March 2013

EXCAVATIONS AT FAN BARROW, TALSARN, CEREDIGION

2009 – 2012

FINAL REPORT

Prepared by Dyfed Archaeological Trust
For Cadw

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Duncan Schlee

Cadw

Llywodraeth Cynulliad Cymru
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EXCAVATIONS AT FAN BARROW, TALSARN, CEREDIGION 2009-12

FINAL REPORT

SUMMARY

A scheduled Bronze Age round barrow at Fan, near Talsarn, Ceredigion was ploughed flat in the late 1990s. In order to ascertain what survived of the monument, Dyfed Archaeological Trust obtained grant-aid from Cadw to evaluate the site. This was undertaken in three phases: a geophysical survey in 2009 (Poucher 2009): evaluation trenching in 2010 (Schlee 2010): and an open area excavation in 2011.

Although all evidence of the barrow structure had been destroyed by ploughing, five cremation burials were revealed below the barrow, all of early Bronze Age date. Several whole pots including Collared Urns and Cups were recovered from the cremation pits. Another pit contained the remains of two small, charred planks of wood. The central, stone lined cremation pit also contained fragments of melted copper and bronze.

Two cut features, one containing Neolithic pottery fragments, were dated to the Middle Neolithic period.

Two small charcoal filled pits were dated to the middle and later Bronze Age.

A circular feature revealed by the geophysical survey appears to be the vestige of a monument pre-dating the barrow. Due to the loss of horizontal stratigraphy, however, it is not certain whether this feature is of Neolithic or early Bronze Age origin.

The results of the excavation make a useful addition to the corpus of Bronze Age ceramics from Wales, and shed interesting light on funerary practices in the Bronze Age, and the complexity of round barrow structures.

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INTRODUCTION

During the late 1990s, a scheduled Bronze Age barrow (SAM CD078) located at NGR SN 5647 5870 was ploughed flat. Following this event Cadw commissioned Dyfed Archaeological Trust to undertake a condition survey of the site to inform decisions on its future management. The first phase of the assessment comprised a geophysical survey undertaken in 2009 (Poucher 2009). This was followed up by targeted trench evaluation over 5 days of fine weather in October 2010 (Schlee 2010). In 2011 excavation was completed over a three week period in September/October.

During 2012 various specialist analyses and conservation of the ceramics was undertaken. This final report presents the results of the analyses and discusses the site as a whole.

Methodology

Geophysical Survey

A geophysical survey of the site of the barrow and its environs was undertaken in December 2009 using a fluxgate magnetometer (Poucher 2009). The survey provided a clear image indicating the extent of the barrow and a variety of other features of possible archaeological significance upon which the trenching strategy for the evaluation excavation was based in 2010 (Figures 2 and 3).

Feature A (see Figure 4) was a large circular anomaly initially assumed to be the remnants of the ploughed out barrow. It was approximately 24m in diameter, possibly defined by a bank and ditch up to 1.5m wide.

Feature B (see Figure 4) was a smaller arc, assumed to be part of a small circular feature approximately 9m in diameter. Feature B, was visible 'bulging' out from the perimeter of Feature A in its northeast quadrant and was interpreted as either an earlier or later intercutting feature.

Feature C was a rectangular anomaly within Feature A (see Figure 4).

Feature D was the ploughed out barrow(see Figure 4).

Evaluation excavation

An evaluation trench was located to enable several possible features of potential archaeological significance to be investigated. The trench was cut using a tracked 8 tonne JCB with a 1.20m wide toothless ditching bucket. Following initial results, the trench plan was modified to a 'T' shape to confirm the findings of the initial trench. Standard excavation and recording techniques were employed.

Open area excavation

Based on the interpretation of the 2009 geophysical survey (Poucher 2009) shown in Figure 2, it had been assumed that the geophysical 'anomaly' (Feature A) indicated the extent of the former barrow. Following the evaluation, it became apparent that the location of the former barrow did not tally exactly with the geophysical anomaly and that there was probably more than one feature present at the site. A larger area of topsoil was stripped in 2011 to further characterize the form of the barrow and to target a variety of potential features within and around it (Figure 4 and 5).

The excavation area was stripped of topsoil using a tracked 8 tonne JCB with a 1.20m wide toothless ditching bucket. Due to the initial lack of visible evidence

for the former barrow (such as mound material, buried soil or a perimeter ditch) or other features indicated on the geophysical survey, it was unclear what the exact location, form and extent of these features had been. The original trenching strategy was modified to ensure the target features had not been wrongly located.

In the event, almost all of the probable area of the barrow was excavated, approximately half of the area of the geophysical anomaly within the survey area, and portions of the periphery of both monuments.

Considering the evidence of the geophysical survey, the form of the monuments and the extent of their degradation revealed by the excavation, it is considered unlikely that further excavation of the remaining parts of the monuments would add significantly to the archaeological record.

During the excavation numerous bulk soil samples for the recovery of cremated bone, environmental and radiocarbon-dating evidence were taken. Standard excavation and recording techniques were employed.

Historical and archaeological background

Fan Barrow is associated with the discovery of a Bronze Age Pygmy Cup known as the Abermeurig or Nantcwnlle Cup (Photo 43). In an article in *Archaeologia Cambrensis* (1879) the Rev. E.L. Barnwell reports that the cup was found in a field near Talsarn 'in the time of' Dr T.E. Rogers of Abermeurig'. The cup is curated at the National Museum of Wales in Cardiff (Accession No. 15.139/1-2).

In 'A Short History of the Parish of Nantcwnlle' by the Rev. Evan Edwardes, published in the Cambrian News in 1930 (translated by J Hyatt 2003) the cup is described as having been found in a group of stones on Ty'n Rhos bank on the Abermeurig estate.

A local resident has pointed out that Fan Barrow itself is not located on Ty'n Rhos Bank, nor has the land on which the barrow sits ever been part of the Abermeurig estate. He was able to identify the location which he has always understood to be the site from which the Abermeurig Cup was excavated, which is indeed a suspicious looking 'pimple' on the nearby rise known as Ty'n Rhos bank. This location (SN 56840 58900) has not been previously identified as a round barrow and is not recorded in the HER. It is possible therefore, that the association of Fan Barrow as the source of both of these artefacts is unreliable.

A visit to the location on Ty'n Rhos bank during the excavation identified the remnants of a possible barrow, however, a considerable amount of disturbance, including what appear to be the remains of a rectangular enclosure or building, and other delvings, have somewhat obscured the situation (Photo 8). An aerial photograph of the site also suggests it could be a barrow (Photo 7). It is considered entirely possible, however, that this is the location of a barrow from which the Abermeurig Cup was recovered.

It is also noteworthy that another round barrow was excavated in 1929 at the nearby farmstead of Pen-y-glogau, just over 1km away (SN 55440 59320). A useful description of the excavations (Jones and Davies 1930) suggests it may have been a similar feature to Fan Barrow. The excavation was undertaken when cremations were discovered during the removal of the barrow to provide roadstone for the repair of local roads.

The Pen-y-glogau excavation report describes a stone-lined primary cremation pit (Grave N) with similar characteristics to cremation pit 004 which formed the central, primary burial at Fan. In addition to general similarities of form

and size, several other features described in the report would appear to be similar to features excavated at Fan. A Collared Urn and Pygmy Cup recovered from the excavation (Photos 41 and 42) are stored at Cardigan Museum (Accession numbers 75.1278 and 75.4738).

Another local resident reported another possible unrecorded barrow and several unrecorded burnt mounds in the surrounding area.

Archive photographs

Aerial photographs of the barrow in taken in 1989 and 1992 and 1996 (Photos 1, 2 and 3), show the barrow from various angles before it was destroyed. The barrow is substantially intact in these photos, but shows evidence of disturbance, probably the result of antiquarian excavations, quarrying for hardcore or possibly as a consequence of secondary burial activity within the mound. A ground photos taken in 1988 and 1993 (Photos 5 and 6) give an impression of the form of the mound and the extent of the disturbance.

A digital aerial image from 'Get Mapping' (Photo 4), of *c.*2001, shows the barrow possibly soon after it was destroyed. A pale coloured area appears to correspond to the circular feature suggested by the geophysical survey. Surrounding this is an irregular area of reddish hue, thought to be formed by the spreading of the mound material when it was destroyed.

Photos 7 and 8 are an aerial photograph and a ground photograph of the possible barrow located on Ty'n Rhos bank.

An attempt to establish the former location of the barrow in relation to the geophysical survey using rectified photography was not successful due to the absence of suitable reference points in the available photographs.

EXCAVATION RESULTS

Charcoal filled pits

These three cut features were all roughly circular, vertical sided and flat based. Each contained a black charcoal rich fill, with no other inclusions. These pits are located on the north side periphery of the mound. They are not cremation pits (or at least do not contain cremated bone) and appear more likely to be post holes. Their location suggests they may be associated with the geophysical anomaly (Feature A) or with a different pre-barrow feature, rather than the round barrow itself.

Pit 009 (Filled by 008) - Photo 15

A circular pit 0.45m diameter, 0.18m deep with vertical sides and a flat base. The fill consisted of fine silt mixed with fine charcoal/ash 'crumb'. Although most charcoal fragments were too small to be identifiable, some possible ivy wood was identified. Charcoal from this feature (context 008) has been radiocarbon dated to 1048-896 cal BC at 95.4% probability (SUERC 42558).

Pit 042 (Filled by 041) - Photo 16

A circular, vertical sided pit with a flat base. Diameter 0.22m, depth 0.10m. The fill was a dark grey-brown charcoal rich silt, but all the charcoal was too small to identify or date.

Pit 011 (Filled by 010) - Photo 17. Figure 8

An oval pit, 0.5m x0.47m x 0.27m deep with vertical sides, slightly concave base. The shape of the feature was distorted by stones in surrounding natural. The fill was a charcoal rich fine silt, although the charcoal was too fine to be identifiable. Charcoal from this feature (context 010) has been radiocarbon dated to 1048-896 cal BC at 95.4% probability (SUERC 42559).

Cremation pits

Cremation pit 004 (fills 003, 007, 008, 010) – Photos 11- 14, Figure 6

The primary burial at Fan Barrow was an excellently preserved cremated bone assemblage (007) representing approximately 100% of the expected quantity of bone for a single individual (weighing 1,908.6g), placed within a stone lined pit. The deposit overlying the cremation (003) also contained fragments of cremated bone, probably as a result of bioturbation. Also present within deposits 003 and 007 were various items that were probably burnt on the pyre alongside the body, including charcoal, possible burnt flint and droplets of bronze and copper. There was no clear evidence that the cremation had been deposited within a bag or other container.

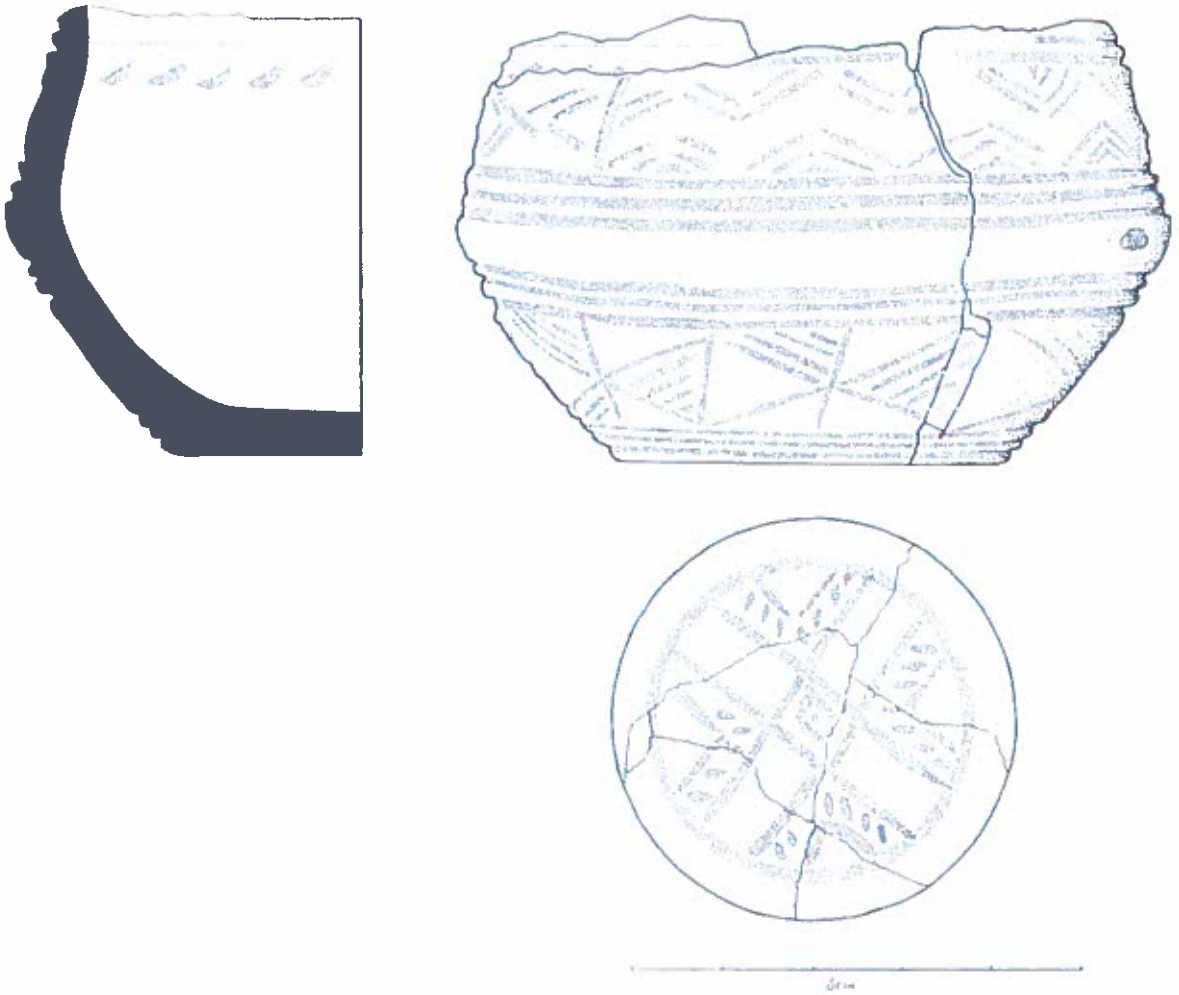
Osteological analysis has identified the burial as a probable female mature adult aged 46+, with degenerative joint disease in the neck. Small holes in the top of the skull (parietal foramen) may be a genetic trait in the individual. The same trait was found in Cremation 005.

The human bone from this feature (context 007) has been radiocarbon dated to2051-1895 cal BC (95%probability SUERC 40799). This is a very similar date to that obtained from cremation 036.

Analysis of several of the bronze droplets suggests that despite the exact

proportions of tin to copper being distorted by the effects of corrosion, the total absence of tin in one sample suggests that the droplets may represent the remains of both copper and bronze objects.

The cremation deposit was accompanied by a complete, upright, finely decorated pygmy cup (Cup 4). Cup 4 (Photo 33 and 34) is bipartite coil built vessel with traces of two perforations on the shoulder (Drawing 1). The decoration inside the rim comprises a low ring of small crescent-shaped stabs. The upper zone of external decoration is bordered above and below by traces of 2 encircling incised lines. Within this border, opposed chevrons each comprised of 3 nested sets of incised lines form a zone of running reserved chevron. Below the shoulder, the decorative zone is also bordered above and below with 3 incised encircling lines. The zone is divided by incised lines into rectangular panels, each divided into six triangular panels. Alternating panels are filled with oblique incised lines. The base is also decorated with incisions. A 9-sectioned lattice is framed in an encircling line. The central part of the lattice has a roughly concentric square within it and with a small stab in the centre. The outer 4 corner squares of the lattice have incisions parallel to their inner sides and the resulting angles are filled with short stabs similar to those inside the rim. Although the form of the cup is a common type in Wales, the decoration is difficult to parallel in Wales (see Appendix 4).



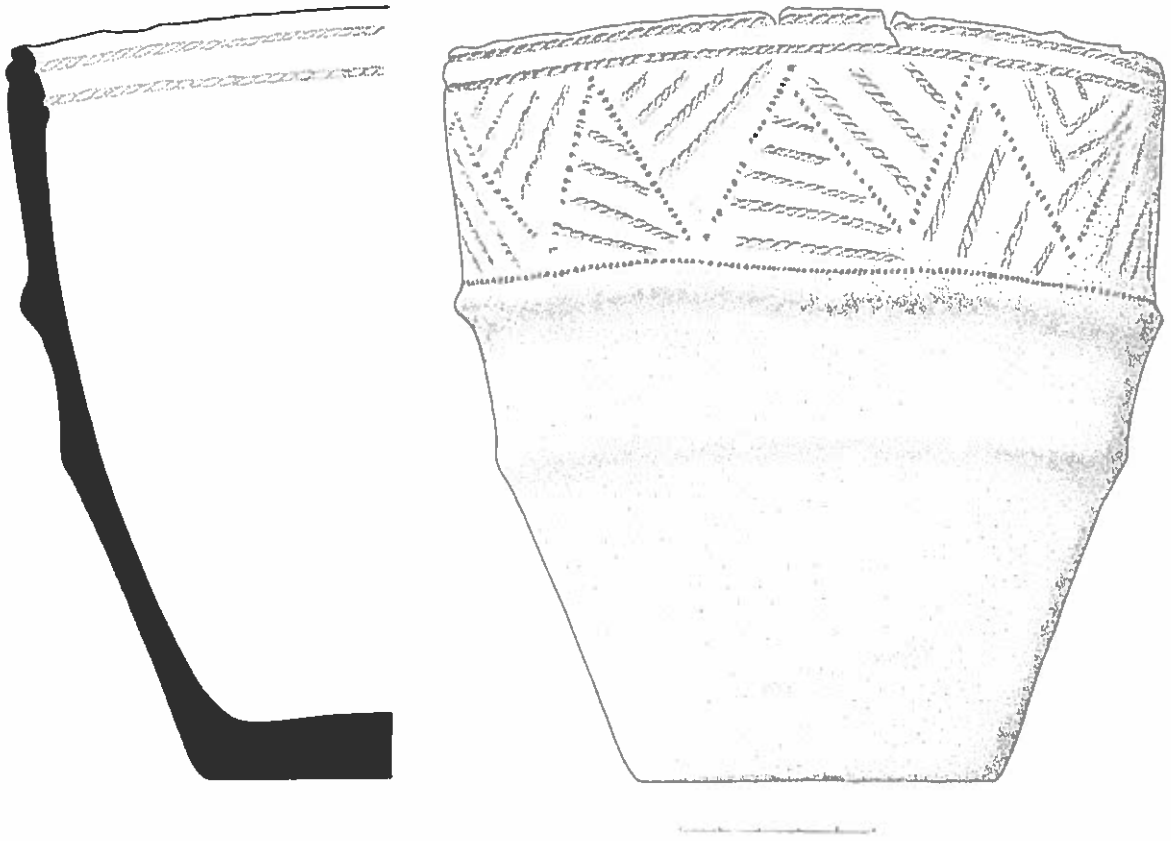
Drawing 1: Cup 4

Cremation pit 006 (fills 005, 011) – Photos 9 and 10, Figure 6

Burial 005 was a cremation within a plain circular flat bottomed cut (006). The moderately well preserved cremation represented approximately 41% of the expected average quantity of bone (662g) for an individual. A couple of minute bronze fragments were noted during the initial cleaning of this feature, but no further traces were observed during the controlled excavation of the pit fill.

This individual was a possible female old middle adult, aged between 36 and 45. Small holes in the top of the skull (parietal foramen) may be a genetic trait in the individual. A lambdoid ossicle in one of the cranial sutures may be the result of stresses placed on the skull during foetal life and early infancy.

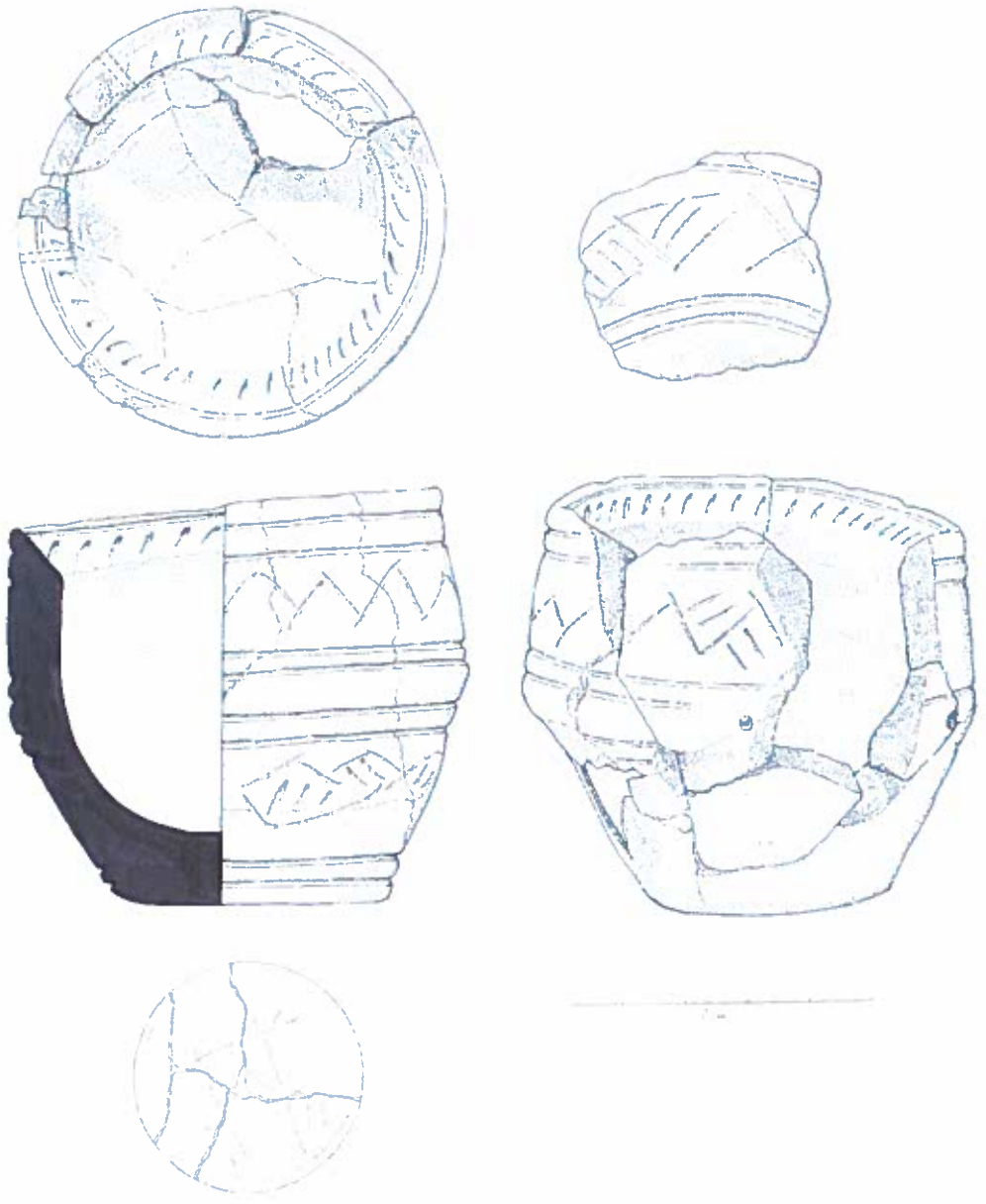
The human bone from this feature (context 005) has been radiocarbon dated to 2029-1874 cal BC (95%probability SUERC 40798). This is a very similar date to those obtained from cremation 023 and ritual pit 029.



Drawing 2: Urn 1

The cremation was partly contained within a Tripartite Collared Urn laid on its side, facing approximately west. The urn is misshapen (Drawing 2, Photo 35), apparently during the firing process. The urn collar is decorated with a single zone of well-executed twisted cord lattice bordered above and below with three encircling twisted cord lines. Urn 2 was accompanied by a Cup (Cup 3) laid on its side. Cup 3 (Photo 32) is of bipartite form with two perforations at the shoulder (Drawing 3). The rim has a slight internal bevel decorated with a single incised line towards the top and a series of oblique short incisions below. The decoration on the outer surface is similarly incised. The upper zone, above the shoulder, comprises a zone of incised single running chevrons bordered above and below by two encircling lines. Below the shoulder is a zone of lozenges filled with oblique

lines again bordered above and below by two encircling lines. The base is decorated with the abraded traces of an incised 9 square lattice bordered by an outer encircling line. The outside 4 corners of the lattice appear to have been filled with oblique incisions. There is also a possible trace of a single oblique incision in the central square. Although the bipartite form of this vessel has abundant parallels amongst Welsh Bronze Age cups, the decoration is much more difficult to match. The filled and open grid squares on the base similarly appear unique in the Welsh corpus, but bears comparison with Cup 4 from Fan. The inside of Cup 3 appears possibly to have been stained with ochre, although this has not been confirmed.



Drawing 3: Cup 3

Cremation pit 017 (fills 016, 021, 028) - Photo 18. Figure 8

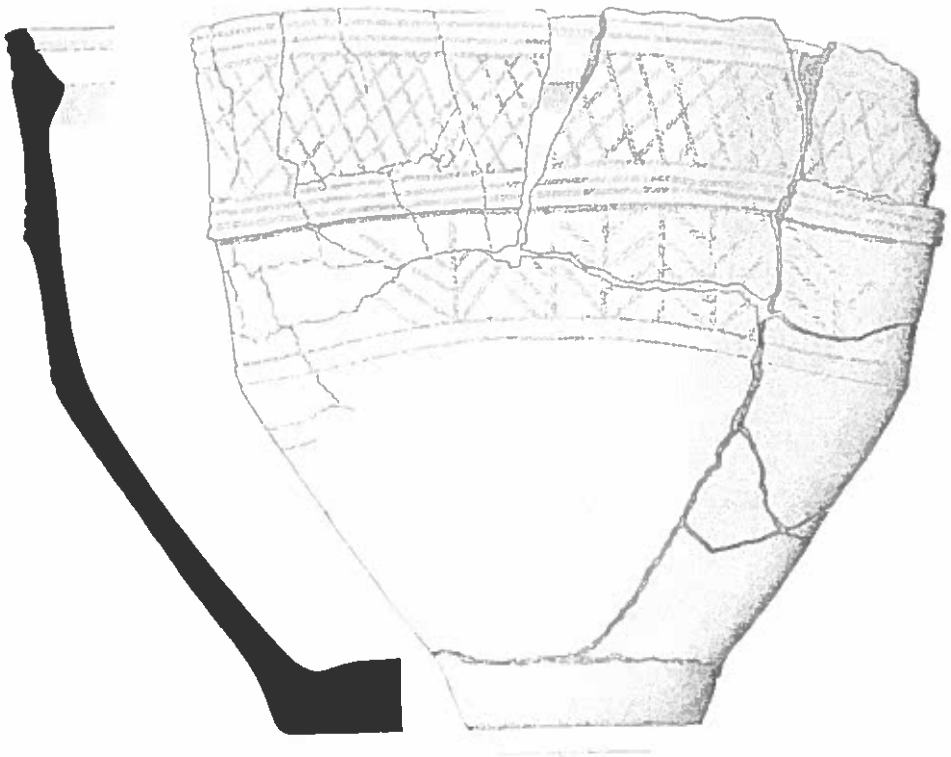
Flat bottomed slightly sub-circular pit cut 017 contained a moderately well preserved cremation representing approximately 20% of the expected average quantity (332.1g) of an individual.

Osteological analysis has identified the burial as an adult of indeterminate sex, whose age could not be determined more precisely than 18+. Radiocarbon dating suggests that this burial could be later than the other cremations within the burial mound. However, there is also some overlap between the dates.

The human bone from this feature (context 021) has been radiocarbon dated to 1926-1741 cal BC (95% probability SUERC 40800). This is a slightly later date than those obtained from the other cremations.

Below the cremation the soil appeared to have been heat affected, perhaps suggesting something was burnt within the cut prior to the deposition of the cremation.

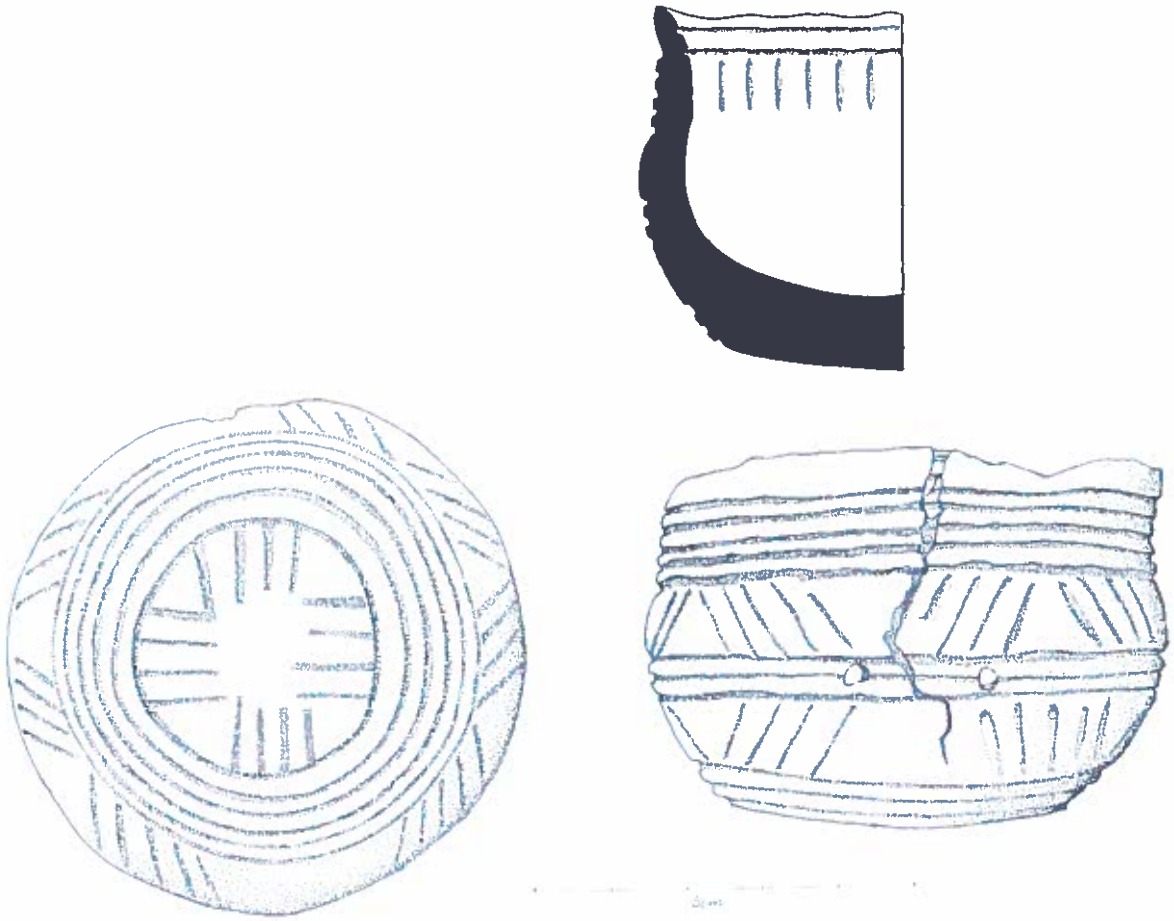
Only part of the cremation was contained within a tripartite Collared Urn (Urn 1) which was laid on its side, facing approximately west, on top of the bulk of the cremation material. The urn (Drawing 4, Photo 31) is misshapen, most probably during the firing process and can be regarded as a firing waster. The rim is simple with a vertical internal bevel decorated at the top and base by two well-separated encircling twisted cord lines; the intervening space is undecorated. The upper portion of the pot is decorated at the top with 2 encircling lines of twisted cord impressions. The main zone comprises an opposed filled chevron motif. The outlines of the chevrons are executed in whipped cord while the diagonal lines filling the chevron are in twisted cord. An encircling line of whipped cord forms the lower border of the motif immediately above the cordon. The second (lower) cordon is less well-defined and situated some 35mm below the upper. The vessel is undecorated below the upper cordon.



Drawing 4: Urn 1

A small rounded and finely decorated cup (Cup 1) with a pair of perforations at the shoulder on one side, was placed next to the urn, on top of the cremation. The decoration (Drawing 5, Photos 37 and 38) is incised and comprises close-set vertical incisions on the inside of the neck with two encircling lines above. The rim itself is rounded and undecorated. Externally, the decoration is zoned. At the top are 5 incised lines occupying a space of 10mm. Below is a zone, also 10mm deep, of alternating groups of 4 oblique lines (5 in 1 case). This is bordered below by 3 incised lines, a second zone of alternating groups of 4 oblique lines and finally a lower border of 3 incised lines above the base. The base itself is decorated similarly. Three encircling incised lines act as a border for 4 groups each consisting of 4 incised lines arranged in the shape of a cross with undecorated centre. There are traces of possible white inlay in some of the incisions.

Cup 1 bears remarkable similarity in decoration and form to an unprovenanced pot (see Photo 41), possibly from Ceredigion (Savory 1980, 219, No.471), and it may be that these two cups have been made by the same potter.



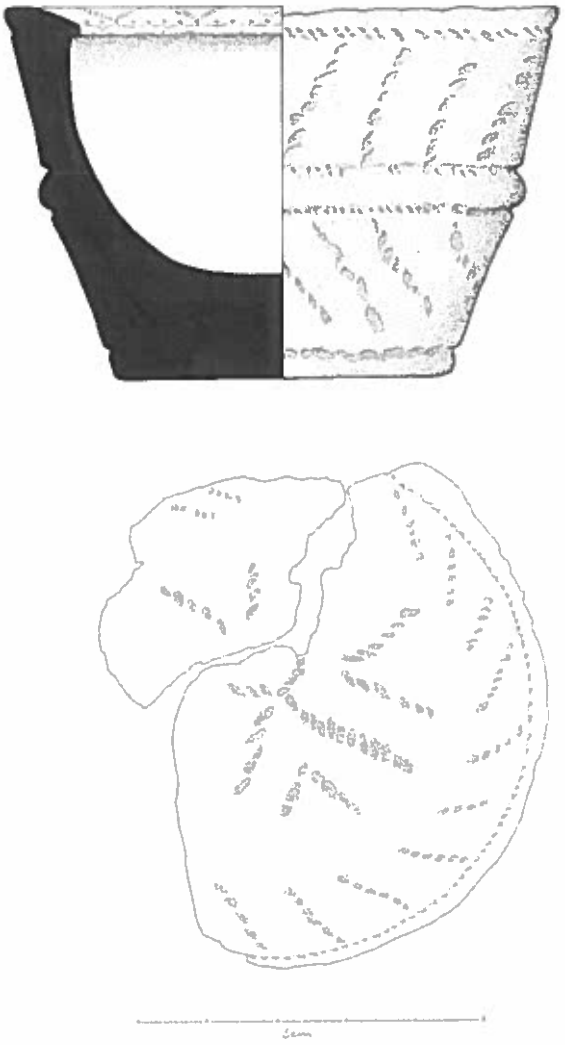
Drawing 5: Cup 1

Cremation pit 037 (fills 038, 036) - Photo 19. Figure 8

Pit 037 was a plain, sub-circular flat bottomed pit cut containing a cremation of good preservation. The initial appearance of the feature suggested it had suffered plough damage, but the cremation appears to represent approximately 100% of the expected quantity of bone (1,718.03g) for a single individual. However, two individuals were represented – a possible female aged at least 36 years old and an adolescent represented only by finger bones.

The human bone from this feature (context 036) has been radiocarbon dated to 2044-1890 cal BC (95%probability SUERC 40802). This is a very similar date to that obtained from cremation 007.

There was no urn present, but approximately one third of a cup (Cup 2) more accurately described as a splayed wall miniature bipartite Vase Food Vessel (Drawing 6, Photo 39). The breaks on the vessel appear old and it would appear that it was fragmentary when deposited. The rim has an internal bevel and slight internal lip. It is decorated with faint traces of whipped cord zig-zags. The neck is decorated externally with oblique lines of twisted cord Impressions and there are traces of a twisted cord line above this and below the rim though it does not appear to have completely encircled the vessel. The shoulder is accentuated above and below by an encircling line of whipped cord impressions. Like the neck, the belly of the vessel is decorated with oblique twisted cord lines (sloping top left to bottom right) with an encircling twisted cord line below. The base has been decorated with radiating lines of twisted cord impressions. The vessel lacks a pair of perforations, though these may well have been on the missing portion of the pot. The unusual combination of whipped and twisted cord decoration on this vessel link it clearly to Urn 1.



Drawing 6: Cup 2

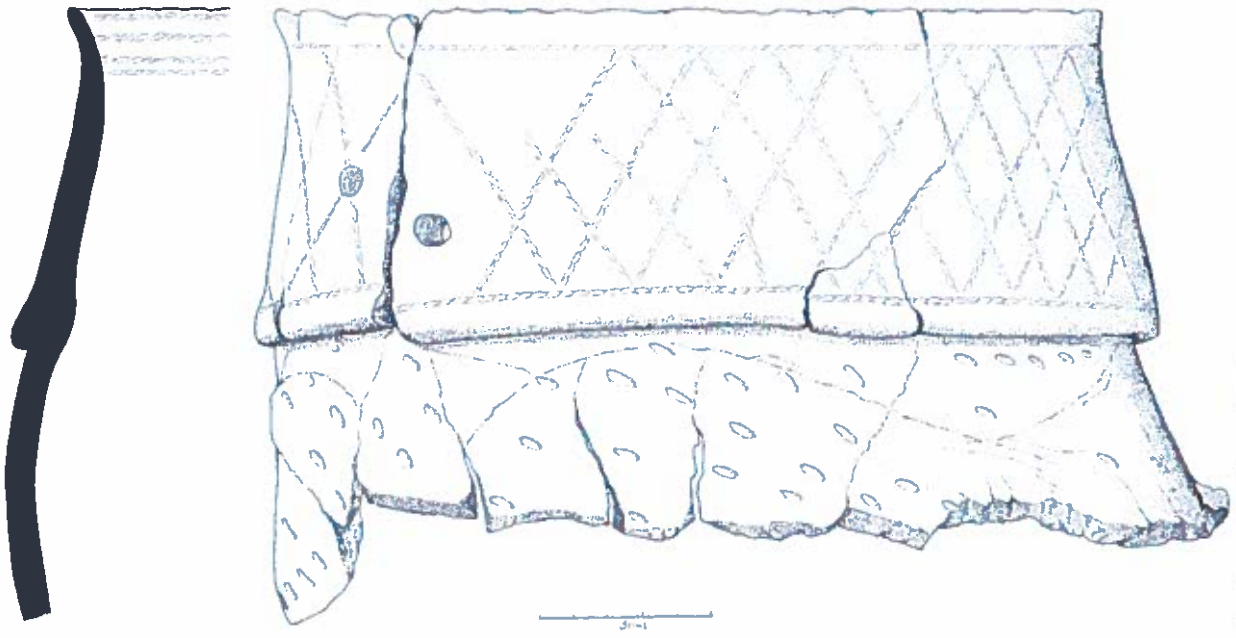
Cremation pit 023 (fill 022) - Photo 20, Figure 6

To the southwest of the primary burial, circular pit 023 contained a tightly fitting, partly damaged large inverted tripartite Collared Urn (Urn 3). The uppermost portion (the base) had either collapsed in soon after burial, or was later plough damaged, but would clearly have been an imposing vessel when complete.

On excavation Urn 3 (Photo 36) was found to contain a substantial quantity of cremated bone (approximately 100% of the expected average amount of an individual) weighing 2,068.0g It is possible that two individuals were represented by the assemblage, although no duplicate bone elements were recovered. The individual was an adult, possibly female, whose age could not be determined more precisely. The human bone from this burial (context 023) has been radiocarbon dated to2031-1876 cal BC (95%probability SUERC 40801). This is a very similar date to cremation 005 and 'ritual' pit 029.

The rim is slightly flattened, has an internal thinning giving the appearance of an internal bevel which is decorated with 3-4 encircling rows of twisted cord impressions (Drawing 7). The collar is decorated with a broad zone of twisted cord lattice motif bordered above and below by a single encircling twisted cord line. Shallow oval impressions form rough diagonal rows in the neck and a single row of these near vertical impressions decorate the shoulder of the Urn. There are three perforations on the collar. These have been drilled after firing causing slight break-through damage to the inner surface. The surviving pair is placed on either side of a substantial crack and may therefore be repair holes. A third appears to be on its own, but has also been drilled after firing.

The decoration on the neck is difficult to match in Wales. Whilst not in itself a rare motif, it is interesting to note that, like Urn 3, this also has bordered lattice motif on the collar.



Drawing 7: Urn 3

Ritual pits

Two pits were located just to the south of the cremation pit group, but within the area of the former barrow.

Pit 015 - Photos 21-23. Figure 8

Pit 015 appeared to have two phases of deposition. The original pit was roughly circular, bowl-shaped and cut into natural silts. This appeared to have been intentionally backfilled with redeposited natural, before a second, smaller circular shallow pit with a level base was cut into the top of the backfill. This cut appeared to have been roughly lined with small stones before being backfilled with a charcoal rich fill from which some burnt quartz, a struck flake of glass-like quartz crystal, an apparently unworked piece of quartz crystal and four fragments of pottery were recovered.

Three of the pot sherds were small and undecorated and are difficult to assign to a specific ceramic tradition, however a Neolithic or Early Bronze Age date is most likely.

A single large rounded rim fragment is unusual and difficult to parallel. Heavy rims similar to this and also in a quartz-rich fabric have been found at Clegyr Boia (Williams 1953) amongst a modified Carinated Bowl assemblage. This sherd may well therefore be early Neolithic in date: approximately 3800-3600 BC.

Charcoal from the fill of this feature (context 020) has been radiocarbon dated to between 3655-3526cal BC at 95.4% probability (SUERC 42560). This is a very similar date range to the fill of feature 003.

Pit 029 - Photos 24-26. Figure 8

Pit 029 contained two charred planks (or the remains of two partially burnt logs?) laid parallel to each other in the base of the pit on a roughly north-south alignment. The pit then appears to have been intentionally backfilled with a uniform, but mixed fill of redeposited natural from which a single fragment of flint flake was recovered. This fill was overlain by a deposit of tightly packed stones which appeared to be contained within a second slightly smaller and shallower pit cut 019. Alternatively, the stones may originally have formed a small cairn over the pit, which over time (or as a result of pressure from the overlying barrow mound) subsided into the backfilled pit below.

Charcoal from the fill of this feature (context 025) has been radiocarbon dated to between 2016-1776calBC at 95.4% probability (SUERC 42561). This is a very similar date to that recovered from cremations pits 023 and 005.

Other features

Probable cut feature 032 - Photos 27, 28 and 29. Figure 7

This possible cut feature corresponded with part of the large circular geophysical feature. It appeared to contain two fills. The upper fill was primarily composed of stones within a silty matrix. A considerable amount of charcoal was observed within the matrix, some fragments sufficiently large to doubt they could have been worked in through natural processes. It may represent another 'structured deposit, although apart from charcoal, no other cultural material was recovered from the fills. The feature lies just beyond the probable edge of the barrow, and may represent a different phase of activity on the site.

Natural feature 043, 042 - Photo 30

Although initially considered to be a stone-filled cut feature, on excavation, its profile suggested that this was most likely to be a natural geological feature of some kind. Occasional small charcoal fragments were, however, noted in the soil matrix between the stones. These are presumed to have worked downwards into the feature through natural processes.

Features 012, 013, 031, 003, 005, 007 – Figure 7

Although most likely to be pits and posthole cuts, due to difficulty of distinguishing the fills from the surrounding natural it was not easy to define several of these features. They did, however contain occasional charcoal fragments and pitched pebbles sometimes suggested the edges of features.

Charcoal from the fill of feature 003 (context 002) has been radiocarbon dated to between 3641-3518calBC at 95.4% probability (SUERC 42557). This is a very similar date to that recovered from pit 015.

Environmental evidence

The results obtained from the analysis of charred plant remains and pollen recovered from the fills of all of the excavated features was a little disappointing. Charcoal preservation was almost always poor. Much of the material consisted of very small, mostly unidentifiable fragments. From the limited evidence available, it would appear that hazel was a locally available resource in the Bronze Age exploited for both food (hazelnuts) and as a wood for fuel. Grasses may also have been burnt. Beyond this, the other ancient remains present were too few to be of any real interpretative value.

The pollen was likewise poorly preserved and hard to identify. There was no apparent evidence suggesting plant material was ritually placed in any of the features. Overall the pollen evidence suggests a grassland environment with associated weed species, as well as heather. In the wider area there is some evidence for hazel woodland as well as oak and alder.

DISCUSSION

Site formation processes

The geophysical survey undoubtedly indicates the presence of a large circular 'anomaly' (Feature A). Despite the absence of surviving physical evidence of the exact former location and extent of the barrow (Feature D), it is clear from the geophysical evidence and archive photographs of the barrow, that they are not the same feature.

The excavation has shown that Feature A is characterized in different ways in different parts of the site. The inside edge of the circular anomaly appears to be defined by an arc of exposed natural shale that was visible during the excavation. Beyond this was slightly deeper ploughsoil and silty subsoil. Feature B appears to be the combined result of a group variety of features; some of these are possible natural geological features, others possible cut features. No ditch cut appears to have been present, and no bank or mound material has survived *in situ*.

It was initially assumed that Feature A was a coincidentally round anomaly resulting from the 'scalping' (by deep ploughing and harrowing) of the underlying geology of the crown of the hill upon which the barrow was located, contrasting with deeper surrounding topsoil.

On further contemplation, it is now considered possible that Feature A was indeed a constructed circular feature. What the nature of the feature was remains uncertain. No evidence of a ditch cut, or a bank could be identified during the excavation, suggesting that the geophysical survey had detected the last vestiges of a circular turf bank surviving within the thin ploughsoil that was removed when the area was stripped prior to excavation.

Phasing (Figure 5)

Based upon the nature of the excavated features, the finds, and the radiocarbon dating evidence, three phases of activity can be distinguished at Fan Barrow. The dates suggest there is a substantial gap of almost 1500 years between the Neolithic and the Bronze Age activity at the site. This need not necessarily suggest that the two phases are not linked. Likewise, the two 'younger' Bronze Age dates may also suggest continuity of use of the burial mound rather than a separate unrelated phase of activity. Unfortunately, because all horizontal stratigraphy has been lost, it is not possible to directly link the dated features with the evidence for the different phases of the structure of the monument, although likely associations can never-the-less be made.

Neolithic features

Neolithic dates were obtained from the fills of two features.

Pit 015 (Figure 4)

This feature was located within the probable original limits of the barrow structure to the south of all the cut barrow features, but in close proximity to them. Pit 015 exhibits a sequence of backfilling events. An initial oval bowl-shaped pit seems to have been backfilled with re-deposited natural soil before a smaller round flat-based pit was cut into the pit fill. This was backfilled with a charcoal rich fill containing burnt quartz, a small struck flake of clear quartz crystal, a piece of quartz crystal and four sherds of Neolithic pottery. Charcoal from the upper fill of the feature suggests a middle Neolithic date, but the specialist analysis (Appendix 4) has suggested the Neolithic pot sherds could be derived from an earlier form and may therefore be residual. During the excavation, the sherds and some small pebbles appeared to have been pressed into the sides of the cut, suggesting an

intentional re-use of the sherds (along with the other finds) rather than accidental redeposition. A minute quantity of burnt bone was recovered from this pit, but whether it was of animal or human origin could not be determined. Because of its apparent structured deposition sequence, this feature has been interpreted here as a 'ritual pit' although a more domestic function cannot be ruled out.

Similar deposits attributed to the Bronze Age have been excavated in barrows elsewhere (Jones 2012, 180). It has not been possible to ascertain whether these date attributions were established by direct dating or artefactual evidence or by association. Either way, the characteristics of feature 015 at Fan Barrow may suggest a degree of continuity of ritual tradition between the Neolithic and Bronze Age.

Linear cut 003 (Figure 4)

This feature was located on the northeast periphery of the former barrow. On the basis of the Neolithic date recovered from its fill, it is possible that features 032, 003, 005, 007 and 043 are all of Neolithic origin.

All these features share an absence of inclusions other than varying quantities of charcoal and stone, and a very subtle colour difference between their fills and the natural deposits into which they are cut. What type of activity these features represent is uncertain, but their location in front of a possible opening in the perimeter of Feature A may not be coincidental.

Linear cut 032 (Figure 4)

This probable cut feature lay just beyond the probable edge of the barrow and corresponded with part of the annular geophysical anomaly B. It contained two fills. The upper fill was primarily composed of stones within a silty matrix. A considerable amount of charcoal was observed within the matrix, some fragments sufficiently large to doubt they could have been worked in through natural processes. A radiocarbon date of 3940-3695 cal BC (SUERC 44714) was obtained from charcoal from this pit.

Feature 043 (Figure 4)

During excavation this feature was considered most likely to be a naturally stone-filled geological feature of some kind. However, a radiocarbon date obtained from occasional flecks of charcoal produced a date of 3630-3370 cal BC (SUERC 44712).

Feature A as a Neolithic enclosure

Although a direct association between feature 015 and Feature A (identified from the geophysics survey) cannot be demonstrated, it is tempting to suggest there may be an association. The presence of a visible Neolithic monument in this location might help to explain the gap of approximately 1500 years between the Neolithic features at the site and the establishment of a burial monument in the same place in the early Bronze Age. However, the choice of the same location for ritual behaviour could be the result of a coincidentally shared appreciation of the landscape value of the setting in both periods rather than necessarily suggesting a continuity of use or significance.

Prior to the excavation, geophysical feature B (in the northeast quarter of the otherwise circular Feature A, was presumed to be a small monument, possibly a burial mound, either pre-dating or post-dating Feature A. However, no evidence

of a circular cut, bank or mound could be discerned. If there had been such features, they appear to have been ploughed away. Feature B therefore seems to be the result of a combination of a natural glacial feature and possible cut features. The absence of evidence for Feature B raises the possibility that Feature A may not have been a closed circle, but instead may have had a wide opening in its northeast quadrant.

Evidence of Neolithic features beneath Bronze Age barrows has been identified at several sites, most recently at Pant-y-Butler where a single pit containing charcoal dated to the Neolithic period was sealed beneath a buried soil below the burial mounds, and predated the barrows by around 1000 years (Murphy et al. in prep). Since no other Neolithic evidence was encountered at Pant y Butler, it remains unclear whether the presence of the pit was purely coincidental, or suggests that the location had ritual significance prior to the Bronze Age.

At Fan, the potential for the site having been significant in the Neolithic is possibly a bit stronger, and would help account for the gap of almost 1500 years between the Neolithic and Bronze Age phases at the site. However, the evidence remains ambiguous.

It is also possible (and possibly more likely?), that Feature A is of Bronze Age origin (see below), and that the Neolithic component of the site is not the consequence of monument focussed activity.

Feature A as an Early Bronze Age ring cairn

Frances Lynch has suggested that the diversity of forms of circular Early Bronze Age monuments in Wales and evidence of complex structures of Bronze Age date beneath Bronze Age barrows, demonstrate that these monuments were modified and developed in form over a greater length of time than is often thought to be the case with barrows constructed for individual burials. This is taken to demonstrate the continuing influence of Neolithic ritual traditions in the Welsh Bronze Age. Lynch observes that in Wales, groups of cremations in barrows often appear to have been deposited in a single phase (although subsequent burials may also occur) emphasizing the significance of group or family bonds, over individual status (Lynch 1980. p 235).

Pre-barrow structures of a variety of forms, including ring cairns, are likely to enclose the burial groups prior to the construction of the barrow. Some burial groups have been termed 'flat cemeteries'. These sites appear not to have had surrounding enclosures. Only a few sites in the region are accepted as 'flat' cemeteries, and they may actually be the result of the degradation or removal of overlying mounds from conventional barrows, as is known to have happened at several other sites (Benson 1982. P 289-291).

The suggestion at Fan is that the cemetery was enclosed by a turf bank (Feature A) which later had a conventional barrow superimposed upon it. A similar spatial association between a barrow and a turf bank was encountered at Pant-y-Butler (Murphy et al 2011 in prep). Here, to the west of a smaller earth and turf barrow, evidence of a turf bank was identified. Although the surviving stratigraphic evidence at Pant y Butler was ambiguous, this turf bank was interpreted as a later extension to the smaller barrow, but was in any case datable to the Bronze Age because it was stratigraphically above a buried soil sealing a Neolithic deposit.

As was hypothesised earlier, it is possible that Feature A, interpreted as a turf bank ring cairn, had an entrance in its northeast quadrant. Several examples of ring cairns, often with open or blocked entrances have been recorded elsewhere in Wales (Lynch 1980 p.237).

Bronze Age cremations

All the Fan Barrow cremations have Early Bronze Age dates spanning a potential 158 years. A chi-squared statistical test to determine whether or not the dates are indistinguishable from each other provided a T value of 8.31 with an acceptance value of 11.07, suggesting the ages are statistically indistinguishable from one another and could in theory represent a single event (G. Cook pers. comm). However, based on similarities between the calibration curve plots for several of the dating samples, it may be possible to distinguish three different funerary events within the group (features 029, 023 and 006; features 037 and 004; and feature 017).

Located at the centre of the former burial mound, Cremation Pit 004 is the primary cremation burial of the round barrow monument. It is distinguished from the other cremation burials by having a carefully constructed lining of irregularly shaped stone slabs and a stoney backfill. The well preserved cremation of a mature adult probable female is probably the most aged individual represented in the group and is also potentially the oldest (first) burial in the group. The individual appears to have been cremated with copper and bronze objects of which only amorphous melted droplets have survived. The cremation is accompanied by a Cup (Cup 4), although it is not clear if this was also included in the cremation pyre, or was added when the burial occurred. Cremation Pit 037 Lies nearby, to the south of Pit 004 and produced a very similar date.

Cremation Pits 006 and 023, although different to each other in style also have very similar dates. Cremation Pit 017 appears to have a slightly more recent date than the other two groups.

There is no evidence to suggest that the differences between these burials have interpretive significance. Other evidence, however, such as the possible identification of the work of one potter in two of the cremations (the cup from Cremation Pit 037 and the collared urn from Cremation Pit 017); the skeletal evidence of a potentially genetic shared trait between the individuals from cremation pits 006 and 004; and the similar stoney backfills of pits 004 and 029 may suggest that the calibration curve graphs do not represent separate funerary events, or their dates of internment are too close to be differentiated by the AMS dates.

Cremation 007 appears to represent most of an individual. Cremations 005 and 021 appear to represent varying proportions of individuals. Cremation 036 contained substantial quantities of cremated bone representing a large proportion of two individuals. Cremation 022 also contained a substantial quantity of bone, suggesting it is likely to represent a large proportion of two individuals, but no diagnostic bones could be identified to confirm this (Holst, Appendix 2). The large bone quantities may represent 'double' cremations, or possibly the post-cremation mixing of individuals (since few diagnostic bones could be identified). Smaller bone quantities may represent the partial collection of the cremation, or the post cremation subdivision and even distribution of the remains (Jones 2012, 181).

It is interesting to note that the osteological analysis suggests that a significant proportion of the cremations appear to be females or possible females, with no definite males represented. However, there are many caveats to the reliability of attributing sexes to the individuals on the surviving cremated bone evidence. Although Fan barrow has the potential to an exclusively female burial monument, this is by no means certain.

At Fan Barrow, interpretation of the cremation pits as 'satellite burials' interred prior to construction of the barrow (rather than dug into it at a later date) is backed up by the carbon dating evidence and the excavated evidence. The five cremation pits appear very likely to represent a small kin group, buried over a

relatively short period of time. It also seems likely, that the cremation group was intentionally placed within the bounds of Feature A.

Ritual pit 029

The two lengths of charred wood laid in parallel in the base of pit 029 are an unusual feature. The pit fill has a very similar date to Cremation Pits 023 and 006. Charcoal from one of the planks however, produced a date of cal 2561-2297BC (SUERC-44713).

After the initial deposition of the charred wood (and possibly other items of which evidence has not survived) the pit seems to have been partially backfilled with re-deposited natural soil, before being 'capped' with a deposit of tightly packed stones. Alternatively, the stones may originally have formed a small cairn above the backfilled pit that sank into the pit as its contents decomposed and settled, becoming compacted once the barrow was constructed over it. A similar 'settling effect' may account for the concave stone backfill of the central Burial (Cut 004). When first created, these features may therefore have been visible as small cairns within Feature A.

Direct parallels for pit 029 from other sites have not been identified, but evidence of charred wooden structures, charred planks and pits containing no artefacts other than charcoal have been found in association with burial monuments elsewhere in Wales such as the Brenig Valley (Lynch et al 1973; Lynch 1980 p239). Such features may be broad parallels with pit 029 at Fan.

Recent excavations of two Early Bronze Age barrows at Pant-y-Butler also encountered much larger, apparently intentionally aligned charred wooden planks beneath and within one of the mounds (Murphy et al in prep).

It may be that the buried charred wood at Fan barrow and Pant-y-Butler are another example of the developed continuation in Wales of Neolithic traditions into Bronze Age burial traditions as has been suggested by Frances Lynch (Lynch 1980). This could be another example of a stronger continuity between the Neolithic and Bronze Ages.

Examples of these, and discussion of the possible symbolic significance of trees in the Neolithic and Bronze Age are also explored in Noble 2007.

Round barrow (Feature D)

It seems likely that the burial mound (Feature D) was raised up over the group of cremation burials at some significant time for the community the cemetery served, possibly as an act of 'closure' or 'supersedure' of the earlier monument. Unfortunately the mound element of the monument, and any evidence for a buried soil horizon beneath it, has been entirely ploughed away, so it is impossible to say when the barrow was constructed. Despite this lack of evidence it seems reasonable to suggest that if the barrow had been defined by a perimeter ditch, some evidence of this would have been visible on the geophysical survey and would have survived at a similar level to the cremation burials. Since no such evidence was apparent it is assumed that this was a 'ditchless barrow'. The nearby barrow at Pen-y-Glogau (Jones and Davies 1930) is also recorded as not having had a perimeter ditch. Likewise the barrows at Pant-y-Butler did not have perimeter ditches (Murphy et al. in prep).

No other evidence of how the mound was constructed has survived. It is tempting to conjecture that other burials were interred in the mound when or after it was constructed, as is described in the account of the Pen-y-Glogau mound excavation (along with a stone lined pit similar to burial 004 at Fan):

> "Owing to a temporary shortage of stone from a quarry near his farm, Mr Griffith Howell had agreed to the removal of stone from the tumulus for the metalling of local roads. About 160 cart-loads were removed and during this process three large stones forming three sides of a rectangle, the enclosed space being filled up with rubble, were noted. Mr Howell's interest was further aroused by the finding of a grave containing bones. The grave was circular in shape with an average diameter of 1 foot, and a depth of 1 foot 4½ ins. A small slab protected the top, and the sides and bottom were also lined with stones".

At Fan Barrow, it is possible, but sadly not provable, that the rectangular anomaly visible within the mound area on the geophysical survey (Feature C) may have been the former location of a similar stone cist constructed within the mound. This location was investigated during the evaluation in 2010, but no evidence of a cut, or stone settings was apparent. Other similarities between the two barrows include the presence of stone lined primary burial pits in both (cremation pit 004 at Fan and Grave N at Pen-y-glogau), and possibly the intentional laying of collared urns on their sides within cremation pits.

Later Bronze Age features

Due to the loss of the extant portion of the burial mound, it is not known when the barrow was constructed. However, features 009 and 011 (and in all probability 042), have been dated to the Middle to Late Bronze Age, several hundred years after the deposition of the cremations. It is assumed that the barrow would have been constructed by this time and that these features must therefore have been cut into the mound. Although the fills of these features appeared charcoal rich, they did not contain any evidence of charred bone. While these features may not therefore be evidence of secondary cremations inserted into the barrow mound after its initial construction, they may suggest continued ritual practice at the site, possibly specifically involving the ritual deposition of charcoal.

The possibility of ritual activity at Fan Barrow in the later Bronze Age may help support an alleged association of a Bronze Age spear head with Fan Barrow (Arch Camb 1958). In his 'Corpus of Welsh Bronze Age Pottery' H N Savory is sceptical that the two objects are associated with the same findspot:

> 'One apparent association of a socket-loop spearhead of Class IV with a Bipartite Cup at Nantcwnlle, will have to be left out of account. This association, accepted by Wheeler and Grimes, is based upon a statement of Mr. G. Eyre Evans, preserved in a manuscript in the National Museum, that the Pygmy Cup and Spearhead had been found at the same time and place, and that this information was based on the personal account of the finder, whom he knew well. The finder was in fact, recollecting in old age the discoveries of his early youth, and Mr G. Eyre Evans is not himself clear as to whether the objects were directly associated in the same burial. The type of spearhead in question is one that appears to belong to Late Bronze Age I (c. 1000-800 B.C.) in southern England and if genuinely associated with the Pygmy Cup would bring this admittedly rather evolved specimen of the fine West Wales type down to a much lower *(earlier?)* date than the remaining evidence would suggest'.

If, however, the site continued to be used for burial into the Late Bronze Age, it is possible that the Nantcwnlle Cup and the spearhead could have been retrieved from different deposits within the same barrow.

Site location

The site occupies a hilltop position at just over 280m above sea level. The mound was situated on a small knoll on the crest on a ridge that runs in a southwest /northeast orientation. Facing north, the site looks down over the Nant Rhiwafallan valley, but is overlooked from the north by a higher ridge of southwest /northeast oriented hills including the Trycrug Barrow group 2.5km away to the northwest at about 340m above sea level. Between Trycrug and Fan (at a distance of just over 1 km from Fan) is the location of the Pen-y-glogau barrow (PRN4789) at SN55455931 approximately 274m above sea level. Pen y Gaer hillfort (PRN 0791) is located about 1.2km to the southeast of Fan barrow at SN577583.

There are far reaching views looking from the site towards the west and east. However, to the southeast, south and southwest, although there are extensive distant views, a bluff across from a small valley to the southeast of Fan barrow ridge effectively blocks views down over the Aeron valley. In today's landscape, Fan barrow is mid-way between the valley bottoms and the high ground of Trygrug hill. The overall impression is that despite its prominent location on the Fan ridge, the barrow seems quite 'tucked away' and would be most visible locally or from the north. Until relatively recently, much of this area was poorly drained unimproved rough pasture, but more recently several areas have been extensively ploughed and drained. During this work, local farmers have reported encountering several features that are likely to have been burnt mounds. It is possible that other Bronze Age archaeological features were formerly visible in the area but have since been lost to cultivation.

Ceramics

The ceramic assemblage recovered from Fan Barrow is described in detail in Appendix 4. Several features of the assemblage considered to be of importance are discussed below.

The majority of previously excavated urn burials in the region have not been radiocarbon dated. The assemblage from Fan therefore makes an important contribution to the growing corpus of dated Bronze Age Pottery from Wales. The dates for the Collared Urns and Cordoned Urn from Fan are in keeping with elsewhere, broadly datable to *c.*2000 – 1500 cal BC and 1900-1400 cal BC respectively (Sheridan 2003; 2004: Brindley 2007). They form part of the increased variety of ceramic styles and burial practices entering the sepulchral record after the initial appearance of Beakers and coinciding with Needham's Fission Horizon when ceramics, based on earlier middle Neolithic forms predominate (Needham 2005).

Cups are found both unaccompanied with cremations and accompanied by urns. Both such situations are represented at Fan. They are thought to have been containers for offerings or offerings themselves. Based solely on the Fan evidence, it is not possible to hypothesise if it is significant whether a cremation burial is accompanied by an Urn, a Cup, or both (or neither). Nor is it clear whether or in what way the inversion of Urn 3, or the laying of Urns 1 and 2 on their sides might be significant.

Cups have previously been termed Pygmy Cups, Incense Cups and Accessory Vessels. Each of these terms have problematic interpretive implications. The form of Cups is typically considered to be derived from food vessels, but the term 'miniature' vessel is used only for those Cups that are clearly miniature versions of larger forms such as Collared Urns or Food vessels.

There are various forms of Pygmy Cups with distinct distributions in Britain. Their characteristics demonstrate influences from the Atlantic seaboard of Europe but are probably a local style with influences from several continental sources.

Wales and southwest Scotland has the main concentration of 'Bipartite' forms of Pygmy Cups, and Ceredigion and Pembrokeshire have a notable concentration of specimens with fine characteristics.

The four Cups from Fan Barrow bring the corpus of known or suspected Welsh cups to 67, 25 of which come from south-west Wales. The provenance, associations and archaeological details of many of these finds is uncertain. To have four Cups from the same monument at Fan is also an unusual occurrence. Few have been excavated since the 1930s and few have been dated. The dates of those that have coincide exactly with those of Collared Urns. More dates for cups are required nationwide to test if the various types of Cups have their own distinct chronologies.

Two characteristics of the Fan ceramics suggest that the work of individual potters can be identified. The comparatively rare use of both whipped and twisted cord decoration on Urn 1 and Cup 2 (from cremation pits 017 and 037) may suggest they are the work of the same maker. In addition, the almost identical form and decoration of Fan Cup 1 (also from cremation pit 017), an unprovenanced vessel 'probably from Cardiganshire' (Savory 1980 No. 471), and one from Templeton, Pembrokeshire (Savory 1980, No.414.2), may also suggest the work of one individual.

The possible links between the Fan ceramics from Cremation pits 017 and 037 also makes it less likely that the difference in their date range is as potentially great as might be inferred from the Carbon dating evidence.

Alex Gibson (Appendix 4) notes that the distorted shapes of Urns 1 and 2 suggest they are clearly firing wasters. An alternative suggestion is that the urns became distorted as the result of post depositional effects of pressure over time (Phil Parks pers comm). A firing spall from Cup 3, present in the fill of cremation pit 006 may suggest that the cup may have been fired in the funeral pyre.

The different vessel types, combinations of vessels and their positions (inverted upright or on their sides) within burials, may have some indiscernible significance, but it is not possible to suggest differences in status or gender, or date of burial based upon pottery types.

Despite their proximity to Fan Barrow, the Cup and Urn from the nearby burial mound at Pen-y-Glogau do not demonstrate any sufficiently distinctive characteristics to suggest a clear association between the two barrows. Likewise, there are no particular shared traits between the Fan Barrow Cups and the 'Abermeurig Cup' to lend support to the idea that they may originate from the same barrow.

Environmental evidence

The pollen evidence from Fan is consistent with pollen evidence from Blaen yr Esgair, Tregaron (Cors Caron) and Bryniau Pica (see Appendix 6). This suggests oak woodland with a hazel understory, as well as hazel and birch woodland in the uplands, and alder woodland in wetter areas.

From evidence gathered in the wider region, relatively small-scale clearance activity is indicated during the Neolithic and earlier Bronze Age, and evidence for cereal cultivation is slight. More extensive clearance commenced during the middle-later Bronze Age in the uplands, although from the 'elm decline' onwards there is evidence for the spread of vegetation communities dominated by grasses,

sedges and heather. In the lowlands the evidence suggests more extensive clearance occurred during the early Iron Age or later.

Although cereal pollen is absent from the pollen record at Fan, the presence of charred cereal confirms that cereal cultivation was taking place in the area during the early Bronze Age. In general charred cereal evidence is quite widespread in Wales for the Bronze Age, but in most instances the evidence tends to be quite limited. The scarcity of charred cereal in deposits associated with the cremations at Fan is, therefore, similar to that found at other early Bronze Age sites in Wales. More common are the occurrence of frequent charred grass remains and the presence of charred hazelnut shells at these and other sites. The cereal, and perhaps the hazelnuts and *Prunus* fruit stone, at Fan may indicate food offerings and ritual activity but could also simply reflect material used to make the funeral pyre.

CONCLUSIONS

The results demonstrate that the barrow structure (Feature D) has not survived the plough damage. No evidence of a ditch or bank surrounding the barrow was apparent. No physical evidence of Features A, B or C (identified on the geophysical survey) was apparent. Despite the lack of evidence for these structures, features cut into the subsoil have survived. Dating evidence suggests several possible phases of activity at the site.

A Neolithic phase is primarily represented by a small pit which may contain structured deposits. It may also have been associated with Feature A.

Alternatively Feature A may be of Early Bronze Age origin. Either way Feature A became the focus for a small cremation cemetery during the Early Bronze Age.

A ditchless round barrow (Feature B) was subsequently constructed over the cremation cemetery and part of Feature A.

Small charcoal filled pits dating to the Middle Bronze Age, suggest probable continuity of use of the barrow, although any evidence of secondary burials within the extant mound has been lost.

It remains unclear whether antiquarian finds associated with this barrow were actually found here, or were in fact from a neighbouring barrow.

The ceramic assemblage makes a significant contribution to the corpus of pygmy cups found in West Wales and within Wales generally.

Despite the destruction of the extant parts of the barrow, the range of excavated features makes a significant contribution to understanding the character and complexity of Bronze Age burial monuments in the region.

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APPENDICES

APPENDIX 1

CONTEXT LISTS

2010 Excavation context list

Context	Type	Description
001	Topsoil	Loose light grey brown clay silt with frequent stones.
002	Cleaning	Same as topsoil.
003	Fill of 004	Loose dark brown clay silt with charcoal, bronze droplets and cremated bone. Upper fill of cremation pit above stone backfill 008.
004	Pit cut containing 003	Rectangular cut. 1.15m x 0.85 x 0.3m deep with rounded corners, sloping sides with level base.
005	Fill of 006	Upper fill of cremation pit, above 011.
006	Pit cut containing 005	Roughly circular pit 0.4m diameter. Approx. 0.15m deep. Lifted whole for micro-excavation.
007	Cremation deposit in 004	Relatively fragmented cremation laid on stone lining 009. Melted bronze droplets. No clear evidence of formal arrangement or containment.
008	Fill of 004	Stone backfill below 003 and above 007.
009	Stone lining of 004	Carefully arranged, but not formally constructed stone lining of cremation pit using flat slabs of sandstone and shale.
010	Fill Of 004	Fill between cut 004 and stones of 009.
011	Cremation deposit in 006	Cremation deposit within pit 006, below 005.

2011 Excavation context list

Context	Type	Description
001	Topsoil/cleaning	Loose light grey brown clay silt with frequent stones.
002	Fill of pit 003	Loose grey brown clay silt with moderate stones and occasional charcoal fragments.
003	Pit cut containing 002	Possible oval pit 0.8x0.7x0.35m deep. Vertical sides with flat base.
004	Fill of 005	Loose light grey brown silt with frequent gravelly shale fragments and very occasional charcoal.
005	Pit/posthole? containing 004	Circular, 0.45m diam. 0.35m deep. Vertical sides, flat base.
006	Fill of 007	Loose orange brown gravelly silt with occasional stones and charcoal.
007	Pit/posthole? containing 006	Circular 0.4m diameter 0.35m deep, slightly tapering sides, flat base.
008	Fill of 009	Black charcoal rich clay silt fill.
009	Pit cut containing 008	Circular pit 0.45m diameter o.18m deep. Vertical sides, flat base.
010	Fill of 011	Black charcoal rich fill.
011	Pit cut containing 010	Oval, 0.5m x0.47m x 0.27m deep. Vertical sides, slightly concave base. Shape distorted by stones in surrounding natural.
012	Fill of 013	Loose reddish brown silty clay.
013	Pit cut containing 012	Possible oval pit or natural feature. 0.7m x 0.42m x 0.15m.
014	Fill of 015	Upper fill of pit 015. Compact friable reddish brown silty clay with quartz and burnt stone fragments and charcoal. Overlies 020.
015	Pit cut containing 014	Oval pit 0.58 x 0.56 x 0.20m deep. Steep sides, flat base.
016	Fill of 017	Friable reddish brown clay silt with frequent charcoal and cremated bone. Upper fill of cremation pit sealing/containing collared urn. Above 024.
017	Pit cut containing 016	Egg-shaped cremation pit 0.47m x 0.49m x 0.32m deep. Steep sides, concave base.
018	Fill of 019	Intentionally placed and tightly packed stone deposit in loose mid grey silt matrix.
019	Pit cut containing 018	Possible shallow cut 1.15m x 0.8m x 0.25m deep. Containing and defined by removal of 018.
020	Fill of 015	Black charcoal rich deposit 0.04m thick with three pottery fragments, clear quartz crystal frag and flake and burnt quarts fragments. Below 014, above 027.
021	Fill of 017	Friable grey clay silt matrix with cremation deposit below 016, above 028.
022	Fill of 023	Loose dark brown clay silt with frequent charcoal. Unexcavated fill of pit containing pot. Lifted for micro-excavation.
023	Pit cut containing 022	Roughly circular 0.35m diameter. Depth unknown.
024	Fill of 017	Friable yellow grey sandy clay deposit of natural subsoil – collapse from pit edge between 016 and 021.

025	Fill of 019	Moderately compact mixed silty clay with occ stones and charcoal. Lower fill of 029, cut by 019 overlain by 018. Two charred wooden planks arranged at base of fill.
026	Fill?	Probably a natural concentration of stones.
027	Fill of 015	Loose light grey/reddish brown mottled silty clay with charcoal and pot fragment. Fill of 015 below 020.
028	Fill of 017	Heat reddened (not by the cremation?) clay silt with occasional charcoal below cremation deposit 021, above 017. Appears to be a discrete deposit.
029	Pit cut containing 025	Oval pit cut 1.05m x 0.85m x 0.45m deep with vertical sides curving in to flat base. Two charred wooden planks laid parallel on base, plus a few stones prior to backfilling (025).
030	Fill of 031	Moderately compact mixed clay silt deposit with moderate charcoal with traces of heat reddening, giving way apparent natural but with occasional charcoal fragments. Possibly over-dug/disturbed pit fill?
031	Pit cut containing 030	Irregular oval .9m x 0.6m x .3m profile uncertain. Possible natural/over-dug feature.
032	Pit cut containing 033/034	Linear pit resembling a short ditch with steeply sloping sides and a level base. May or may not be man-made.
033	Fill of 032	Small to large angular stones in a friable dark brown clay silt with occasional charcoal fragments. Some stones appeared heat affected. Possibly in a recut of 032.
034	Fill of 032	Friable orange brown clay silt with occasional charcoal flecks. Primary fill of cut 032.
035	Fill of 032	Friable grey clay silt. Occasional charcoal fragments. Possibly a 'natural' deposit.
036	Fill of 037	Friable Dark brown/black charcoal rich deposit of cremated bone fragments. Overlies 038.
037	Pit cut containing 036	Oval cremation pit 0.43m x 0.32m x 0.13m deep. Vertical edges, slightly concave base.
038	Fill of 037	Firm black charcoal deposit below cremation 036. 0.03m thick.
039	Fill of 040	Moderately compact mid grey-brown sandy clay silt. Possibly a natural fill of a natural feature.
040	Pit? cut containing 039	Unconvincing shallow concave irregular oval 'cut'. 0.70m x 0.4m x 0.12m deep. Possibly a natural feature.
041	Fill of 042	Soft, loose very dark brown/black charcoal rich fill.
042	Pit? cut containing 041	Circular, straight sided, flat base diameter 0.22m, depth 0.10m.
043	Deposit	Apparently natural stoney deposit with occasional flecks of charcoal.
044	Deposit	Apparently natural orange clay deposit with occasional flecks of charcoal.

APPENDIX 2

RADIOCARBON DATES

Five samples of cremated human bone selected from the cremation deposits, and five samples of charcoal selected from other significant features, were sent for radiocarbon dating by SUERC. The calibration curves and all other data are presented below.

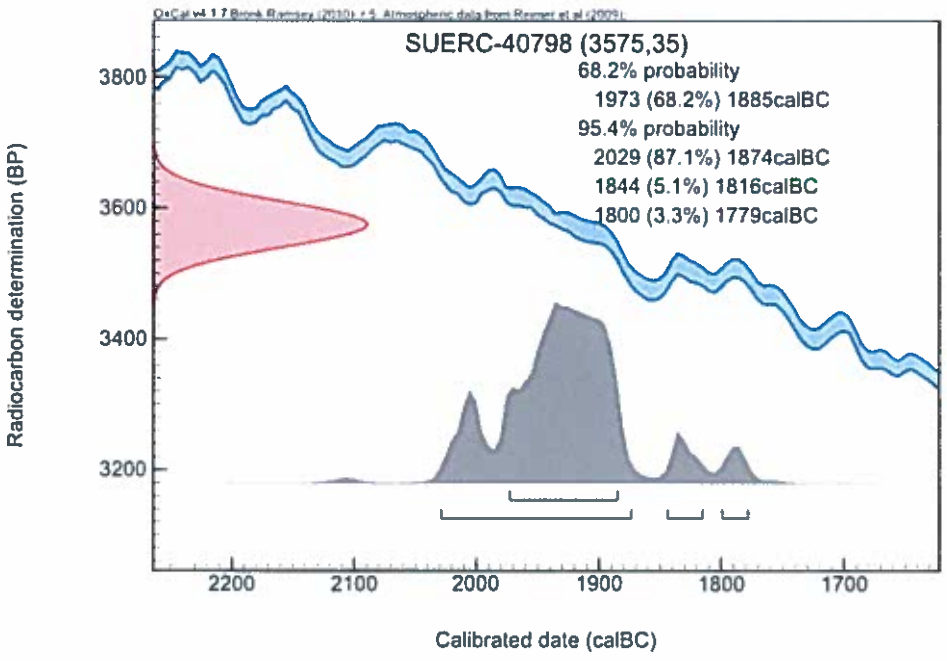
The ^{14}C ages are quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standards, background standards and the random machine error.

The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

In addition, a distribution table demonstrates the range of dates represented, and the similarities and differences between the calibration curves.

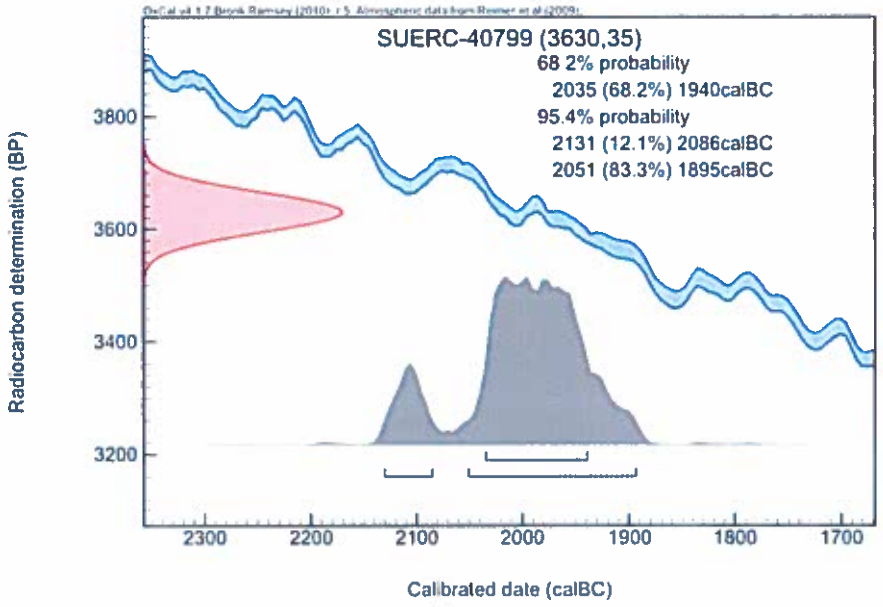
Laboratory Code	SUERC-40798 (GU27569)
Sample Reference	FBT10-005-1
Material	Cremated Bone : Human
$\delta^{13}C$ relative to VPDB	-23.6 ‰
Radiocarbon Age BP	3575 ± 35

Calibration Plot



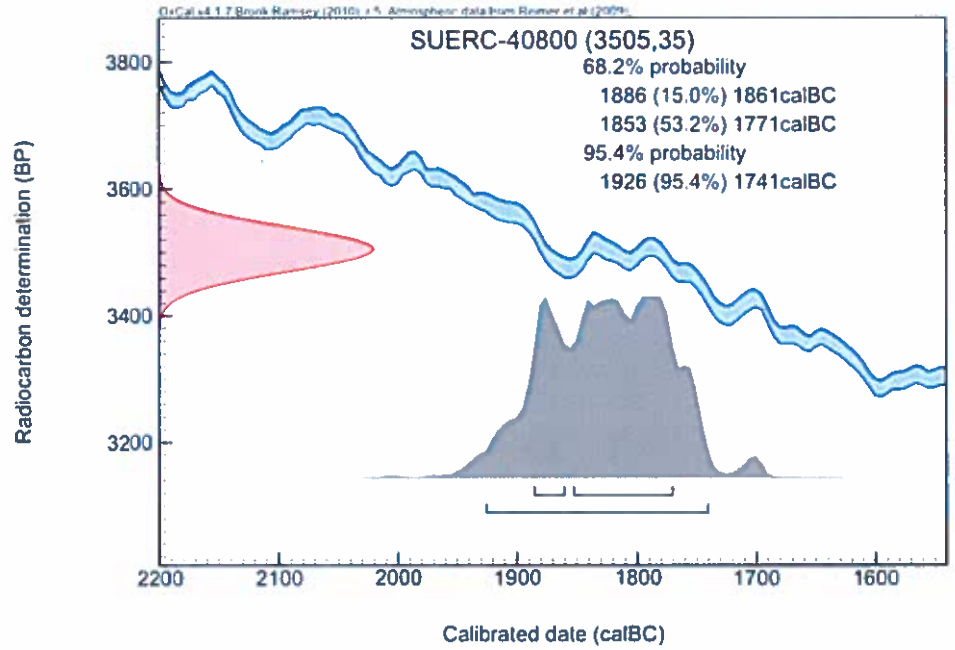
Laboratory Code	SUERC-40799 (GU27570)
Sample Reference	FBT10-007-2
Material	Cremated Bone : Human
$\delta^{13}C$ relative to VPDB	-24.4 ‰
Radiocarbon Age BP	3630 ± 35

Calibration Plot



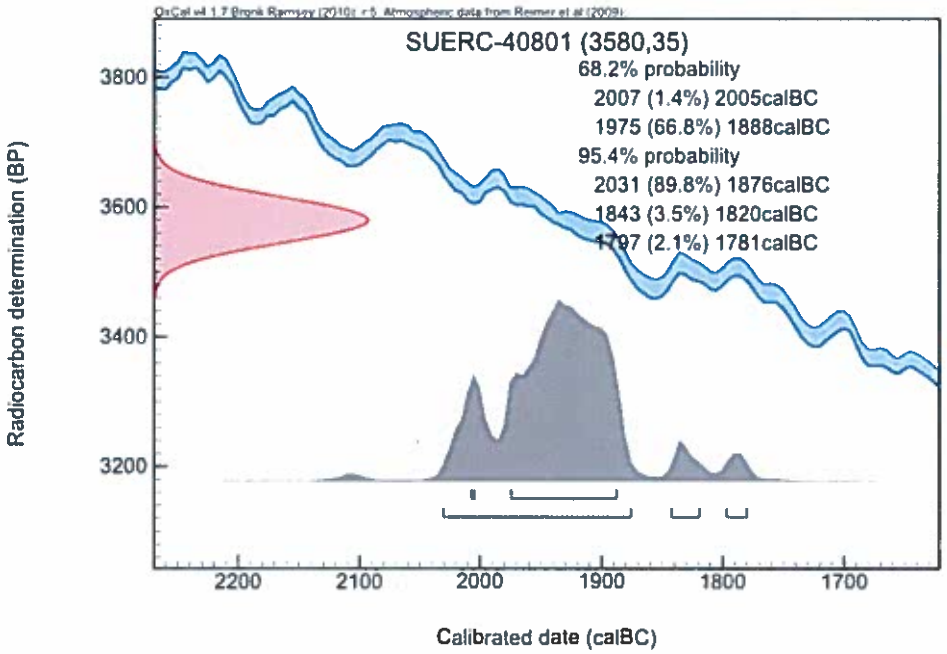
Laboratory Code	SUERC-40800 (GU27571)
Sample Reference	FBT11-021-3
Material	Cremated Bone : Human
$\delta^{13}C$ relative to VPDB	-24.7 ‰
Radiocarbon Age BP	3505 ± 35

Calibration Plot



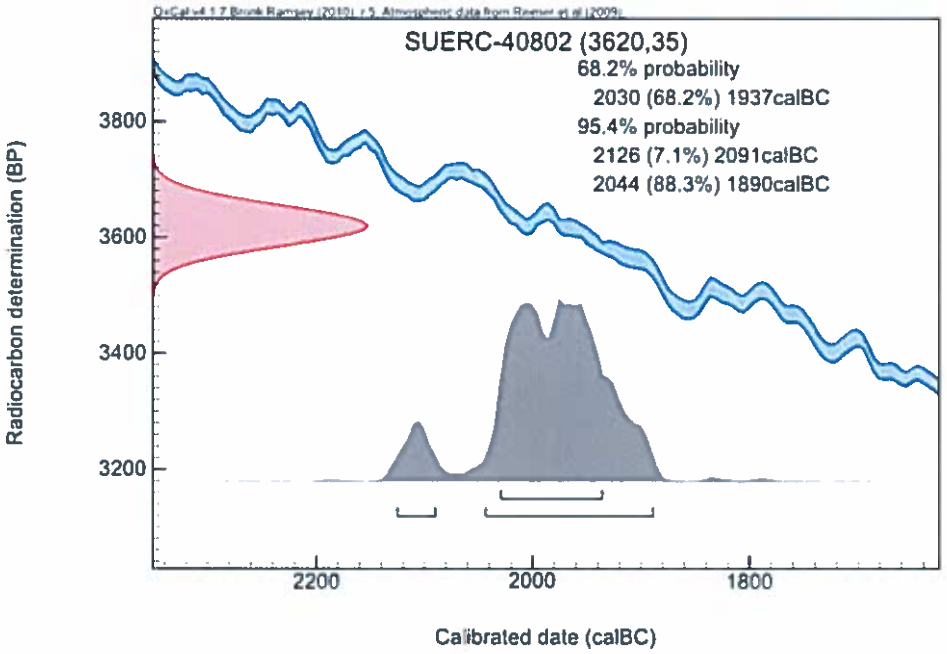
Laboratory Code	SUERC-40801 (GU27572)
Sample Reference	FBT11-023-4
Material	Cremated Bone : Human
$\delta^{13}C$ relative to VPDB	-24.9 ‰
Radiocarbon Age BP	3580 ± 35

Calibration Plot



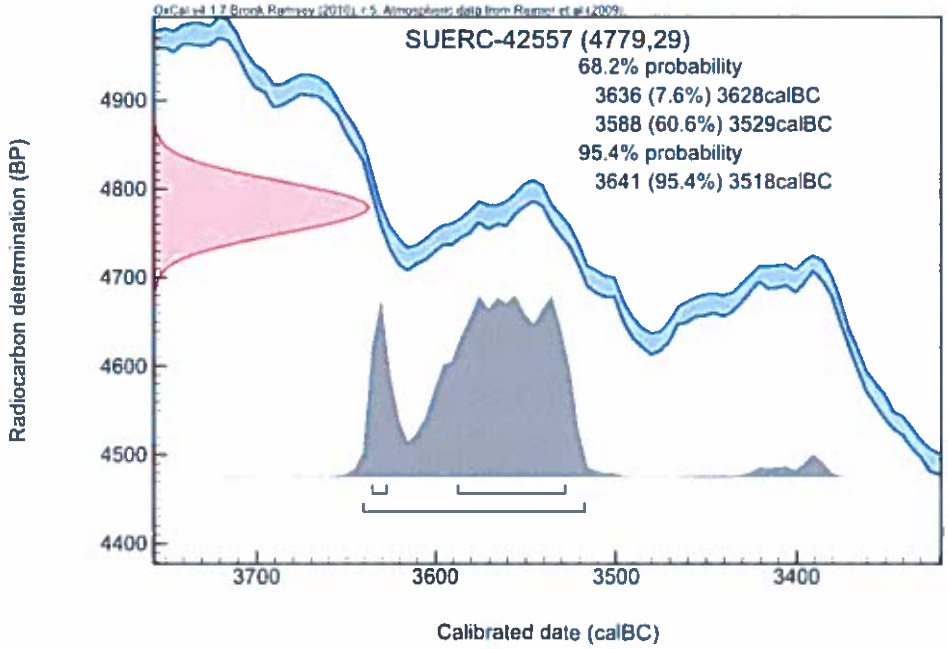
Laboratory Code	SUERC-40802 (GU27573)
Sample Reference	FBT11-036-5
Material	Cremated Bone : Human
$\delta^{13}C$ relative to VPDB	-24.4 ‰
Radiocarbon Age BP	3620 ± 35

Calibration Plot



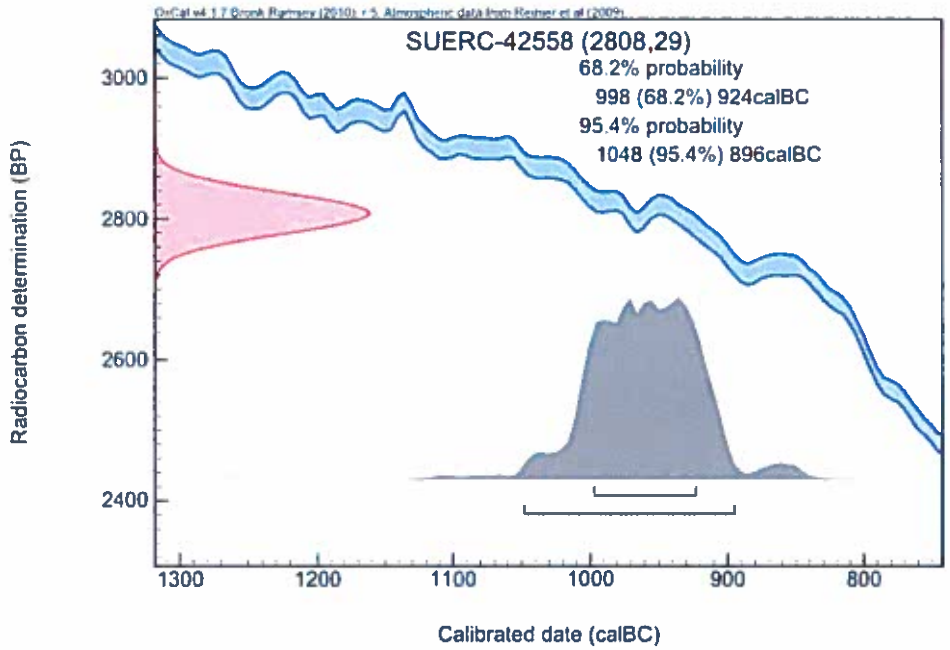
Laboratory Code	SUERC-42557 (GU28474)
Sample Reference	FBT11-002-1
Material	Wood : Corylus/Alnus
$\delta^{13}C$ relative to VPDB	-24.8 ‰
Radiocarbon Age BP	4779 ± 29

Calibration Plot



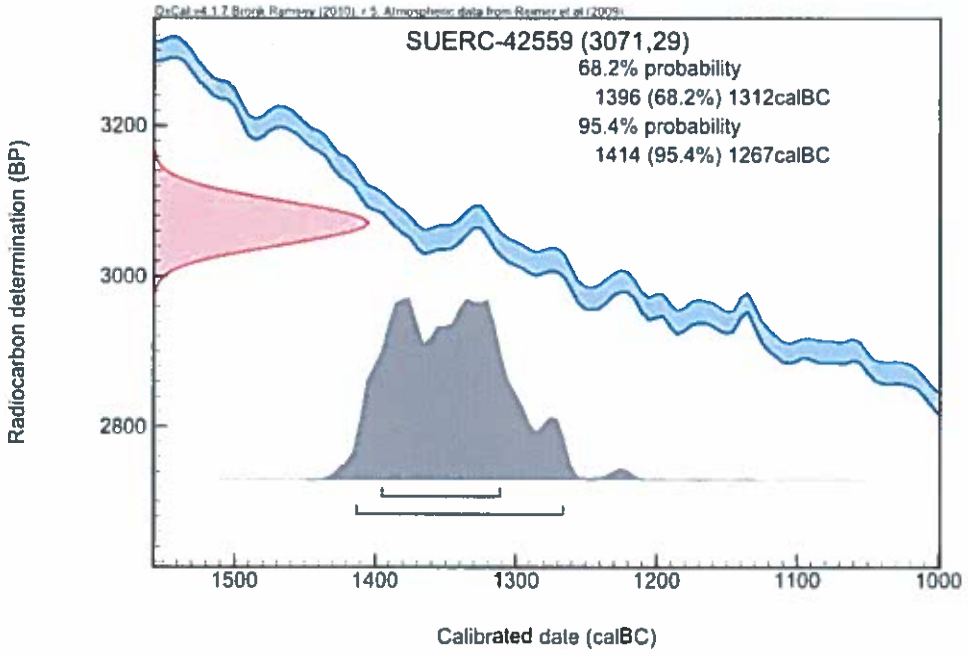
Laboratory Code	SUERC-42558 (GU28475)
Sample Reference	FBT11-008-2
Material	Charcoal: Indet. Roundwood
$\delta^{13}C$ relative to VPDB	-28.2 ‰
Radiocarbon Age BP	2808 ± 29

Calibration Plot



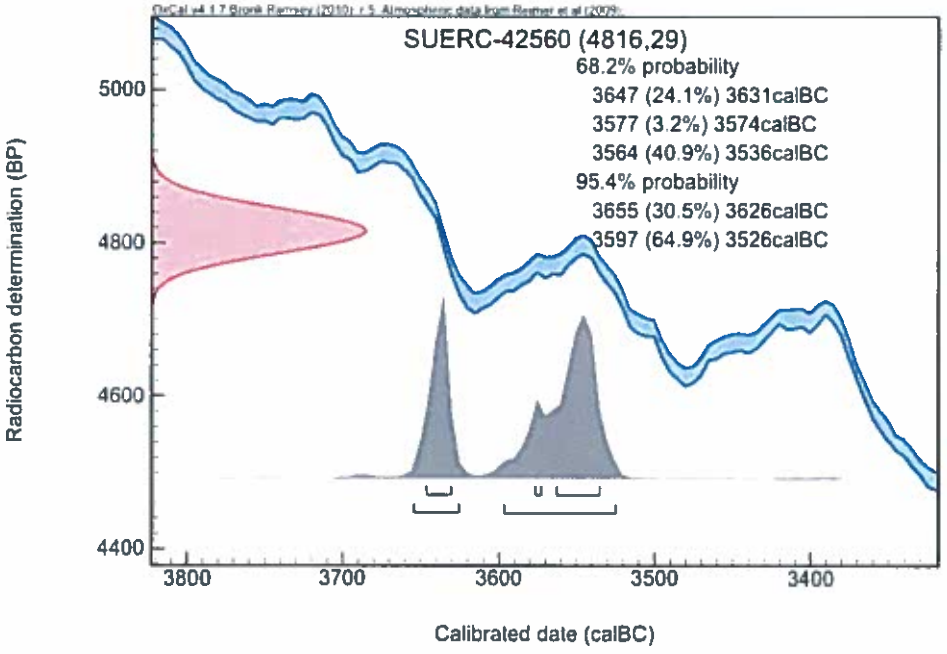
Laboratory Code	SUERC-42559 (GU28476)
Sample Reference	FBT11-010-3
Material	Charcoal: Indet. Roundwood
$\delta^{13}C$ relative to VPDB	-26.1 ‰
Radiocarbon Age BP	3071 ± 29

Calibration Plot



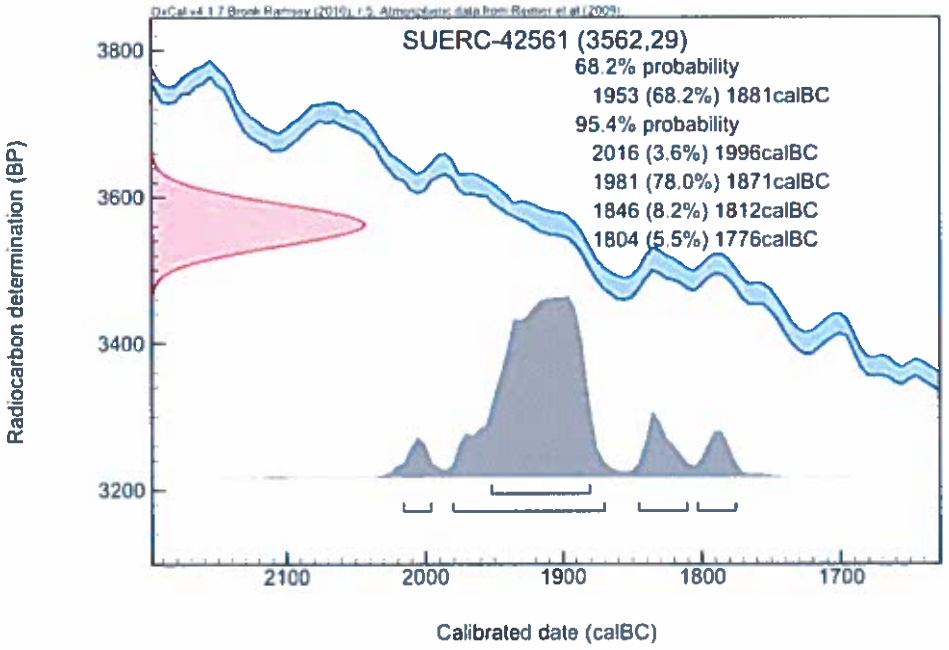
Laboratory Code	SUERC-42560 (GU28477)
Sample Reference	FBT11-020-5
Material	Charcoal : Indet. Roundwood
$\delta^{13}C$ relative to VPDB	-27.9 ‰
Radiocarbon Age BP	4816 ± 29

Calibration Plot



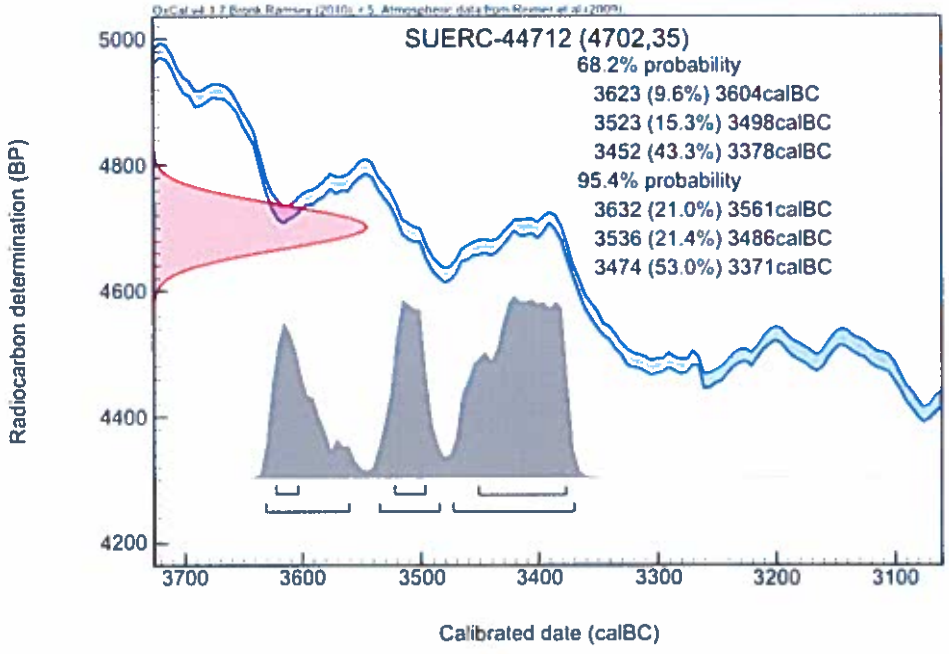
Laboratory Code	SUERC-42561 (GU28478)
Sample Reference	FBT11-025-10
Material	Fruit Stones : Prunus
$\delta^{13}C$ relative to VPDB	-28.7 ‰
Radiocarbon Age BP	3562 ± 29

Calibration Plot



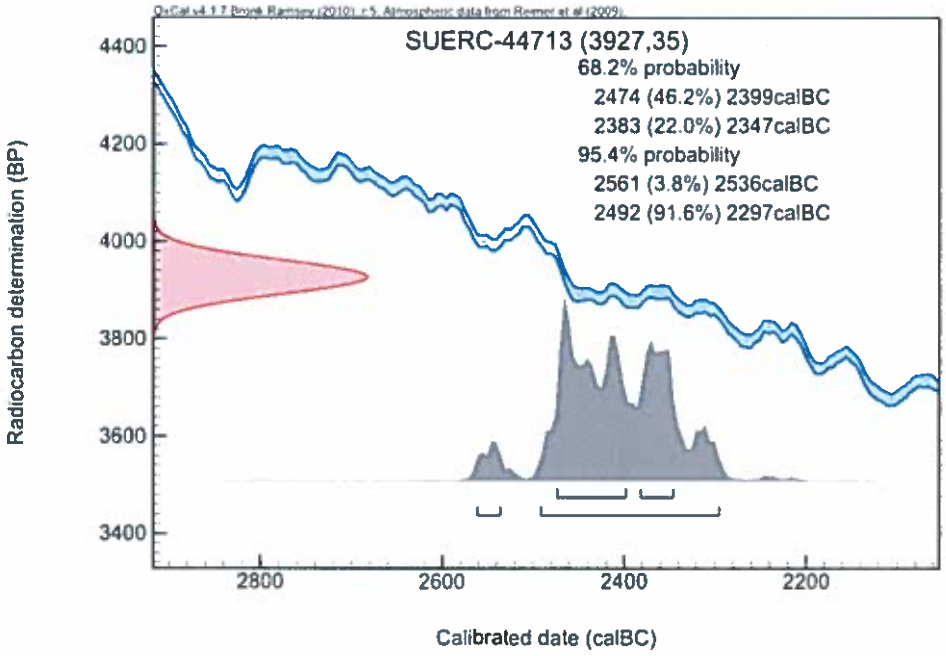
Laboratory Code	SUERC-44712 (GU29997)
Sample Reference	FBT11-044-11
Material	Charcoal
$\delta^{13}C$ relative to VPDB	-22.4 ‰
Radiocarbon Age BP	4702 ± 35

Calibration Plot



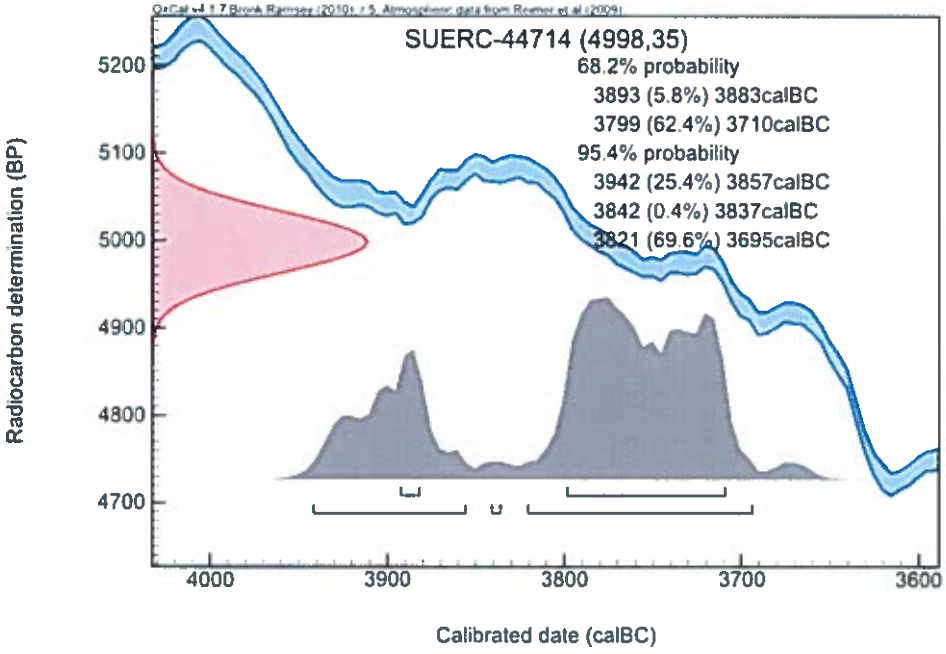
Laboratory Code	SUERC-44713 (GU29998)
Sample Reference	FBT11-025-12
Material	Charcoal
$\delta^{13}C$ relative to VPDB	-23.8 ‰
Radiocarbon Age BP	3927 ± 35

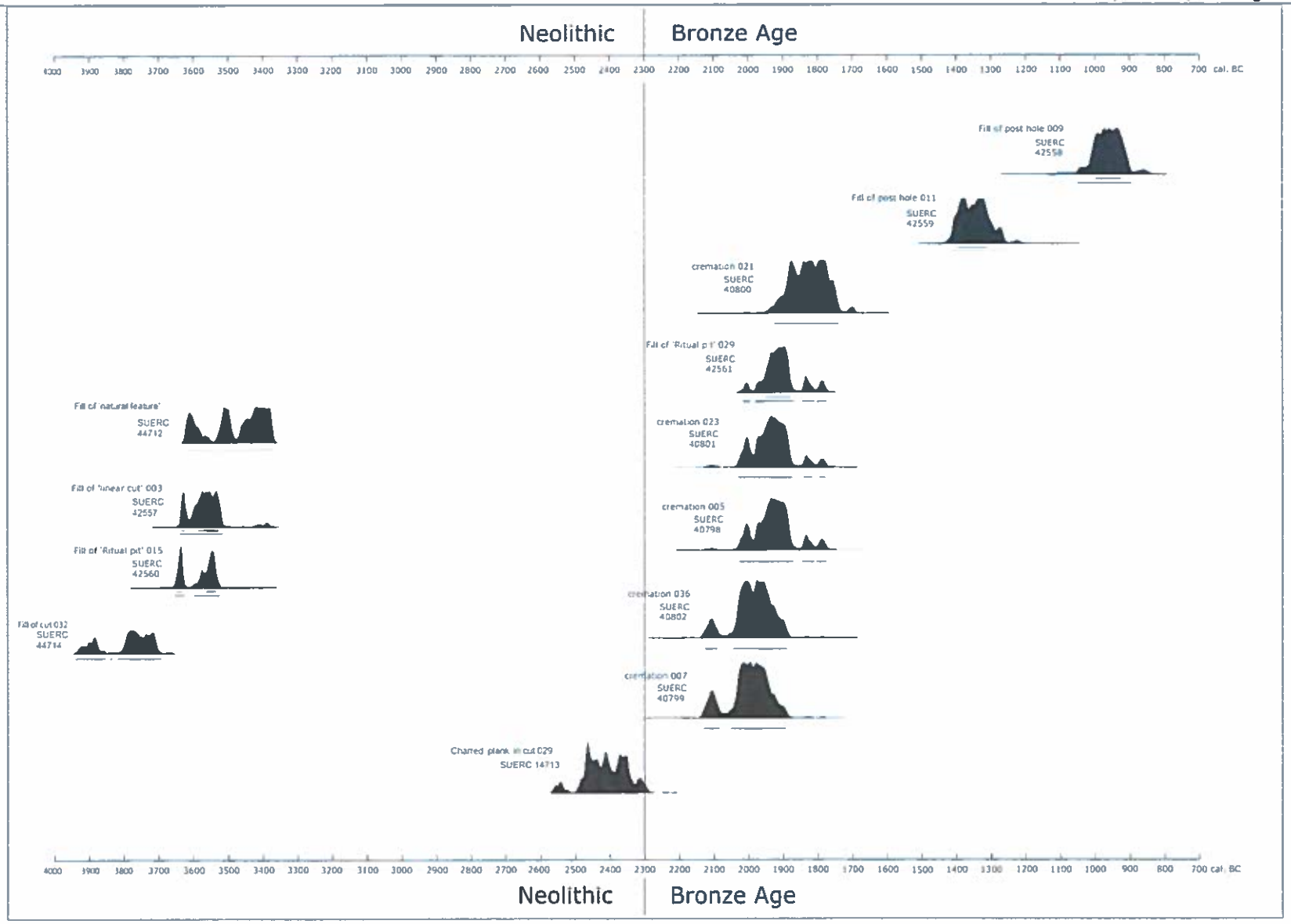
Calibration Plot



Laboratory Code	SUERC-44714 (GU29999)
Sample Reference	FBT11-033-13
Material	Charcoal
$\delta^{13}C$ relative to VPDB	-26.1 ‰
Radiocarbon Age BP	4998 ± 35

Calibration Plot





Plot of all carbon dates

APPENDIX 3

OSTEOLOGICAL ANALYSIS – Malin Holst

Summary

York Osteoarchaeology Ltd was commissioned by Dyfed Archaeological Trust Ltd to carry out the osteological analysis of five cremated bone assemblages from Fan Barrow, Talsarn, Ceredigion (SN 5647 5870). The burials were interred within a scheduled Bronze Age barrow (SAM CD078), which had been ploughed flat in the late 1990s. Three of the burials were urned, while a fourth was interred in a stone lined pit and this is thought to have been the primary barrow burial. Pygmy cups were noted in four of the burials and fragments of copper and were noted in two.

The quantity of bone recovered from the burials varied considerably, from 332.1g to 2,068.3, representing between 20% and over 100% of the mean quantity of bone recovered from cremations. It is possible that the largest assemblage contained two individuals; however, no bone elements were duplicated. One other assemblage contained the remains of one adult and a non-adult. Preservation was moderate to excellent and the bones were very well cremated. All individuals were adults with the exception of an adolescent who had been buried with an adult. It was possible to determine age more precisely in three individuals, suggesting that there were two old middle adults aged 36 years old or older and a mature adult aged 46 years or older. Sex could be estimated in four individuals, who were all possible females. Pathology was noted in two individuals, both of whom had spinal degenerative joint disease.

1.0 INTRODUCTION

In March 2011 York Osteoarchaeology Ltd was commissioned by Dyfed Archaeological Trust Ltd to carry out the osteological analysis of five assemblages of cremated human bone. The skeletal remains were recovered between 2010 and 2011 during two phases of archaeological investigation at Fan Barrow, Talsarn, Ceredigion (SN 5647 5870).

The burials were interred within a scheduled Bronze Age barrow, which had been ploughed flat in the late 1990s. The primary barrow burial was interred in a stone-lined burial pit (004) and contained a pygmy cup and burnt flint, as well as bronze fragments. Three further burials (006, 017 and 023) were interred in collared or other urns, while the fifth burial (037) was unurned. Pygmy cups were recovered from all burials except the unurned cremation burial.

Table 1 Summary of cremated bone assemblages

Cremation Burial	Feature No	Feature Type	Period	Urned	Artefacts and Inclusions	Bone Colour	Preservation	Weight (g)	Percentage of Expected Quantity of Bone
003, 007	004	Stone lined pit	Bronze Age	Unurned	Cremated flint, melted bronze/copper, pygmy cup	White	Excellent	1,908.6	>100%
005	006	Pit	Bronze Age	Collared urn	Melted bronze/copper, pygmy cup	White	Moderate	662.6	41%
016, 021	017	Pit	Bronze Age	Collared urn	Pygmy cup	White	Moderate	332.1	20%
022	023	Pit	Bronze Age	Urn	-	White	Good	2,068.3	>100%
036	037	Pit	Bronze Age	Unurned	Pygmy cup, charcoal	Light grey	Good	1,718.0	>100%

1.1 Aims and Objectives

The assessment aimed to identify whether all cremated human bone recovered from the burial was human. The analysis then aimed to determine age, sex, minimum number of individuals interred as well as any manifestations of disease from which the individuals may have suffered. Additionally, information was sought regarding the cremation techniques.

1.2 Methodology

The cremated bone was sieved through a stack of sieves, with 10mm, 5mm and 2mm mesh sizes. The bone recovered from each sieve was weighed and sorted into identifiable and non-identifiable bone. The identifiable bone was divided into five categories: skull, axial (excluding the skull), upper limb, lower limb and long bone (unidentifiable as to the limb). All identifiable groups of bone were weighed and described in detail.

2. RESULTS

2.1 Preservation

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation of human remains is assessed subjectively, depending on the severity of bone surface erosion and post-mortem breaks, but disregarding completeness.

Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone erosion and very few or no post-depositional breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The bone from two burials was in a moderate condition, in two further burials the bone was well preserved and the primary barrow Burial 007/003 contained bone that was in an excellent condition. Moderate warping and bone cracking, which occurs commonly during the cremation process, was evident in all of the burials. The least warping and cracking was noted in Burial 022; this may be due to the more severe fragmentation of bone in that burial compared with the other burials (discussed below).

The fragment size of cremated bone is frequently attributed to post-cremation processes. This is because skeletal elements retrieved from modern crematoria tend to be comparatively large before being ground down for scattering or deposition in the urn. Bone is also prone to fragmentation if it is moved while still hot (McKinley 1994, 340).

All five cremated bone assemblages contained bone fragments that were 10mm in size or larger (Table 2). Almost half of the fragments recovered from Burials 003/007, 005 and 016/021 were 10mm or larger. In Burials 022 and 036 almost half the quantity of bone recovered was in the 5mm sieve category. In the largest burial, Burial 022, only a fifth of the bone was 10mm in size or larger. This was possibly due to the cremated bone being so tightly compressed into the urn that some of it had to be broken up to remove it from then urn during excavation. The bone usually cracks along the fissures caused during the cremation process, which is supported by less cracking observed on these bones compared with the other burials.

Table 2 Summary of cremated bone fragment size

Cremation Burial	10mm (g)	10mm (%)	5mm (g)	5mm (%)	2mm (g)	2mm (%)	< 2mm (g)	< 2mm (%)	Weight (g)
003/007	881.9	46.2	635.9	33.3	229.5	12.0	161.3	8.5	1,908.6
005	274.8	41.5	214.8	32.4	101.4	15.3	71.6	10.8	662.6
016/021	141.3	42.5	107.9	32.5	65.4	19.7	17.5	5.3	332.1
022	464.6	22.5	867.5	41.9	372.3	18.0	363.9	17.6	2,068.3
036	565.7	32.9	826.7	48.1	288.2	16.8	37.4	2.2	1,718.0

The quantity of cremated bone recovered per burial varied from 332.1g to 2,068.3g (see Tables 1 or 2), with an overall mean weight of 1,337.92g. Burials 003/007, 022 and 036 yielded the expected quantity of bone weight produced by modern crematoria, which tends to range from 1000.5g to 2422.5g with a mean of 1625.9g (McKinley 1993). Burials 005 and 016/022 produced 41% and 20% of the expected mean quantity of bone respectively. Both of these burials were interred in collared urns. Wahl (1982, 25) found that archaeologically recovered remains of cremated adults tend to weigh less (between 250g and 2500g) as a result of the commonly practised custom of selecting only some of the cremated bone from the pyre for inclusion in the burial, thereby representing a symbolic, or token, interment. At Pant Y Butler, Llangoedmor in Cardiganshire, ca. 30km southwest of Fan Barrow, three Bronze Age cremation burials were found in two barrows. The quantity of cremated bone recovered per burial varied from 40.9g to 1599.7g, with an overall mean weight of 769.2g (Keefe and Holst 2011).

According to McKinley (1989), the body requires a minimum temperature of 500° Celsius over seven to eight hours to achieve complete calcination of the bone. This process of calcinations appears to have occurred with the Fan Barrow bone assemblages as the bones were very well burnt, causing the complete loss of the organic portion of the bone and producing a white colour. The bone from Burial 036 was slightly darker than the remainder, appearing to be light grey. However, it is possible that the large quantity of charcoal in this burial discoloured the bones.

It was possible to identify between 36.0% and 60.7% of the skeletal elements in all five cremation burials (Table 3), with an average of 49.9% of bone being identifiable. The percentage of identifiable bone was related closely to the degree of fragmentation of the bone, so although Burial 022, contained the most bone, the smallest percentage of bone was identifiable because of the greater fragmentation of bone in this assemblage.

Table 3 Summary of identifiable elements in the cremation burials

Cremation Burial	Skull (g)	Skull (%)	Axial (g)	Axial (%)	UL (g)	UL (%)	LL (g)	LL (%)	UIL (g)	UIL (%)	Total ID (g)	Total ID (%)	Total UID (g)	Total UID (%)
003/007	197.9	19.5	67.8	6.7	66.5	6.6	74.1	7.3	607.2	60.0	1,013.5	53.1	895.1	46.9
005	118.4	32.6	10.0	2.8	18.5	5.1	18.1	5.0	198.0	54.5	363.0	54.8	299.6	45.2
016/021	78.2	38.8	4.9	2.4	7.7	3.8	7.2	3.6	103.5	51.4	201.5	60.7	130.6	31.2
022	126.4	17.0	29.1	3.9	50.5	6.8	56.3	7.6	481.9	64.8	744.2	36.0	1,324.1	64
036	342.9	44.5	47.1	6.1	37.8	4.9	22.4	2.9	320.6	41.6	770.8	44.9	947.2	55.1

The majority of identifiable bones were from long bone shaft fragments except in Burial 036, where the greatest quantity of identifiable bone derived from the skull. The skull was also well represented in the other burials and included recognisable cranial bones, parts of the mandible, maxilla and tooth roots, as well as generic vault fragments. Since the cranial vault is very distinctive and easily recognisable, even when severely fragmented, it often forms a large proportion of identified bone fragments in cremated remains (McKinley 1994). Bones representing all parts of the body were found, including many hand and some foot phalanges (bones of the fingers and toes; Plate 1parts of vertebrae and identifiable bones from the arms and legs.

Plate 1 Fused foot phalanges in Burial 022

2.2 Minimum Number of Individuals

A count of the 'minimum number of individuals' (MNI) recovered from a cemetery is carried out as standard procedure during osteological assessments of inhumations in order to establish how many individuals were represented by the articulated and disarticulated human bones (without taking the archaeologically defined graves into account). The MNI is calculated by counting all long bone ends, as well as other larger skeletal elements, such as the hip joints and cranial elements.

It is not possible to calculate the MNI for cremation burials, because only a token selection of bone from the pyre tends to be buried. Double burials can be identified only if skeletal elements are duplicated, or if skeletons of different ages are represented in one burial. The quantity of bone was very large in Burial 022, but no duplicated bones were found and as such, it is impossible to be certain whether this was a double burial or not. However, the number of tooth root fragments represented in this burial was very large, suggesting that either almost all the teeth were represented or that this represented a double burial, suggesting that at least five, but perhaps six individuals were represented.

Burial 036 contained mostly adult bones, but a small number of hand phalanges (fingers) that belonged to an adolescent, as they were much smaller than the rest of the bones and also because they were in the process of fusing, while the remainder of the bones had already fully fused.

2.3 Assessment of Age

Age was determined using standard ageing techniques, as specified in Scheuer and Black (2000a; 2000b) and Cox (2000). Age estimation relies on the presence of the pelvis and uses different stages of bone development and degeneration in order to calculate the age of an individual. Age is split into a number of categories, from foetus (up to 40 weeks in *utero*), neonate (around the time of birth), infant (newborn to one year), juvenile (1-12 years), adolescent (13-17 years), young adult (ya; 18-25 years), young middle adult (yma; 26-35 years), old middle adult (oma; 36-45 years), mature adult (ma; 46+) to adult (an individual whose age could not be determined more accurately as over the age of seventeen).

For Burial 003/007 it was possible to determine age using the auricular surface (joint between the sacrum and pelvis) for ageing, which suggested an age of at least 46 years old or older, which meant that this was a mature adult (Table 4). Burial 005 was also aged using the auricular surface, indicating that this individual was aged between 36 and 45 years old.

Table 4 Summary of osteological results

Cremation No.	Preservation	MNI	Age	Sex	Weight (g)	Period
003/007	Excellent	1	46+, mature adult	Female?	1,908.6	Bronze Age
005	Moderate	1	36-45, old middle adult	Female??	662.6	Bronze Age
016/021	Moderate	1	18+, adult?	-	332.1	Bronze Age
022	Good	2?	18+, adult?	Female	2,068.3	Bronze Age
036	Good	2	36+, old middle or mature adult and adolescent (14-16.5 years old)	Female?? and adolescent	1,718.0	Bronze Age

Age could not be accurately determined in Burials 016/021 and 022, because the ageing criteria, which are normally used, did not survive in these two assemblages. As a result, ageing was solely based on tooth root formation and fusion, indicating that both assemblages contained adults aged eighteen years old or older (Table 4). The presence of degenerative joint disease in Burial 036 implies that this individual was aged at least 36 years old, but could have been older. This burial also contained unfused hand phalanges, suggesting that it also contained the remains of an adolescent aged between fourteen and sixteen and a half years old.

2.4 Sex Determination

Sex determination is usually carried out using standard osteological techniques, such as those described by Mays and Cox (2000). Assessment of sex in both males and females relies on the preservation of the skull and the pelvis and can only be carried out once sexual characteristics have developed, during late puberty and early adulthood.

It was possible to estimate sex in four of the five cremation burials, all of whom were considered to be possible or probable females. In most instances, sex was based on the sharpness of the eye orbits and the lack of supraorbital ridges. However, in Burial 005 there was a slight supraorbital ridge and this, coupled with

the fact that cranial sexing is not very accurate as young males can appear female and it was not possible to determine age accurately in this individual, means that the sex estimate is very tentative. In Burial 036, sex was merely based on the very gracile nature of the bones and as this was clearly an older adult, the lack of robusticity was clearly not as a result of the individual still growing. However, robusticity is not an accurate indicator of sex and as a result, sex must also to be considered tentative in this individual.

2.5 Metric Analysis

Stature depends on two main factors, heredity and environment; it can also fluctuate between chronological periods. Stature can only be established in skeletons if at least one complete and fully fused long bone is present, but preferably using the combined femur and tibia. The bone is measured on an osteometric board, and stature is then calculated using a regression formula developed upon individuals of known stature (Trotter 1970).

Cremated bone shrinks at an inconsistent rate (up to 15%) during the cremation process and it was therefore not possible to measure any of the bones from these burials.

2.6 Non-Metric Traits

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons (Saunders 1989). The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress (Kennedy 1989) or environment (Trinkhaus 1978).

A number of non-metric traits were identified, including parietal foramen (small holes in the top of the skull) in Burials 003/007 and Burial 005, bridging of the supraorbital notch (a bony bridge on the eye orbit) and a lambdoid ossicle (an additional little bone in one of the cranial sutures) in Burial 005. Bennett (1965) has suggested that the formation of ossicles in these sutures may be related to stresses placed on the growing cranium during foetal life and early infancy.

2.7 Conclusion

Osteological analysis suggested that the cremated bone assemblages were of mixed preservation, ranging from being moderately well preserved to excellent condition. The degree of fragmentation of the cremated bone was greatest in the burial that contained the largest quantity of bone, with above average post-cremation bone content. It is possible that the greater fragmentation was due to disturbance of the pyre while the bone was still hot. Three burials contained the approximate quantity that is expected to remain after the cremation process.

All five of the cremated bone assemblages were very well burnt leading to loss of the organic portion of the bone, suggesting that the cremation process was undertaken proficiently.

Two individuals were adults, whose age could not be determined more precisely (Burials 016/021 and 022). One of these was a possible female (Burial 022), while the sex of the other individual was undetermined (016/021). One individual was a possible female old middle adult, aged between 36 and 45 (005), while another possible female was aged at least 36 years old (036). This burial also contained finger bones belonging to an adolescent.

3.0 PATHOLOGICAL AND DENTAL ANALYSIS

The analysis of skeletal and dental manifestations of disease can provide a vital insight into the health and diet of past populations, as well as their living conditions and occupations.

The most common type of joint disease observed tends to be degenerative joint disease (DJD). DJD is characterised by both bone formation (osteophytes) and bone resorption (porosity) at and around the articular surfaces of the joints, which can cause great discomfort and disability (Rogers 2000).

Spinal degenerative joint disease was observed in the two older burials, Burials 003/007 and 036. Severe osteophytes and porosity were noted in three cervical vertebral bodies of Burial 003/007 (Plate 2) and mild lesions were noted in a lumbar vertebral body fragment of Burial 036.

Plate 2 Cervical vertebra with degenerative joint disease from Burial

Spinal DJD was not uncommon in the Bronze Age, with a crude prevalence rate of 14.1% (Roberts and Cox 2003, 78).

Analysis of the teeth from archaeological populations can provide vital clues about health, diet and oral hygiene, as well as information about environmental and congenital conditions. A total of 73 root fragments and 26 crown fragment were recovered from the burials. However, because the crowns of the teeth shatter into small fragments during the cremation process, no dental pathology could be observed.

4.0 FUNERARY RITUAL

The whole area of the barrow was excavated and also the area to the north and west of the barrow, which meant that a good insight into the nature of the barrow and its associated burials could be gained. There are numerous barrows in the Talsarn Bronze Age environ; Fan barrow was first noted in 1879, with the discovery of the Abermeurig or Nantcwnlle Cup, a pygmy cup found at Talsarn (Schlee 2011). Imminent AMS dating will reveal precise dating for the Fan Barrow burials.

The primary burial at Fan Barrow was 003/007, which consisted of a stone lined pit, containing a cremated bone assemblage of above average size, suggesting that most of the bone from the cremation pyre had been interred. It also contained a pygmy cup on top of the bone, as well as charcoal, burnt flint and copper fragments (see Table 1). This burial contained a female mature adult with degenerative joint disease in the neck.

Burial 005 was buried in a collared urn to the north of the primary burial with a pygmy cup and copper fragments. This was the burial of an old middle adult possible female. This burial contained less than half the expected mean quantity of bone (41%).

To the west of the primary burial was Burial 016/021, which was interred in a

collared urn on top of soil that had been affected by heat, but is unlikely to represent the pyre site (Schlee 2011). This burial also contained a pygmy cup, situated on top of the urn and an adult of undetermined sex. This burial only contained a fifth of the expected mean quantity of bone from a cremation and contained the lowest quantity of bone at Fan Barrow.

Burial 022 was interred in a pottery vessel in a pit to the southwest of the primary burial and contained a substantial quantity of bone (2,068.3g). It is possible that two individuals were represented by the assemblage, though considering that no duplicate bone elements were recovered, this is less likely than the burial just containing one individual. The individual was an adult possible female.

Burial 036 was unurned and located to the south of the primary burial. It contained more than the expected mean quantity of bone from a cremation and two individuals – an old middle adult female and an adolescent.

Pygmy cups were found in four of the five burials. Pygmy cups are small pottery vessels with an incurved rim, and can be found in Bronze Age funerary context throughout Britain (Woodward 2000, 114). It is thought that pygmy cups are either offerings or contain offerings and are not uncommon in cremation burials. In total, 49 pygmy cups have been found in Wales, but none have yet been associated with radiocarbon dates (Schlee 2011). In northern England, the cups are thought to date to 2,000 to 1,500 BC. The pygmy cup from Burial 005 contained red pigment. Woodward (2000, 114) has noted that here are often perforations in the side of the cup and they often display signs of burning, indicative of burning aromatic substances.

At Mitchell Laithes, Dewsbury, West Yorkshire and at Cross Farm, Stanbury, West Yorkshire, bone beads, bronze ear rings and burnt flint were associated with pygmy cups in Bronze Age cremation burials. Artefacts, such as those recovered from the burials, including flint are well documented from Bronze Age barrow burials (McKinley 1997).

Collared urns are common in Bronze Age cremation burials and are often found inverted. Two of the urns at Fan Barrow were located on their sides, a parallel for which was found at the nearby Bronze Age barrow at Pen-Y-Glogau (Schlee 2011).Burial 022 was contained in a large inverted urn (exact type yet to be determined).

5.0 DISCUSSION AND SUMMARY

The osteological analysis of five cremated bone assemblages from Fan Barrow, Ceredigion, has revealed that all five of the cremated bone assemblages were very well burnt, suggesting the cremation process had been proficiently completed.

The peripheral cremated burials contained two adults aged eighteen years old or older, one of whom was possibly female, an old middle adult female and an adult aged at least 36 years old who was possibly female. this individual had been buried together with an adolescent. The primary burial contained a mature adult female aged 46 years old or older. Two of the older females had degenerative joint disease of the spine. One of these had the condition in three vertebrae of the neck, while the second individual suffered from degeneration of the lower back.

Three of the burials contained the quantity of bone expected from modern cremations, suggesting that only a portion of the individual's remains were necessary for interment in the other burials, or that later disturbances resulted in the truncation of some of the peripheral burials. The remaining two burials

contained 20% and 41% of the average quantity of bone expected after cremation.

Two of the assemblages were interred in collared urns, and another burial was also interred in a pottery vessel. Four of the burials contained complete or partial pygmy cups, of which only 49 have been found in Wales to date (Schlee 2011). There seems to be a strong association of pygmy cups with female and non-adult burials, however, they can also be found in the burials of males. Other inclusions in the burials included burnt flint, copper fragments and quantities of charcoal.

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HUMAN BONE ASSEMBLAGE CATALOGUE

Cremation 003/007

Skeletal element	Identity	Fragments
Skull	151 generic cranial fragments, 41 sphenoid fragments, mandibular condyle, mandibular ramus, nasal, part of foramen magnum, right orbit, maxilla fragment, 9 tooth root fragments, 1 tooth crown fragment	208
Axial	Dens, 1st rib fragment, 54 rib shaft fragments, 2 rib heads, 1 rib tubercle, 1 lumbar articular facet, 17 vertebral facet fragments, 1 thoracic body, 1 lumbar body, 3 cervical bodies, 20 unidentified vertebral fragments, 1 pelvic rim fragment, 2 auricular surface fragments, 1 pubic ramus fragment	107
Upper limb	3 radius shaft fragments, 1 ulna shaft fragment, 3 humerus shaft fragments, 2 proximal ulna epiphyses, 4 distal humerus epiphysis fragments, 5 distal hand phalanges, 3 proximal hand phalanges, 11 intermediate hand phalanx fragments, 2 metacarpal shaft fragments, left scaphoid, left capitate	38
Lower limb	2 femoral shaft fragments, 1st distal foot phalanx, patella fragment, 2 talus fragments, 2 1st metatarsal distal epiphysis fragments, 6 fibula shaft fragments, 4 tibia shaft fragments, 1 sesamoid, 1 proximal 1st phalanx fragment, 1 proximal phalanx shaft fragment	21
Unidentified long bone	698 shaft fragments	698

Cremation 005

Skeletal element	Identity	Fragments
Skull	138 generic skull fragments, 1 petrous temporal fragment, 7 tooth roots, 2 lambdoid ossicles, 5 parietal fragments	159
Axial	3 vertebral facet, 21 rib shaft fragments, auricular surface fragment, 1 pelvis fragment,	26
Upper limb	2 humerus shaft fragments, 3 ulna/radius shaft fragment, 1 hand phalanx fragment, 1 metacarpal shaft fragment	7
Lower limb	2 femur shaft fragments, 3 fibula shaft fragments	5

Unidentified long bone	370 long bone fragments	370

Cremation 016/021

Skeletal element	Identity	Fragments
Skull	2 mandible fragments, 251 generic skull fragments, 3 tooth root fragments	256
Axial	20 rib shaft fragments, 1 vertebral facet	21
Upper limb	1 humerus shaft fragment, 2 radius shaft fragments, 1 distal hand phalanx	4
Lower limb	5 tibia shaft fragment	5
Unidentified long bone	233 long bone fragments	233

Cremation 022

Skeletal element	Identity	Fragments
Skull	172 generic skull fragments, 2 orbit fragments, 195 sphenoid fragments, 1 petrous temporal, 1 nasal, 2 zygomatic processes, 3 maxilla fragments, 2 mandible fragments, mandibular condyle, 2 digastric fossa mandibular fragments, 6 partial molar roots, 4 canine/premolar roots, 42 unidentified tooth root fragments	257
Axial	4 vertebral body fragments, 1 cervical body, 1 thoracic body, 13 vertebral facets, 61 rib shaft fragments, 1 ilium fragments	81
Upper limb	2 humerus shaft fragments, 2 distal humerus epiphyses, 4 clavicle shaft fragments, 6 radius shaft fragments, 2 glenoid fragments, 1 coracoid fragment, 3 distal metacarpal epiphyses, proximal 1st metacarpal epiphysis, 6 fragments of proximal hand phalanges, distal parts, 5 proximal parts, 4 complete intermediate hand phalanges, 6 distal fragments, 8 complete distal hand phalanges, 2 proximal fragments, 7 carpal fragments, including capitate, scaphoid, hamate	4
Lower limb	9 fibula shaft fragments, 1 fibula proximal epiphysis fragment, 2 patella fragments, 2 tibia shaft fragments, 2 tibia shaft fragments, 5 femoral shaft fragments, 4 distal femoral epiphysis fragments, 1 proximal femoral epiphysis fragment, intermediate cuneiform, 5 distal metatarsal epiphyses, 2 sesamoids, 2 proximal	34

	foot phalanges, 2 distal foot phalanges	
Unidentified long bone	793 long bone fragments	793

Cremation 036

Skeletal element	**Identity**	**Fragments**
Skull	56 generic skull fragments, 1 mandibular fossa fragment, 1 frontal fragment, 1 left zygomatic, 1 occipital fragment, 13 mandible fragment, 3 maxilla fragments	62
Axial	10 vertebral body fragments, 2 vertebral facets, 5 spinous process fragments, 7 rib shaft fragments, 1 pelvis fragments	27
Upper limb	3 humerus shaft fragments, 1 distal ulna fragment, 2 proximal humerus epiphysis fragments, 1 distal humerus epiphysis, 1 scapula spine, 3 radius shaft fragments, 3 proximal hand phalanx fragments, 1 metacarpal fragments	43
Lower limb	1 proximal femur neck fragment, 1 tibia shaft fragment, 1 tibia distal epiphysis fragment, 5 fibula shaft fragments	8
Unidentified long bone	131 long bone fragments	131

APPENDIX 4

ANALYSIS OF COPPER ALLOY FRAGMENTS

by Phil Parkes, Cardiff University

Background

During trial excavations at Fan, near Talsarn, Ceredigion two cremation pits were discovered. One, with a stone lining, contained a Pygmy Cup, and several fragments of copper alloy. The second (with no stone lining) contained another Pygmy Cup and a vessel. The copper alloy fragments were sent, along with the lifted vessels, for laboratory excavation, conservation and analysis.

Analysis

The copper alloy fragments were examined with a view to x-raying them. However, due to the small size of many of the pieces and the very corroded nature of all of the pieces it was decided that x-raying using our Faxitron cabinet x-ray system and Industrex film was unlikely to produce useful information regarding original function, technology or use.

Analysis of the alloy composition was carried out using a Camscan Maxim 2040 scanning electron microscope with Oxford Inca energy dispersive xray analysis. Where possible overlying powdery corrosion was removed in a small area (typically 1-2mm^2) to reveal a more stable (often metallic in appearance) corrosion surface. In one or two cases, due to breaks in the object the core of the sample could be analysed. The samples were analysed for copper, tin, lead, arsenic and antimony as all of these were present on the spectra, with the results being normalised for comparative purposes. Elements such as silica, aluminium and iron were not analysed for as they were deemed to be part of the incorporated dirt / soil.

Results

The fragments of copper alloy that were analysed produced a wide range of results in terms of composition (Table 1, below). Although the figures are presented to 2 decimal places due to the calculations of the analysis software, they should be regarded as an approximation. The wide range in the results can be attributed to the corroded nature of the pieces and the preferential removal of copper from the surface, leaving a tin-rich surface layer. The range of compositions that can be exhibited by a single sample can be seen by looking at the results for Cu9, where copper content ranges from 30% to 60% as analysis moves from the corrosion surface to the more metallic core, while tin content is reduced from 62% to 37% from surface to core. Due to the small size of the fragments, even an analysis of the 'core' of the object is unlikely to present a true picture of the original composition of the metal alloy as corrosion has taken place throughout the sample.

The results can be used to determine that the copper alloy consists of a mixture of copper and tin, with small amounts of lead, antimony and arsenic also present. In some cases the amounts are small enough to be below detection levels but may still be present and are recorded as (b.d.). Only in the cases of Cu4 and Cu12 are the antimony levels recorded as zero, due to having negative results in the analyses.

One result that does bear mention is that of the 'object' from context (007). This sample has an extremely low tin content compared to all of the other samples. I would suggest that it is a different alloy and more likely to be considered a copper object rather than a bronze object.

Table 1 – SEM-EDX results for samples from FBT10 excavation

Sample	Context	Location of analysis	Cu %	As %	Sn %	Sb %	Pb %
Cu1 (small)	007	Metallic corrosion	60.50	0.93	32.74	3.14	2.69
Cu1 (large)	007	Metallic corrosion	59.78	b.d	35.87	2.24	2.11
Cu2	007	Corroded surface	50.25	1.22	43.19	5.34	b.d.
Cu2	007	Metallic core	89.24	b.d	9.57	1.19	b.d
Cu3	007	Metallic corrosion	57.99	0.54	39.51	1.08	0.87
Cu4	007	Metallic corrosion	71.53	0.70	26.94	-	0.83
Cu5	007	Metallic corrosion	25.35	2.05	69.75	b.d.	2.85
Cu6	007	Blackened surface	56.74	0.66	38.12	1.13	3.36
Cu6	007	Grey metallic corrosion	67.70	0.75	29.03	b.d.	2.51
Cu7	007	Metallic corrosion	69.96	0.66	27.26	1.24	0.88
Cu8	003	Metallic corrosion	27.62	2.67	67.19	1.49	1.03
Cu9	003	Oxidised core	57.08	b.d.	37.39	5.54	b.d.
Cu9	003	Metallic corrosion	45.47	0.97	48.80	4.09	0.67
Cu9	003	Corroded surface	30.58	1.46	61.56	3.35	3.05
Cu11	010	Corroded surface	70.10	2.44	26.43	b.d.	1.03
Cu12	010	Metallic corrosion	32.74	1.38	64.28	-	1.60
Cu from cremated material	007	Corroded surface	60.27	0.64	36.12	0.99	1.98
Cu object	007	Metallic corrosion	96.73	0.54	1.04	b.d.	1.68

Spectra and detailed analysis information for each sample

.

Sample: Cu 1 - smaller piece
Type: Default
ID:

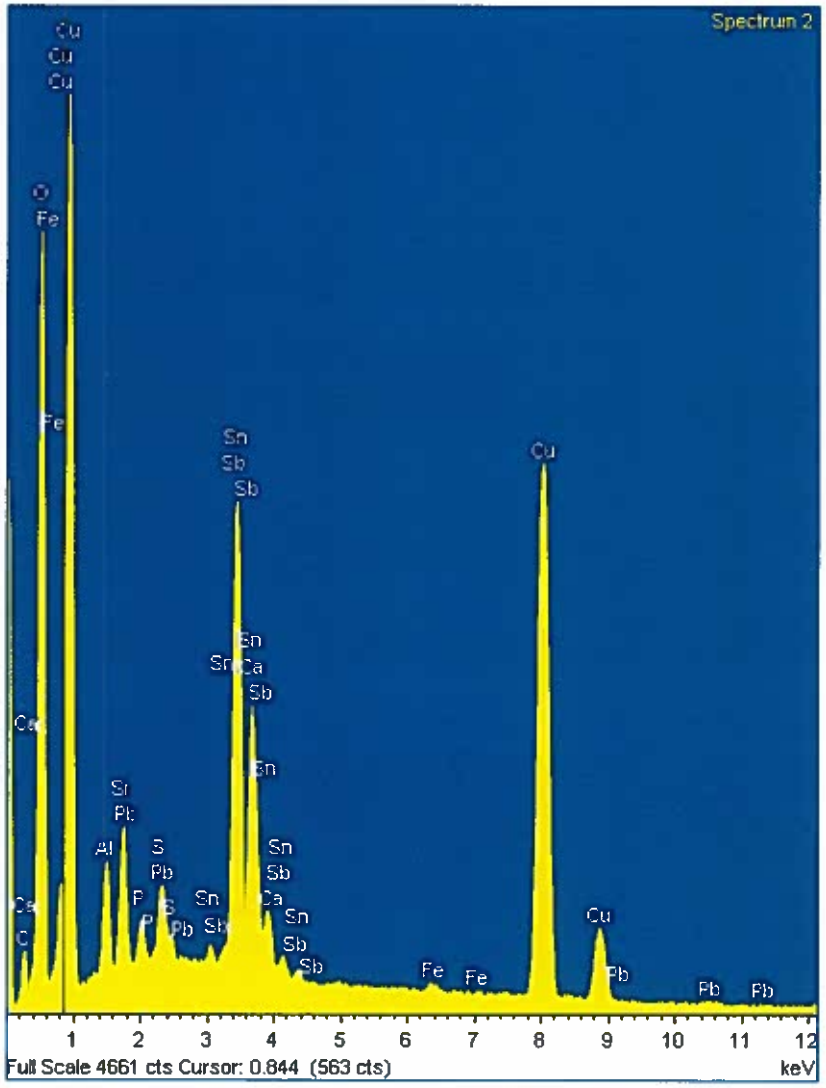
Spectrum processing :
Peak possibly omitted : 6.381 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	60.50	74.43
As L	0.93	0.97
Sn L	32.74	21.57
Sb L	3.14	2.01
Pb M	2.69	1.01
Totals	100.00	

Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1



Sample: Cu 1 - larger piece
Type: Default
ID:

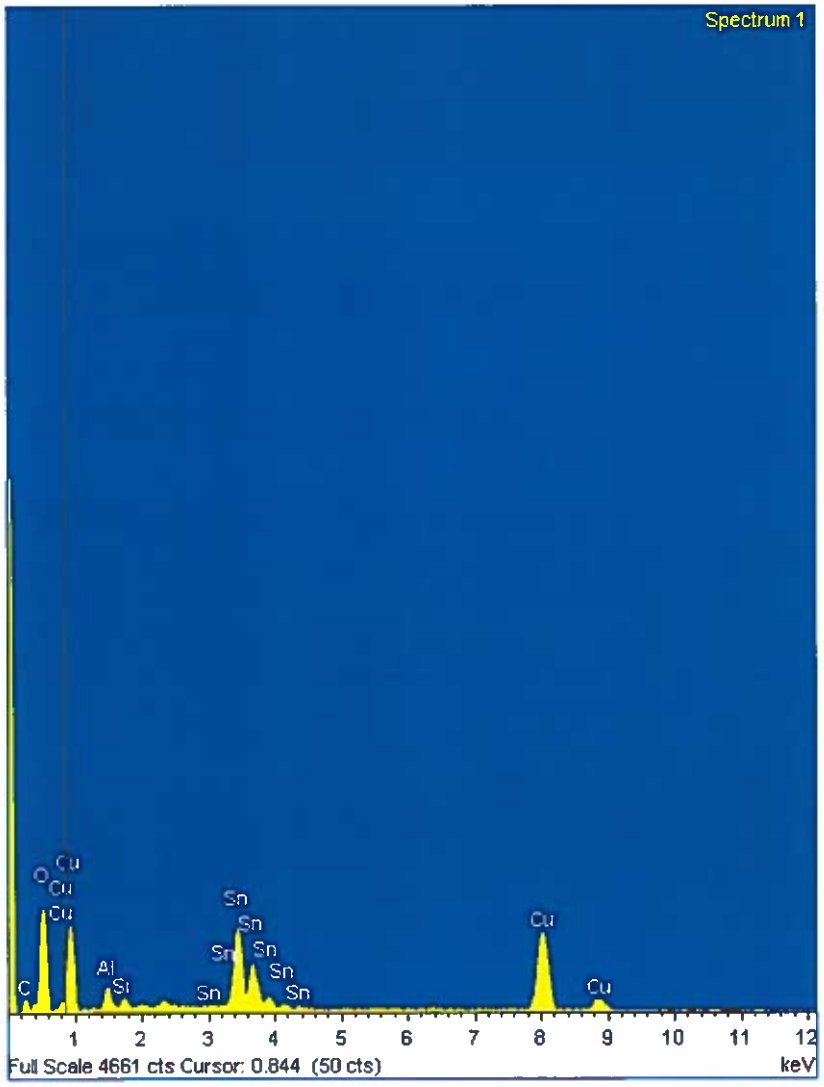
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	59.78	73.99
As L	0.00	0.00
Sn L	35.87	23.76
Sb L	2.24	1.45
Pb M	2.11	0.80
Totals	100.00	



Sample: Cu 2
Type: Default
ID:

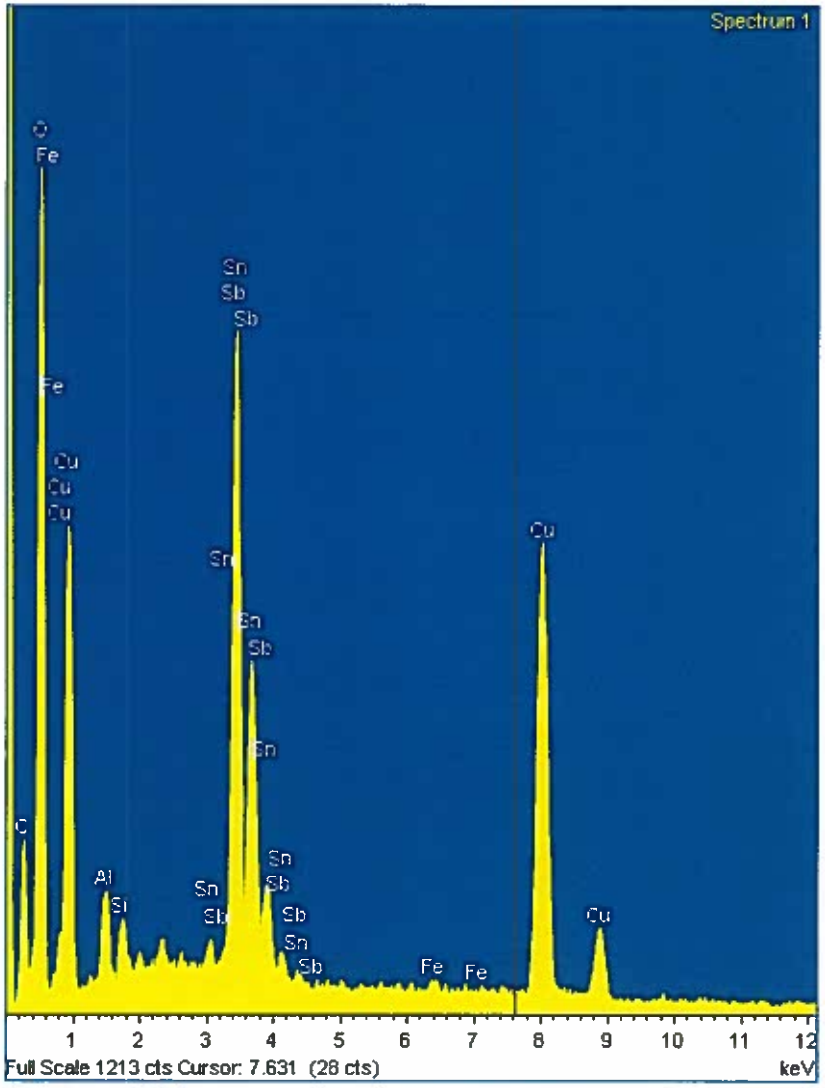
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.395 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	50.25	65.10
As L	1.22	1.34
Sn L	43.19	29.96
Sb L	5.34	3.61
Pb M	0.00	0.00
Totals	100.00	



Sample: Cu 2
Type: Default
ID:

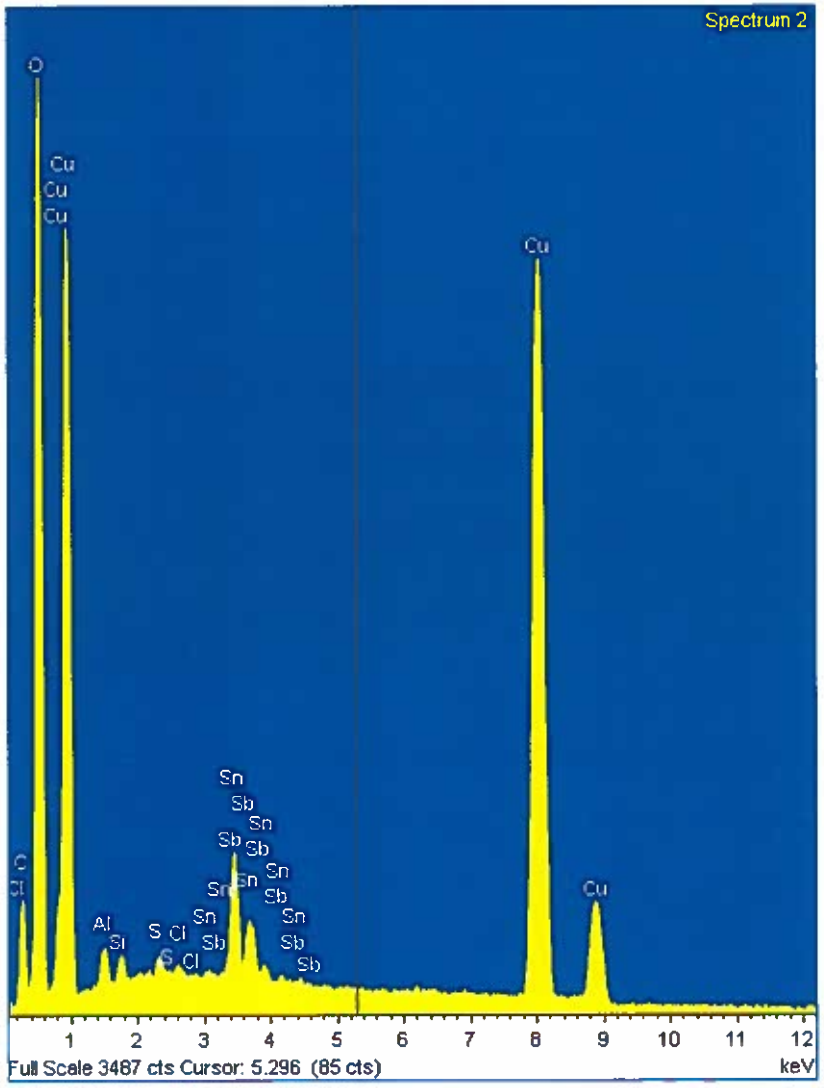
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	89.24	93.95
As L	0.00	0.00
Sn L	9.57	5.39
Sb L	1.19	0.65
Pb M	0.00	0.00
Totals	100.00	



Sample: Cu 3
Type: Default
ID:

Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	57.99	72.10
As L	0.54	0.57
Sn L	39.51	26.30
Sb L	1.08	0.70
Pb M	0.87	0.33
Totals	100.00	

Sample: Cu 4
Type: Default
ID:

Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.394 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	71.53	82.41
As L	0.70	0.68
Sn L	26.94	16.61
Sb L	0.00	0.00
Pb M	0.83	0.29
Totals	100.00	

Sample: Cu 5
Type: Default
ID:

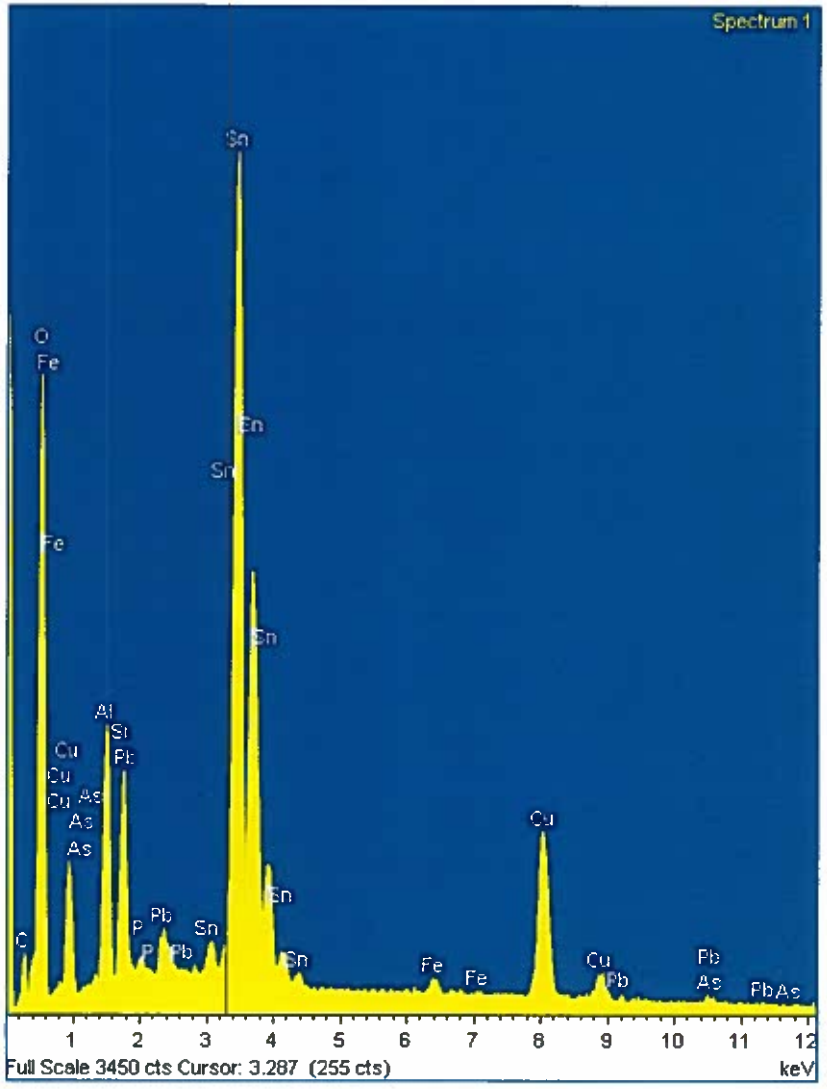
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.402 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	25.35	38.82
As L	2.05	2.66
Sn L	69.75	57.18
Sb L	0.00	0.00
Pb M	2.85	1.34
Totals	100.00	



Sample: Cu 6 - A
Type: Default
ID:

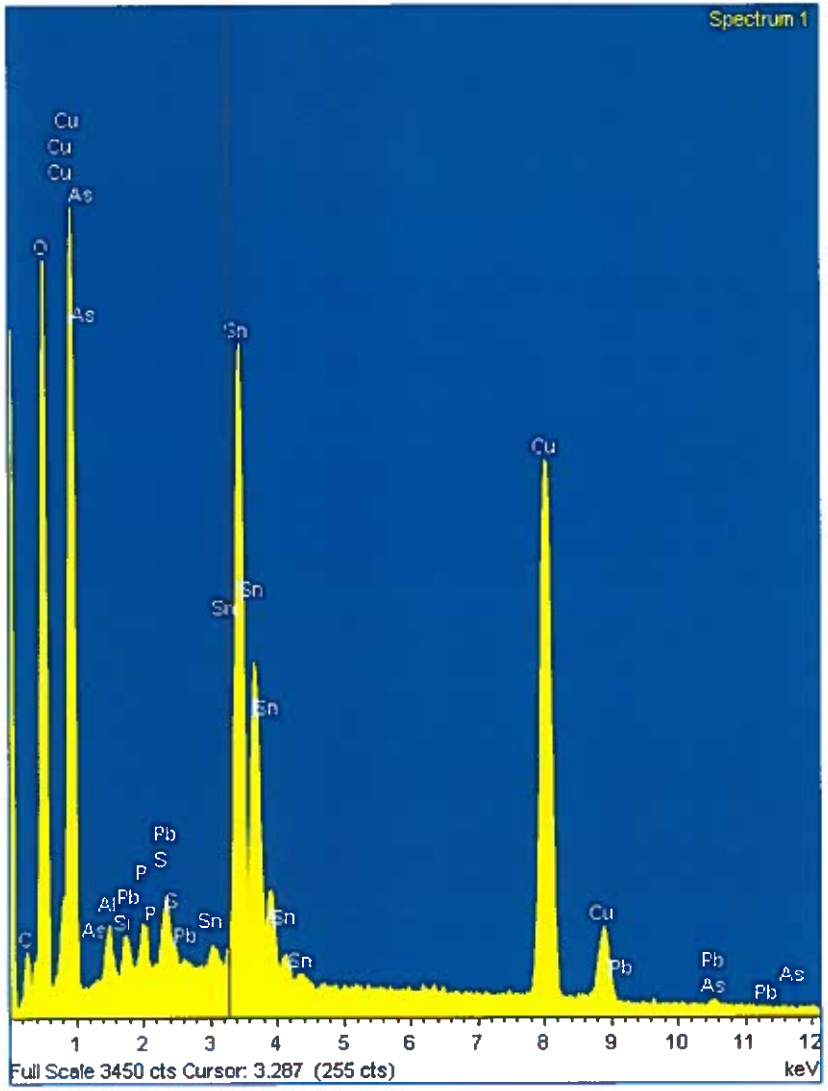
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	56.74	71.53
As L	0.66	0.70
Sn L	38.12	25.73
Sb L	1.13	0.74
Pb M	3.36	1.30
Totals	100.00	



Sample: Cu 6 - B
Type: Default
ID:

Project: Fan Barrow, Talsarn
Owner: philp
Site: Grey metallic corrosion

Spectrum processing :
Peak possibly omitted : 6.400 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	67.70	79.97
As L	0.75	0.76
Sn L	29.03	18.36
Sb L	0.00	0.00
Pb M	2.51	0.91
Totals	100.00	

Sample: Cu 7
Type: Default
ID:

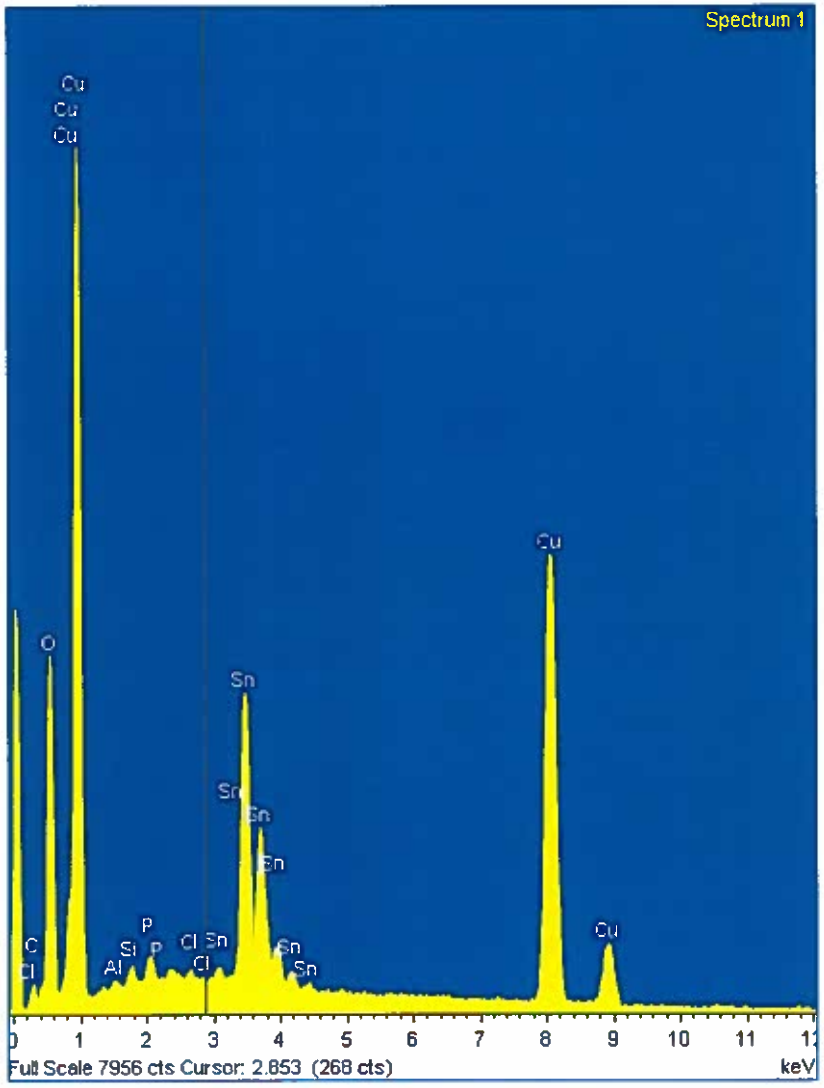
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	69.96	81.32
As L	0.66	0.65
Sn L	27.26	16.97
Sb L	1.24	0.75
Pb M	0.88	0.31
Totals	100.00	



Sample: Cu 8
Type: Default
ID:

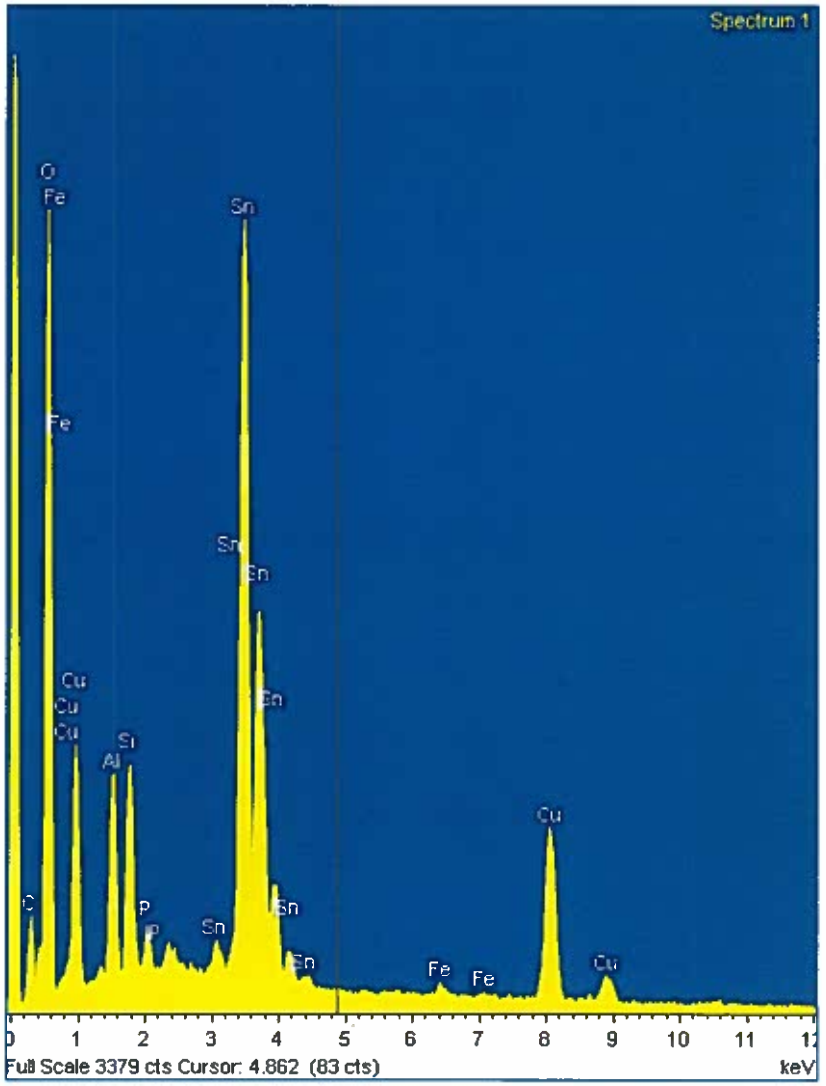
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.403 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	27.62	41.26
As L	2.67	3.38
Sn L	67.19	53.72
Sb L	1.49	1.16
Pb M	1.03	0.47
Totals	100.00	



Sample: Cu 9 A
Type: Default
ID:

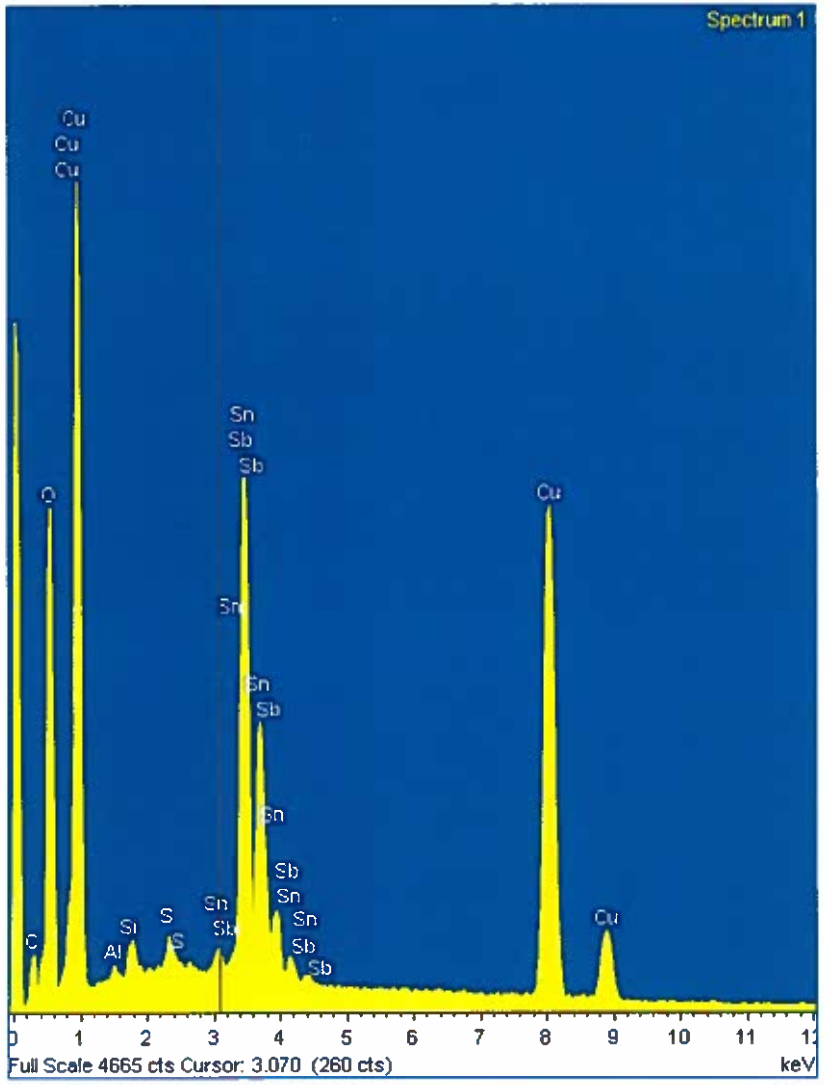
Project: Fan Barrow, Talsarn
Owner: philp
Site: Core

Spectrum processing :
Peak possibly omitted : 5.829 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	57.08	71.36
As L	0.00	0.00
Sn L	37.39	25.02
Sb L	5.54	3.61
Pb M	0.00	0.00
Totals	100.00	



Sample: Cu 9 B
Type: Default
ID:

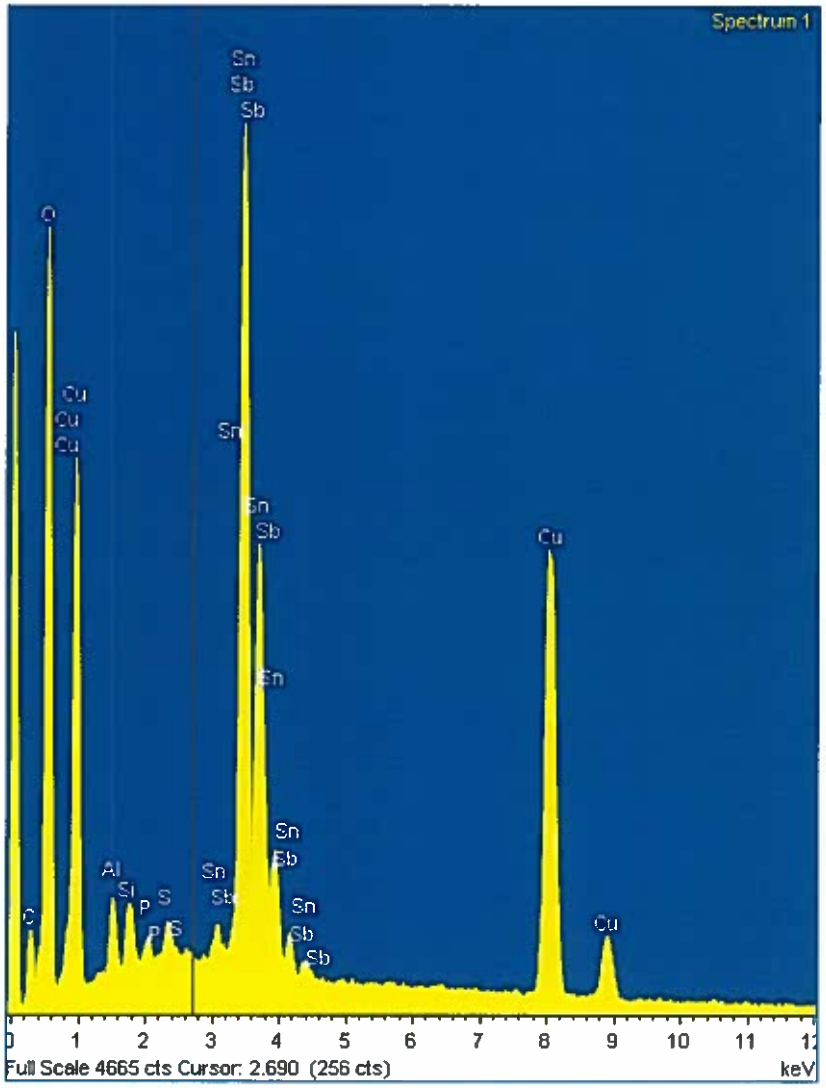
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	45.47	60.82
As L	0.97	1.11
Sn L	48.80	34.95
Sb L	4.09	2.85
Pb M	0.67	0.27
Totals	100.00	



Sample: Cu 9 C
Type: Default
ID:

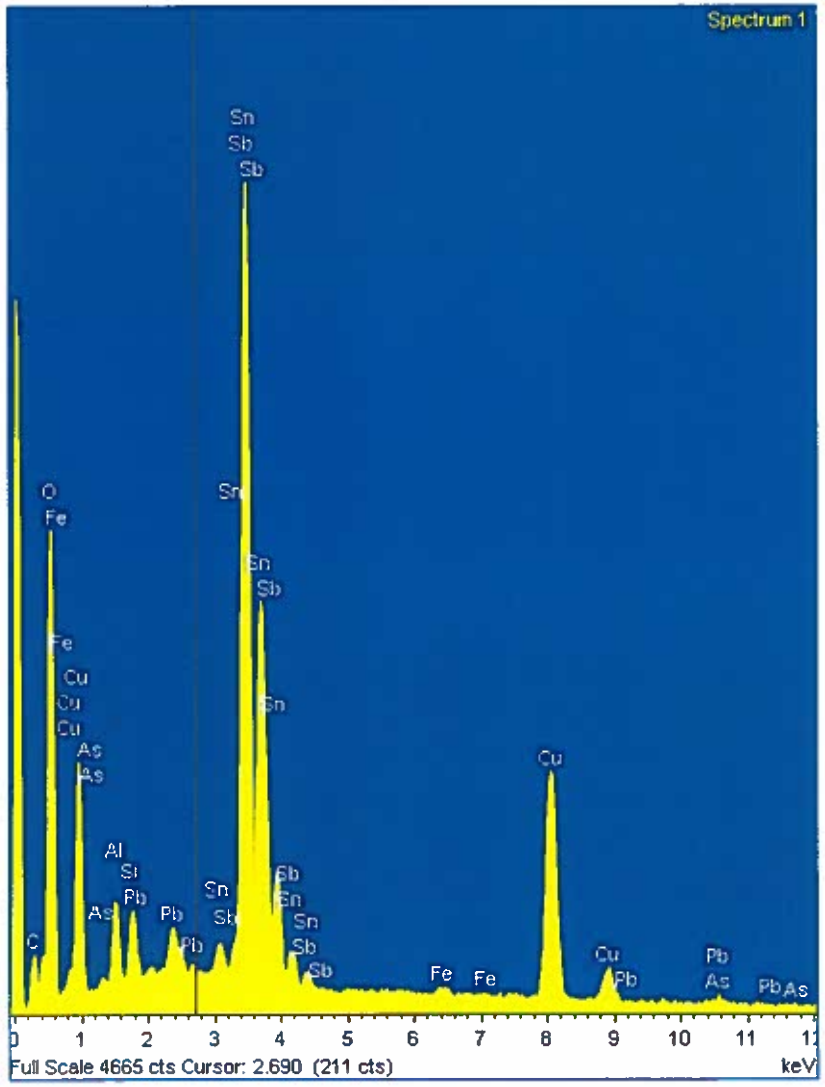
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.385 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 3

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	30.58	45.33
As L	1.46	1.84
Sn L	61.56	48.86
Sb L	3.35	2.59
Pb M	3.05	1.39
Totals	100.00	



Sample: Cu 11
Type: Default
ID:

Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.377 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	70.10	80.92
As L	2.44	2.39
Sn L	26.43	16.33
Sb L	0.00	0.00
Pb M	1.03	0.36
Totals	100.00	

Sample: Cu 12
Type: Default
ID:

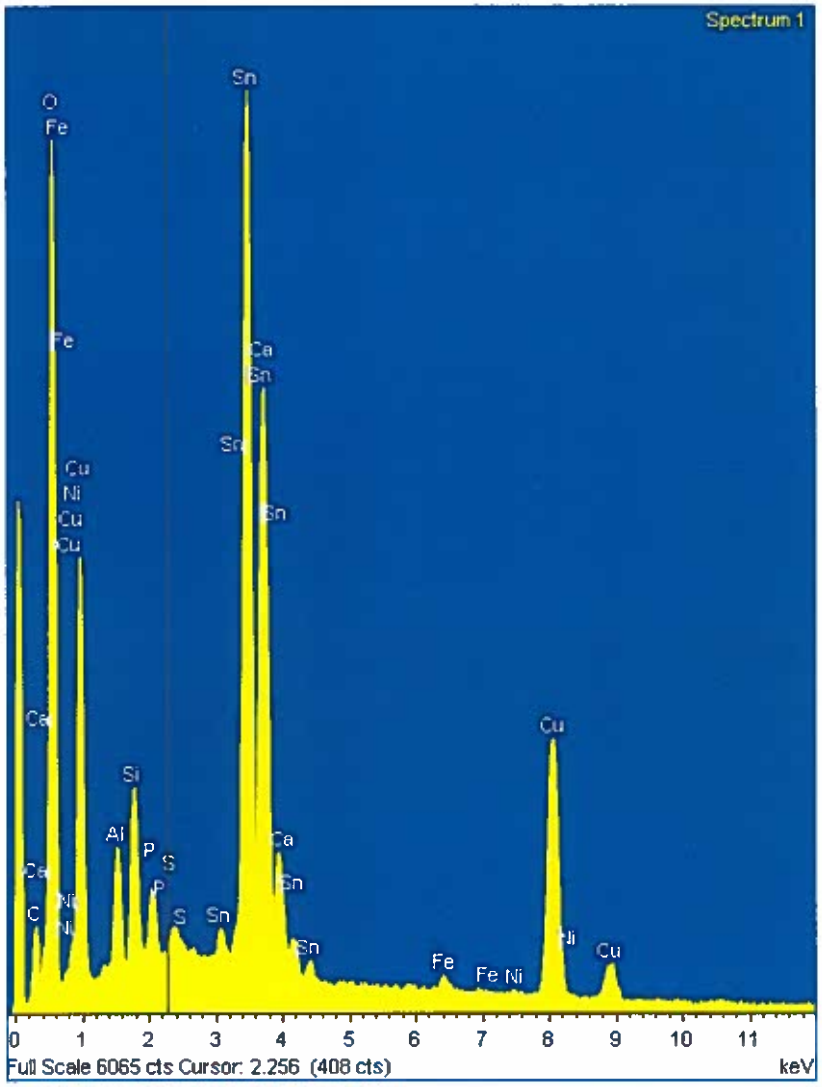
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peaks possibly omitted : 5.900, 6.401 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	32.74	47.58
As L	1.38	1.70
Sn L	64.28	50.00
Sb L	0.00	0.00
Pb M	1.60	0.71
Totals	100.00	



Sample: Cu Object from (007)
Type: Default
ID:

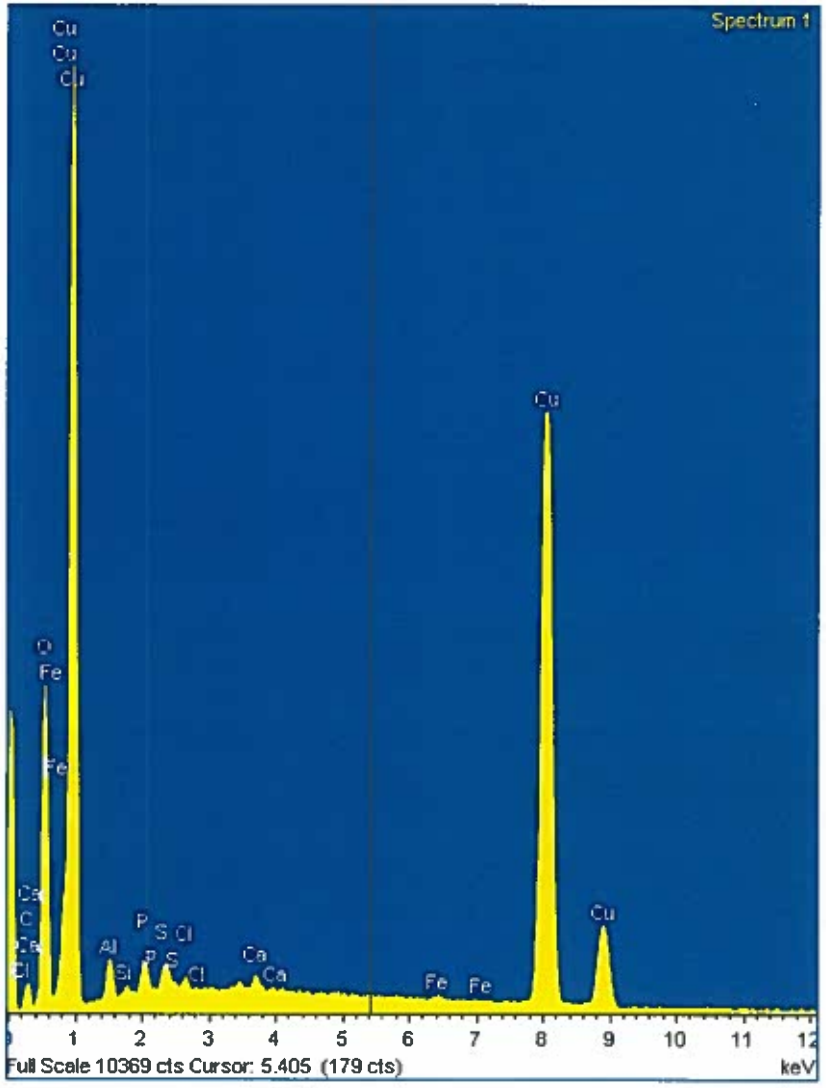
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
Peak possibly omitted : 6.370 keV

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	96.73	98.44
As L	0.54	0.47
Sn L	1.04	0.56
Sb L	0.00	0.00
Pb M	1.68	0.53
Totals	100.00	



Sample: Cu from cremated material (007)
Type: Default
ID:

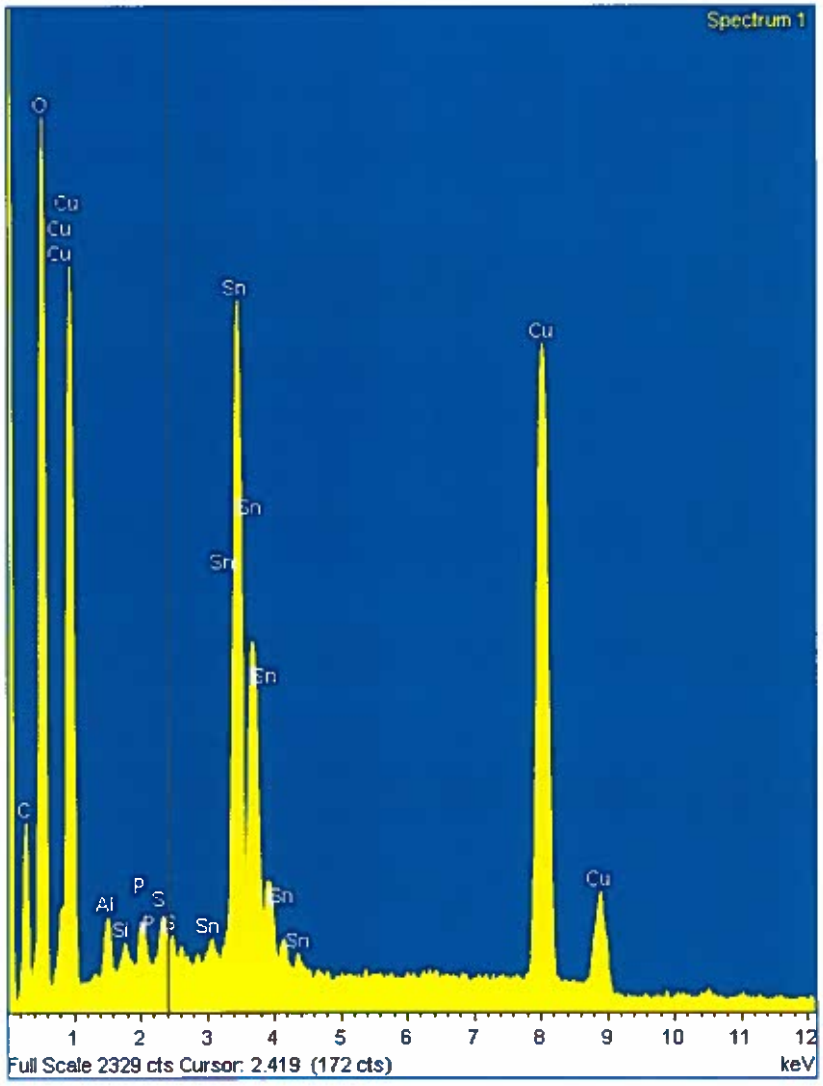
Project: Fan Barrow, Talsarn
Owner: philp
Site: Site of Interest 1

Spectrum processing :
No peaks omitted

Processing option : All elements analyzed (Normalised)
Number of iterations = 2

Standard :
Cu Cu 4629 17-Jun-2010 09:42 AM
As InAs 4629 17-Jun-2010 10:39 AM
Sn Sn 4629 17-Jun-2010 10:11 AM
Sb Sb 4629 17-Jun-2010 10:09 AM
Pb Benitoite CGS 18-Jun-2010 04:20 PM

Element	Weight%	Atomic%
Cu K	60.27	74.16
As L	0.64	0.67
Sn L	36.12	23.79
Sb L	0.99	0.64
Pb M	1.98	0.75
Totals	100.00	



APPENDIX 5

THE BRONZE AGE POTTERY

Alex Gibson

INTRODUCTION

In September 2012, the pottery from Fan barrow was delivered to the writer for analysis. The pottery had been conserved and reconstructed or partially reconstructed. The assemblage was unpacked and laid out in good natural light and fabric and decoration examined using a x10 hand lens. The fabrics have not been examined microscopically therefore the macroscopic descriptions given here are liable to change should microscopy be undertaken in the future. Similarly, given the colour variations that can occur on Bronze Age pottery as a result of a combination of firing and burial conditions, the fabric colours have been only broadly described. Due to the reconstruction of the fragmentary vessels, little can be gleaned regarding the manufacture of the pots though they are certainly hand built and open fired. The pots have not been subjected to biomolecular analysis and this may be a viable avenue for future research.

Context 021 (Pit 017)

Urn 1

Context 021; Rim D – 150mm; Base D – 95mm; Height – 18mm

This tripartite Cordoned Urn is misshapen and flattened. This has almost certainly happened during the firing where the temperature has been so high as to cause the clay particles to begin to melt and collapse. The vessel has presumably, therefore, been fired on its side and can be regarded as a firing waster. The fabric is well fired, pink to grey-brown on both surfaces and with a slightly darker core. It contains coarse quartz sand, some of the larger grains visible on the outer surface where it is abraded. The rim is simple with a vertical internal bevel 17mm deep. The bevel is decorated at the top and base by two well-separated encircling twisted cord lines; the intervening space is undecorated. The upper portion of the pot, above the first cordon, is some 70mm deep. It is decorated at the top with 2 encircling lines of twisted cord impressions. The main zone comprises opposed filled chevron motif. The outlines of the chevrons are executed in whipped cord while the diagonal lines filling the chevron are in twisted cord. An encircling line of whipped cord forms the lower border of the motif immediately above the cordon. The second (lower) cordon is less well-defined and situated some 35mm below the upper. The vessel is undecorated below the upper cordon.

Cordoned Urns are defined by the lack of a real collar. Rather than a collar *sensu stricto* the base of the uppermost zone is defined by a raised cordon and the shoulder by a second cordon or even a slight carination or change in direction. The internal profile of the vessel is smooth. There is clearly a strong relationship between Cordoned Urns and Collared Urns – the basic bipartite and tripartite forms are shared as is the restriction of the decoration to the zones above the shoulder and the simple geometric decoration. Both types are also generally associated with cremation burials. The distinction between Cordoned Urns and Collared Urns may therefore be more academic than real, the former being a rather degenerate form of the latter, perhaps having developed from Collared Urns and certainly alongside them. Cordoned Urns may also be related to Food Vessel Urns, especially those with plastic decoration and the complexity of overlapping Early Bronze Age ceramic typologies has been discussed by Law (2008).

The filled chevron motif on the upper part of the pot finds abundant parallels amongst the Collared Urn class but also in a Cordoned Urn found with a cremation burial at Llanddyfnan on Anglesey (Savory 1980, 218). The twisted cord chevron motif in all its variations is a common motif on Cordoned Urns in Ireland (Kavanagh 1976; Brindley 2007) where links with Collared Urns may be even stronger. Collared Urns in Ireland have a markedly eastern distribution. This is largely shared by Cordoned Urns although they do reach further west into the Irish Midlands, even reaching Connaught and eastern Munster.

Comprehensive dating of Cordoned Urns has not been undertaken in England or Wales but dates from Ireland and Scotland suggest a currency in graves of around 1850-1500 cal BC (Brindley 2007; Sheridan 2004). Dates from Glanfeinion in Powys, however, may suggest that Cordoned Urns survive longer in a domestic context, perhaps as late as 1100 cal BC, and may have fulfilled the role that Deverel-Rimbury and Deverel-Rimbury Derivative pottery played in southern England (Britnell *et al.* 1997, 195).

Cup 1

Context 021; Rim D – 60-66mm; Base D – 45mm; Height – 45mm

The pink fabric, averaging some 5-7mm thick, has a black core visible in the breaks and some finely crushed grog inclusions visible on both surfaces. The surfaces are crazed and the base is slightly rounded. There is a pair of perforations, 15mm apart, at the shoulder on one side. The perforations have caused slight scarring on the inner surface suggesting that they were bored from the outside when the clay was either fired or leather hard. There is some slight wear around the outer edges of the perforations. The rim is slightly everted. The decoration is incised and comprises close-set vertical incisions on the inside of the neck with two encircling lines above. The rim itself is rounded and undecorated. Externally, the decoration is zoned. At the top are 5 incised lines occupying a space of 10mm. Below is a zone, also 10mm deep, of alternating groups of 4 oblique lines (5 in 1 case). This is bordered below by 3 incised lines, a second zone of alternating groups of 4 oblique lines and finally a lower border of 3 incised lines above the base. The base itself is decorated similarly. Three encircling incised lines act as a border for 4 groups each consisting of 4 of incised lines arranged in the shape of a cross with undecorated centre. There are traces of possible white inlay in some of the incisions.

Cups have a distinct if varied grammatical repertoire as defined by Longworth (1984). Miniature urns, Food Vessels and Beakers are found as are more distinctive forms such as perforated wall cups, grape cups, Aldbourne cups and so on. Many of these forms are perforated, often with multiple perforations, but more commonly at shoulder or belly level. Pairs of perforations are common and have invariably been created before the vessel was fired, or even, in some cases, decorated (Gibson 2004). The form of the cup is a miniature Bowl Food Vessel. It bears remarkable similarity ion decoration and form to an unprovenanced pot, possibly from Cardiganshire (Savory 1980, 219, No.471). This vessel combines not just the two main decorative zones of the Fan vessel, but also the out-turned thinned lip, the slightly rounded base, the multiple incised lines on the base and the vertical incised lines inside the rim. Internal decoration is rare on Cups other than on rim bevels and in this respect at least these two cups are remarkable. The decoration on the Fan vessel comprises groups of opposed diagonal lines, that on the Cardiganshire vessel comprises zones of filled chevrons. The difference is interesting but probably academic and it may be that these two cups, from the similarity of their form and unusual decoration, have been made by the same potter. It is a pity that the context of the Cardiganshire vessel is not documented. A cup from Templeton in Pembrokeshire (associated with a rather

unusual Collared Urn with encircling incised lines on the belly) is also worthy of discussion though once again the details of the discovery are not known (Savory 1980, 219, No.414.2). Although bipartite in shape and lacking the sinuous profile of the Fan Cup 1, nevertheless the decoration is similar with groups of opposed oblique lines arranged in two zones. The zones are defined by encircling incised lines, the cup has a pair of perforations at the belly and again internal decoration comprises multiple vertical to oblique incised lines the rarity of which decoration has already been mentioned. This vessel also shares the basal motif with the Cardigan and Fan vessels. This may bring the known output of this potter to at least 3 cups.

Context 038 (Pit 037)

Cup 2

Context 038; Rim D – 80mm; Base D – 45mm; Height – 50mm

The vessel represents approximately one third of a splayed wall vessel not dissimilar to a miniature Food Vessel. The fabric is pink internally, pink-brown externally and has a dark grey core. The fabric contains coarse sand inclusions and possibly some grog. The breaks appear old and it would appear that the vessel was fragmentary when deposited. The base of the vessel is unusually thick at 15mm. The cup is in the form of a bipartite vase. The rim has an internal bevel and slight internal lip. It is decorate with faint traces of whipped cord zig-zags. The neck is decorated externally with oblique lines of twisted cord Impressions (sloping top right to bottom left) and there are traces of a twisted cord line above this and below the rim though it does not appear to have completely encircled the vessel. The shoulder is accentuated above and below by an encircling line of whipped cord impressions. Like the neck, the belly of the vessel is decorated with oblique twisted cord lines (sloping top left to bottom right) with an encircling twisted cord line below. The base has been decorated with radiating lines of twisted cord impressions.

Cup 2 is a miniature bipartite Vase Food Vessel. It lacks a pair of perforations thought these may well have been on the missing portion of the pot. The form of the pot, the thickened rim, and the main decorative motif can be paralleled on a small cup from Llanfihangel Cwm-du, Brecknock (Savory 1980, 219, No.474) though this pot has twisted cord decoration on the rim and lacks the decorated base of the Fan vessel. This was found with a primary cremation below a round mound and appears to have been the only ceramic accompanying the burial. A similar vessel from Tregaron, Cardiganshire is more rounded in profile than the Fan Cup, is decorated on the rim bevel with radial twisted cord lines, is undecorated on the base, but has the same twisted cord motif on the body (Savory 1958, fig 5.7). Once again the circumstances of the find are not known.

The unusual combination of whipped and twisted cord on this vessel link it clearly to Urn 1.

Context 005 (Pit 006)

Urn 2

Context 005; Rim D – *c.*185mm; Base D – 70mm; Height – 230mm

Tripartite Collared Urn in a hard and well-fired fabric with finely crushed stone inclusions. The urn is misshapen, the fabric shows the start of sintering and part of the rim is bloated indicating that the firing has been high causing the clay particles to start to melt (see Gibson & Woods 1997, 110 & 248). The misshapen nature of the pot is similar to Urn 1 and it is clear in this example that this is a result of firing. The rim is rounded and has a steep undecorated internal bevel which has been applied to the inner surface. The collar carries a single zone of decoration comprising well-executed twisted cord lattice bordered above and below with three encircling twisted cord lines. The neck to the shoulder is decorated with regular vertical interrupted herringbone motif, once again executed in twisted cord.

Urn 2, by contrast, is a classic tripartite Collared Urn. The collar is straight but well-defined and not simply marked by a raised cordon. The shoulder also shows a clear change of direction. The straight collar and internal rim moulding are traits of Longworth's (1984) Primary series Collared Urns however the deep collar and the smooth internal profile are late traits as identified by Burgess (1986) though the neck decoration is amongst Burgess's early traits. The radiocarbon date of 2029-1874 cal BC (87.1% probability – SUERC-40798) from the cremated bone of the mature female associated with this vessel might suggest that the Urn is early in the sequence (Sheridan 2004; Needham 2005, fig. 13) though the comprehensive radiocarbon dating of Bronze Age pottery is rare outside Scotland.

The lattice decoration, bordered by encircling lines, can be matched on a tripartite Collared Urn from Kilpaison Barrows in Pembrokeshire (Savory 1980, 215 No 420) which was found with the cremated remains of an adult male. The neck and rim bevel decoration of this urn comprise respectively short vertical and horizontal twisted cord lines therefore it is not as accomplished as that on Urn 2. Two incomplete Collared Urns, one certainly tripartite, with lattice decoration on the collar were found at Cross Hands Barrow 2, Llanboidy, Carmarthenshire (Savory 1980, 216, Nos 418.1 & 2). The former was associated with the primary cremation and in this instance the lattice is incised and bordered by short hyphenated incised lines. In the neck there are well-executed opposed filled chevrons. The second urn is larger and the lattice is formed by twisted cord and therefore bears a closer comparison to Urn 2. Double twisted cord lattice on both the collar and neck can be seen on a small tripartite Collared Urn from Templeton, Pembrokeshire though the circumstances of this find are uncertain (Savory 1980, 217, No.415). Finally a tripartite Collared Urn with incised lattice motif in both the neck and on the collar was found at Letterston, Pembrokeshire associated with a plano-convex knife and the primary cremation (Savory 1980, 214, No.316.1). The lattice however is irregularly executed. The propensity of Welsh Collared Urns with lattice motif to come from south-west Wales may be worthy of note.

The interrupted vertical herring bone decoration in the neck is rare on Collared Urns. The motif can be found on the collar of an urn associated with a child cremation from Carneddau in Powys (Gibson 1993, 28). This vessel is also similar in form to Fan Urn 2 but is undecorated below the collar and dates slightly later to 3430±70 BP (CAR-1286). It is also found on the collars of an Urn from Wimborne St Giles 14, Dorset, and Long Whittenham, Oxfordshire (Longworth 1984, Nos 499 & 1375 – Pl.149d & c), the latter bordered by three encircling twisted cord lines. The same motif is found on both the collar and the neck of a Collared Urn from Hutton Buscel, N. Yorks (Longworth 1984 No.1180 – Pl.183c) once again on a rather upright vessel. The Urn was associated with a second and found in

fragments in a pit without a burial. The same motif is found as part of a more complex pattern in the neck of a tripartite Urn from Chapel-en-le-Frith, Derbyshire (Longworth 1984, No.265 –Pl.61i). Once again the upright form of this Urn is comparable to the Fan vessel and the Derbyshire pot bears closer comparison given that the collar is filled with a lattice of twisted cord impressions bordered above and below by two encircling twisted cord lines. The Urn was associated with a cremation deposit, a cup and a flint knife. Interrupted herring bone is also found in the neck of a Collared Urn from Lancaster (Longworth 1984, No.825 – Pl.84c) but again it forms part of a more complex design. This Urn was found with a second, a cremation and a wristguard with rounded ends and a single perforation at each end (Atkinson's type A1 – Woodward & Hunter 2011) Two urns from Sheffield (Longworth 1984, Nos 1410 & 1411 – Pl.99a & b) also have interrupted herring bone in the neck though in both these cases, the diagonals are separated by multiple vertical lines rather than the single line in the other examples discussed. The unusual neck motif combined with the fact that both urns have broad horizontal herring bone on their collars may suggest that they are the work of the same person. The Sheffield Urns, found together, were associated with a bipartite Cup, a bronze knife and a burnt leaf-shaped arrowhead, the latter almost certainly an antique at the time of its deposition. A rather more upright Urn from Staintondale, North Yorkshire (Longworth 1984, No.1275 – Pl.182a) combines interrupted twisted cord herring bone in the neck but combines it with filled opposed triangles on the collar. The vessel was apparently associated with four flint knives and other artefacts.

The interrupted herringbone motif is, however, also found on Cups and given the association of the two types at Fan, it may be worth mentioning the occurrence of the motif on a cup from a ruined cairn at Llanelltyd, Merioneth (Savory 1980, 219, No.472) and on another from Wester Bucklyvie, Fife which has also been identified as a firing waster (Gibson 2004, fig 98.1).

Cup 3

Context 005; Rim D – 66mm; Base D – 40mm; Height – 60-70mm

The fabric is hard and well-fired with pink-brown to grey-brown surfaces and a grey core. The fabric is speckled in appearance with sand and white calcareous inclusions. Some of the latter have leached out leaving small pits within the fabric and the surfaces. The fabric has been heated to the degree that it has also started to sinter (Gibson & Woods, 1997, 248). The cup is of bipartite form and has been perforated at the shoulder. Two perforations survive, one either side of a missing fragment. It is not possible to ascertain whether there was a single pair or 2 close-set pairs. One perforation has been made whilst the clay was still wet but the other is too damaged to be certain. The rim has a slight internal bevel. This is decorated with a single incised line towards the top and a series of oblique short incisions below. The decoration on the outer surface is similarly incised, sometimes lightly and often haphazardly with overlaps in the short incised lengths clearly visible. The upper zone, above the shoulder, comprises a zone of incised single running chevrons bordered above and below by two encircling lines. Below the shoulder is a zone of lozenges filled with oblique lines again bordered above and below by two encircling lines. The base is decorated with the abraded traces of an incised 9 square lattice bordered by an outer encircling line. The outside 4 corners of the lattice appear to have been filled with oblique incisions. There is also a possible trace of a single oblique incision in the central square. There is a large firing spall on the lower part of the vessel. This spall is catastrophic in that it has resulted in a hole through the vessel wall. The spalled sherd is present.

The bipartite form of this vessel finds abundant parallels amongst Welsh Bronze Age cups but the decoration is much more difficult to match. The incised chevrons

on the upper half represent a common motif however the filled lozenges on the lower half seem unmatched in Wales. Incised lozenges are found on a small pinched cup from Carneddau, Powys (Gibson 1993) but they are open and not filled. Lozenge-shaped perforations occur on cups from Llanbeblig, Caernarvonshire and fro Meini Gwyr, Pembrokeshire (Longworth 1983) but this may be taking the hunt for analogies too far. The filled and open grid squares on the base similarly appear unique in the Welsh corpus although cup 4 in the present assemblage bears comparison. A small round based handled cup from Denzell Downs, Cornwall has dot-filled lozenges as the main motif (Abercromby 1912, fig 301)

Context 007 (Pit 004)

Cup 4

Context 007; Rim D – *c.*63mm; Base D – 40mm; Height – 48mm

Hard, well-fired fabric with a black core and slight traces of the start of sintering. The fabric is speckled with sand and finely crushed calcareous inclusions. The rim is badly abraded and no top surface survives. The vessel is bipartite with traces of two perforations on the shoulder. The first measures 2mm in diameter at the outer surface. The second falls at a damaged part of the vessel and is only visible on the inner surface where its presence marked by some dislodged clay suggesting that the perforation was made when the clay was still wet. That the vessel was coil-built is ascertainable from the breaks near the rim. The decoration inside the rim comprises a low of small crescent-shaped stabs. The upper zone of external decoration is bordered above and below by traces of 2 encircling incised lines. Within this border, opposed chevrons each comprised of 3 nested sets of incised lines form a zone of running reserved chevron. Below the shoulder, the decorative zone is also bordered above and below with 3 incised encircling lines. The zone is divided by incised lines into rectangular panels, each divided into six triangular panels. Alternating panels are filled with oblique incised lines. The base is also decorated with incisions. A 9-sectioned lattice is framed in an encircling line. The central part of the lattice has a roughly concentric square within it and with a small stab in the centre. The outer 4 corner squares of the lattice have incisions parallel to their inner sides and the resulting angles are filled with short stabs similar to those inside the rim.

Once again the bipartite form of the cup is a common type but the decoration is difficult to parallel in Wales. The zone of bordered nested chevrons finds parallel in a bipartite cup from Llanarth, Cardigan, which was found in a barrow but otherwise in unrecorded circumstances (Savory 1980, 219, No.475). A similar motif but also comprising chevrons consisting of single incised lines is found on the lower part of a bipartite cup from Llanfihangel-y-Creuddyn, Cardiganshire (Savory 1980, 219, No. 469) but again does not match the present vessel exactly. The split lozenge motif on the lower part of the vessel is again unmatched in Wales or indeed on any other cup known to the present writer. It is, however reminiscent of the interrupted lozenges encountered on Aldbourne Cups such as that from Wimbourne St Giles G8 (Annable & Simpson 1964, 114, No.433).

Context Pit 023

Urn 3

Context 023; Rim D – 260 mm; Base D – *c.*150mm

Badly crushed remains of a tripartite Collared Urn in a hard, well-fired fabric with crushed rock inclusions. The surfaces are light brown and the fabric black. There

are traces of carbonaceous encrustations on the outer surface. The rim is slightly flattened, has an internal thinning giving the appearance of an internal bevel which is decorated with 3-4 encircling rows of twisted cord impressions. The collar is decorated with a broad zone of twisted cord lattice motif bordered above and below by a single encircling twisted cord line. Shallow oval impressions form rough diagonal rows in the neck and a single row of these near vertical impressions decorate the shoulder of the Urn. The collar has clearly been applied to the neck forming a point of weakness and collapse. There are three perforations on the collar. These have been drilled after firing causing slight break-through damage to the inner surface. The surviving pair is placed on either side of a substantial crack and may therefore be repair holes. A third appears to be on its own but has also been drilled after firing.

Urn 3 is badly crushed but has clearly been an imposing vessel. With a rim diameter of some 260mm it probably had a height in excess of 300mm and this is well into the upper half of Urn dimensions (Longworth 1985). Like Urn 2, the deep and well-defined collar and the smooth internal profile put this in Burgess's late phase though the date of 1926-1741 cal BC (95% probability, SUERC-40800) obtained from the cremated remains of the mature female associated with this vessel place it firmly in the middle of Collared Urn chronology. Whilst not in itself a rare motif, it is interesting to note that, like Urn 3, this also has bordered lattice motif on the collar.

Once again the decoration on the neck is difficult to match in Wales. The neck stabs on a vessel from a barrow on Penmaenmawr in Caernarvonshire are rather deeper and more irregular than the present vessel's ovals (Savory 1980, 212, No.455.1). Similar ovals decorate the collar (not the neck) of the unusual and elaborate Collared Urn from Templeton in Pembrokeshire to which we have already referred (Savory 1980, 217, No.414.1). Urns with stabbed neck decoration are not unusual (*e.g.* Longworth 1985, pl.177 & 178) but an interesting example found with a cremation on Acklam Wold, N. Yorks, (also associated with a small cup) combines the neck impressions with bordered twisted cord lattice on the collar and internal encircling cord lines. It forms perhaps the closest parallel to the present vessel in Longworth's corpus (1985, Pl. 176d).

Context 020 (Pit 015)

1 Two small sherds (total 4g) in a thin hard fabric averaging 7mm thick with abundant crushed quartz inclusions. The surfaces where they remain are reddish-brown and the core black. Both sherds are undecorated.

2 Single sherd (14g) in a hard and well-fired but slightly friable fabric averaging *c.*10mm thick. The fabric has light brown surfaces and a black core and contains abundant crushed quartz inclusions. There are no decorative or formal traits.

Assigning these two sherds to a specific ceramic tradition is difficult in the absence of decorative or formal traits however the radiocarbon date (SUERC-42560) suggests a Middle Neolithic date and the fabric is not out of character with quartz-filled fabrics of Welsh Impressed Ware, and especially the Mortlake style (Gibson 1995). The abraded nature of these sherds, however suggests that they may be residual in which case they may probably belong to quartz-filled Developed Bowls of the type found at Clegyr Boia (Williams 1953)

3 Single large rounded rim fragment (42g) in a hard well-fired fabric with smooth light pink-brown surfaces and abundant crushed quartz inclusions. The fabric bears comparison with the hard and well-fired quartz-filled

Neolithic pottery of the area though the rim form is unusual and difficult to parallel. However, the profile of the rim itself changes over the length of the sherd with 1 section being far less bulbous than the other. Heavy rims similar to this and also in a quartz-rich fabric have been found at Clegyr Boia (Williams 1953) amongst a modified Carinated Bowl assemblage. This sherd may well therefore be early Neolithic in date: approximately 3800-3600 BC. The date from this context (SUERC-42560) again suggests that this sherd may be residual though the date is in keeping for the end of Developed Bowl traditions.

DISCUSSION

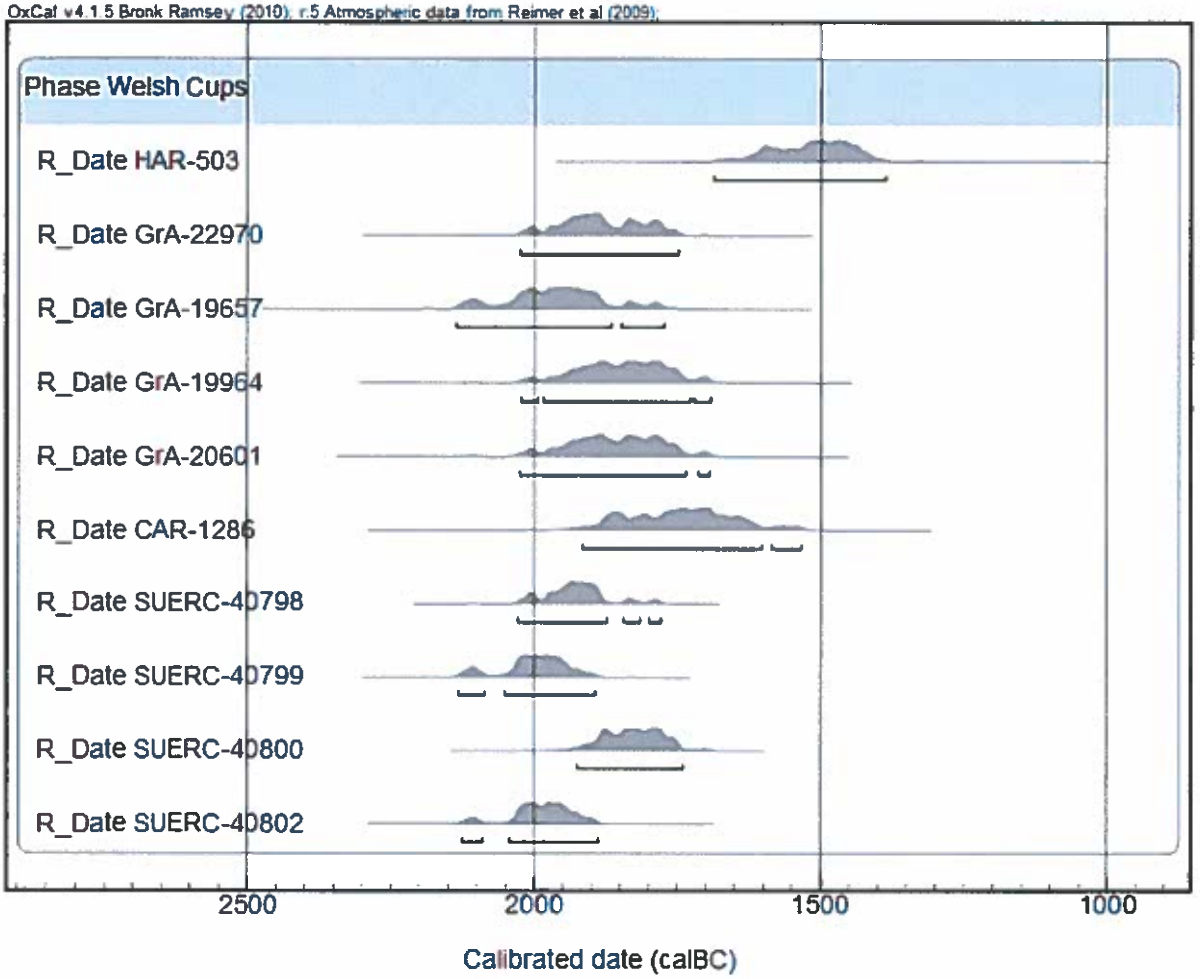
The pottery from the Fan Barrow excavations is important for a number of reasons. Firstly they add to the growing corpus of dates for Bronze Age pottery and burials in the Principality confirming that they are contemporary with their English, Scottish and Irish counterparts (where radiocarbon dating has been much more systematically and/or extensively undertaken). The finding of four Pygmy Cups in the same barrow is noteworthy. Thirdly it is also of considerable interest that a number of the pots appear to be firing wasters.

The dates for the Collared Urns and Cordoned Urn from Fan are in keeping with the currency of these vessels elsewhere, broadly datable to *c.*2000 – 1500 cal BC and 1900-1400 cal BC respectively (Sheridan 2003; 2004: Brindley 2007). They form part of the increased variety of ceramic styles and burial practices entering the sepulchral record after the initial appearance of Beakers and coinciding with Needham's Fission Horizon when ceramics, based on earlier middle Neolithic forms predominate (Needham 2005). The difficulty of finding exact parallels for the Urns is not restricted to this class of pottery and it is noteworthy that despite the restricted nature of the decorative techniques employed and indeed the limited range of motifs used, the combinations of technique and motif appear to be almost limitless. Certain features of the Fan pottery suggest that we might be able to identify a potter. This is especially so when considering the comparatively rare combination of whipped and twisted cord on Urn 1 and Cup 2. Further afield, the almost identical form and decoration of Cup 1 and the vessel 'probably from Cardiganshire' (Savory 1980 No.471) and that from Templeton, Pembrokeshire (Savory 1980, No.414.2) again suggest the works of an individual.

The recognition of the work of specific individuals in prehistory is largely dependent on the detailed analysis of local corpora and emphasises the continued importance of corpora in archaeology. Handled Food Vessels, potentially by the same maker have been identified from Caythorpe in Lincolnshire (Manby 2004, 225 & Fig 75). Meanwhile in north Northumberland two distinctively and unusually decorated Food Vessels and a Food Vessel Urn were found at Lowick, Beanley and Bamborough respectively. These find spots fall within a radius of about 10km. However a fourth vessel, a second Food Vessel Urn from Ryton in Tyne and Wear, also exhibits some of the decorative elements and ingenuity of the others. Its attribution to the same potter is less certain, but if the identification is correct, this extends the work of the same individual over some 70km (Gibson 2002, 66-7). Other examples will doubtless come to light as the corpora become more widely studied and as archaeological illustration improves. Such identifications will also doubtless be important in refining absolute chronologies given that they must all date to a single generation.

The four Cups from Fan Barrow bring the corpus of known or suspected Welsh cups known to the writer to 67, 25 of which come from south-west Wales. Most of Longworth's types are represented in the area. Dates for cups are relatively few but coincide exactly with the currency of Collared Urns. The latest date, from Brenig 44 is clearly an outlier but nevertheless falls well within the early Bronze

Age. Clearly more dates for cups are required nationwide to test if the various types have their own distinct chronologies.



One of the most interesting aspects of this assemblage is the fact that some of the vessels are clearly firing wasters. Urns 1 and 2 are flattened and misshapen suggesting that both have been fired on their sides (or have fallen over during the firing) and that the temperature of the firing has been such that the clay particles have started to melt and the bots have lost their original shape. Cup 4 also has a hard brittle fabric and it would appear that sintering has also started here. The reconstruction of the pot does not allow us to determine whether or not spalling has occurred (see below). Urn 2 in particular shows that the fabric is sintered indicative of the early stages of vitrification. There are also traces of bloating near the rim of the vessel. This is related to sintering and is caused when gases, resulting from the combustion of organic material in the clay, cannot escape through the fabric of the pot but are instead trapped by the sintering clay particles which for an impermeable barrier. This is also indicative of high and a rapid rise in firing temperatures. Cup 3 from the same context (005) is also a firing waster. In this case the Cup has a catastrophic spall on the outer surface. This had been replaced onto the vessel was but had become detached during transit. Spalls are roughly circular flakes of clay that have exploded from the surface of the vessel during firing. This also usually indicates that the rise in firing temperature has been too rapid and that either the water of plasticity or the water of chemical composition in the clay has been converted rapidly to steam. Steam expands and, if there are insufficient escape routes through the fabric of the pottery, spalls can be blown from either or both surfaces. In this case the

spall has been catastrophic in that both surfaces have been affected by the same spall and therefore the Cup could not have acted as a container.

Firing wasters have been noted in other Cups. Notably there are a number of Cups in Scotland that show both normal and catastrophic spalling (Gibson 2004). That some of the spalls have been recovered from these wasters suggests that the Cups were specifically made for the burial and may even have been fired in the funeral pyre: this may account for why the spalls were gathered (along with the cremated bone) and why the firing temperature was rapid ad high. As well as Scotland, firing wasters have been recognised by the present writer on a Fenestrated Wall Cup from Dowsby in Lincolnshire (Allen & Hopkins 2000, fig2). That this can be recognised from the drawing is a testament to the illustrator and demonstrates the importance of drawing archaeological artefacts in as much detail as possible to allow their future interpretation. Insufficient work has been done on other corpora of sepulchral vessels to judge how common this phenomenon is but it does suggest that at least some funerary pottery may have been fired with the cremation of the deceased. This is strongly suggested by the Scottish Cups and the present assemblage.

Finally a note on the terminology of Cups. Previously termed Pygmy Cups and Incense Cups, the latter term refers largely to cups with multiple perforations suggesting their possible use as censers. As early as 1912, Abercomby was dissatisfied with this term however 'Pygmy Cups' persisted though the name has gone out of fashion with political correctness. We still have pygmy shrews (*Sorex minutus*) and pygmy hippopotami (*Choeropsis liberiensis*) therefore I do not understand why 'Pygmy Cup' is no longer acceptable. This said, pygmy comes from the Greek pugmaios meaning 'dwarf' and these vessels are not always miniature: in short, 'Pygmy' is both unnecessary and inaccurate. Some authors prefer the term Accessory Vessel despite the fact that occasionally these Cups may be found on their own in graves and therefore are no more or less accessory than standard Beakers, Food Vessels, Collared Urns and so on: these too are accessory to the burial. Given the size range of the Cups, however, they do stand as a class apart within the Bronze Age repertoire and there are sub-types within the corpus. The simple term 'Cup' has all the elements needed to describe these small vessels. The term 'miniature' vessel should be reserved only for those Cups that are clearly miniature versions of more standard forms such as Collared Urns or Food vessels.

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APPENDIX 6

CHARRED PLANT REMAINS

by

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Introduction

Archaeological excavations were undertaken by Dyfed Archaeological Trust (DAT) at Fan Barrow, Talsarn, Ceredigion, Wales (NGR SN 5647 5870), during October 2010 and more extensively during September and October 2011. During the late 1990s, the scheduled Bronze Age barrow (SAM CD078) was ploughed flat and the excavation works formed part of a condition survey of the site (commissioned by Cadw) to inform decisions on its future management.

The objective of the second excavation season (2011) was to characterise the remains of the monument and to undertake 'preservation by record' of any surviving features, in order that sufficient information about the barrow could be recovered to justify rescinding its scheduled ancient monument status. Almost all of the probable barrow area was excavated and it is thought likely that all significant features were recorded. In addition, part of the immediate periphery to the north and west of the monument was exposed within the excavation area.

A total of 46 sediment samples ('GBA'/'BS' samples *sensu* Dobney *et al.* 1992), some general samples of deposits and others of sediment collected from within and around excavated vessels, were submitted to Palaeoecology Research Services Limited, Kingston upon Hull, for an assessment of their bioarchaeological potential.

Methods

The 'bulk' samples were inspected and their lithologies recorded, using a standard *pro forma*. The samples were processed for the recovery of plant, invertebrate and vertebrate remains, broadly following the techniques of Kenward *et al.* (1980). The lighter organic washover fractions of the samples were sieved to 300 microns, whereas the heavier organic and mineral residues were sieved to 1 mm. Very small subsamples of sediment (of a few millilitres) were extracted from each of the submitted samples against the possibility of a requirement for examination for microfossils (principally pollen).

The washovers did not appear to exhibit waterlogged preservation of organic remains and were recorded dry and examined for macrofossils using a low-power (x7 to x45) microscope; where necessary the material was separated into fractions (using 1, 2 and 4 mm sieves) to facilitate assessment. All of the over 4 mm fractions were recorded in their entirety whereas, for the larger washovers, the fractions less than 4 mm were divided through a riffle box (each pass dividing the fraction in two) and a proportion of the material ultimately subjected to examination under the microscope (the proportion of the finer washover fractions recorded for each sample is shown in Table 2). The components were recorded using a five-point semi-quantitative scale (see Key to Table 2); fractions were generally scanned until no new remains were observed and a sense of the abundance of each taxon or component (relative to the processed fraction as a whole) was achieved. The abundance of recovered organic and other remains within the sediment as a whole may be judged by comparing the washover volumes and the quantities of remains recovered from the residues with the size of the processed sediment samples.

The residues were primarily mineral in nature and were dried, separated into fractions (using 4 and 10 mm sieves) and weighed prior to the recording of their components. All cremated bone fragments of over 4 mm were sorted from the residues and forwarded to the appointed human bone specialist (York Osteoarchaeology). Where smaller cremated bone fragments were numerous the residue fractions (after sorting for other remains) were also forwarded as, although it was considered unlikely that these would be identifiable, the quantity and degree of fragmentation might provide some additional information.

Plant macrofossil remains were compared with modern reference material (where possible) and published works (e.g. Cappers *et al.* 2006 and for cereal remains Jacomet 2006), and identified to the lowest taxon possible or necessary to achieve the aims of the project. Nomenclature for wild plant taxa follows Stace (1997), whereas cereals follow Jacomet (2006) in which nomenclature follows van Zeist (1984).

Charcoal identifications were attempted for a random selection of larger fragments (typically those over 4 mm but on occasion pieces as small as 2 mm). The fragments were broken to give clean cross-sectional surfaces and the anatomical structures were examined using a low-power binocular microscope (x7 to x45). Basic identifications were made by comparison with modern reference material where possible, and with reference to published works (principally Hather 2000 and Schoch *et al.* 2004).

A particular consideration during recording was the identification of suitable remains for submission for radiocarbon dating by standard radiometric technique or accelerator mass spectrometry (AMS). Information regarding the presence of suitable candidate material, together with notes regarding the levels of modern intrusive remains noted, was returned to the excavator and five samples were submitted to the radiocarbon dating laboratory of the Scottish Universities Environmental Research Centre (SUERC), East Kilbride, Scotland, for AMS dating (see Table 4; results pending). Previous rounds of radiocarbon dating had been undertaken using cremated bone from each of the burials and had mostly returned dates of between 2050 and 1875 BC, the exception being remains from cremation pit 017 which gave a slightly later, though still Bronze Age, date range of 1920 to 1740 BC (Duncan Schlee pers. comm.).

Results

Ancient organic remains recovered from the sediment samples were largely restricted to cremated bone (probably all human remains derived from the cremations but forwarded to the nominated specialist, York Osteoarchaeology, and reported elsewhere) and charcoal. The latter was recorded from all of the samples but preservation was almost always poor and much of the material was in the form of very small (<2 mm) fragments with few of those examined more closely proving to be identifiable. Identifications that were possible were predominantly only partial and mostly of hazel/alder (Corylus/Alnus); certainly hazel appears to have been a locally available resource as small quantities of hazelnut shell were recovered from several of the samples. Other trees/shrubs represented within the identified charcoal assemblage were few but included traces of oak (Quercus; from FBT10, Context 005, fill of Pit 006, subsample h, "cremated material and fill from outside vessel. Layer 3") and some remains tentatively identified as of heather (Calluna) root/rhizome (also from FBT10, Context 005, but subsample a, "large lifted block. Soil. Layer 1").

Other identifiable charred plant remains were few but included a single fragment of plum/cherry/sloe (Prunus) fruitstone (from FBT11, Context 025, fill of Pit 019, subsample 10a) and occasional charred cereal grains (from FBT11, Context 020,

fill of Pit 015, Sample 5; FBT11, Context 023, subsamples c and e, "material beneath cremation" and "burnt material and fill", respectively; and FBT11, Context 025, fill of Pit 019, Sample 10 (subsample a) – these last were indeterminate and perhaps larger grass caryopses rather than cereals) and 'seeds' of wild taxa.

Several of the washovers from individual samples of FBT10, Context 005 (fill of Pit 006), contained small (1 to 15 mm) lumps of pale grey, vesicular, silica ash 'slag', notably from those samples collected from around the vessels within this deposit (no such material was recorded from the samples from within the vessels themselves). This material is produced when plants with high silica content, such as grasses and cereals, are burnt—perhaps more likely the former in this case given the general lack of other cereal remains—and best preserved within acidic deposits (Canti 2003).

Many of the samples contained significant quantities of clearly modern rootlet and all of the records of uncharred 'seeds' of wild plant taxa and invertebrate remains were also considered to be recent intrusions or contaminants.

Details of the assessment are provided in Tables 1 to 5. Table 1 presents summary information for the sediments, the processed subsamples and the mineral components of the sorted residues. Table 2 provides details of the biological remains from the assessed washovers. Table 3 gives information regarding the biological and artefactual material recovered from the sample residues. Preliminary charcoal and other charred plant macrofossil identifications are presented in Table 4, together with notes regarding the presence and suitability of remains for submission for radiocarbon dating. Table 5 shows records of the bone recovered from the samples together with notes indicating the material forwarded to the human bone specialist (York Osteoarchaeology).

Discussion and statement of potential

Few identifiable ancient organic remains were recovered from the sediment samples and there were no concentrations of material other than largely indeterminate charcoal and cremated bone (presumed human but reported elsewhere).

From the limited evidence available, it would appear that hazel was a locally available resource in the Bronze Age exploited for both food (hazelnuts) and as a wood for fuel, and that grasses may also have been burnt. Beyond this, the other ancient remains present were too few to be of any real interpretative value.

Small quantities of remains suitable for radiocarbon dating (via AMS) were identified from a number of deposits and a selection of these (made by the excavator) have been submitted to provide supplementary information to that already obtained from dating of some of the cremated bone.

Recommendations

No further study of the biological remains recovered from the samples – other than the cremated bone which has been considered and reported separately – is warranted.

Material identified as suitable for submission for radiocarbon dating has been sorted from the sample fractions and, if not already submitted for this purpose, retained against the possibility of a future requirement for additional dates.

Retention and disposal

The remains (other than bone) recovered from the processed sediment samples should be retained, for the present at least, pending a decision with regard to any requirement for further radiocarbon dating.

The bone from the samples should be retained together with the corresponding hand-collected material as part of the physical archive of the site.

The very small subsamples of sediment (of a few millilitres) extracted from each of the samples reported here against the possibility of examination for microfossils (principally pollen) should also be retained for the present.

Archive

All material (with the exception of the cremated bone forwarded to York Osteoarchaeology) is currently stored by Palaeoecology Research Services (Unit 4, National Industrial Estate, Bontoft Avenue, Kingston upon Hull), pending return to the excavator, along with paper and electronic records pertaining to the work described here.

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Table 1. Fan Barrow, Talsarn, Ceredigion, Wales: Summary information for the sediment samples and the mineral components of the sorted residues by size fractions in context number order by site code (year of excavation). Key: 'CN' = context number; 'SN' = sample number (lower case letters designated by PRS to distinguish between several samples from the same context); 'Wt/Vol (kg/l)' = weight in kilograms and volume in litres of processed sediment sample; 'Total dry wt (g)' = total dry weight of residue in grammes; 'Wt >10' = weight of dry residue fraction greater than 10 mm in grammes; 'Wt 1-10' = weight of dry residue greater than 1 mm and less than 10 mm in grammes; '% >10' = percentage of residue greater than 10 mm; '% 1-10 mm' = percentage of residue greater than 1 mm and less than 10 mm; the phrase 'fine fraction' in the residue descriptions refers to material less than 4 mm.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
FBT10	003	-	Upper fill of pit 004	0.33/ ~0.25	Dry, slightly yellow light grey-brown to light to mid grey-brown, crumbly and indurated, silt with a trace of modern rootlet. Stones (6 - 60 mm) and a little charcoal/black ash present	158	45	28	113	72	Sandstone (to 36 mm) with a little sediment 'crumb'. Frequent charcoal fragments and 1 or 2 tiny pieces of burnt bone in the fine fraction.
FBT10	005	a	Fill of Pit 006. "Large lifted block. Soil. Layer 1"	1.3/~1	Dry, mid red-brown, crumbly to unconsolidated, silt, with abundant stones (2 to 60 mm)	962	716	74	246	26	Sandstone (to 80 mm), including abundant cracked and burnt pieces. Very occasional burnt bone and tiny charcoal fragments in the fine fraction.
FBT10	005	b	Fill of Pit 006. "Lifted block, layer 1. Material from upper/open end of pot"	0.4/0.35	Dry, light to mid yellow-brown, crumbly to unconsolidated, silt with stones (2 to 20 mm) common and very occasional burnt bone	222	41	18	181	82	Sandstone (to 32 mm, a few burnt and cracked) with some sediment 'crumb'. Some burnt bone fragments in the fine fraction.
FBT10	005	c	Fill of Pit 006. "Large, lifted block. Layer 1. Fill and cremated material"	0.55/0.55	Dry, light to mid grey-brown with very occasional small lumps of light yellow-brown (and a few patches of dark grey/burnt ashy material), crumbly (and ?indurated) to unconsolidated, silt, with abundant stones (2 to 20 mm) and some burnt bone	297	110	37	187	63	Sandstone (to 38 mm), including frequent burnt and cracked pieces. Abundant sediment 'crumb' (possibly lightly fired), frequent burnt bone and very occasional tiny charcoal in the fine fraction. Very dusty.
FBT10	005	d	Fill of Pit 006. "Lifted block. Layer 1. Fill material from around urn"	1.4/1.2	Dry, mid orange-brown to light to mid yellow-brown, crumbly to unconsolidated (and ?indurated), silt with abundant stones (2 to 60 mm)	934	624	67	310	33	Sandstone (to 75 mm, mostly burnt/reddened and cracked) with some sediment 'crumb' (possibly fired) and very occasional burnt bone fragments. Very dusty.
FBT10	005	e	Fill of Pit 006. "Lifted block. Layer 2. Cremation/soil from rim of vessel and up"	0.45/0.3	Dry, light to mid grey-brown to yellow-brown, crumbly to unconsolidated silt (with some ?indurated lumps). Abundant stones (2 to 60 mm) and a little burnt bone. This sample was soaked for several days prior to processing which had little effect on the hard (possibly fired) lumps of sediment	256	84	33	172	67	Sandstone (to 38 mm, some burnt and cracked), with frequent small lumps of (?fired) sediment. Abundant burnt bone and very occasional charcoal fragments in the fine fraction.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
FBT10	005	f	Fill of Pit 006. "Lifted block. Layer 2. Cremation and fill from outside pot"	0.3/0.25	Dry, light to mid yellow-brown, crumbly to unconsolidated (and ?indurated), silt, with occasional burnt bone and charcoal. Frequent stones (2 to 60 mm)	183	78	43	105	57	Sandstone (to 55 mm, burnt/reddened and cracked stones common), with frequent (?fired) sediment 'crumb'. Burnt bone fragments common in the fine fraction. Dusty.
FBT10	005	g	Fill of Pit 006. "Lifted block. Soil. Layer 2"	0.75/ ~0.75	Dry, light to mid yellow-brown, crumbly to unconsolidated, silt, with stones (2 to 60 mm) common	394	239	61	155	39	Sandstone (to 49 mm, some burnt and cracked) with very occasional burnt bone fragments in the fine fraction.
FBT10	005	h	Fill of Pit 006. "Cremated material and fill from outside vessel. Layer 3"	0.5/~0.5	Dry, light grey brown to light to mid yellow-brown, crumbly to unconsolidated, silt, with abundant stones (2 to 20 mm) and some burnt bone	337	105	31	232	69	Sandstone (to 32 mm, most of which are reddened/burnt and cracked) with frequent sediment 'crumb'. Frequent burnt bone and some pottery fragments remaining in fine fraction.
FBT10	005	j	Fill of Pit 006. "Contents of Urn 1A"	0.3/ ~0.25	Dry, light to mid grey-brown, crumbly to unconsolidated (with small, hard, ?indurated lumps), silt, with frequent stones (2 to 20 mm) and some burnt bone fragments. Soaked (as for Sample 005 e) to little effect	136	15	11	121	89	Sandstone (to 22 mm, including frequent cracked and burnt pieces) with abundant sediment (possibly fired). Abundant burnt bone fragments and occasional charcoal in the fine fraction.
FBT10	005	k	Fill of Pit 006. "Contents of Urn "2A"	1/~1	Dry, light to mid grey-brown, slightly crumbly to unconsolidated (with hard, ?indurated lumps), silt, with occasional modern rootlet, some stones (2 to 20 mm) and burnt bone. Soaked (as for Sample 005 e) to little effect	261	14	5	247	95	Mostly (?fired) sediment with some sandstone (to 24 mm). Abundant burnt bone fragments and very occasional tiny charcoal in the fine fraction.
FBT10	005	m	Fill of Pit 006. "Material spilled beneath Urn 3A"	0.7/ ~0.75	Dry, light to mid grey-brown, crumbly to unconsolidated (with ?indurated lumps), silt, with some burnt bone and occasional charcoal. Stones (2 to 60 mm) common. Soaked (as for Sample 005 e) to little effect	415	79	19	336	81	Sandstone (to 44 mm, some burnt and cracked) with abundant (?fired) sediment. Abundant burnt bone and frequent charcoal in the fine fraction. Dusty.
FBT10	005	n	Fill of Pit 006. "Cremation remnants after lifting pots"	0.4/0.4	Dry, light yellow-brown, unconsolidated silt with relatively large crumbly lumps (to 50 mm) of ?lightly fired silt. Abundant stones (2 to 20 mm)	256	84	33	172	67	Sandstone (to 38 mm, a few slightly burnt and cracked) with very occasional burnt bone fragments in the fine fraction.
FBT10	005	p	Fill of Pit 006. No additional details given	1.4/~1.5	Dry, light to mid grey-brown to light to mid red-brown (slightly pinkish in places), crumbly to unconsolidated, silt with abundant stones (2 to 60 mm) and occasional burnt bone	812	364	45	448	55	Sandstone (to 50 mm, many of which are burnt/reddened and cracked, with (?fired) sediment 'crumb' and very occasional tiny fragments of burnt bone and charcoal. Very dusty.
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants – small coarse fraction"	0.4/ ~0.33	One of four bags from this context, presumed sieved and examined prior to delivery. Smallest sample, >2 mm fraction. Dry, light to mid grey-brown, indurated and crumbly silt with stones (2 to 20 mm); relatively little matrix.	274	22	8	252	92	Sandstone (to 25 mm) and some sediment 'crumb'. Burnt bone and charcoal fragments common in the fine fraction. Dusty.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
					Charcoal and burnt bone present.						
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants – small fine fraction"	0.375/ ~0.33	One of four bags from this context, presumed sieved and examined prior to delivery. Smallest sample, <2 mm fraction. Dry, light to mid grey-brown, unconsolidated, silt. Occasional charcoal and burnt bone fragments. Little matrix; most is 'dust'	114	-	-	-	-	Not sieved into fractions for sorting. Sediment 'crumb' and small sandstone with charcoal common and very occasional burnt bone fragments.
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants – large coarse fraction"	1.5/~1.5	One of four bags from this context, presumed sieved and examined prior to delivery. Largest sample, >2 mm fraction. Dry, light to mid grey-brown, unconsolidated, silt, with abundant stones (2 to 60 mm) and occasional modern rootlet. Abundant burnt bone and a little charcoal also present. Relatively little matrix	1022	244	24	778	76	Sandstone (to 42 mm, including frequent burnt pieces). Abundant burnt bone and charcoal fragments common in the fine fraction. Dusty.
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants – large fine fraction"	1.3/~1.3	One of four bags from this context, presumed sieved and examined prior to delivery. Largest sample, <2 mm fraction. Dry, light to mid grey-brown, unconsolidated, silt, with some charcoal and abundant burnt bone	340	-	-	-	-	Not sieved into fractions for sorting. Mostly burnt bone fragments with frequent small sandstone, abundant charcoal and some sediment 'crumb'.
FBT10	008	-	Fill of Pit 004 "Stone backfill"	25.5/16	Sediment in one tub moist the other filled with water. The following sediment description refers to the moist material. Moist, mid orange-brown to mid grey-brown, crumbly and slightly sticky (working soft), silt, with abundant stones (2 to 60 mm) and some charcoal	9257	3354	36	5903	64	Angular sandstone (to 48 mm, some pinkish and burnt-looking), with very occasional slate and quartz. Very occasional tiny burnt bone and charcoal fragments in the fine fraction.
FBT10	010	-	Fill of Pit 004	18/10	Wet, mid brown to mid grey-brown (with frequent small (to 10 mm) areas of light to mid orange-brown), soft and sticky, silt. 'Gritty', with abundant stones (2 to 60 mm). Occasional charcoal. Some modern leaves	8228	4661	57	3567	43	Sandstone (including large, angular pieces to 72 mm) with frequent charcoal and occasional burnt bone fragments in the fine fraction.
FBT11	002	1	Fill of Pit 003	5/2	Tub filled with water; disproportionately heavy. Wet, mid yellow-brown to mid grey-brown, unconsolidated, silt, with frequent stones (2 to 60 mm) and a little charcoal. Occasional fine modern rootlet present	1814	606	33	1208	67	Sandstone (to 61 mm, including flat, angular pieces) with sediment concretions. Charcoal fragments common in the fine fraction.
FBT11	008	2	Fill of Pit 009	16/20	Slightly moist, very fine black ash/charcoal, very well mixed in a fine, unconsolidated silt crumb, with occasional crumbly lumps (to 40 mm) of mid grey-brown silt. Occasional stones (2 to 20 mm) and very fine modern rootlet	1837	548	30	1289	70	Sandstone (to 47 mm) with abundant charcoal and black sediment 'crumb' in the fine fraction.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
FBT11	010	3	Fill of Pit 011	10.75/11	Dry, very dark brown-black, unconsolidated (very fine crumb texture) silt, with some stones (2 to 60 mm), abundant charcoal and very occasional fine modern rootlet	3028	865	29	2163	71	Sandstone (to 68 mm, most burnt and cracked) with abundant black sediment 'crumb'.
FBT11	014	4	Upper fill of Pit 015	6.5/6	Dry, mid yellow-brown to mid grey brown (and some pale buff-brown lumps (to 30 mm) of clay) with occasional small, black ashy/charcoal patches. Loose, crumbly to unconsolidated, fine silt crumb (with larger lumps of sediment that crumble easily). Some stones (2 to 60 m) and fine, modern rootlet also present	1748	603	34	1145	66	Sandstone (to 39 mm) with some sediment concretions; frequent charcoal fragments in the fine fraction.
FBT11	016	6	Upper fill of Pit 017	18.5/15	Just moist, mid red-brown crumbly to unconsolidated (working slightly soft), silt, with abundant stones (2 to >60 mm) and occasional modern rootlet	8173	4549	56	3624	44	Sandstone (including large angular pieces to 106 mm, some bunt and cracked). Some charcoal fragments and very occasional burnt bone in the fine fraction.
FBT11	018	9	Fill of Pit 019 "placed stone deposit"	7/~3	Tub filled with water; disproportionately heavy. Wet, mid to dark yellow-brown, unconsolidated thin silt on top of tub with compacted, slightly sticky silt at the base. Abundant stones (2 to 60 mm)	3407	1943	57	1464	43	Sandstone (to 59 mm, including occasional slate); some charcoal fragments in the fine fraction.
FBT11	020	5	Fill of Pit 015	4/3	Just moist, dark black-brown, unconsolidated fine crumb (working somewhat soft) silt with frequent charcoal/ash and some stones (2 to 60 mm). Occasional very fine modern rootlet	985	493	50	492	50	Sandstone (to 49 mm); abundant charcoal and very occasional burnt bone and pottery fragments in the fine fraction.
FBT11	021	a	Fill of Pit 017	1.3/~1	One of two bags labelled only "Context 021" (no sample number). Sample material noticeably different in each bag; processed separately as 'a' and 'b'. Just dry, mid grey-brown to mid slightly orange-brown, loose, unconsolidated, crumb-textured silt, with larger lumps (to 35 mm) which crumble easily. Stones (2 to 20 mm) common, together with some black, ashy (?charcoal) patches and burnt bone. Occasional fine modern rootlet	560	238	43	322	58	Sandstone (to 54 mm, including flat, angular pieces); frequent burnt bone in the fine fraction.
FBT11	021	b	Fill of Pit 017	0.7/0.7	Dry, mid orange-brown, loose, unconsolidated, crumb-textured silt, with lumps (to 40 mm) which crumble easily. Stones (2 to 20 mm) common; very occasional burnt bone and some fine modern rootlet	257	59	23	198	77	Sandstone (to 28 mm, including some flat, angular pieces) with a little sediment 'crumb'. Very occasional charcoal and burnt bone in the fine fraction.
FBT11	021	c	Fill of Pit 017 "Contents"	1.2/~1.2	Dry, mid orange-brown, mostly unconsolidated silt crumb with a few larger lumps (to 25 mm) which crumble easily. Stones (2 to 60 mm) common; a little charcoal and very occasional fine modern	607	239	39	368	61	Sandstone (to 65 mm, including flat, angular pieces); some pottery fragments, burnt bone and charcoal in the fine fraction.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
					rootlet also noted						
FBT11	021	7	Fill of Pit 017	4.75/4	Moist, mid to dark brown with slight orange-brown cast, loose, crumb-textured silt (works soft), with stones (2 to 60 mm) common and occasional burnt bone. A little modern rootlet also present	1969	898	46	1071	54	Sandstone (to 73 mm, including flat, angular pieces) and a little sediment 'crumb', with frequent burnt bone and occasional charcoal in the fine fraction.
FBT11	023	a	"Inside pot"	1.1/1	Dry, mostly mid pinkish grey-brown with less mid yellow-brown, unconsolidated fine silt crumb (with larger lumps (to 30 mm) which crumble easily). Abundant stones (2 to 60 mm) and a little fine rootlet; occasional charcoal was also noted	644	316	49	328	51	Sandstone (to 53 mm); the fine fraction also contained frequent pottery 'crumb', some charcoal fragments and very occasional burnt bone.
FBT11	023	b	"Fill of pit containing pot"	12.7/12	Dry, mid brown to mid red-brown, very loose and unconsolidated fine silt crumb with abundant stones (2 to 60 mm) and occasional charcoal. Some fine modern rootlet was also present	5935	3349	56	2586	44	Sandstone (to 85 mm, including flat, angular pieces). Some pottery 'crumb', charcoal and very occasional burnt bone remain in the fine fraction.
FBT11	023	c	"Material beneath cremation"	2.8/2.5	Very dry and dusty, mostly light to mid pinkish grey-brown with less light to mid yellow brown, loose and unconsolidated silt, with occasional small lumps which crumble easily. Abundant stones (2 to 60 mm) and a little ?charcoal	1619	995	61	624	39	Sandstone (to 71 mm, including flat, angular pieces). Frequent burnt bone and occasional ?pottery fragments in the fine fraction.
FBT11	023	d	"Contents"	1.4/1.4	Dry, mid yellow-brown to mid grey-brown, loose, unconsolidated fine silt crumb with some easily crumbled lumps (to 20 mm). Abundant stones (2 to 60 mm), some charcoal fragments and a little fine modern rootlet	744	438	59	306	41	Sandstone (to 69 mm, including flat, angular pieces) with occasional (fired) sediment 'crumb'. Frequent charcoal and pottery 'crumb' and very occasional burnt bone in the fine fraction.
FBT11	023	e	"Burnt material and fill"	2/2.4	Just dry, mostly mid to dark yellow brown and rather less mid to dark grey-brown (with frequent charcoal/black ashy patches to 20 mm), crumbly to unconsolidated silt. Occasional small lumps (to 20 mm) of light to mid yellow-brown clay silt and frequent stones (2 to 60 mm) were also present	1165	561	48	604	52	Sandstone (to 57 mm, including flat, angular pieces), with some (?fired) sediment 'crumb' and abundant charcoal fragments in the fine fraction.
FBT11	023	f	"Material from within cremation deposit"	0.9/0.9	Dry, light to mid pinkish grey-brown with a slight yellow-brown cast, very loose and dusty silt 'crumb' with abundant burnt bone, frequent stone (2 to 20 mm) and some pottery fragments	378	126	33	252	67	Sandstone (to 32 mm) with abundant burnt bone and some pottery fragments in the fine fraction.
FBT11	023	g	"From outside pot"	3/2.75	Just dry, mid to dark brown to mid to dark red-brown, unconsolidated silt crumb, with occasional small lumps which crumble easily and frequent stones (2 to 60 mm). Some charcoal fragments also present	1907	1183	62	724	38	Sandstone (to 72 mm, including angular, flat pieces); some (?fired) sediment, charcoal and pottery in the fine fraction.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Sediment description	Total dry wt (g)	Wt >10	% >10	Wt 1-10	% 1-10	Residue description (after sorting)
FBT11	025	10a	Fill of Pit 019	9/8	One of two tubs processed separately owing to different appearance of sample material. Dry, mid to dark orange/yellow-brown (with occasional small areas slightly darker), unconsolidated, loose fine silt crumb with abundant stones (2 to 60 mm)	4195	1338	32	2857	68	Angular sandstone (to 75 mm) with very occasional tiny charcoal in the fine fraction.
FBT11	025	10b	Fill of Pit 019	13/8	Very moist, mid orange-brown, soft and sticky (working very soft) slightly clay silt with frequent stones (2 to 60 mm)	5400	2565	48	2835	53	Sandstone (to 70 mm, including flat, angular pieces).
FBT11	028	8	Discrete deposit between two cremation deposits	8.25/6	Very moist, mid to dark yellow-brown, crumbly and slightly sticky (working soft) slightly clay silt with stones (2 to 60 mm) common and a little charcoal	2756	1088	39	1668	61	Sandstone (to 103 mm, including flat, angular pieces with smaller fragments of slate. Occasional burnt bone and charcoal in the fine fraction.
FBT11	030	11	(?Disturbed) fill of Pit 031	13.5/9	Just moist, mid orange/yellow-brown, crumbly to stiff (working somewhat soft) clay silt, with some lumps (to 40 mm) of light grey clay. Areas of drier material including some small ?indurated lumps	5738	2863	50	2875	50	Sandstone (to 68 mm, including one or two pieces cracked and possibly burnt) with very occasional charcoal in the fine fraction.
FBT11	033	15	Fill of Pit 032	20/12	One tub moist, the other wet; sediment description is of the moist material. Mid brown to slightly orange-brown, crumbly and slightly sticky (working somewhat soft), silt, with frequent fine modern rootlet, occasional charcoal and abundant stones (2 to > 60 mm)	8743	3930	45	4813	55	Angular sandstone (to 94 mm) with very occasional quartz and slate. Frequent sediment 'crumb' (lightly fired?) and occasional silted charcoal in the fine fraction.
FBT11	036	13	Fill of Pit 037	14.75/10	Wet, dark grey-black to mid to dark brown, soft and sticky (working soft), slightly clay silt. Deposit is mainly stones (2 to 60 mm), cremated bone and charcoal/ash. These constitute a much higher proportion than the silt matrix	4284	2459	57	1825	43	Sandstone (to 100 mm, most pieces burnt/reddened and cracked) with super abundant burnt bone and frequent charcoal in the fine fraction.
FBT11	038	14	Fill of Pit 037 "Deposit of cremated bone fragments"	0.95/~1	Just moist, mostly dark grey (flecked with light to mid grey-brown, light yellow-brown, mid brown and occasional white), unconsolidated, (working soft and slightly sticky), very ashy, slightly clay silt with frequent stones (2 to 60 mm)	316	97	31	219	69	Sandstone (to 50 mm, one or two pieces possibly burnt), with some burnt bone and charcoal fragments in the fine fraction.
FBT11	041	12	Fill of Pit 042	2/1	Very wet, dark grey-brown, very soft/loose silt with abundant stones (2 to 60 mm)	1000	512	51	488	49	Sandstone (to 65 mm, frequent flat, angular pieces); very occasional charcoal in the fine fraction.

Table 2. Fan Barrow, Talsarn, Ceredigion, Wales: Summary information regarding the assessment of the content of the sample washovers in context number order by sites code (year of excavation). Key: 'CN' = context number; 'SN' = sample number (lower case letters designated by PRS to distinguish between several samples from the same context); 'Wt/Vol (kg/l)' = weight/volume of processed sediment in kilos/litres; 'w/o vol (ml)' = volume of washover in millilitres – the first figure given is the total volume and the second is the volume excluding modern rootlet; '2-4 mm' = proportion of 2 to 4 mm fraction sorted; '1-2 mm' = proportion of 1 to 2 mm fraction sorted; '<1 mm' = proportion of 0.3 to 1 mm fraction sorted (Note: all >4 mm fraction sorted in their entirety and numbers shown for finer fractions are '1' = all sorted, '2' = one half sorted, '4' = one quarter sorted, etc); 'c'coal' = charcoal (see Table 4 for charcoal and occasional other identifications and notes); 'ch'd' = charred; 'unch'd = uncharred; 'eec' = earthworm egg capsules. Abundance scale: 1 – few/rare, up to 3 individuals/items or a trace level component of the whole; 2 – some/present, 4 to 20 items or a minor component; 3 – many/common, 21 to 50 or a significant component; 4 – very many/abundant, 51 to 200 or a major component; and 5 – super-abundant, over 200 items/individuals or a dominant component of the whole.

Site code	CN	SN	Context type/deposit description	Wt/Vol (kg/l)	w/o vol (ml)	2-4 mm	1-2 mm	<1 mm	c'coal >4 mm	c'coal 2-4 mm	c'coal <2 mm	ch'd grain	ch'd chaff	ch'd seed/ nutshell	unch'd seed	eec	Notes
FBT10	003	-	Upper fill of pit 004	0.33/0.25	25/25	1	1	1	3	5	5	-	-	-	-	1	Exclusively silted charcoal (to 20 mm), with no roundwood, twigs, thorns or roots.
FBT10	005	a	Fill of Pit 006. "Large lifted block. Soil. Layer 1"	1.3/~1	45/40	1	1	1	2	3	5	-	-	-	-	1	Approximately equal proportion of silted charcoal (to 8 mm) and sediment 'crumb', with a few charred herbaceous stems (?grass, to 20 mm) and very occasional tiny, pale grey, vesicular silica ash 'slag' (to 5 mm). A little modern rootlet.
FBT10	005	b	Fill of Pit 006. "Lifted block, layer 1. Material from upper/open end of pot"	0.4/0.35	12/10	1	1	1	-	2	5	-	-	-	1	1	Charcoal (to 8 mm) with abundant sediment 'crumb' and several relatively large pieces of light grey, vesicular, silica ash 'slag' (to 10 mm). Uncharred *Stellaria media* (L.) Vill. Some modern rootlet and abundant soil fungus spores (score 5).
FBT10	005	c	Fill of Pit 006. "Large, lifted block. Layer 1. Fill and cremated material"	0.55/0.55	50/50	1	1	1	2	4	5	-	-	-	-	-	Charcoal (to 14 mm) and sediment 'crumb' with lumps of ?peat ash/cinder which powder under slight pressure. Abundant tiny calcined bone fragments (to 8 mm) and some light grey, vesicular silica ash 'slag' (to 15 mm). Occasional soil-dwelling fungus (cf. *Cenococcum geophilus* Fr.) spores (score 2).
FBT10	005	d	Fill of Pit 006. "Lifted block. Layer 1. Fill material from around urn"	1.4/1.2	50/45	1	1	1	2	4	5	-	-	-	-	1	Silted charcoal (to 12 mm) with sediment 'crumb' and occasional light grey, vesicular silica ash 'slag' (to 6 mm). A little modern rootlet.
FBT10	005	e	Fill of Pit 006. "Lifted block. Layer 2. Cremation/soil from rim of vessel and up"	0.45/0.3	5/2	1	1	1	-	2	3	-	-	-	-	-	Pale grey sediment 'crumb' and abundant modern rootlet with occasional charcoal (to 9 mm) and soil fungus spores (score 2).
FBT10	005	f	Fill of Pit 006. "Lifted block. Layer 2. Cremation and fill from outside pot"	0.3/0.25	6/5	1	1	1	1	2	5	-	-	1	-	-	Mainly sediment 'crumb' with rather less charcoal (to 8 mm) and some modern rootlet. 1x <1 mm charred grass seed (Poaceae). Very occasional light grey vesicular silica ash 'slag' (to 4 mm). A few soil fungus spores also present (score 2).
FBT10	005	g	Fill of Pit 006. "Lifted block. Soil. Layer 2"	0.75/~0.75	20/15	1	1	1	-	2	5	-	1	-	-	-	Charcoal (to 4 mm) and sediment 'crumb' with frequent modern rootlet and occasional soil fungus spores (score 2). 1x fragment of charred culm node

Site code	CN	SN	Context type/deposit description	Wt/Vol (kg/l)	w/o vol (ml)	2-4 mm	1-2 mm	<1 mm	c'coal >4 mm	c'coal 2-4 mm	c'coal <2 mm	ch'd grain	ch'd chaff	ch'd seed/ nutshell	unch'd seed	eec	Notes
																	(small, possibly grass (Poaceae)).
FBT10	005	h	Fill of Pit 006. "Cremated material and fill from outside vessel. Layer 3"	0.5/~0.5	25/21	1	1	1	2	4	5	-	?1	-	1	1	Silted charcoal (to 11 mm) with abundant sediment 'crumb' and some modern rootlet. 1x indeterminate ?chaff fragment. 1x indeterminate uncharred seed. 1x modern mite (Acarina sp.). Occasional soil fungus spores (score 2).
FBT10	005	j	Fill of Pit 006. "Contents of Urn 1A"	0.3/~0.25	10/3	1	1	1	-	1	3	-	-	-	-	-	Mostly modern rootlet with some sediment 'crumb' and a trace of fine charcoal. Occasional tiny fragments of calcined bone in the <2 mm fraction. 1x modern ant (Formicidae) head. A few soil fungus spores (score 1).
FBT10	005	k	Fill of Pit 006. "Contents of Urn "2A"	1/~1	18/3	1	1	1	-	1	2	-	-	-	-	-	Almost entirely modern rootlet with a small amount of silt 'crumb'. Very occasional charcoal, very occasional calcined bone (to 2 mm). A few soil fungus spores (score 1).
FBT10	005	m	Fill of Pit 006. "Material spilled beneath Urn 3A"	0.7/~0.75	10/5	1	1	1	1	3	5	-	-	-	-	-	Mainly sediment 'crumb' with frequent charcoal (to 12 mm) and calcined bone (to 8 mm). Abundant modern rootlet.
FBT10	005	n	Fill of Pit 006. "Cremation remnants after lifting pots"	0.4/0.4	2/1.5	1	1	1	-	1	4	-	-	-	-	-	Charcoal (to 6 mm) with sediment 'crumb' and modern rootlet. Very occasional tiny pieces of light grey, vesicular silica ash 'slag' (to 2 mm). A few soil fungus spores (score 1).
FBT10	005	p	Fill of Pit 006. No additional details given	1.4/~1.5	50/40	1	1	1	3	5	5	-	-	-	1	1	Predominantly charcoal (to 14 mm) with some modern rootlet and very fine silt 'crumb'. 1x uncharred trigonous *Carex*. A few soil fungus spores (score 2) also present.
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants - small coarse fraction"	0.4/~0.33	30/30	1	1	1	4	5	5	-	-	1	1	1	Silted charcoal (to 12 mm) with very occasional calcined bone (to 3 mm). 2x indeterminate charred seeds, plus 2x uncharred *Ranunculus* sp. achenes. 1x modern beetle larva.
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants - small fine fraction"	0.375/~0.33	10/8	1	1	1	-	3	5	-	-	-	-	-	Silted charcoal (to 5 mm) with some modern rootlet and modern cereal/grass chaff. Frequent soil fungus spores (score 4).
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants - large coarse fraction"	1.5/~1.5	45/40	1	1	1	4	5	5	-	-	-	-	2	Almost exclusively charcoal (to 12 mm, including frequent pieces silted, some vitrified, distorted and crumbly) with some modern rootlet and occasional soil fungus spores (score 2).
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants - large fine fraction"	1.3/~1.3	12/6	1	1	1	-	2	5	-	-	-	2	1	Fine charcoal (to 5 mm) with abundant modern rootlet and very occasional calcined bone (to 2 mm) and cinder (to 2 mm). Some charred herbaceous/grass stems Soil fungus spores (score 4). Modern contaminants comprise uncharred 'seeds' of (*Betula* cf. *pubescens* Ehrh.) and (*Stellaria media*), an earthworm egg capsule and beetle elytra.
FBT10	008	-	Fill of Pit 004 "Stone backfill"	25.5/16	750/700	4	8	32	5	5	5	-	-	-	-	1	Charcoal (to 20 mm) including some ?root wood and finer root/rhizome fragments. A few small pieces of calcined bone (to 5 mm) also present. Soil fungus spores (score 2) and modern rootlet also present.
FBT10	010	-	Fill of Pit 004	18/10	500/450	1	4	16	5	5	5	-	-	-	2	1	Charcoal (to 19 mm), including ?heather (cf. *Calluna*) root/rhizome and some modern rootlet, together with a little calcined bone (to 12 mm) and a single snail (*Lauria cylindracea* (da Costa)). Other uncharred botanical material comprises *Stellaria media*, *Fraxinus*

Site code	CN	SN	Context type/deposit description	Wt/Vol (kg/l)	w/o vol (ml)	2-4 mm	1-2 mm	<1 mm	c'coal >4 mm	c'coal 2-4 mm	c'coal <2 mm	ch'd grain	ch'd chaff	ch'd seed/ nutshell	unch'd seed	eec	Notes
																	excelsior L., *Ranunculus* sp. and other unidentified 'seeds'. A modern beetle larva and a few soil fungus spores (score 2) were also present.
FBT11	002	1	Fill of Pit 003	5/2	90/60	1	1	4	3	5	5	-	-	1	1	2	Silted charcoal (to 15 mm) with small sediment lumps (to 4 mm). 1x charred *Carex* sp., 2x uncharred *Stellaria media*. Soil fungus spores (score 2).
FBT11	008	2	Fill of Pit 009	16/20	2700/2700	8	16	64	5	5	5	-	-	-	-	1	Charcoal (to 30 mm) with a little blackened sediment 'crumb' in the fine fraction (<2 mm).
FBT11	010	3	Fill of Pit 011	10.75/11	1000/950	4	8	32	5	5	5	-	-	-	1	1	1st and 2nd washovers combined. Charcoal (to 25 mm) with some lumps of blackened sediment (to 10 mm). 2x uncharred *Ranunculus* sp. (one is germinated – definitely modern!). Soil fungus spores (score 1).
FBT11	014	4	Upper fill of Pit 015	6.5/6	225/200	1	2	8	4	5	5	-	-	1	-	1	Heavily silted charcoal (to 13 mm) and some modern rootlet. 1x charred Polygonaceae achene. Very occasional soil fungus spores (score 1).
FBT11	016	6	Upper fill of Pit 017	18.5/15	400/325	1	2	8	5	5	5	-	-	1	3	2	Silted charcoal (to 25 mm) and a little sediment 'crumb'. 1x charred *Plantago* sp. seed. Relatively frequent uncharred 'seeds' including *Ranunculus* sp., *Stellaria media*, *Polygonum* ?*aviculare* L., *Persicaria* sp. These, together with modern rootlet and earthworm egg capsules, plus a complete modern might suggest significant bioturbation. Abundant soil fungus spores (score 5).
FBT11	018	9	Fill of Pit 019 "placed stone deposit"	7/~3	50/25	1	1	1	3	5	5	-	-	-	-	1	Very silted charcoal (to 12 mm) with abundant modern rootlet and some fine sediment 'crumb'. Occasional soil fungus spores (score 2).
FBT11	020	5	Fill of Pit 015	4/3	650/650	4	4	16	5	5	5	1	-	-	-	1	Almost exclusively charcoal (to 18 mm) with a little fine sediment 'crumb'. Charred grains include 1x glume wheat, possibly ?emmer (cf. *Triticum dicoccum* Schübl.); the remainder were small and indeterminate (possibly grass). Soil fungus spores (score 1).
FBT11	021	a	Fill of Pit 017	1.3/~1	105/100	1	1	4	4	5	5	-	-	1	-	1	Silted charcoal (to 28 mm) with abundant sediment lumps (to 16 mm). Very poorly preserved indeterminate charred 'seed'. A few tiny fragments (<2 mm) of calcined bone (score 2). Occasional soil fungus spores (score 1).
FBT11	021	b	Fill of Pit 017	0.7/0.7	18/13	1	1	1	3	4	5	-	-	-	1	-	Silted charcoal (to 12 mm) with frequent sediment 'crumb' in the fine fraction. Modern contaminants comprise rootlet, a beetle fragment and an uncharred *Stellaria media* seed.
FBT11	021	c	Fill of Pit 017 "Contents"	1.2/~1.2	50/45	1	1	1	4	5	5	-	-	-	-	1	Very silted charcoal (to 18 mm) with a little modern rootlet and frequent sediment 'crumb' in the fine fraction.
FBT11	021	7	Fill of Pit 017	4.75/4	180/140	1	2	4	4	5	5	-	-	-	-	1	Silted charcoal (to 20 mm) with some modern rootlet and sediment lumps (mostly fine but including a few larger pieces (to 7 mm)). Very occasional calcined bone fragments (to 5 mm, score 2). 1 x modern beetle fragment. Soil fungus spores (score 2).
FBT11	023	a	"Inside pot"	1.1/1	90/85	1	2	4	4	5	5	-	-	1	1	-	Silted charcoal (to 13 m) with some sediment 'crumb' in fine fraction. A single fragment of hazelnut shell and uncharred *Ranunculus* sp.
FBT11	023	b	"Fill of pit containing pot"	12.7/12	1000/975	4	16	32	5	5	5	-	-	-	-	-	Silted charcoal including abundant relatively large pieces (to 30 mm). Very occasional calcined bone (to 8 mm, score 2).
FBT11	023	c	"Material beneath cremation"	2.8/2.5	190/190	1	4	16	5	5	5	1	-	1	-	-	Charcoal (to 14 mm) with a single indeterminate charred cereal grain and 2x fragments of hazelnut shell (to 5 mm). Modern earwig (Forficulidae).

Site code	CN	SN	Context type/deposit description	Wt/Vol (kg/l)	w/o vol (ml)	2-4 mm	1-2 mm	<1 mm	c'coal >4 mm	c'coal 2-4 mm	c'coal <2 mm	ch'd grain	ch'd chaff	ch'd seed/ nutshell	unch'd seed	eec	Notes
FBT11	023	d	"Contents"	1.4/1.4	80/75	1	4	4	5	5	5	-	-	1	1	-	Charcoal (to 15 mm) with one charred small seeded legume (*Trifolium* sp.) and an uncharred *Stellaria media* seed. Occasional modern rootlet.
FBT11	023	e	"Burnt material and fill"	2/2.4	175/175	1	4	8	4	5	5	1	-	-	-	1	Poorly preserved, silted, flaking charcoal (to 22 mm) with very occasional ?heather root/rhizome and a little sediment 'crumb' in the fine fraction. 1x charred wheat grain (*Triticum* sp.), 1x indeterminate cereal grain. Modern invertebrate remains (1x centipede).
FBT11	023	f	"Material from within cremation deposit"	0.9/0.9	60/60	1	1	8	2	3	5	-	-	-	-	-	Poorly preserved, silted charcoal (to 7 mm) with abundant tiny calcined bone fragments (to 5 mm) and some sediment 'crumb' (some of which may be fired).
FBT11	023	g	"From outside pot"	3/2.75	115/110	1	4	8	4	5	5	-	-	-	1	-	Very silted charcoal (to 16 m), including one piece of charred root. A little modern rootlet and a single uncharred ?*Ranunculus* sp. 'seed'. Very occasional soil fungus spores (score 1).
FBT11	025	10a	Fill of Pit 019	9/8	300/150	1	4	8	4	5	5	1	-	2	2	2	Very silted and decayed charcoal (to 15 m) with abundant modern rootlet and a little sediment 'crumb' in the fine fraction. 2x indeterminate charred cereal/grass grains/seeds, together with a fragment of fruit stone (*Prunus* sp.), a small legume (Fabaceae) and two unidentified seeds, one of which possibly ?*Rubus* sp. Several uncharred 'seeds' also present, including Polygonaceae, *Ranunculus* sp. and *Stellaria media*. Abundant soil fungus spores (score 5) and significant bioturbation indicated by the modern rootlet and relatively frequent earthworm egg capsules.
FBT11	025	10b	Fill of Pit 019	13/8	60/25	1	1	4	2	4	5	-	-	1	2	1	Very silted charcoal (to 9 mm) with abundant modern rootlet and a little sediment 'crumb' in the fine fraction. One charred seed, possibly ?*Rubus* sp., uncharred seeds include *Stellaria media*, *Ranunculus* sp., Asteraceae and Polygonaceae. Soil fungus spores (score 3) and modern insect fragments (score 2).
FBT11	028	8	Discrete deposit between two cremation deposits	8.25/6	165/125	1	2	8	4	5	5	-	-	1	-	1	Silted charcoal (to 18 mm) with frequent modern rootlet, some sediment 'crumb' (to 5 mm) and occasional small stones (to 5 mm). One fragment of charred hazelnut shell (to 6 mm).
FBT11	030	11	(?Disturbed) fill of Pit 031	13.5/9	225/100	1	4	8	4	5	5	-	-	1	1	1	Silted charcoal (to 14 mm) with abundant modern rootlet. 2x fragments of charred hazelnut shell and an uncharred *Ranunculus* sp. seed. Frequent soil fungus spores (score 4).
FBT11	033	15	Fill of Pit 032	20/12	225/75	1	1	4	4	5	5	-	-	1	2	3	Silted charcoal, including some relatively large pieces (to 29 mm). One indeterminate charred 'seed'; uncharred seeds include *Ranunculus* sp., *Stellaria media*, *Plantago* sp. and *Lamiaceae* sp. Significant bioturbation from abundant modern roots and earthworm activity. Modern beetle sclerites (score 2). Abundant soil fungus spores (score 5).
FBT11	036	13	Fill of Pit 037	14.75/10	150/120	1	1	16	3	5	5	-	-	1	2	-	Well-preserved, unsilted charcoal (to 13 mm) with frequent calcined bone fragments (to 13 mm). One small charred ?grass seed, a few uncharred seeds including *Ranunculus* sp., *Stellaria media* and Polygonaceae. Frequent modern rootlet.
FBT11	038	14	Fill of Pit 037 "Deposit of cremated bone fragments"	0.95/~1	120/120	1	4	8	3	5	5	-	-	1	-	-	Well-preserved, unsilted charcoal (to 10 mm) with occasional calcined bone fragments (to 3 mm). Two pieces of hazelnut shell (to 7 mm).

Site code	CN	SN	Context type/deposit description	Wt/Vol (kg/l)	w/o vol (ml)	2-4 mm	1-2 mm	<1 mm	c'coal >4 mm	c'coal 2-4 mm	c'coal <2 mm	ch'd grain	ch'd chaff	ch'd seed/ nutshell	unch'd seed	eec	Notes
FBT11	041	12	Fill of Pit 042	2/1	10/<1	1	1	1	-	-	3	-	-	-	-	1	A trace of fine charcoal (to 3 mm) with a little silt 'crumb'.

Table 3. Fan Barrow, Talsarn, Ceredigion, Wales: Biological and artefactual remains recovered from sample residues in context number order by site code (year of excavation). Key: 'CN' = context number; 'SN' = sample number (lower case letters designated by PRS to distinguish between several samples from the same context); 'Wt/Vol (kg/l)' = weight/volume of processed sediment in kilos/litres; 'sq' = semi-quantitative abundance score; '1' = present (1-3); '2' = occasional (4-20); '3' = common (21-50); '4' = abundant (51-200); '5' = super-abundant (201+); '#' = number of items; 'mm' = maximum linear dimension in mm; 'g' = weight in grammes.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Residue weight (g)	Charcoal >4 mm sq/mm/g	Charred nut shell >4 mm sq/mm/g	Bone >4 mm sq/mm/g	Pottery >4 mm #/mm/g	Metal #/mm/g	Notes
FBT10	003	-	Upper fill of pit 004	0.33/0.25	158	-	-	-	-	-	-
FBT10	005	a	Fill of Pit 006. "Large lifted block. Soil. Layer 1"	1.3/1	962	-	-	-	-	-	-
FBT10	005	b	Fill of Pit 006. "Lifted block, layer 1. Material from upper/open end of pot"	0.4/0.35	222	-	-	1/9/<0.1	-	-	-
FBT10	005	c	Fill of Pit 006. "Large, lifted block. Layer 1. Fill and cremated material"	0.55/0.55	297	-	-	3/20/4.2	-	-	-
FBT10	005	d	Fill of Pit 006. "Lifted block. Layer 1. Fill material from around urn"	1.4/1.2	934	-	-	-	-	-	-
FBT10	005	e	Fill of Pit 006. "Lifted block. Layer 2. Cremation/soil from rim of vessel and up"	0.45/0.3	256	-	-	4/15/9	-	-	-
FBT10	005	f	Fill of Pit 006. "Lifted block. Layer 2. Cremation and fill from outside pot"	0.3/0.25	183	-	-	1/9/0.1	-	1/14/0.3	Fragment of copper/copper alloy
FBT10	005	g	Fill of Pit 006. "Lifted block. Soil. Layer 2"	0.75/0.75	394	-	-	-	-	-	-
FBT10	005	h	Fill of Pit 006. "Cremated material and fill from outside vessel. Layer 3"	0.5/0.5	337	-	-	4/20/10.5	3/17/2	-	-
FBT10	005	j	Fill of Pit 006. "Contents of Urn 1A"	0.3/0.25	136	1/12/<0.1	-	4/15/4.4	2/11/1	-	-
FBT10	005	k	Fill of Pit 006. "Contents of Urn "2A"	1/1	261	2/12/0.1	-	5/22/63	2/13/1	-	-
FBT10	005	m	Fill of Pit 006. "Material spilled beneath Urn 3A"	0.7/0.75	415	2/13/0.6	-	4/27/26	-	-	Burnt bone includes terminal phalanx

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Residue weight (g)	Charcoal >4 mm sq/mm/g	Charred nut shell >4 mm sq/mm/g	Bone >4 mm sq/mm/g	Pottery >4 mm #/mm/g	Metal #/mm/g	Notes
FBT10	005	n	Fill of Pit 006. "Cremation remnants after lifting pots"	0.4/0.4	256	-	-	2/15/0.9	-	-	-
FBT10	005	p	Fill of Pit 006. No additional details given	1.4/1.5	812	-	-	1/8/<0.1	-	-	-
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants"	0.4/0.33	274	1/6/<0.1	-	4/13/3.5	-	-	-
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants"	0.375/ 0.33	114	-	-	-	-	-	-
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants"	1.5/1.5	1022	2/15/0.6	-	5/20/154	-	1/10/0.5	Lump of ferrous corrosion
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants"	1.3/1.3	340	-	-	-	-	-	-
FBT10	008	-	Fill of Pit 004 "Stone backfill"	25.5/16	9257	4/16/13.5	-	4/24/25	2/6/0.2	1/6/<0.1	Small lump of sediment concretion/corrosion with green staining
FBT10	010	-	Fill of Pit 004	18/10	8228	5/23/26	-	3/18/2.5	-	1/8/0.6	Small lump of green ?corrosion
FBT11	002	1	Fill of Pit 003	5/2	1814	2/18/0.5	-	-	-	-	-
FBT11	008	2	Fill of Pit 009	16/20	1837	2/10/0.5	-	-	-	-	-
FBT11	010	3	Fill of Pit 011	10.75/11	3028	2/14/0.7	-	-	-	-	-
FBT11	014	4	Upper fill of Pit 015	6.5/6	1748	3/5/0.2	-	-	-	-	-
FBT11	016	6	Upper fill of Pit 017	18.5/15	8173	4/12/3.2	-	-	-	-	-
FBT11	018	9	Fill of Pit 019 "placed stone deposit"	7/3	3407	2/8/0.3	-	-	-	-	-
FBT11	020	5	Fill of Pit 015	4/3	985	2/11/0.7	-	1/13/0.1	5/22/5.2	-	-
FBT11	021	a	Fill of Pit 017	1.3/1	560	-	-	3/35/12.5	2/5/0.2	-	-
FBT11	021	b	Fill of Pit 017	0.7/0.7	257	-	-	1/6/<0.1	-	-	-

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Residue weight (g)	Charcoal >4 mm sq/mm/g	Charred nut shell >4 mm sq/mm/g	Bone >4 mm sq/mm/g	Pottery >4 mm #/mm/g	Metal #/mm/g	Notes
FBT11	021	c	Fill of Pit 017. "Contents"	1.2/1.2	607	1/6/<0.1	-	1/12/<0.1	7/7/0.7	-	-
FBT11	021	7	Fill of Pit 017	4.75/4	1969	2/27/2.6	-	4/13/11	-	-	-
FBT11	023	a	"Inside pot"	1.1/1	644	1/5/<0.1	-	-	6/21/7.5	-	-
FBT11	023	b	"Fill of pit containing pot"	12.7/12	5935	2/19/1.1	1/13/0.1	2/8/0.7	37/39/57.5	-	2x charred hazelnut (*Corylus avellana* L.) shell fragments
FBT11	023	c	"Material beneath cremation"	2.8/2.5	1619	-	2/5/0.1	2/12/0.8	-	-	2x charred hazelnut shell fragments
FBT11	023	d	"Contents"	1.4/1.4	744	2/12/0.5	-	1/8/0.1	8/15/8	-	-
FBT11	023	e	"Burnt material and fill"	2/2.4	1165	2/12/0.8	-	1/13/0.2	-	-	-
FBT11	023	f	"Material from within cremation deposit"	0.9/0.9	378	-	-	5/25/82	18/19/6	-	-
FBT11	023	g	"From outside pot"	3/2.75	1907	2/8/0.6	-	-	19/35/32	-	-
FBT11	025	10a	Fill of Pit 019	9/8	4195	-	-	-	-	-	-
FBT11	025	10b	Fill of Pit 019	13/8	5400	-	-	-	-	-	-
FBT11	028	8	Discrete deposit between two cremation deposits	8.25/6	2756	2/15/0.5	-	2/14/0.2	-	-	-
FBT11	030	11	(?Disturbed) fill of Pit 031	13.5/9	5738	3/10/1.2	1/5/<0.1	-	-	-	2x charred hazelnut (*Corylus avellana* L.) shell fragments
FBT11	033	15	Fill of Pit 032	20/12	8743	4/20/4.5	-	-	-	-	-
FBT11	036	13	Fill of Pit 037	14.75/10	4284	4/18/7.5	1/7/<0.1	5/38/1251	-	-	1x charred hazelnut shell fragment. Some identifiable bone present including phalanges and tooth roots
FBT11	038	14	Fill of Pit 037 "Deposit of cremated bone fragments"	0.95/1	316	-	-	3/15/4	-	-	-
FBT11	041	12	Fill of Pit 042	2/1	1000	-	-	-	-	-	-

Table 4. Fan Barrow, Talsarn, Ceredigion, Wales: Summary information regarding the presence and suitability of remains for possible submission for radiocarbon dating in context number order by site code (year of excavation). Multiple samples from the same context are listed separately with any additional notes from the sample labeling shown within quotation marks in the 'Context type' column. Dating via Accelerator Mass Spectrometry (AMS) would be required in all cases. Material selected by the excavator for submission is highlighted in bold face. Key: 'CN' = context number; 'SN' = sample number (lower case letters designated by PRS to distinguish between several samples from the same context); 'Bioturbation (low/med/high)' = an assessment of the degree of disturbance of the deposit my modern plant and animal activity (e.g. rootlet, earthworms) as low, medium or high.

Site code	CN	SN	Context type	Identifications and possible material for AMS dating	Quality of material for AMS dating	Bioturbation (low/med/high)
FBT10	003	-	Upper fill of pit 004	Indeterminate charcoal including some of a ring-porous species – no roundwood.	Poor	Low
FBT10	005	a	Fill of Pit 006. "Large lifted block. Soil. Layer 1"	Indeterminate charcoal including occasional charred ?heather (cf. *Calluna vulgaris* (L.) Hull) root/rhizome – no roundwood	Poor	Low
FBT10	005	b	"Lifted block, layer 1. Material from upper/open end of pot"	Indeterminate charcoal including occasional tiny ?heather root/rhizome – no roundwood	Poor	Low
FBT10	005	c	"Large, lifted block. Layer 1. Fill and cremated material"	Indeterminate charcoal only – no roundwood	Poor	Low
FBT10	005	d	"Lifted block. Layer 1. Fill material from around urn"	Indeterminate charcoal only – no roundwood	Poor	Low
FBT10	005	e	"Lifted block. Layer 2. Cremation/soil from rim of vessel and up"	Indeterminate charcoal only – no roundwood	Poor	High
FBT10	005	f	"Lifted block. Layer 2. Cremation and fill from outside pot"	Indeterminate charcoal with some possible charred root – no roundwood	Poor	Low
FBT10	005	g	"Lifted block. Soil. Layer 2"	Indeterminate charcoal including one charred root/rhizome – no roundwood	Poor	Medium
FBT10	005	h	"Cremated material and fill from outside vessel. Layer 3"	Charcoal mostly indeterminate but including some oak (*Quercus* sp.) – no roundwood	Poor	Low
FBT10	005	j	"Contents of Urn 1A"	Indeterminate charcoal only – no roundwood	Poor	High
FBT10	005	k	"Contents of Urn "2A"	Indeterminate charcoal only – no roundwood	Poor	High
FBT10	005	m	"Material spilled beneath Urn 3A"	Indeterminate charcoal only – no roundwood	Poor	High
FBT10	005	n	"Cremation remnants after lifting pots"	Indeterminate charcoal only – no roundwood	Poor	Medium
FBT10	005	p	No details given	Indeterminate charcoal only – no roundwood	Poor	Medium
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants" "Small coarse fraction"	Indeterminate charcoal including some very distorted pieces of a ring-porous species, possibly ?oak – no roundwood	Poor	Low
FBT10	007	-	Cremation deposit in Pit 004. "Cremation remnants" "Small fine fraction"	Indeterminate charcoal only including charred root – no roundwood	Poor	Medium
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants" "Large coarse fraction"	Charcoal including some of a diffuse-porous species, possibly identifiable further – no roundwood	Poor	Low
FBT10	007	-	Cremation deposit in Pit 004 "Cremation remnants" "Large fine fraction"	Indeterminate charcoal only (mostly rootlet/rhizome) – no roundwood	Poor	High

Site code	CN	SN	Context type	Identifications and possible material for AMS dating	Quality of material for AMS dating	Bioturbation (low/med/high)
FBT10	008	-	Stone backfill; fill of 004	Indeterminate vitrified charcoal with some ?oak (including one piece of roundwood of 4 years growth)	Good	Low
FBT10	010	-	Fill of Pit 004	Indeterminate charcoal, very crumbly, some vitrified. 1x tiny charred twig fragment – probably insufficient for AMS dating	Poor	Low
FBT11	**002**	**1**	**Fill of Pit 003**	Charcoal, including frequent pieces of oak of indeterminate age. **1x fragment of hazel/alder (*Corylus/Alnus*) charcoal of indeterminate age of growth**	**Moderate**	**Medium**
FBT11	**008**	**2**	**Fill of Pit 009**	Charcoal includes several pieces of the same species (unidentified but possibly ?ivy; cf. *Hedera helix* L.). **1x piece of ring-porous roundwood charcoal of approximately 15 years of wood growth**	**Good**	**Low**
FBT11	**010**	**3**	**Fill of Pit 011**	Charcoal includes some crumbly pieces of a diffuse-porous species; one piece possibly ?oak. **1x piece of diffuse-porous round wood charcoal – inner 'core' wood missing and presence of waney edge not convincing – possibly approximately 10 years of wood growth but perhaps more**	**Moderate**	**Low**
FBT11	014	4	Upper fill of Pit 015	Charcoal includes diffuse-porous and ring-porous species. 1x fragment of hazel/alder charcoal of indeterminate age of growth	Moderate	Low
FBT11	016	6	Upper fill of Pit 017	1x fragment of hazel/alder charcoal of indeterminate age of growth	Moderate	Low
FBT11	018	9	Fill of Pit 019, "placed stone deposit"	Indeterminate charcoal only – no roundwood	Poor	High
FBT11	**020**	**5**	**Fill of Pit 015**	1x charred ?emmer wheat (cf. *Triticum ?dicoccum* Schübl.) grain; **1x diffuse-porous roundwood twig charcoal fragment – no 'core' wood; several other small roundwood twig charcoal fragments [NB: all twig fragments with waney edge and of only a few years of growth]**	**Good**	**Low**
FBT11	021	a	Fill of Pit 017	1x fragment of hazel/alder charcoal of indeterminate age of growth	Moderate	Low
FBT11	021	b	Fill of Pit 017	1x fragment of hazel/alder charcoal of indeterminate age of growth	Moderate	Medium
FBT11	021	c	Fill of Pit 017. "Contents"	Charcoal includes pieces from diffuse-porous and ring-porous species – no roundwood	Poor	Low
FBT11	021	7	Fill of Pit 017	Charcoal includes diffuse-porous and ring-porous species; 1x fragment of hazel/alder charcoal of indeterminate age of growth; 2x small roundwood twig fragments of only a few years of wood growth but species indeterminate	Moderate	Low
FBT11	023	a	"Inside pot"	Charcoal from a ring-porous species (including some very vitrified). 1x charred hazel (*Corylus*) nutshell fragment	Good	Low
FBT11	023	b	"Fill of pit containing pot"	Charcoal of diffuse-porous and ring-porous species. 2x charred hazelnut shell fragments (from residue)	Good	Low
FBT11	023	c	"Material beneath cremation"	Charcoal of ring-porous species. 2x charred hazelnut shell fragments (from residue)	Good	Low
FBT11	023	d	"Contents"	Indeterminate charcoal only – no roundwood	Poor	Low
FBT11	023	e	"Burnt material and fill"	Indeterminate charcoal only – no roundwood	Poor	Low
FBT11	023	f	"Material from within cremation deposit"	Indeterminate charcoal only – no roundwood	Poor	Low
FBT11	023	g	"From outside pot"	Charcoal includes pieces from a ring-porous species (some vitrified) – no roundwood	Poor	Low
FBT11	**025**	**10a**	**Fill of Pit 019**	Indeterminate charcoal only – no roundwood. **1x charred plum/cherry/sloe (*Prunus*) fruitstone fragment**	**Good**	**High**
FBT11	025	10b	Fill of Pit 019	Indeterminate charcoal only – no roundwood	Poor	High
FBT11	028	8	Discrete deposit between two cremation deposits	Charcoal includes pieces from a diffuse-porous species. 1x charred hazelnut shell fragment	Good	Medium

Site code	CN	SN	Context type	Identifications and possible material for AMS dating	Quality of material for AMS dating	Bioturbation (low/med/high)
FBT11	030	11	(Disturbed) fill of ?Pit 031	2x charred hazelnut shell fragments	Good	High
FBT11	033	15	Fill of Pit 032	Ring-porous charcoal only (some vitrified and deformed) – no roundwood	Poor	High
FBT11	036	13	Fill of Pit 037	Indeterminate charcoal only – no roundwood. 1x charred hazelnut shell fragment (from residue)	Good	High
FBT11	038	14	Fill of Pit 037 "Deposit of cremated bone fragments"	Indeterminate charcoal only – no roundwood. 2x charred hazelnut shell fragments	Good	Low
FBT11	041	12	Fill of Pit 042	Nothing	N/A	High

Table 5. Fan Barrow, Talsarn, Ceredigion, Wales: Summary information regarding bone recovered from sample processing in context number order by site code (year of excavation) incorporating notes on the material forwarded to the human bone specialist (York Osteoarchaeology). Key: 'CN' = context number; 'SN' = sample number (lower case letters designated by PRS to distinguish between several samples from the same context); 'Wt/Vol (kg/l)' = weight in kilograms and volume in litres of processed sediment sample; 'v. occ.' = very occasional; 'occ.' = occasional. Semi-quantitative abundance scale: '+' = few/rare, up to 3 individuals/items or a trace level component of the whole; '++' = some/present, 4 to 20 items or a minor component; '+++' = many/common, 21 to 50 or a significant component; '++++' = very many/abundant, 51 to 200 or a major component; '+++++' = super-abundant, over 200 items/individuals or a dominant component of the whole.

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Total residue dry weight (grammes)	Bone >4 mm	Bone fragments present in <4 mm residue	Material forwarded to York Osteoarchaeology
FBT10	003	-	Upper fill of pit 004	0.33/0.25	158	-	v. occ.	none
FBT10	005	a	Fill of Pit 006. "Large lifted block. Soil. Layer 1"	1.3/1	962	-	v. occ.	all residue
FBT10	005	b	Fill of Pit 006. "Lifted block, layer 1. Material from upper/open end of pot"	0.4/0.35	222	+	some	>4 mm bone and all residue
FBT10	005	c	Fill of Pit 006. "Large, lifted block. Layer 1. Fill and cremated material"	0.55/0.55	297	+++	frequent	>4 mm bone and all residue
FBT10	005	d	Fill of Pit 006. "Lifted block. Layer 1. Fill material from around urn"	1.4/1.2	934	-	v. occ.	all residue
FBT10	005	e	Fill of Pit 006. "Lifted block. Layer 2. Cremation/soil from rim of vessel and up"	0.45/0.3	256	++++	abundant	>4 mm bone and all residue
FBT10	005	f	Fill of Pit 006. "Lifted block. Layer 2. Cremation and fill from outside pot"	0.3/0.25	183	+	common	>4 mm bone and all residue
FBT10	005	g	Fill of Pit 006. "Lifted block. Soil. Layer 2"	0.75/0.75	394	-	v. occ.	all residue
FBT10	005	h	Fill of Pit 006. "Cremated material and fill from outside vessel. Layer 3"	0.5/0.5	337	++++	frequent	>4 mm bone and all residue
FBT10	005	j	Fill of Pit 006. "Contents of Urn 1A"	0.3/0.25	136	++++	abundant	>4 mm bone and all residue
FBT10	005	k	Fill of Pit 006. "Contents of Urn "2A"	1/1	261	+++++	abundant	>4 mm bone and all residue
FBT10	005	m	Fill of Pit 006. "Material spilled beneath Urn 3A"	0.7/0.75	415	++++	abundant	>4 mm bone and all residue

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Total residue dry weight (grammes)	Bone >4 mm	Bone fragments present in <4 mm residue	Material forwarded to York Osteoarchaeology
FBT10	005	n	Fill of Pit 006. "Cremation remnants after lifting pots"	0.4/0.4	256	++	v. occ.	>4 mm bone and all residue
FBT10	005	p	Fill of Pit 006. No details given	1.4/1.5	812	+	v. occ.	>4 mm bone and all residue
FBT10	007	-	Cremation deposit in Pit 004. "Small sample, coarse fraction. Cremation remnants"	0.4/0.33	274	++++	common	>4 mm bone and 1-4 mm residue
FBT10	007	-	Cremation deposit in Pit 004. "Small sample, fine fraction. Cremation remnants"	0.375/ 0.33	114	-	common	1-4 mm residue
FBT10	007	-	Cremation deposit in Pit 004 "Large sample, coarse fraction. Cremation remnants"	1.5/1.5	1022	+++++	abundant	>4 mm bone and 1-4 mm residue
FBT10	007	-	Cremation deposit in Pit 004 "Large sample, fine fraction. Cremation remnants"	1.3/1.3	340	-	abundant	1-4 mm residue
FBT10	008	-	Fill of Pit004 "Stone backfill"	25.5/16	9257	++++	v. occ.	>4 mm bone
FBT10	010	-	Fill of Pit 004	18/10	8228	+++	occ.	>4 mm bone
FBT11	002	1	Fill of Pit 003	5/2	1814	-	-	none
FBT11	008	2	Fill of Pit 009	16/20	1837	-	-	none
FBT11	010	3	Fill of Pit 011	10.75/11	3028	-	-	none
FBT11	014	4	Upper fill of Pit 015	6.5/6	1748	-	-	none
FBT11	016	6	Upper fill of Pit 017	18.5/15	8173	-	v. occ.	none
FBT11	018	9	Fill of Pit 019, "placed stone deposit"	7/3	3407	-	-	none
FBT11	020	5	Fill of Pit 015	4/3	985	+	v. occ.	>4 mm bone
FBT11	021	a	Fill of Pit 017	1.3/1	560	+++	frequent	>4 mm bone and 1-4 mm residue
FBT11	021	b	Fill of Pit 017	0.7/0.7	257	+	v. occ.	>4 mm bone

Site code	CN	SN	Context type	Wt/Vol (kg/l)	Total residue dry weight (grammes)	Bone >4 mm	Bone fragments present in <4 mm residue	Material forwarded to York Osteoarchaeology
FBT11	021	c	Fill of Pit 017. "Contents"	1.2/1.2	607	+	v. occ.	>4 mm bone
FBT11	021	7	Fill of Pit 017	4.75/4	1969	++++	frequent	>4 mm bone and 1-4 mm residue
FBT11	023	a	"Inside pot"	1.1/1	644	-	v. occ.	none
FBT11	023	b	"Fill of pit containing pot"	12.7/12	5935	++	v. occ.	>4 mm bone
FBT11	023	c	"Material beneath cremation"	2.8/2.5	1619	++	v. occ.	>4 mm bone
FBT11	023	d	"Contents"	1.4/1.4	744	+	v. occ.	>4 mm bone
FBT11	023	e	"Burnt material and fill"	2/2.4	1165	+	v. occ.	>4 mm bone
FBT11	023	f	"Material from within cremation deposit"	0.9/0.9	378	+++++	abundant	>4 mm bone and 1-4 mm residue
FBT11	023	g	"From outside pot"	3/2.75	1907	-	-	none
FBT11	025	10a	Fill of Pit 019	9/8	4195	-	-	none
FBT11	025	10b	Fill of Pit 019	13/8	5400	-	-	none
FBT11	028	8	Discrete deposit between two cremation deposits	8.25/6	2756	++	v. occ.	>4 mm bone
FBT11	030	11	(?Disturbed) fill of Pit 031	13.5/9	5738	-	-	none
FBT11	033	15	Fill of Pit 032	20/12	8743	-	-	none
FBT11	036	13	Fill of Pit 037	14.75/10	4284	+++++	abundant	>4 mm bone and 1-4 mm residue
FBT11	038	14	Fill of Pit 037 "Deposit of cremated bone fragments"	0.95/1	316	+++	occ.	>4 mm bone
FBT11	041	12	Fill of Pit 042	2/1	1000	-	-	none

APPENDIX 7

POLLEN ANALYSIS

Assessment of the Pollen Evidence from Fan Barrow, Talsarn

Astrid E. Caseldine

Samples were taken from various contexts at Fan round barrow with the principal aim of determining whether there was any evidence for plants being used in ritual activity associated with the cremations. Some of the samples were taken during the field excavation and some were taken during micro-excavation of the pots. A subset of the samples was selected for analysis to assess their potential. The samples examined were as follows:

FBT10 – 005 - Pollen sample 1 – from Pygmy Cup 3, close to edge of vessel near base (pit 006).

FBT10 – 005 – Pollen sample 2 – from collared urn (Urn 2), midpoint of height, against lower body (pit 006).

FBT10 – 007 – Pollen sample 1 – from cremation pit fill above cremation (pit 004).

FBT10 – 007 – Pollen sample 5 – from cremation pit fill below cremation (pit 004).

FBT10 – 007 - Pollen sample 1 – from fill of Pygmy Cup 4 (pit 004).

FBT11 – 016 – Pollen sample from below cordoned urn (Urn 1) (pit 17).

FBT11 – 021B – Pollen sample from base of cordoned urn (Urn 1) just below cremated bones (pit 017).

FBT11 – 021C – Pollen sample from inside collar of cordoned urn (Urn 1), adhering to pot (pit 017).

FBT11 – 022 – Pollen sample from fill of collapsed collared urn (Urn 3) (pit 023).

FBT11 – 038 – Pollen sample from fill containing small quantity of cremated bone and c. third of a Pygmy Cup 2 (pit 037).

Methods

Subsamples 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. The samples were mounted in silicone oil. A magnification of x400 was used for routine counting with magnifications of x630 or x1000 used for critical determinations. Identification was by comparison with slides of modern type material and reference to identification atlases (e.g. Moore *et al* 1991). The pollen count was based on 100 *Lycopodium* spores if pollen was scarce or, where pollen was more plentiful, on 300 total land pollen (TLP), including indeterminate pollen but excluding spores. The results are presented in Table 1. Only raw counts are given where pollen concentrations are low whereas percentages have been

calculated based both on total pollen, spores and indeterminate pollen and on total pollen where concentrations were high. Nomenclature is modified from Moore *et al* (1991), based on Bennett *et al* (1994).

Results

FBT10 – 005 - Pollen sample 1: Pollen from the Pygmy Cup (3) from cremation pit 006 was extremely scarce but included *Corylus avellana* type, Poaceae, *Calluna* and Rubiaceae.

FBT10 – 005 – Pollen sample 2: Pollen was abundant in the sample from the collared urn (Urn 2) from pit 006 and was dominated by herbaceous pollen, namely Poaceae pollen and weed taxa such as *Plantago lanceolata*, Rubiaceae and Lactuceae. *Corylus avellana* type pollen was relatively frequent. *Quercus* and *Alnus* were present in small amounts whilst *Calluna* was slightly more frequent. Of the spores, *Polypodium* was the most frequent. Indeterminate pollen was quite frequent.

FBT10 – 007 – Pollen sample 1: This sample from the fill above the cremation in pit 004 was dominated by indeterminate pollen, making up nearly 50% of the total assemblage. Of the identifiable pollen, *Corylus avellana* type pollen and Poaceae pollen were most frequent and present in approximately equal amounts, followed by *Alnus* and *Calluna*. *Plantago lanceolata* was the most frequent of the weed taxa. *Polypodium* dominated the spore assemblage.

FBT10 – 007 – Pollen sample 5: Poaceae and indeterminate pollen dominated the assemblage from this sample from below the cremation in pit 004. Weed taxa were relatively frequent, notably *Plantago lanceolata*, Rubiaceae, Lactuceae and *Rumex* spp. Corylus avellana type was the most strongly represented of the tree and shrub taxa with only small amounts of *Quercus* and *Alnus*. *Calluna* was present in similar amounts to *Corylus avellana* type. *Polypodium* was the most frequent of the spores.

FBT – 007 - Pollen sample 1: Identifiable pollen from the fill of the Pygmy Cup (4) from pit 004 was extremely scarce but *Polypodium* spores were more frequent and dominated the assemblage. Indeterminate pollen was present in an equivalent amount to identifiable pollen. *Corylus avellana* type, Poaceae, *Calluna* and *Ulmus* were present.

FBT11 – 016: Pollen from below the cordoned urn (Urn 1) in pit 017 was scarce. *Polypodium* spores and Poaceae pollen dominated the assemblage. Other taxa were extremely scarce but included *Alnus, Corylus avellana* type, *Calluna*, *Succisa* and Pteropsida (monolete) indeterminate. Indeterminate pollen was slightly more frequent.

FBT – 021B: Pollen from the base of cordoned urn (Urn 1) just below the cremated bones in pit 017 was extremely scarce and comprised Poaceae, *Alnus* and indeterminate pollen and *Polypodium* spores..

FBT11 – 021C: Pollen from a deposit adhering to the inside of the collar of the cordoned urn (Urn 1) in pit 017 was relatively abundant but more than 40% of the assemblage was indeterminate. Of the identified taxa, *Polypodium* spores were most abundant followed by *Corylus avellana* type pollen. Poaceae and *Alnus* pollen values were relatively low and Calluna and Quercus present only in small amounts. *Plantago lanceolata* and Lactuceae pollen dominated the weed assemblage.

FBT11 – 022: The pollen from the fill of the collapsed collared urn (Urn 3) in pit 023) was scarce. The assemblage was dominated by herbaceous taxa, namely Poaceae pollen with occasional grains of weed taxa including *Plantago lanceolata*,

Rubiaceae and *Rumex acetosella*. *Alnus*, *Corylus avellana* type and *Calluna* were also represented and *Polypodium* spores and indeterminate pollen present in small amounts.

FBT11 – 038: Pollen from the fill of the pit containing cremated bone and *c.* third of a Pygmy Cup (2) in pit 037 was very scarce and comprised small quantities of Poaceae, *Calluna* and indeterminate pollen and *Polypodium* spores.

Discussion

The samples fall into two groups, the first in which pollen is scarce and the second in which pollen is plentiful but generally includes a large amount of poorly preserved indeterminate pollen. Pollen from the Pygmy Cup (3) in cremation pit 006, the Pygmy Cup (4) in cremation pit 004, the fill (016) below the cordoned urn (Urn 1) and the base of the cordoned urn (Urn 1) in cremation pit 017, the fill (022) of the collared urn (Urn 3) in pit 023 and the fill (038) of cremation pit 037, which contained approximately a third of a Pygmy Cup (2), was scarce. There was also nothing to suggest ritually placed plant material.

Of the remaining samples, one was from the collared urn (Urn 2) in cremation pit 006, two were from the fill (007) above and below the cremation in pit 004, and the final sample was from inside the collar of the cordoned urn (Urn 1) in cremation pit 017. Of the identified taxa, in two of the samples, sample 2 from collared urn fill (005) and sample 5 from the fill (007) above the cremation in pit 004, Poaceae (grass) pollen dominated while in the other two samples, from the fill (007) below the cremation in pit 004 and from inside the cordoned urn (Urn 1) in cremation pit 017, *Corylus avellana* type (probably hazel but this type also includes bog myrtle) was dominant, although only marginally so in the sample from cremation pit 004. As a percentage of total land pollen, as opposed to the total assemblage, tree taxa were also more strongly represented in the latter two samples than the former two. *Polypodium* (polypody) spores were also more frequent in the latter two samples. Polypody can be epiphytic on tree-trunks as well as being common on banks and rocks. However the differences between the samples may be a result of the high numbers of indeterminate grains, probably largely herbaceous/Poaceae pollen, in the latter two samples, reflecting differences in preservation rather than differences in the vegetation.

Overall the pollen evidence in these samples suggests grassland with weed taxa, including ribwort plantain (*Plantago lanceolata*), bedstraw (Rubiaceae), docks (*Rumex* spp.), sheep's sorrel (*R. acetosella*), devil's bit scabious (*Succisa*) and dandelion type (Lactuceae), as well as heather (*Calluna vulgaris*) communities in the area. In the wider area there is some evidence for hazel woodland as well as oak (*Quercus* spp.) and alder (*Alnus glutinosa*). Again there is nothing to suggest any plant material deliberately placed with the cremations, such as at Fan Foel (Caseldine and Griffiths 2006) where *Filipendula* (meadowsweet) pollen may reflect a floral tribute. The pollen may reflect the environment contemporary with the cremations but it is equally possible that much of the pollen is more recent in origin. Indeed there is evidence of recent intrusive material from the macrofossil evidence, which supports the latter view, but there is also some agreement between the pollen and charred plant remains and charcoal evidence, summarised in Tables 2 and 3, respectively (full details Appendix 5). Again the results suggest hazel and oak woodland and, possibly, the presence of alder, as well as grassland and heather. In addition cereal, including wheat, is represented in the plant macrofossil record.

The pollen evidence from Fan is consistent with pollen evidence from Blaen yr Esgair (Moore and Chater 1969), Tregaron (Cors Caron) (Turner 1964) and Bryniau Pica (Buckley and Walker 2001) in the wider region. This suggests oak

woodland with a hazel understory, as well as hazel and birch woodland in the uplands, and alder woodland in wetter areas. Relatively small-scale clearance activity is indicated during the Neolithic and earlier Bronze Age and evidence for cereal cultivation is slight. More extensive clearance commenced during the middle-later Bronze Age in the uplands, although from the 'elm decline' onwards there is evidence for the spread of vegetation communities dominated by grasses, sedges and heather. In the lowlands the evidence suggests more extensive clearance occurred during the early Iron Age or later.

Although cereal pollen is absent from the pollen record, the presence of charred cereal at Fan barrow confirms that cereal cultivation was taking place in the area during the early Bronze Age. In general charred cereal evidence is quite widespread in Wales for the Bronze Age, but in most instances the evidence tends to be quite limited. The scarcity of charred cereal in deposits associated with the cremations at Fan is, therefore, similar to that found at other early Bronze Age sites in Wales, for example Llanilar (Caseldine 1997), Pantymenyn (Caseldine 2000a), Yr Allor (Caseldine 2000b) and Parc Maen (Nesbitt 1992). More common are the occurrence of frequent charred grass remains and the presence of charred hazelnut shells at these and other sites. The cereal, and perhaps the hazelnuts and *Prunus* fruit stone, at Fan may indicate food offerings and ritual activity but could also simply reflect material used to make the funeral pyre.

Acknowledgements: I would like to thank Inga Peck for preparing the pollen samples.

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Table 1: Pollen evidence from Fan barrow

Sample Context	FBT10-005	FBT10-005	% T	% TP	FBT10-007	% T	% TP	FBT10-007	% T	% TP	FBT10-007	FBT11-016	FBT11-021	FBT11-021	% T	% TP	FBT11-022	FBT11-038
Pit	**Pit 006**	**Pit 006**			**Pit 004**			**Pit 004**			**Pit 004**	**Pit 17**	**Pit 17**	**Pit 17**			**Pit 23**	**Pit 37**
Context description	**Cup 3**	**Urn 2**			**Pit fill**			**Pit fill**			**Cup 4**	**Pit fill**	**Urn 1**	**Urn 1**			**Urn 3**	**Cup 2**
Sample	**PS 1**	**PS2**			**PS1**			**PS5**			**PS1**		**Base**	**Collar**				
Pollen Taxa																		
Trees																		
Betula	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ulmus	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Quercus	0	16	4.0	5.2	3	0.8	2.5	6	1.9	2.9	0	0	0	10	2.6	6.9	0	0
Tilia	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alnus	0	9	2.3	2.9	19	5.2	15.7	8	2.5	3.9	0	1	1	24	6.3	16.7	1	0
Total Trees	**0**	**27**	**6.9**	**8.8**	**22**	**6.0**	**18.2**	**14**	**4.4**	**6.7**	**1**	**1**	**1**	**34**	**8.9**	**23.6**	**1**	**0**
Shrubs																		
Corylus avellana type	2	67	17.0	21.8	35	9.5	28.9	35	10.9	16.8	5	1	0	50	13.16	34.7	1	0
Salix	0	0	0	0	0	0	0	1	0.3	0.5	0	0	0	0	0	0	0	0
Lonicera	0	0	0	0	1	0.3	0.8	0	0	0	0	0	0	0	0	0	0	0
Total Shrubs	**2**	**67**	**17.0**	21.8	**36**	**9.8**	**29.8**	**36**	**11.2**	**17.3**	**5**	**1**	**0**	**50**	**13.2**	**34.7**	**1**	**0**
Heaths																		
Calluna	1	41	10.4	13.3	18	4.9	14.9	26	8.1	12.5	1	1	0	12	3.2	8.3	1	3
Erica type	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Heaths	**1**	**42**	**10.7**	**13.6**	**18**	**4.9**	**14.9**	**26**	**8.1**	**12.5**	**1**	**1**	**0**	**12**	**3.2**	**8.3**	**1**	**3**
Herbs																		
Poaceae	4	134	34.0	43.5	33	8.9	27.3	97	30.1	46.6	1	11	3	29	7.6	20.1	13	7
Cyperaceae	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aster type	0	0	0	0	0	0	0	1	0.31	0.48	0	0	0	0	0	0	0	0
Lactuceae	0	4	1.0	1.3	1	0.3	0.8	4	1.24	1.9	0	0	0	6	1.6	4.2	0	0
Caryophyllaceae	0	1	0.3	0.3	2	0.5	1.7	3	0.93	1.4	0	0	0	1	0.3	0.7	0	0
Chenopodiaceae	0	0	0	0	1	0.3	0.8	0	0	0	0	0	0	0	0	0	0	0
Lamiaceae	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabaceae	0	1	0.3	0.3	0	0	0	1	0.31	0.5	0	0	0	0	0	0	0	0
Plantago lanceolata	0	17	4.3	5.5	6	1.6	5.0	15	4.7	7.2	0	1	0	8	2.1	5.6	2	0
Filipendula	0	1	0.3	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potentilla	0	0	0	0	0	0	0	1	0.3	0.5	0	0	0	0	0	0	0	0
Ranunculaceae	0	2	0.5	0.6	0	0	0	1	0.3	0.5	0	0	0	0	0	0	0	0
Rubiaceae	1	5	1.3	1.6	0	0	0	4	1.3	1.9	0	1	0	0	0	0	2	0
Rumex acetosa	0	1	0.3	0.3	0	0	0	1	0.3	0.5	0	0	0	0	0	0	0	0
Rumex acetosella	0	0	0	0	0	0	0	2	0.6	1	0	0	0	0	0	0	2	0
Rumex	0	0	0	0	0	0	0	1	0.3	0.5	0	0	0	0	0	0	0	0

Table 1(continued): Pollen evidence from Fan barrow

Sample Context	**FBT10-005**	**FBT10-005**	**% T**	**% TP**	**FBT10-007**	**% T**	**% TP**	**FBT10-007**	**% T**	**% TP**	**FBT10-007**	**FBT11-016**	**FBT11-021**	**FBT11-021**	**% T**	**% TP**	**FBT11-022**	**FBT11-038**
Pit	**Pit 006**	**Pit 006**			**Pit 004**			**Pit 004**			**Pit 004**	**Pit 17**	**Pit 17**	**Pit 17**			**Pit 23**	**Pit 37**
Context description	**Cup 3**	**Urn 2**			**Pit fill**			**Pit fill**			**Cup 4**	**Pit fill**	**Urn 1**	**Urn 1**			**Urn 3**	**Cup 2**
Sample	**PS 1**	**PS2**			**PS1**			**PS5**			**PS1**		**Base**	**Collar**				
Pollen Taxa																		
Succisa	0	4	1.0	1.3	2	0.5	1.7	1	0.3	0.5	0	1	0	4	1.1	2.8	0	0
Total Herbs	**5**	**172**	**43.6**	**55.8**	**45**	**12.2**	**37.2**	**132**	**41.0**	**63.5**	**1**	**14**	**3**	**48**	**12.6**	**33.3**	**19**	**7**
Total Pollen (TP)	**8**	**308**	**78.2**	**100**	**121**	**32.8**	**100**	**208**	**64.6**	**100**	**8**	**16**	**4**	**144**	**37.9**	**100**	**22**	**10**
Spores																		
Polypodium	1	26	6.6	8.4	65	17.6	53.7	14	4.3	6.7	34	14	4	66	17.4	45.8	4	2
Pteridium	0	2	0.5	0.6	1	0.3	0.8	1	0.3	0.5	0	0	0	4	1.1	2.8	0	0
Pteropsida (monolete) indeterminate	0	1		0.3	0	0	0	4	1.2	1.9	0	1	0	7	1.8	4.9	0	0
Sphagnum	0	2	0.5	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Spores	**1**	**31**	**7.9**	**10.1**	**66**	**17.9**	**54.5**	**19**	**5.9**	**9.1**	**34**	**15**	**4**	**77**	**20.3**	**53.5**	**4**	**2**
Total Pollen & Spores	**9**	**339**	**86**	**110.1**	**187**	**50.7**	**154.5**	**227**	**70.5**	**109.1**	**42**	**31**	**8**	**221**	**58.2**	**153.5**	**26**	**12**
Indeterminable	**0**	**55**	**14**	**17.9**	**182**	**49.3**	**150.4**	**95**	**29.5**	**45.7**	**8**	**5**	**3**	**159**	**41.8**	**110.4**	**4**	**2**
Total (T)	**9**	**394**	**100**	**127.9**	**369**	**100**	**304.9**	**322**	**100**	**154.8**	**50**	**37**	**11**	**380**	**100**	**263.9**	**30**	**14**

Table 2: Summary of charred plant remains from Fan barrow

Sample Context	**FBT10 -005**	**FBT10 -007**	**FBT10 -010**	**FBT11 -002**	**FBT11 -016**	**FBT11 -020**	**FBT11 -022**	**FBT11 -025**	**FBT11 -030**	**FBT11 -033**	**FBT11 -036**	**FBT11 -038**
Feature	**Pit 006**	**Pit 004**	**Pit 004**	**Pit 003**	**Pit 017**	**Pit 015**	**Pit 023**	**Pit 019**	**Pit 031**	**Pit 032**	**Pit 037**	**Pit 037**
Corylus avellana L. (Hazel) shell frags.	-	-	-	-	-	-	5	-	4	-	1	2
cf. *Calluna vulgaris* (L.) Hull (Heather) root	+	-	+	-	-	-	+	-	-	-	-	-
cf. *Rubus* sp. (Brambles)	-	-	-	-	-	-	-	1	-	-	-	-
Prunus sp. (Cherries, blackthorn, plum)	-	-	-	-	-	-	-	1	-	-	-	-
Trifolium sp (Clover)	-	-	-	-	-	-	1	-	-	-	-	-
Small Fabaceae	-	-	-	-	-	-	-	1	-	-	-	-
Plantago sp. (Plantain)	-	-	-	-	1	-	-	-	-	-	-	-
Carex sp. (Sedge)	-	-	-	1	-	-	-	-	-	-	-	-
cf. *Triticum dicoccum* (Emmer wheat)	-	-	-	-	-	1	-	-	-	-	-	-
Triticum sp. (Wheat)	-	-	-	-	-	-	1	-	-	-	-	-
Cerealia indet. frag.	-	-	-	-	-	-	1	-	-	-	-	-
Cerealia/ Poaceae frags.							2	2				
cf. chaff	1	-	-	-	-	-	-	-	-	-	-	-
Poaceae (Grass)	1	-	-	-	-	-	-	-	-	-	-	-
Poaceae /herb stems	+	+	-	-	-	-	-	-	-	-	-	-
Poaceae culm node	1	-	-	-	-	-	-	-	-	-	-	-
cf. Poaceae	-	-	-	-	-	-	-	-	-	-	1	-
Indet. seeds	-	2	-	-	-	-	-	1	-	1	-	-

+ = present

Table 3: Summary of charcoal identifications from Fan barrow

Sample context	**FBT10 -005**	**FBT10 -007**	**FBT11 -002**	**FBT11 -014**	**FBT11 -016**	**FBT11 -021**
Feature	**Pit 006**	**Pit 004**	**Pit 003**	**Pit 015**	**Pit 017**	**Pit 017**
Quercus spp. (Oak)	+	-	-	-	-	-
cf. *Quercus* spp.	-	+	-	-	-	-
Corylus avellana L./ *Alnus glutinosa* (L.) Gaertner (Hazel/alder)	-	-	+	+	+	+

+ = present

ILLUSTRATIONS

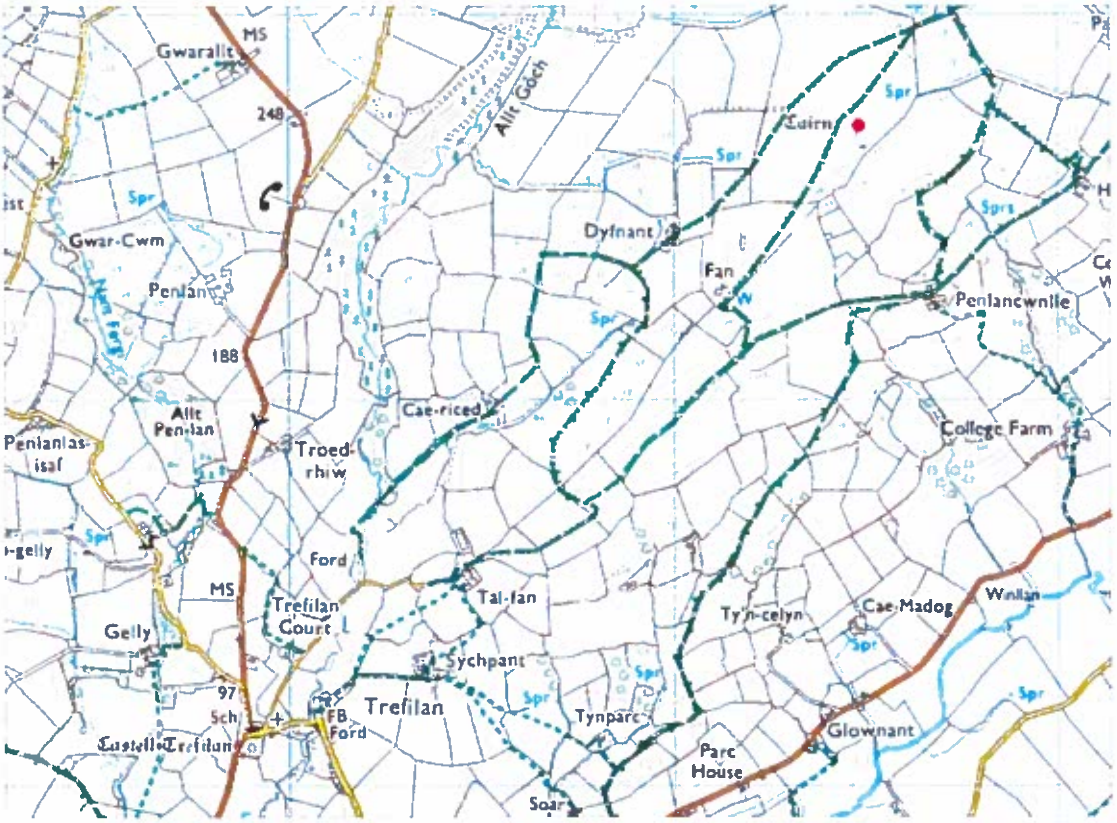

Figure 1: Site location map

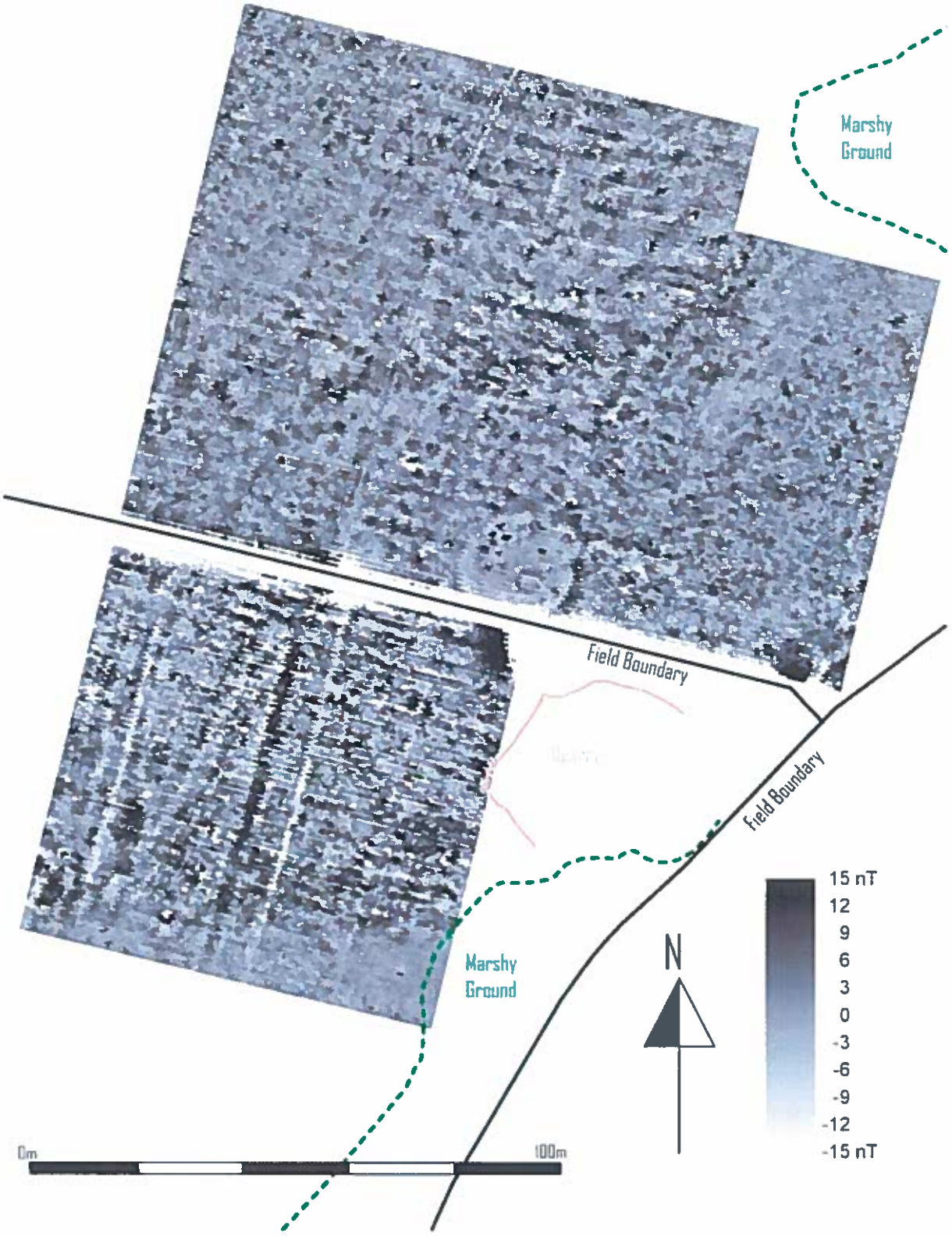

Figure 2: Geophysical survey

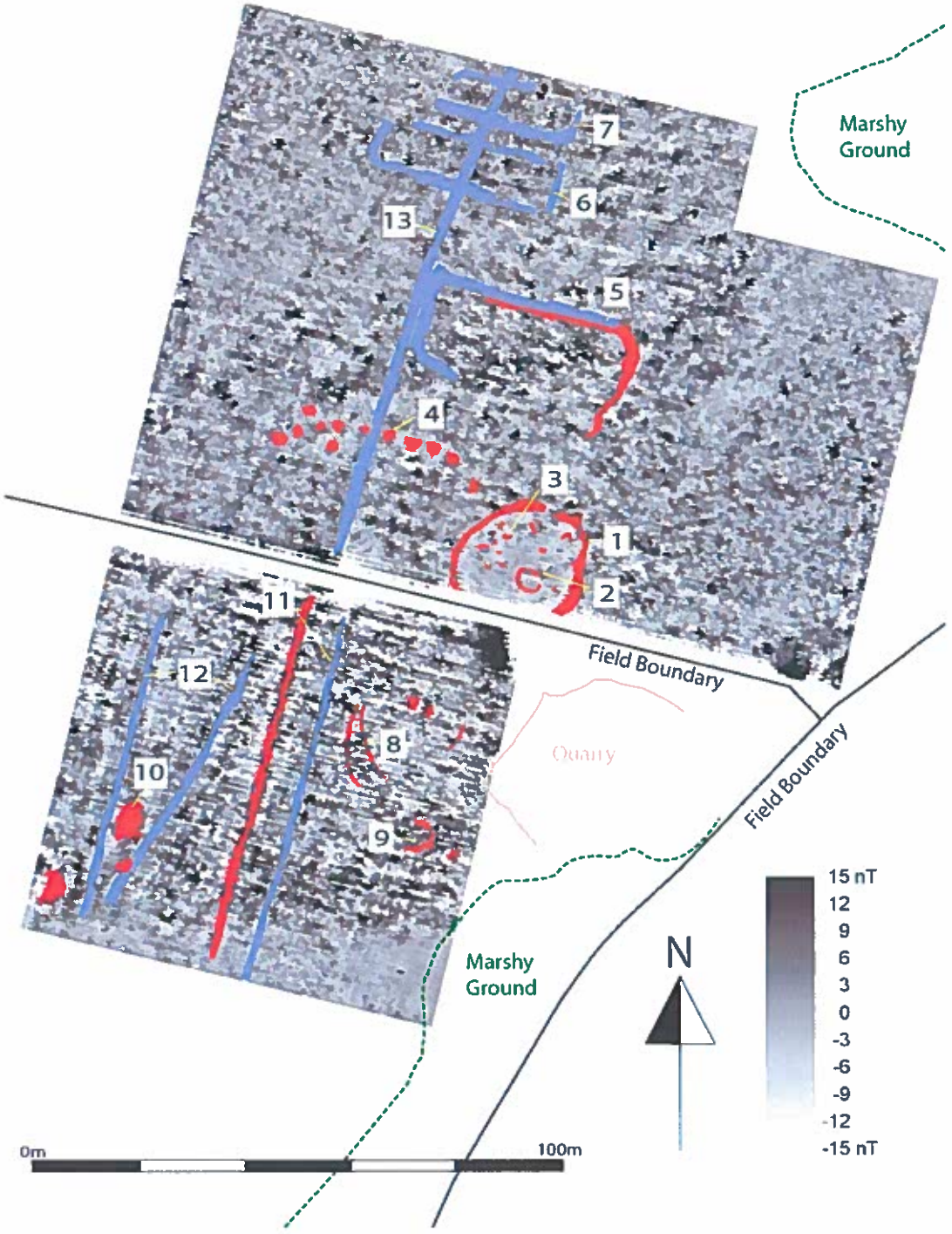

Figure 3: Interpretation of geophysical features (from Poucher 2010)

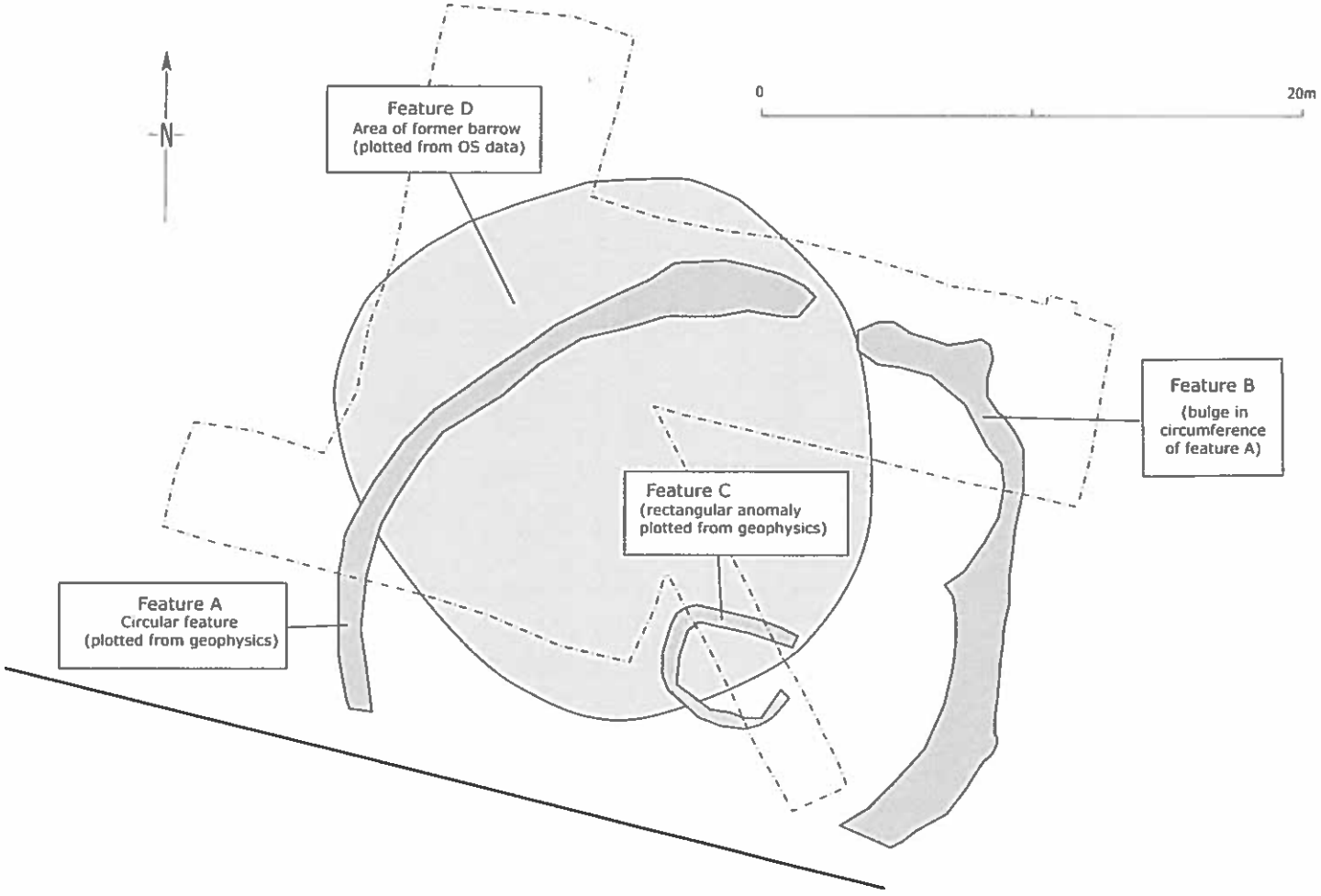

Figure 4: Plan of main features

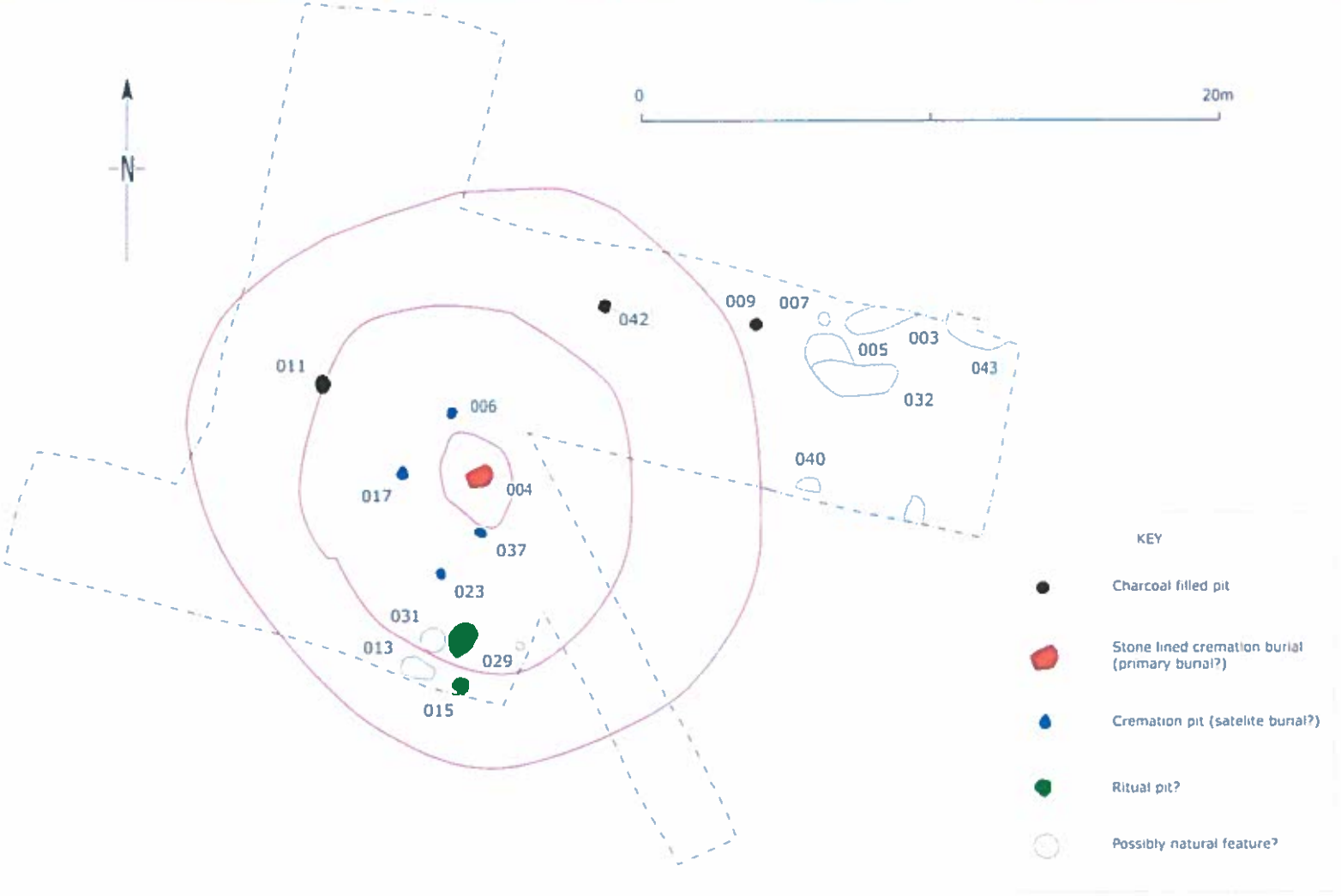

Figure 5: Trench plan showing features

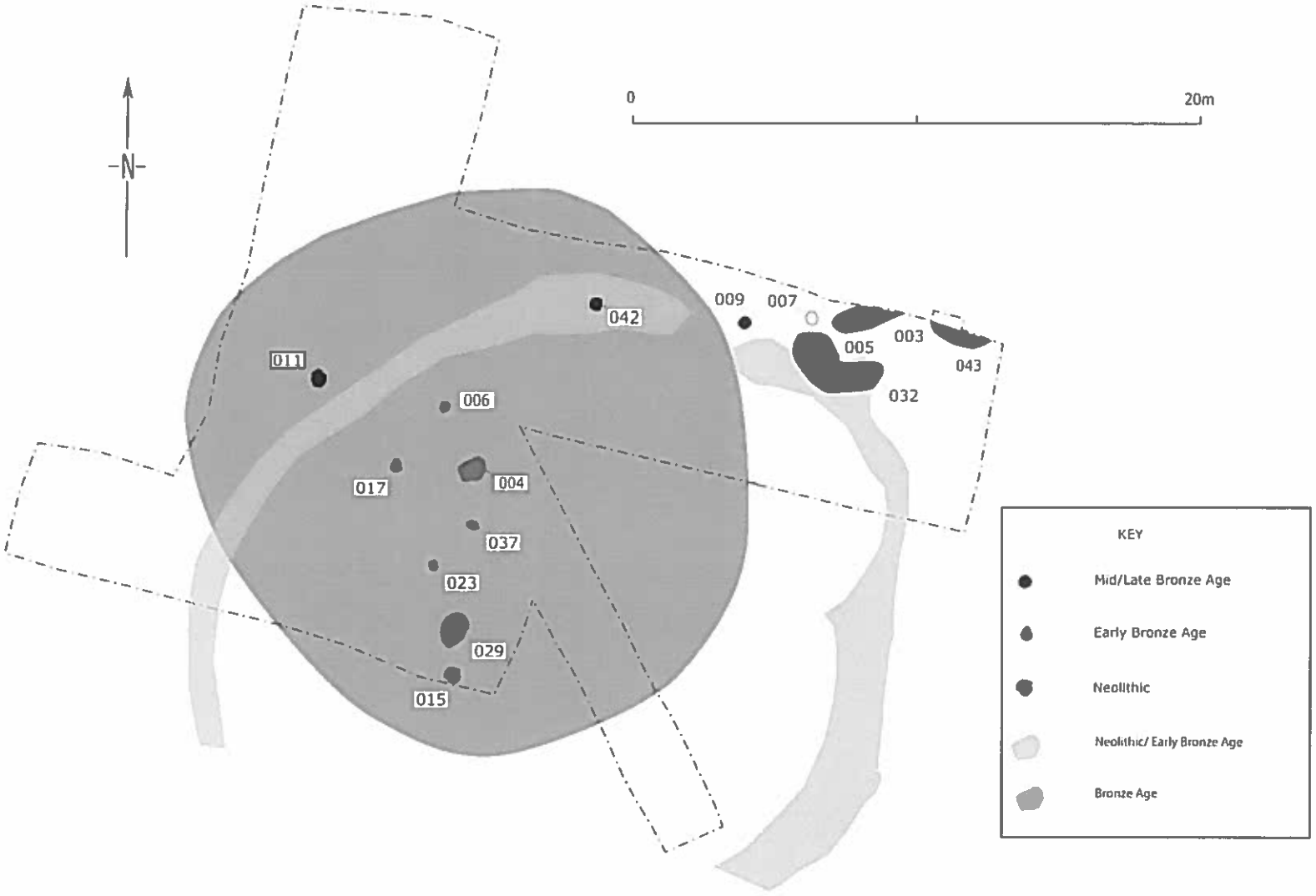

Figure 6: Trench plan showing period phases allotted to features

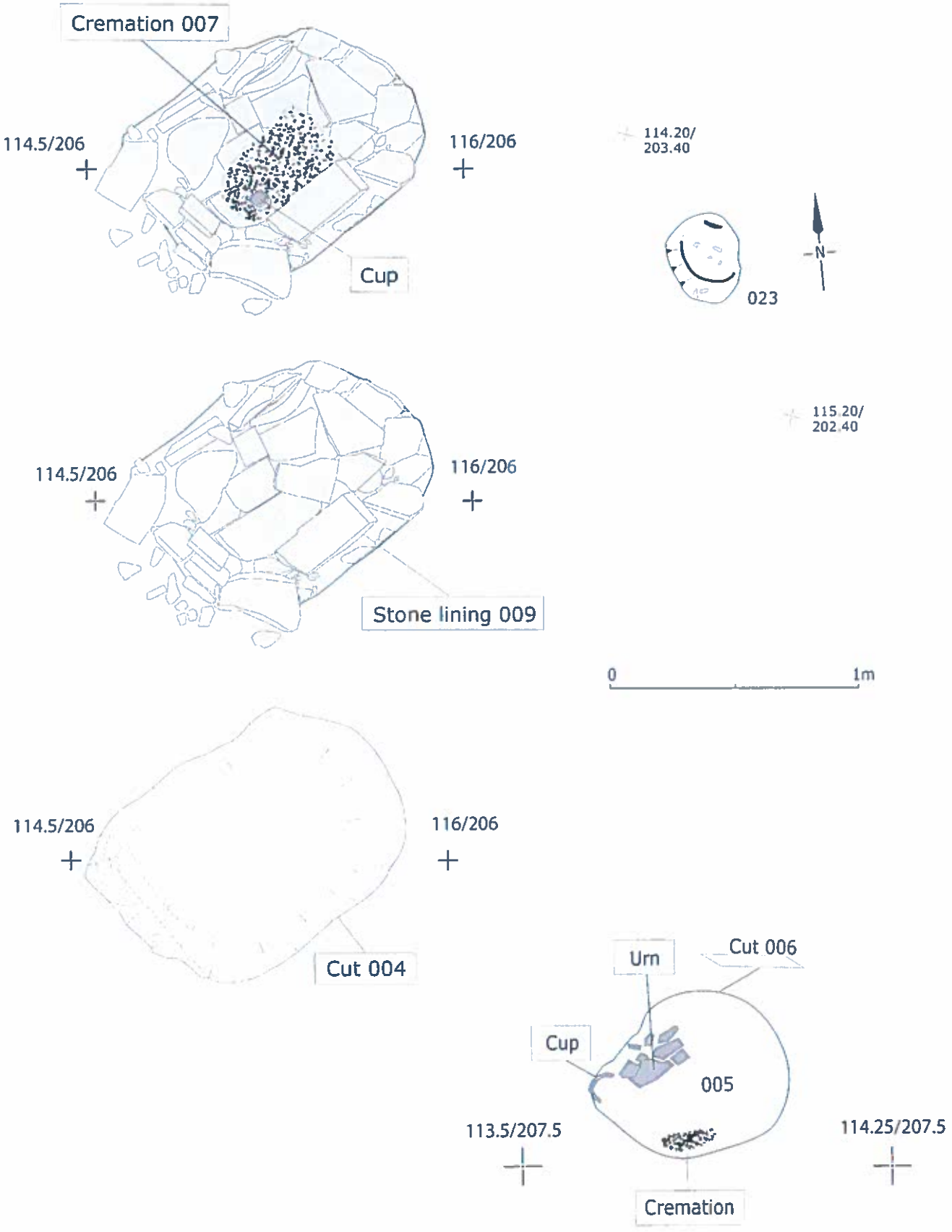

Figure 7: Plans of cremation burials 004, 005 and 023

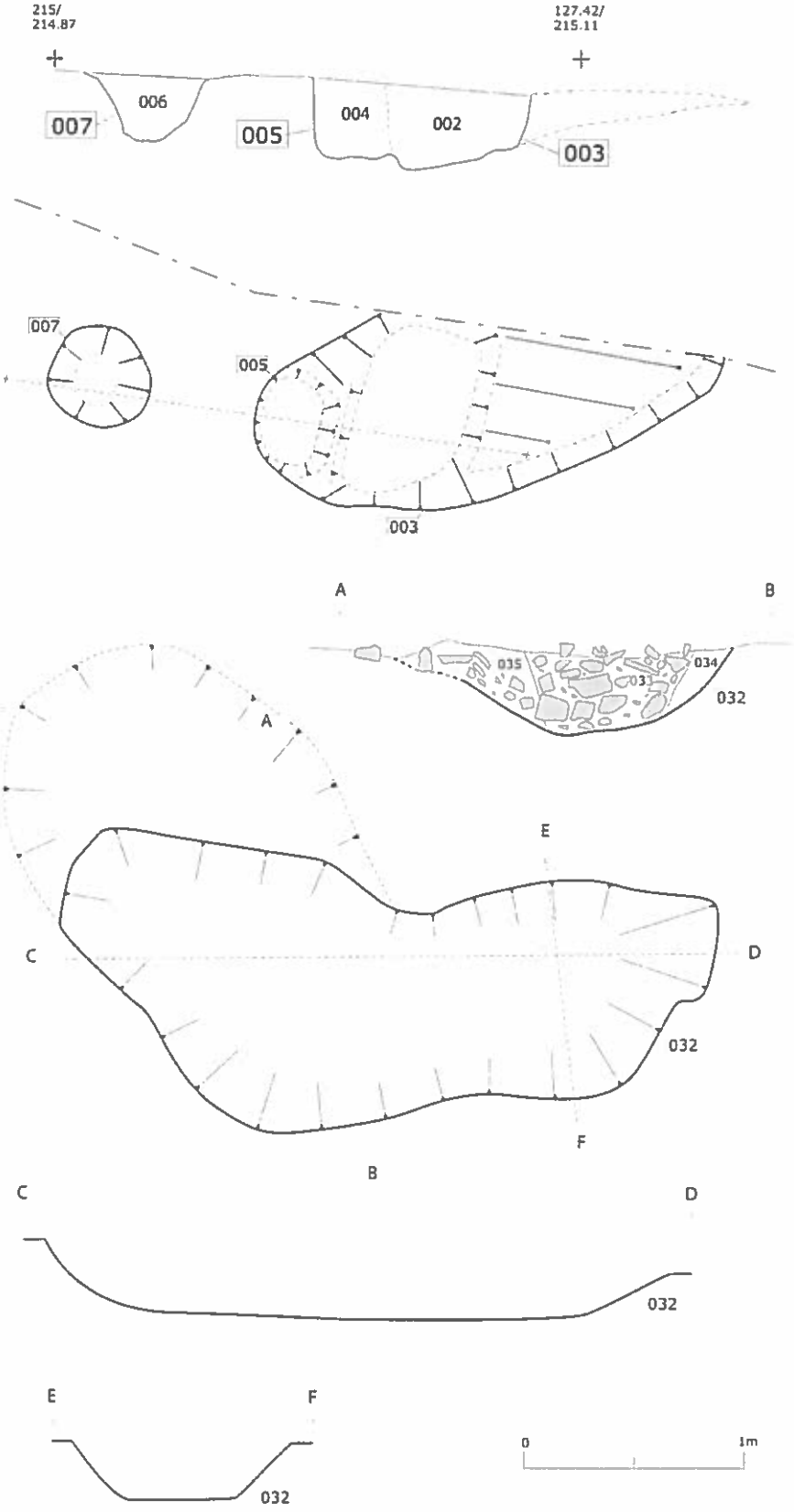

Figure 8: Plans and profiles of Features 032, 003, 005 and 007

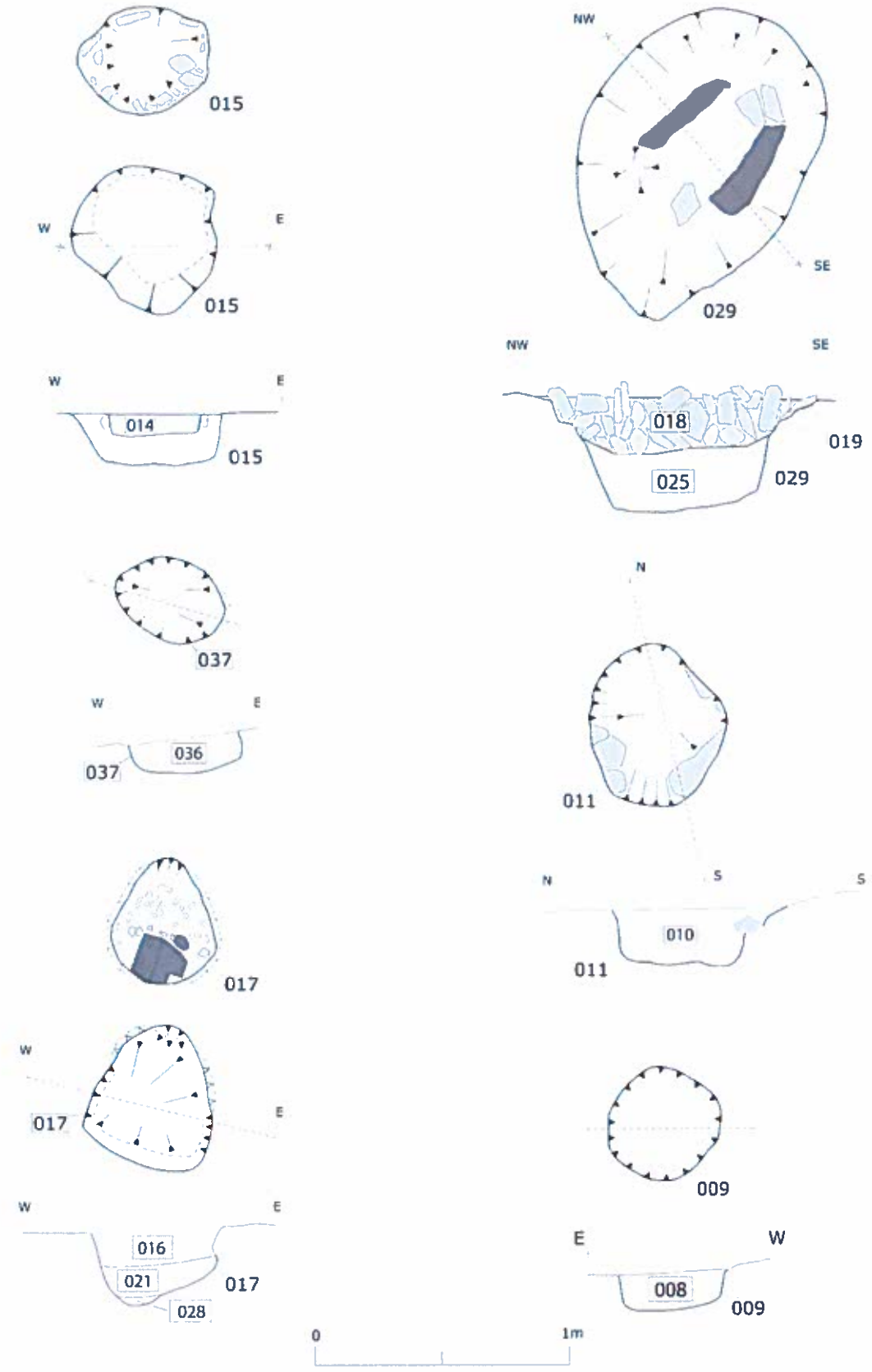

Figure 9: Plans and profiles of Features 009.017, 011 037, 029 and 015

Photo 1: Aerial photograph taken in 1989, looking north

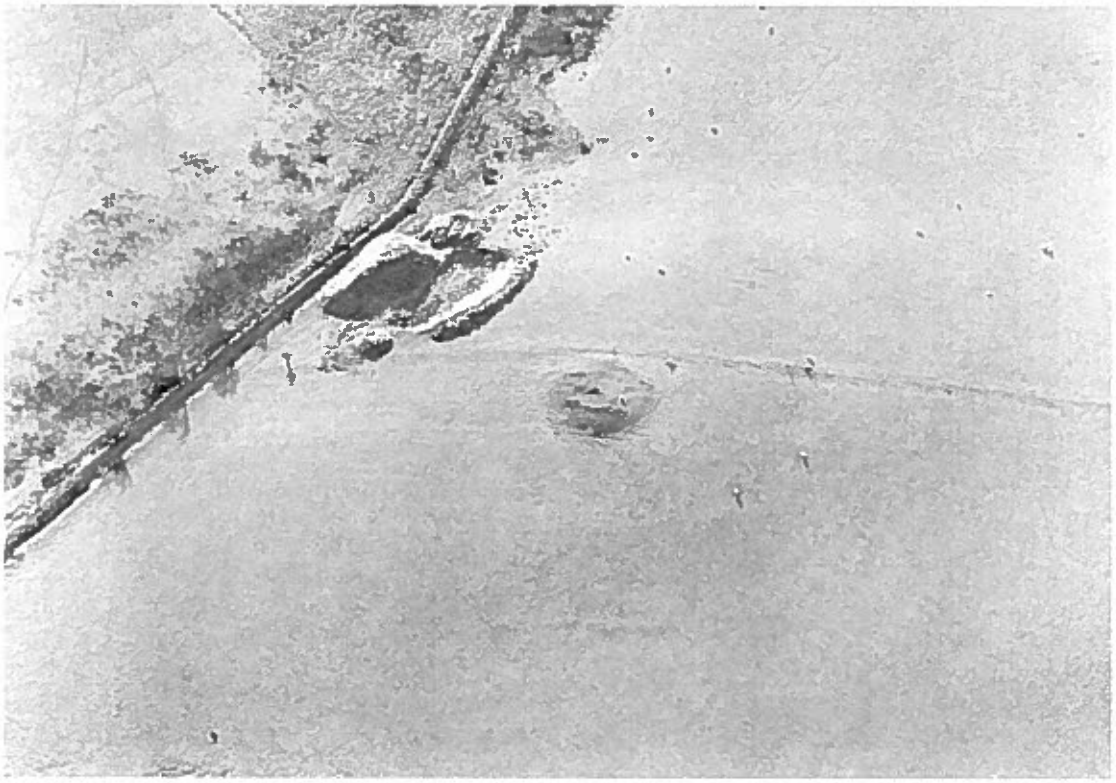

Photo 2: Aerial photograph taken in 1992, looking south

Photo 3: Aerial photograph taken in 1996 looking east

Photo 4: Aerial image (looking north) of barrow after its destruction. The lower middle white area is a stone quarry. Above is the reddish spread (of mound material?) and the white circular area corresponding with the geophysical survey. (Image from Get Mapping)

Photo 5: Ground photograph taken in 1988, looking east (H. Burnham, Cadw)

Photo 6: Ground photograph taken in 1993, looking east (H. Burnham, Cadw)

Photo 7: Aerial image from Google Maps (looking north) of possible barrow site at SN5684058900. It has been suggested that the Abermeurig Cup was excavated from this site, not Fan Barrow

Photo 8: View (looking southwest) of possible barrow site at SN5684058900. It has been suggested that the Abermeurig Cup was excavated from this site, not Fan Barrow (visible on horizon in distance)

Photo 9: Cremation pit 006 showing fragments of Pygmy cup and vessel

Photo 10: Cremation pit 006 during excavation

Photo 11: Cremation pit 004 after removal of fill 003

Photo 12: Cremation pit 004 showing cremation 007 and pygmy cup in situ

Photo 13: Detail of melted? Copper objects within cremation deposit 007

Photo 14: Cremation Pit 004 showing stone lining 009

Photo 15: Pit 009 before excavation

Photo 16: Small pit 042 before excavation

Photo 17: Pit 011 after removal of fills

Photo 18: Cremation pit 017

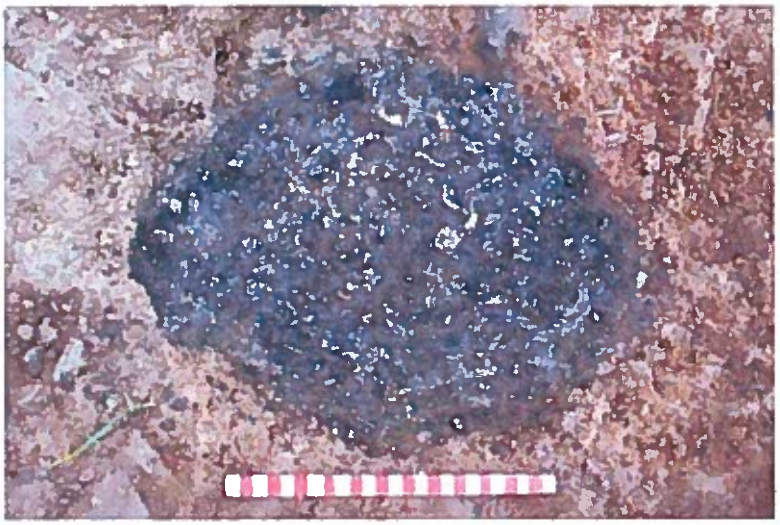

Photo 19: Cremation deposit 036 in cut 037

Photo 20: Pit 023 before it was lifted 'en bloc'

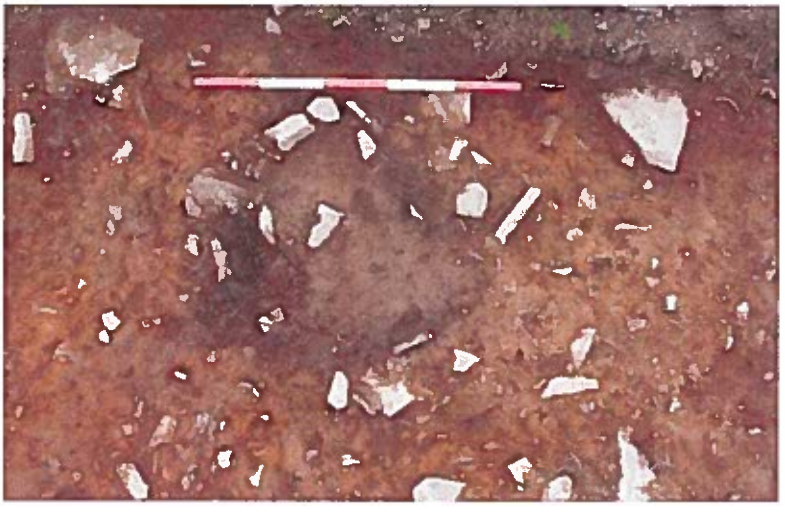

Photo 21: Pit 015 before excavation

Photo 22: Pit 015 after removal of secondary fills

Photo 23: Pit 015 after removal of primary fill

Photo 24: Pit 029 before excavation

Photo 25: Pit 029 after removal of most of stoney fill

Photo 26: Pit 029 after removal of primary fill, showing charred planks in base

Photo 27: Stoney fill 033 in cut 032 before excavation

Photo 28: Section through 032 showing fills 033 and 034

Photo 29: Cut 032 after removal of fills

Photo 30: Natural feature 042/043

Photo 31: Collared Urn 2 from Cremation pit 006

Photo 32: Cup 3 from Cremation pit 006

Photo 33: Cup 4 (Cremation pit 004) lower and basal decoration

Photo 34: Cup 4 (Cremation pit 004) upper decoration

Photo 35: Urn 1 (Cremation Pit 017)

Photo 36: Urn 3 (Cremation Pit 023)

Photo 37: Base of Cup 1 (cremation pit 017)

Photo 38: Cup 1 (cremation pit 017) before conservation

Photo 39: Cup 2 fragment from cremation pit 037

Photo 40: Urn and Cup from Pen y Glogau

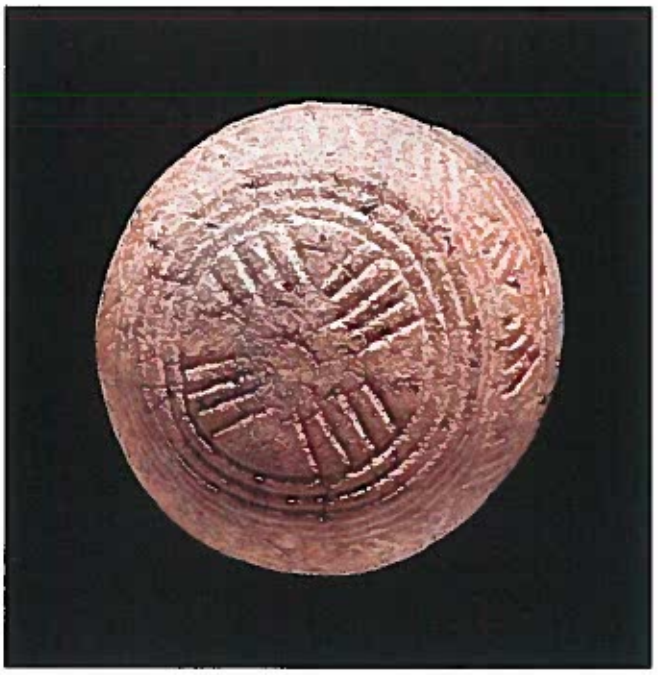

Photo 41: Base of unprovenanced vessel 'probably from Cardiganshire' (Savory 1980 No. 471) for comparison with Fan Cup 1 (see Photo 38). Sufficiently similar to be by the same maker?

Photo 42: Side view of unprovenanced vessel 'probably from Cardiganshire' (Savory 1980 No. 471) for comparison with Fan Cup 1 (see Photo 38). Sufficiently similar to be by the same maker?

Photo 43: The Abermeurig Cup

FAN BARROW, TALSARN, CEREDIGION EXCAVATIONS 2012
FINAL REPORT

RHIF YR ADRODDIAD / REPORT NUMBER 2013/36

Mawrth 2013
March 2013

Paratowyd yr adroddiad hwn gan / This report has been prepared by

Duncan Schlee

Swydd / Position: Field Services Project Manager

Llofnod / Signature  Dyddiad / Date 25/03/2013

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by

James Meek

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position:

Llofnod / Signature ..... Dyddiad / Date

Yn unol â'n nôd i roddi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau sydd gennych ar gynnwys neu strwythur yr adroddiad hwn

As part of our desire to provide a quality service we would welcome any comments you may have on the content or presentation of this report