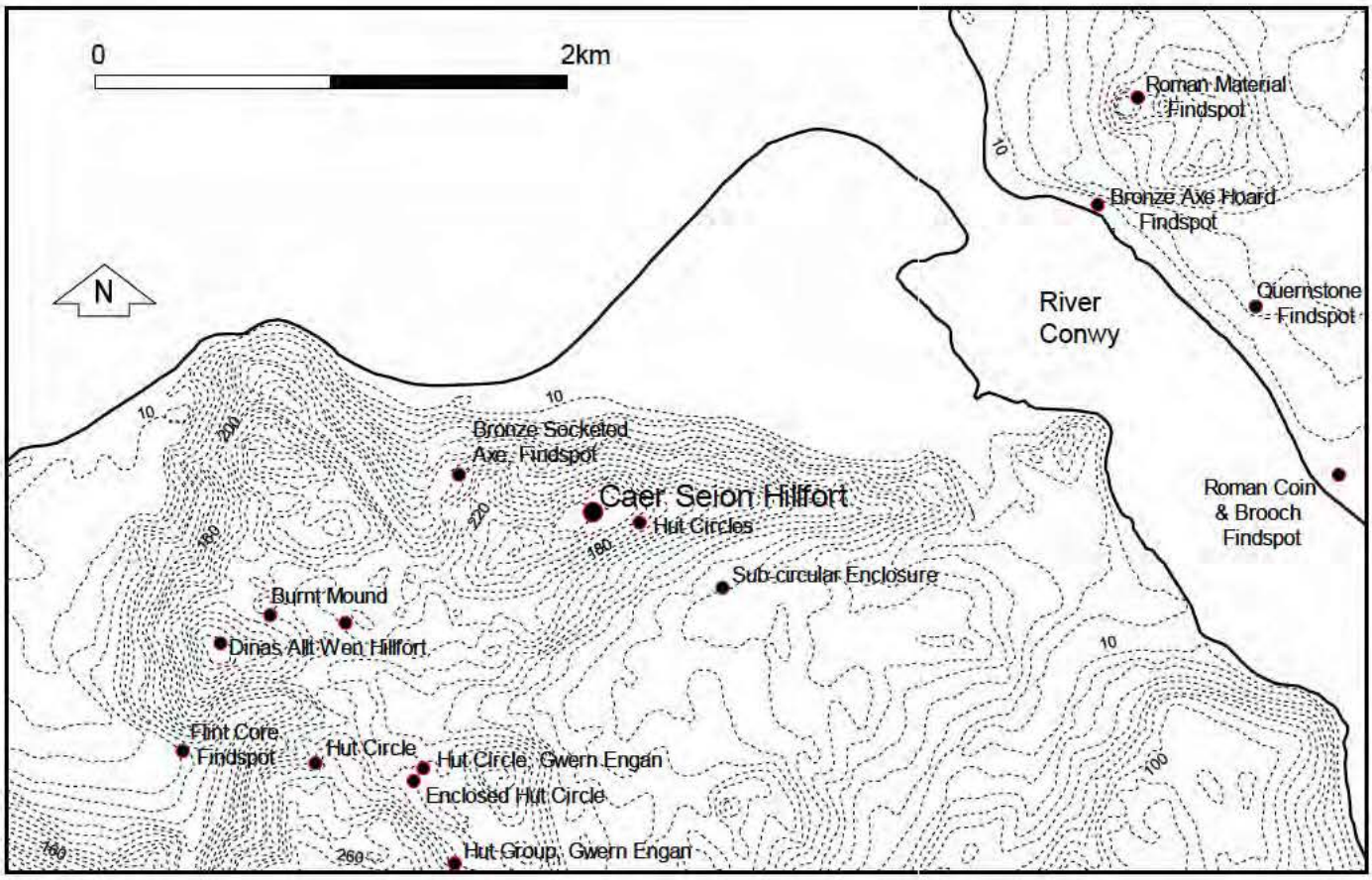

Fig. 1. Caer Seion. Topographic and archaeological context.
Based on Ordnance Survey maps. © Crown copyright. All rights reserved. Licence number AL 100020895

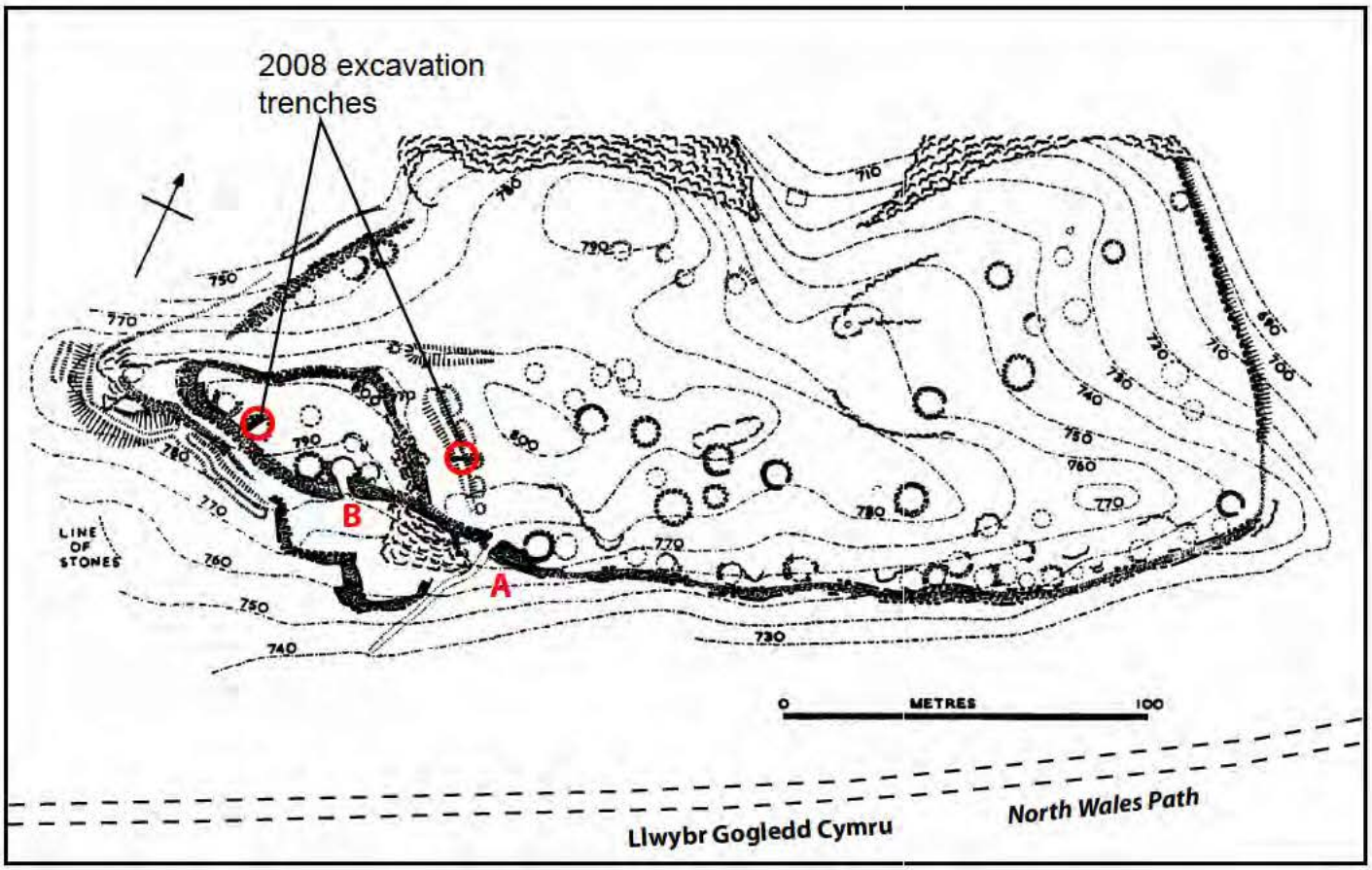

Fig. 2. Caer Seion. Plan of the hillfort, showing the location of the features described
(Based on plan copyright RCAHMW)

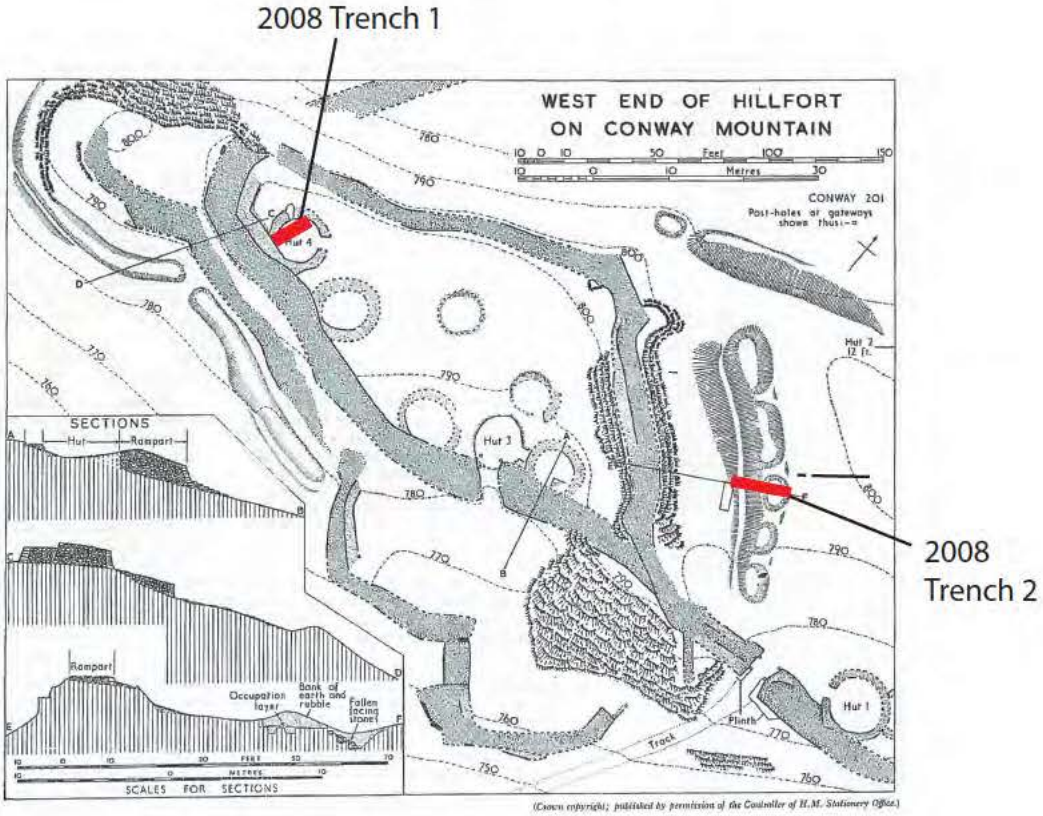

Fig. 3 Caer Seion, Conwy Mountain. Plan of the small fort at the west end of the hill, by W. E. Griffiths (1956), annotated to show the locationof Trenches 1 and 2 excavated in 2008. Scale 1:1000

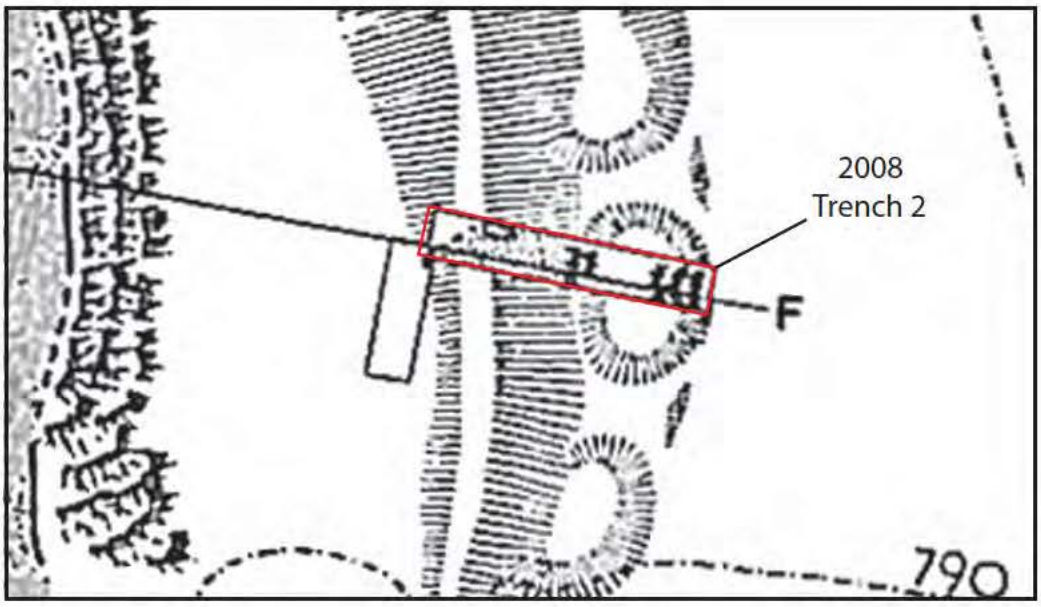

Fig. 4 Caer Seion, Conwy Mountain. Plan of 1951 Trench F, enlarged from W. E. Griffiths (1956), annotated to show the location of 2008 Trench 2. Scale 1:200

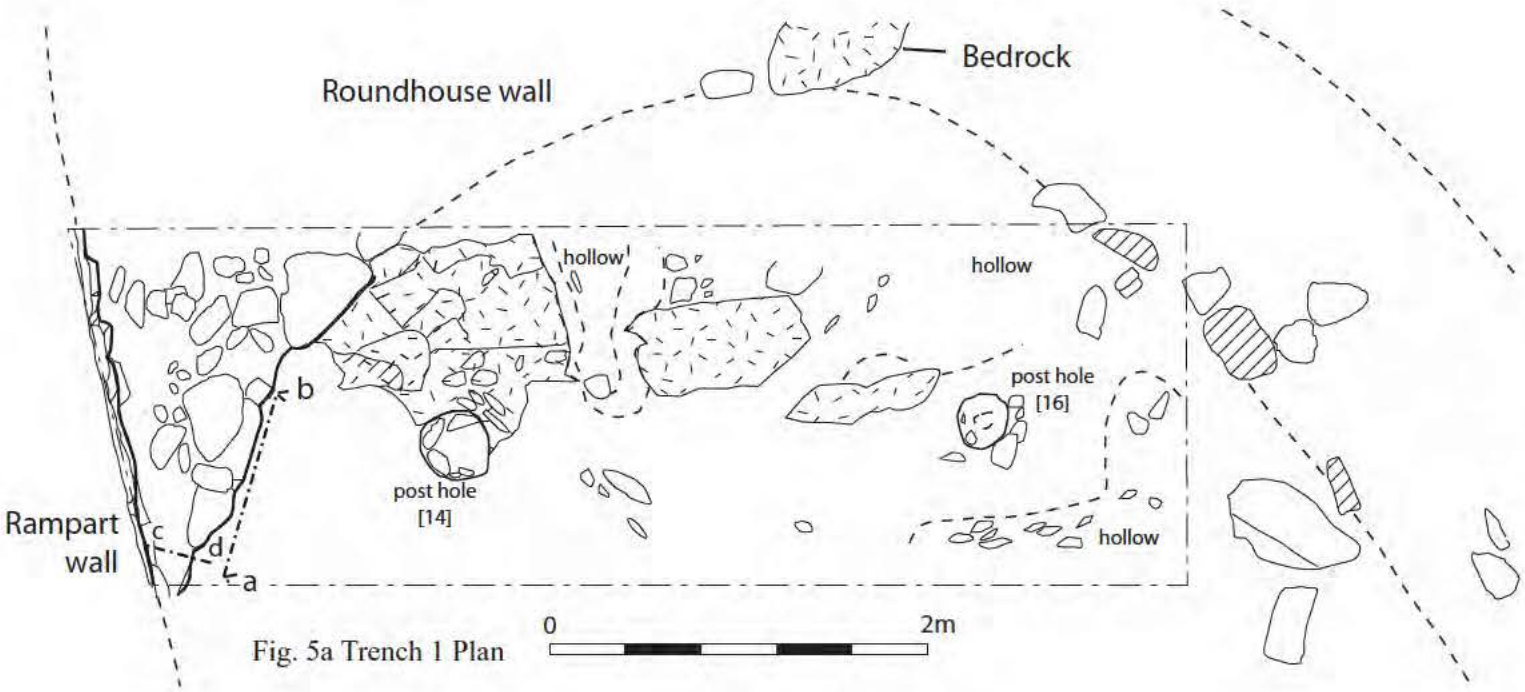

Fig. 5a Trench 1 Plan

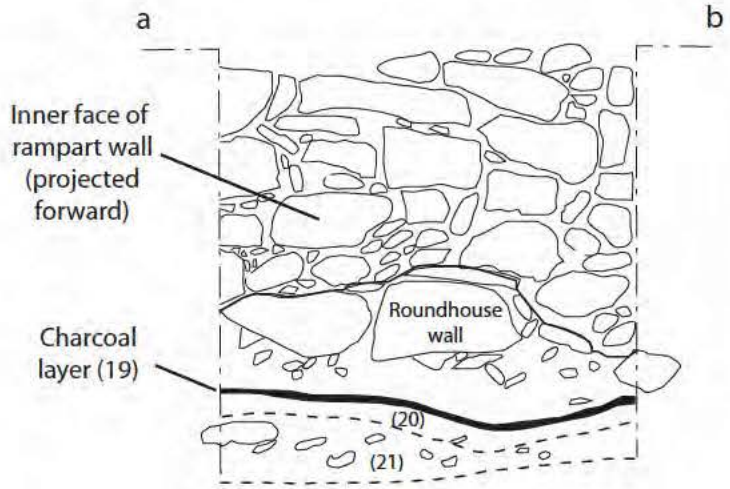

Fig. 5b Elevation of rampart wall and roundhouse wall

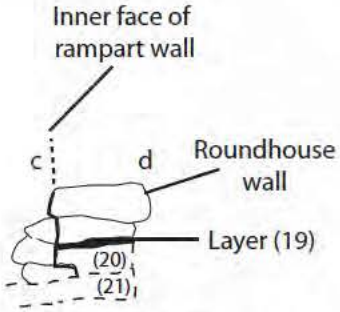

Fig. 5c Section showing relationship between rampart wall and layer (19)

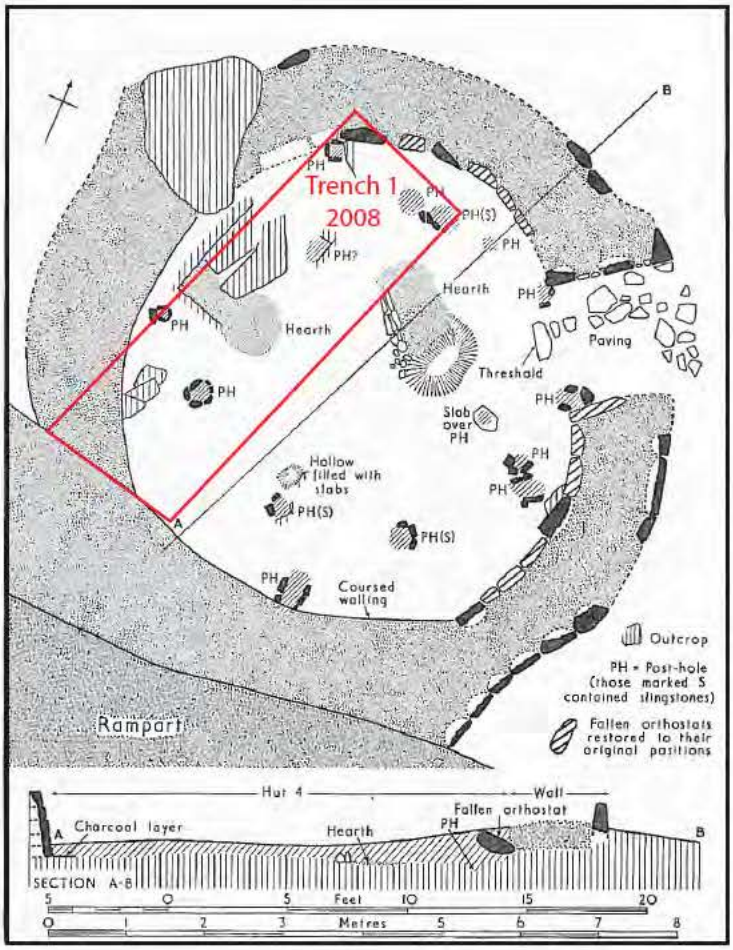

Fig. 5d 1951 excavation plan of Hut 4 annotated to show position of Trench 1

Caer Seion: Fig. 5 Trench 1. Location of the 2008 trench in relation to the 1951 excavation plan of Hut 4 and plan and elevations of rampart and hut wall to show the location of the buried soil (19)

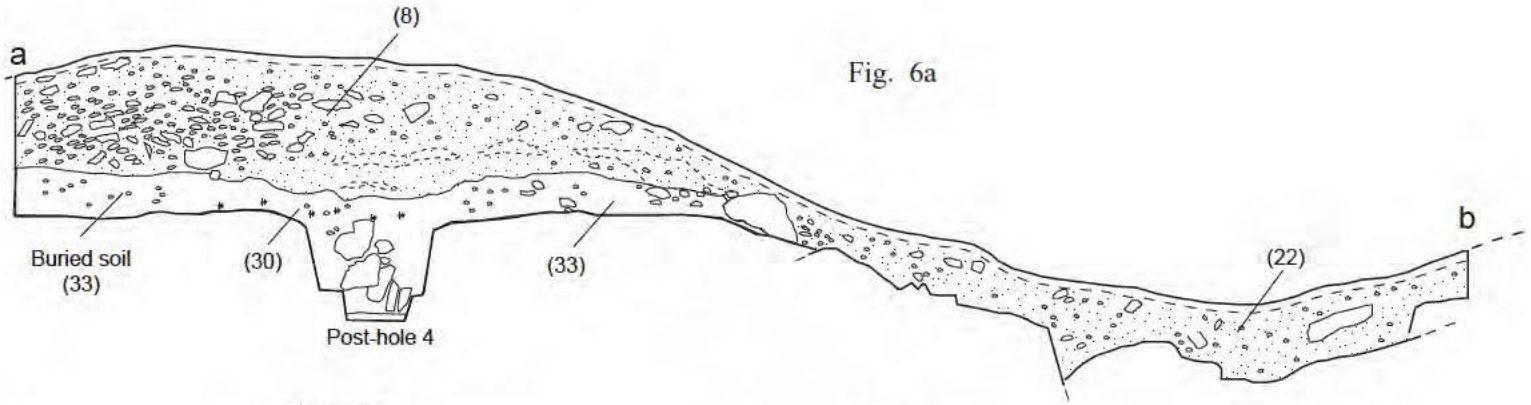

Fig. 6a

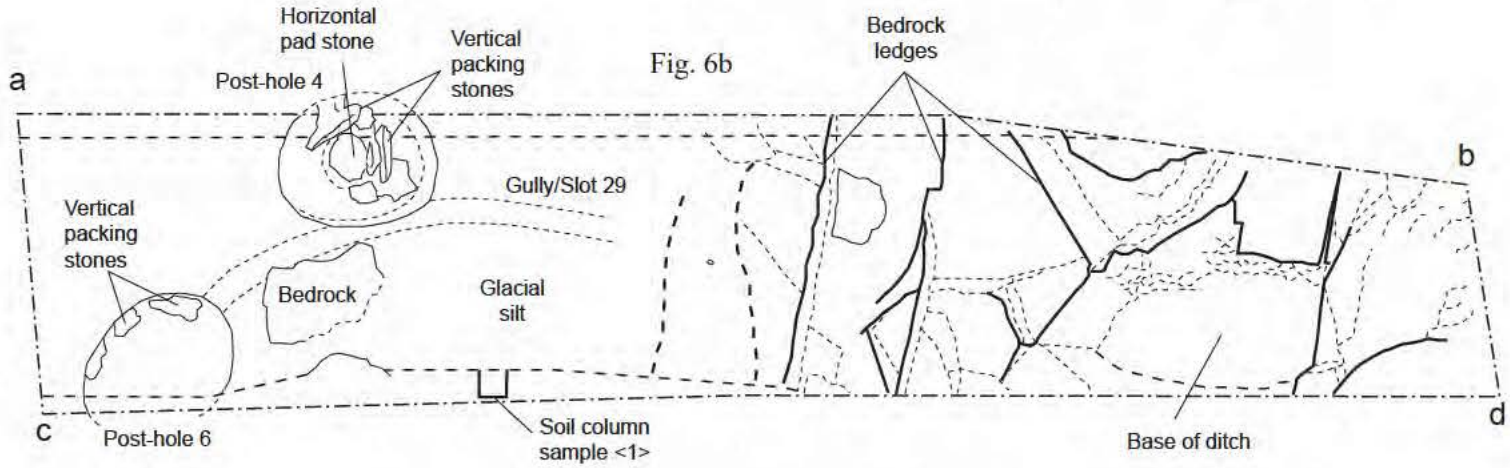

Fig. 6b

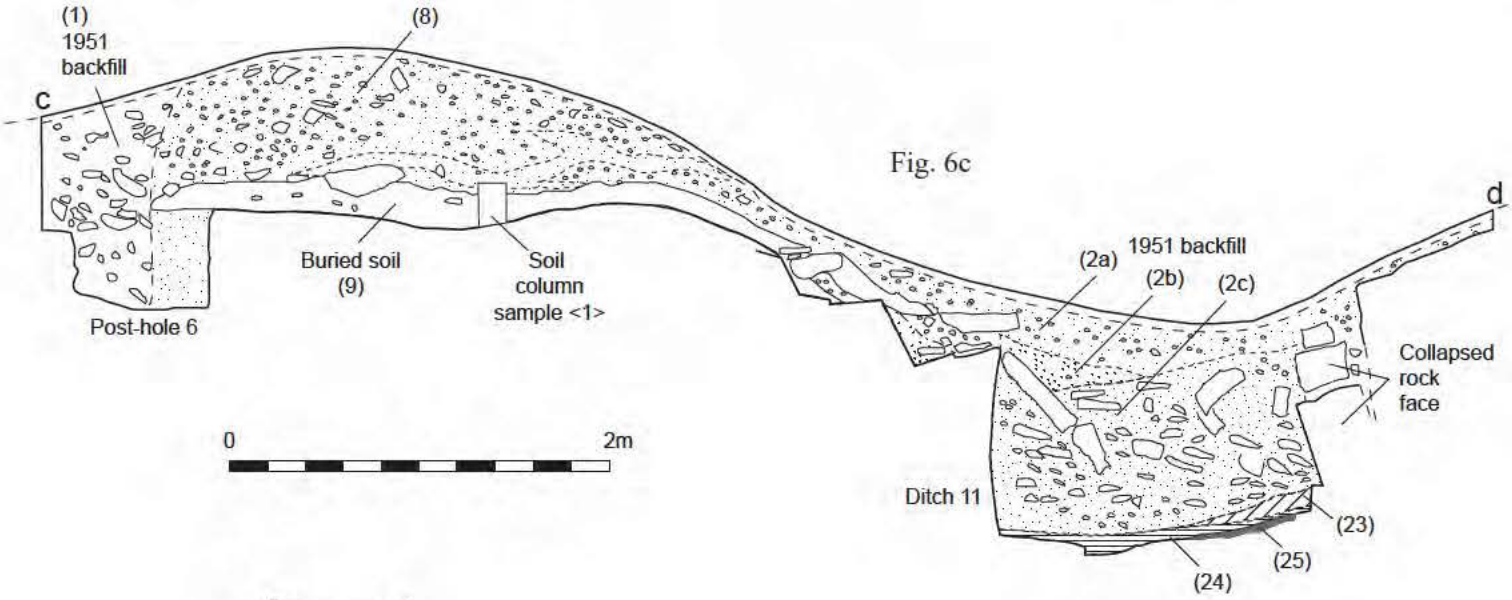

Fig. 6c

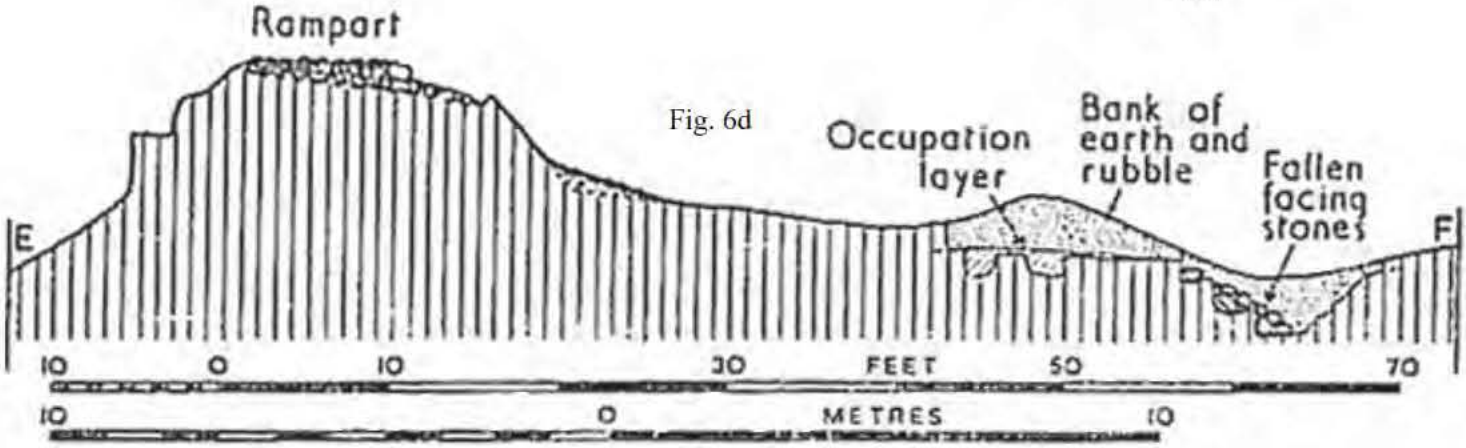

Fig. 6d

Caer Seion Fig. 6 : Trench 2. 2008 Plan and sections of bank and ditch, showing the buried occupation horizon and postholes (Section c-d mirrored)
6d: Profile of small fort rampart and section of bank and ditch enlarged from Griffiths (1956)

Caer Seion: Fig. 7 Trench 1 before excavation, from the south-west. 2m scale

Caer Seion: Fig. 8 Trench 2 before excavation, from the east. 1m scale

Caer Seion: Fig. 9 Trench 1. Buried soil 19 below hut wall, from the north-east. 1m and 30cm scales

Caer Seion: Fig. 10 Trench 1. Post-hole 14 from the south-east. 1m and 30cm scales

Caer Seion: Fig. 11 Trench 2. Post-hole 4 with packing stones from the south. 30cm scale

Caer Seion: Fig. 12 Trench 2. Post-hole 6 with packing stones, from the south. 30cm scale

Caer Seion: Fig. 13 Trench 2. Ditch excavated, from the west. 1m scale

Caer Seion: Fig. 14 Trench 2. Bank and buried soil after excavation, from the north. 1m scale

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