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The excavation of two Bronze Age round barrows at Pant y Butler, Llangoedmor, Ceredigion, 2009–10

By Ken Murphy and Frances Murphy[1]

with contributions by Alex Gibson,[2] Mary Davis,[3] Katie Keefe,[4] Malin Holst,[4] Astrid E. Caseldine[5] and Catherine J Griffiths[5]

Excavation of two heavily plough-damaged round barrows revealed evidence for burial rites dating to the late third/early second millennium BC. In both barrows the primary burial may have been deliberately removed and replaced. In Barrow 1 the remains of the presumed primary cremation burial, an adult dated to 2135–1910 cal. BC, were scattered in the upper fill of the secondary grave pit containing the cremated remains of two individuals, one between 3 and 11 years old and the other over 15 years old, dated to 2275–2025 cal. BC. Very little survived of the mound of this barrow, but what did survive indicated that it was stone built. Barrow 2 was better preserved, comprising a turf and earth mound with some stone. A large secondary grave pit, back-filled with loose stone, had been excavated through the centre of the mound and through the underlying old ground surface probably removing the primary burial. A fragmented inhumation of an adolescent/young adult dated to 2190–1950 cal. BC and accompanied by a jet bead necklace occupied the bottom of the large pit. A floral tribute of meadowsweet had been placed in the grave. Burnt bones in the back-fill of the pit were of a cremation burial dated to 2030–1780 cal. BC.

INTRODUCTION

Two round barrows (1 and 2) identified in the autumn of 2004 soon after they had been ploughed were readily visible as low circular mounds, stonier than the rest of the field in which they lay. Both barrows were under an intensive arable regime. In 2008, the field in which they were located had been fertilised by deep ploughing waste milk products into the ground and the barrows had clearly been reduced in height. Because of this continuing agricultural threat an application was made to Cadw for grant-aid to evaluate the character and condition of the barrows. This evaluation led to full excavation of both barrows. During the excavation two more barrows (3 and 4) were noted in adjacent fields. These lie in semi-permanent pasture and are not under threat and so were not investigated.

The barrows are located in the parish of Llangoedmor, in south-west Ceredigion, 2.5 kilometres to the east of Cardigan. They occupy a wide, flat-topped ridge at *c*. 130m above sea level (Fig. 1; centred on SN 214 467). The land falls steadily away from the barrows to the east, south and south-west but rises to the north, reaching a ridge summit at 170m above sea level 1.5 kilometres away. The landscape of south-west Ceredigion is one of dispersed farms and regular fields bounded by hedges set on large banks. Land-use is a mixture of pasture and arable.

Geology comprises Ordovician siltstone/mudstone shale (British Geological Survey 1994), with the bedding planes in vertical or near vertical formation. Within the excavated areas this shale varied from hard and consolidated through to broken and shattered. In places pockets of silt overlay bedrock. Quartz boulders are visible in many hedge-banks; these are probably derived from igneous intrusions in the sedimentary rocks.

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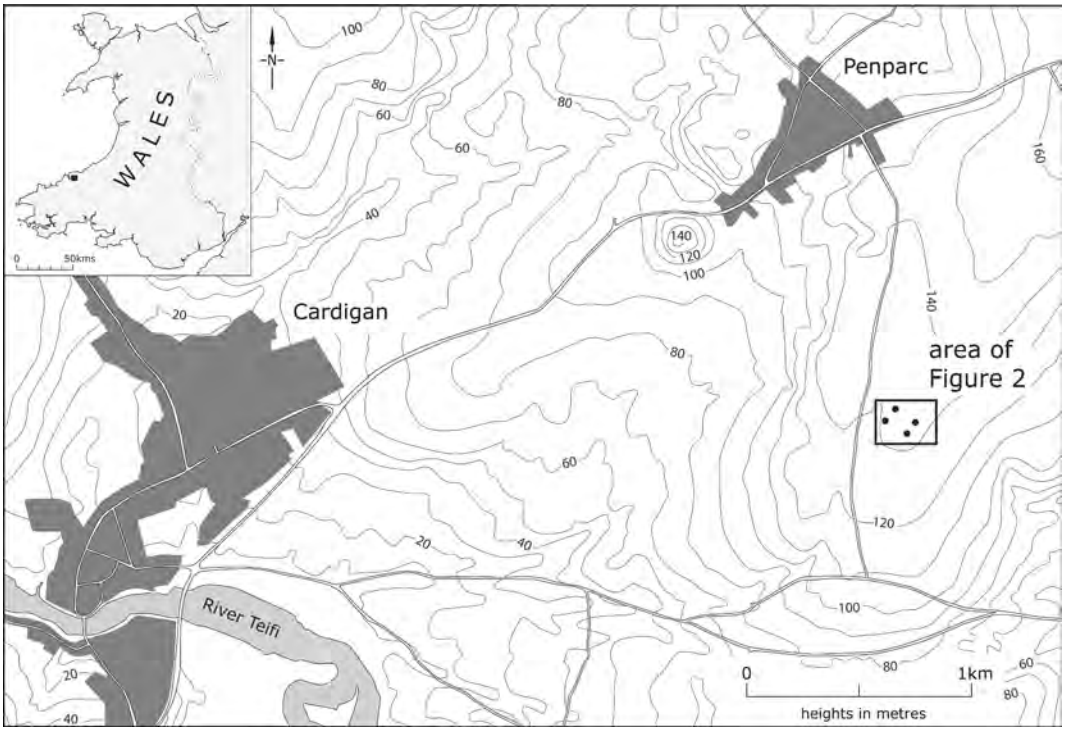

Fig. 1. Location map.

There are few known Bronze Age monuments in south-west Ceredigion; a pair of round barrows at Allt Pengraig (SN 249 454) 3.5 kilometres to the south-east and a single barrow at Crug-Bychan (SN 178 511) 5.7 kilometres to the north-west are the nearest comparable monuments to the Pant y Butler barrows (Cook 2006a). Within a 5 kilometre radius of Pant y Butler no Bronze Age settlements are known, and no Bronze Age artefacts have been found (Briggs 1994).

In 2004, prior to excavation, Barrow 1,[6] the smaller southern of the two excavated barrows, stood to approximately 0.2m high (Fig. 2). Its diameter was difficult to judge, but appeared to be approximately 20m. By 2008 this barrow was barely visible. Barrow 2, the larger northern barrow, prior to excavation comprised a sub-circular mound *c*. 0.75m high and 45m east–west and 36m north–south. The landowner considered it a glacial feature and reported that this barrow formerly stood much higher, having removed numerous cartloads of mostly quartz stone from it between the 1960s and 1980s. Barrow 3, discovered in 2010, lies 100m to the north-west of Barrow 2 in the corner of a field and thus its exact dimensions are difficult to assess, but it stands to approximately 1.5m high and is *c*. 30m in diameter. Barrow 4 lies to the south of Barrow 3 and stands to just 0.5m high and is approximately 12–15m in diameter.

In 2008, a geophysical survey undertaken in the field containing Barrows 1 and 2 added little to our knowledge of the sites (Crane and Wilson 2008).[7]

A two-week long evaluation excavation in late September/early October 2009 comprised the machine removal of topsoil from 1.8m wide cross-trenches on Barrows 1 and 2. These were positioned over what surface evidence and the geophysical survey results indicated to be the centre of the barrows (excavation in 2010 showed that the centre of Barrow 2 cross-trench was a few metres to the north-west of the actual

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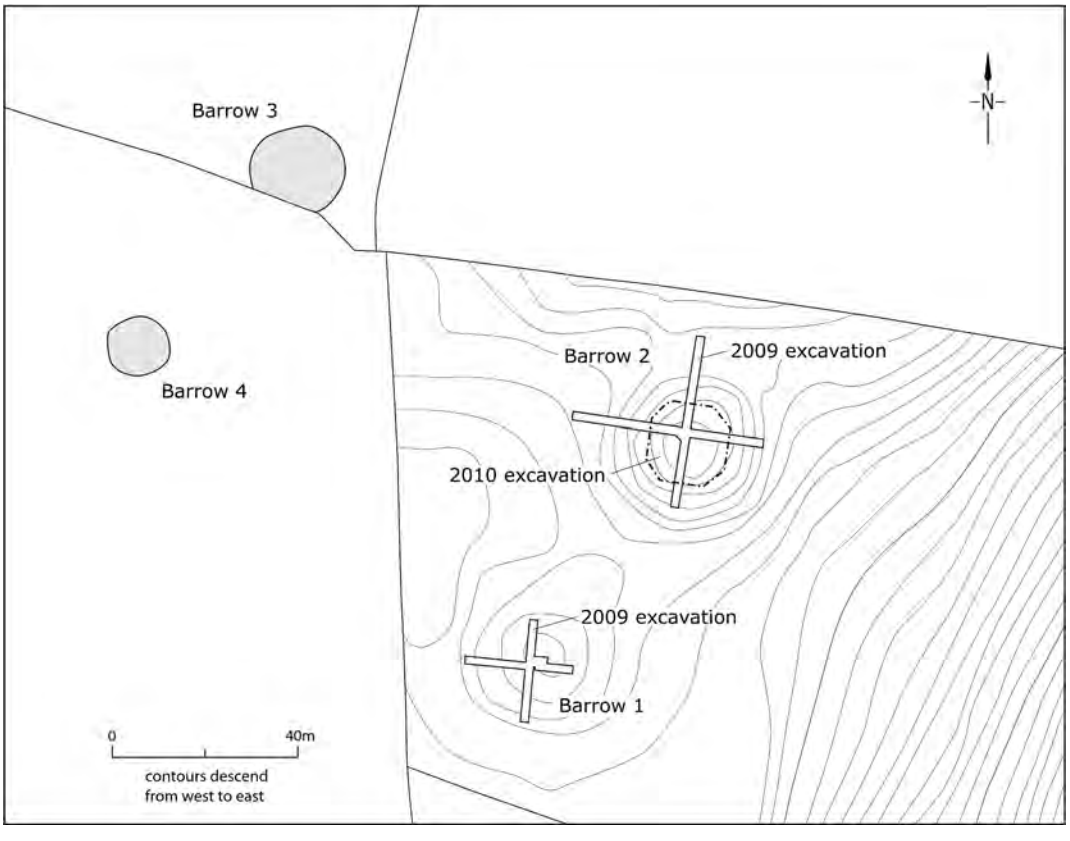

Fig. 2. The Pant y Butler Barrows showing the location of the excavation trenches. Contours are at 1m and 0.1m intervals.

centre of the barrow). Hand-dug sections down to subsoil were then excavated through both barrows. Excavation on Barrow 1 was completed in 2009.

The more substantial remains of Barrow 2 meant that three weeks further excavation was required in September 2010. Topsoil was machine removed from a roughly octagonal area *c*. 17m across. As sections had been excavated through the barrow in 2009, it was considered that little would be gained by hand excavating the whole of the barrow mound. Therefore, the upper levels of the mound were machine removed down to approximately 100–200mm above the buried soil. The remainder of the barrow and the other archaeological features were then hand excavated.

Full details of radiocarbon dates are provided after the main text. All dates in the text are shown calibrated at 2 sigma.

EXCAVATION RESULTS

Barrow 1 (Figs 3–5)

A small shallow pit (52) cut into bedrock, 0.64m diameter and 0.2m deep, containing an upper soil fill (10) and a burnt stone and charcoal-rich lower fill (53), with an adjacent patch of charcoal and burnt

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stone (19) resting in a shallow hollow were the earliest datable elements of the excavation (Figs 3–4). There was heat reddening around both these features, which suggests they were associated. A radiocarbon determination of 3495–3100 cal. BC (SUERC-37910) was obtained from carbonized hazelnut shell from fill 53. A buried soil (5, 51) sealed both features (Fig. 4). At the end of the excavation all the buried soil, including that outside the excavation trenches was machine removed and the underlying surface hand cleaned but no other features sealed by the buried soil were identified.

The buried soil comprised what appeared to be a former turf line (5)—a hard mottled dark brown/orange brown silty clay loam—over the main body of the soil (51), a soft orange brown silty clay loam, with a total thickness of *c*. 015m. The area of turf had a projected diameter of up to *c*. 9m, and its area

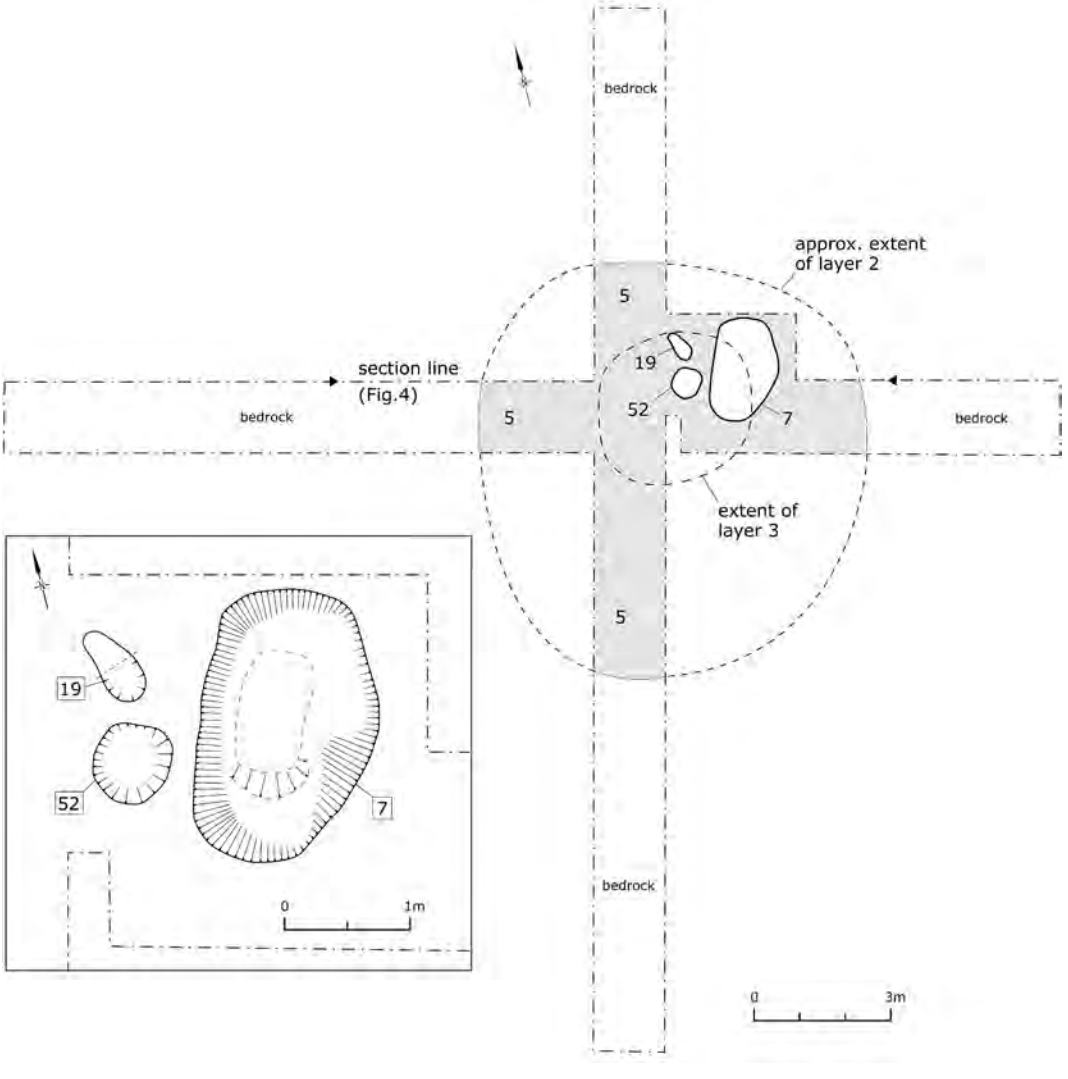

Fig. 3. Plan of Barrow 1.

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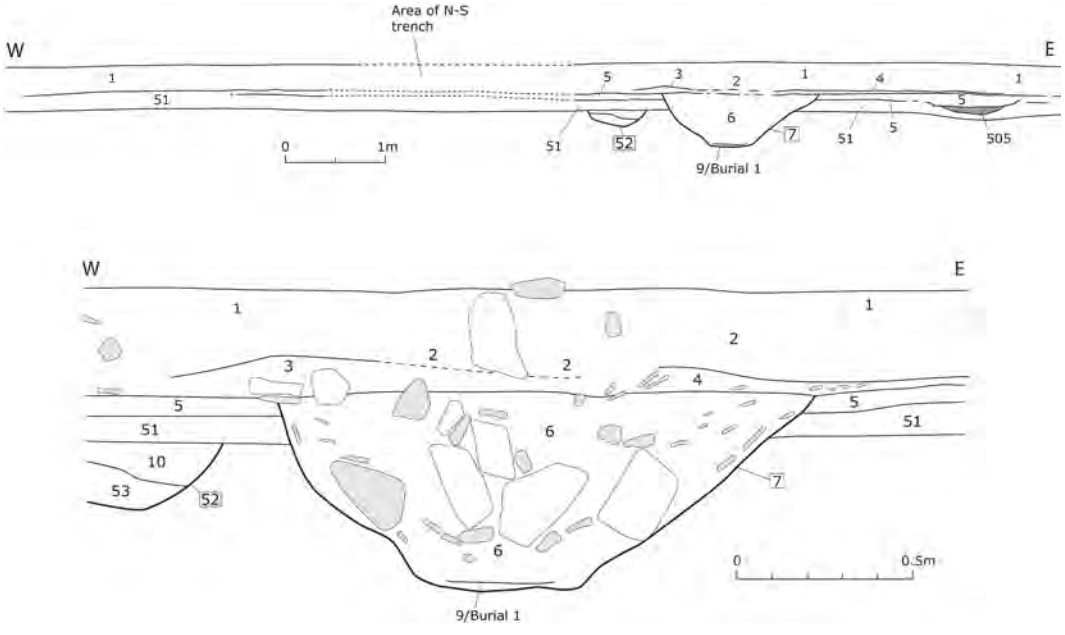

Fig. 4. East/West section central part of Barrow 1.

approximated to that of layer 2 shown on Figure 3. A patch of charcoal and burnt soil (505, Fig. 4) was incorporated in the turf.

A grave pit (7), 2.3m by 1.5m and 0.55m deep, cut through the buried turf and soil and into the underlying bedrock. A cremation burial (context 9, Burial 1) comprising a tight, rectangular-shaped concentration of burnt bone and charcoal fragments *c*. 0.2m across, suggesting deposition in a box or other organic container, and placed between stones, lay at the bottom of this pit (Figs 4–5). Analysis showed this to be of two individuals (one between 3 and 11 years old and the other over 15 years old, possibly a female; see report by Keefe and Holst). A small amount of cremated animal bone mixed with the human remains was from the left shoulder of a pig, perhaps incorporated in the funerary pyre as a joint of meat. A radiocarbon date of 2275–2025 cal. BC (SUERC-36626) was obtained from the human bone of Burial 1. The pit was backfilled with stones and boulders (mostly quartz) in a dark brown soil (6, 8). The partial remains of a second cremation burial (Burial 2) of an adult of indeterminate sex were scattered throughout the backfill, and also in overlying layers (2, 4). Thirteen sherds of a probable Bronze Age urn were associated with the human bone together with a fragment of cremated bone from a medium-sized animal, and a flint flake (see reports by Keefe and Holst, Gibson, and Murphy). A radiocarbon date of 2135–1910 cal. BC (SUERC-36627) was obtained from the human bone of Burial 2. A flint flake was also found in the backfill (6) of the pit. The upper fill of the pit comprised fragments of smashed shale bedrock (4), possibly derived from digging the pit; this spread out over the adjacent buried turf line.

An egg-shaped area of angular stones up to 9m across (2), including much quartz, was initially considered to be the *in situ* remains of the barrow and so was not removed by machine. However, it quickly became apparent that these stones had been turned over by the plough and so were rapidly removed by hand. However, a few stones (3) of similar character and towards the centre of disturbed stony layer (2) were in a more consolidated soil and may have been the last undisturbed remains of the barrow mound.

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Fig. 5. Photograph showing grave pit 7 and the arrangement of stones around the cremation. The buried soil (5, 51) has been removed to the left of the grave pit partly revealing the small pit (52) at the top of the trench. Scales 1m and 0.5m.

Interpretation of Barrow 1

The stony layer (2) incorporated in the topsoil and the possible *in situ* material (3) indicates that this barrow was partly, if not wholly, constructed of stone. There was no ditch surrounding the barrow, and the stones were of very different character from the bedrock fragments (4) probably derived from the digging of the grave pit, and therefore the source of these stones and those used to back-fill the grave is unknown, but is most likely they were surface collected in the immediate vicinity. The original diameter of the barrow is unclear, but assuming it had protected the buried turf line (5) from destruction, then it was at least 9m across, and if the full extent of the buried soil is taken then it may have been up to 15m across. The smooth surface of the buried turf line indicates that the pre-barrow environment may have been grassland; this is broadly confirmed by the palaeoenvironmental analyses (see reports by Caseldine and Griffiths). Owing to the degraded nature of the barrow stratigraphic relationships were not entirely clear. It is likely that the stone-built barrow mound sealed the grave pit (7) containing the *in situ* cremation burial (Burial 1). The smashed bedrock (4) sealing the upper fill of the pit and resting on the adjacent buried turf line, whether it was derived from excavating the pit or not, indicates that the pit must pre-date barrow construction. The presence of a cremation burial (Burial 2) and sherds of Bronze Age pottery in the backfill of the grave pit could be interpreted as the remains of an earlier cremation burial that had been removed by the digging of grave pit 7 and then partially incorporating into its backfill. This is the favoured interpretation, and if accepted then the earlier cremation would not have been covered by a substantial mound, but must have had some other form of marker to enable the diggers of grave pit 7 to have deliberately targeted and removed it. Alternatively, it was a token, less formal burial, broadly contemporaneous with Burial 1.

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The sealing of pit 52 and hollow 19 by a buried soil indicates a significant time-span between their creation and the placing of cremation burials in Barrow 1. The radiocarbon dates confirm this, with as much as a millennium between the two events. The presence of hazelnut shells in the pit and hollow may be an indication of a Neolithic food deposit, but the environmental evidence is not conclusive. It is not possible to demonstrate a connection between these two features and the later burials and barrow, but their location close by the later grave pit, and the presence of similarly dated pits at Fan round barrow (Schlee 2013) strongly suggests a connection and not a coincidence.

Barrow 2 (Figs 6–8)

Removal of a *c*. 7m by 10m area of a buried turf line and buried soil (26, 41) beneath the barrow revealed a series of shallow pits and gullies filled with material similar to the buried soil (not shown on Fig. 7). Although shallow, these features were distinct with clearly defined edges and steep sides. They did not contain packing-stones or other characteristic features to indicate that they were postholes or that they had any other specific function and they formed no distinguishable pattern. Two of them (40 and 95) were sampled for environmental analysis (see report by Caseldine and Griffiths). A hammerstone was found at the interface of the buried turf and buried soil (see report by Murphy).

The buried soil (41) comprised a soft, silty clay-loam over which was a buried turf line (26) consisting of pale grey clay-loam with distinct iron-panning (Fig. 7, section), with a combined thickness of *c*. 0.15m. A dolerite boulder (101), 1.20m long, 0.82m wide and *c*. 0.3m thick protruded from the surface of the

Fig. 6. Photograph of Barrow 2 taken after removal of some to the mound (31) showing the boulder 101 with the stony backfill of grave 43 butting against it. Note how the buried turf and soil (26, 41) laps over the edges of the monolith. The burnt plank (102) is visible centre left. Scale 2m.

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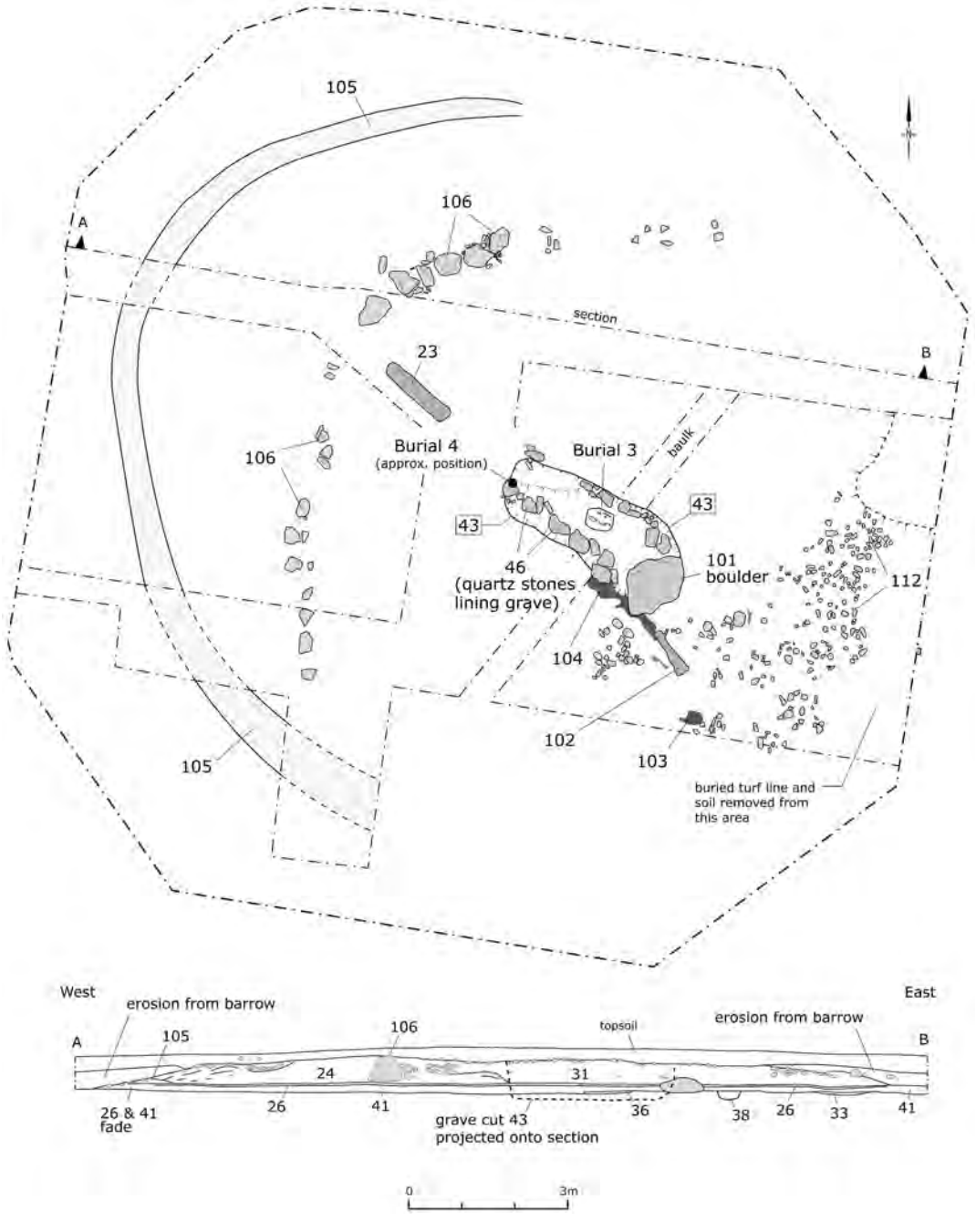

Fig. 7. Barrow 2, plan and section of barrow.

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buried turf line (Fig. 8). The boulder was discus-shaped, with two slightly convex faces tapering to sharper edges on all but the north-west side, where there was a flat edge. Its shape seemed entirely natural and there was no evidence that it had been dressed. When first encountered it seemed as if this boulder had been placed at south-east end of a large grave (43), but on excavation it became clear that it pre-dated the grave, and lay partially in the buried soil with the turf running up over its edges, leaving what would have been the upper 0.15m of the boulder protruding above the surface of the turf (Fig. 6). What seemed to be the remains of a burnt oak plank or straight branch (102), aligned north-west/south-east lay on the buried turf line approximately 1m to the south-east of the boulder. Spreads of charcoal (103, 104) lay nearby. A radiocarbon date of 2205–1980 cal. BC (SUERC-37915) was obtained from the burnt 'plank', and hazel from the charcoal spread 104 returned at date of 2275–2030 cal. BC (SUERC-37916). A spread of loose, small stones (112) to the east of the boulder rested on the buried turf line. The barrow mound covered all these remains.

The barrow mound (31) survived to a maximum of 0.5m high. Its exact diameter was difficult to estimate as it was badly plough-damaged on its eastern side, but it was approximately 12m across. The mound was constructed from layers of turf and topsoil similar in appearance to the buried soil and turf line below the barrow (26, 41), and from occasional layers of small/medium-sized stones. Boulders and large stones of quartz formed a rough kerb (106) to the mound on its western side. The stones are likely to be derived from field clearance. Three to four metres to the west of the kerb, but not concentric to it, was a distinctive arc (105), *c*. 14m in diameter, composed of similar material to the body of the barrow mound. A layer of loose silty-loam (24) lay between this arc (105) and the kerb. It was unclear whether the main body of the mound (31) and the silty loam layer (24) were essentially the same with the kerb and arc representing temporary marking used during construction, or whether there was more than one phase of construction represented by these features.

A large grave pit (43) cut through the centre of the barrow mound (31), through the buried turf line and buried soil (26, 41) and into the underlying bedrock. This pit was detected cut into the surface of barrow mound immediately below modern topsoil, and during the 2009 evaluation (when its western end was revealed) it was considered to be of recent date, perhaps an antiquarian excavation. It was approximately 3m long north-west to south-east, 1.3m wide and 0.9m deep, measured from the top of the barrow mound. Very large quartz blocks lined the north-east and south-west sides of the bottom of the pit (Figs 7–8) against which butted a thin, dark organic layer (45), which covered the base of the grave. The grave had been dug up to and partially on top of the pre-barrow boulder (101); the boulder essentially forming the south-east end of the grave pit. A discrete, compact mass of bone, with a buttery consistency, approximately 0.5m by 0.4m (Burial 3) lay in the centre bottom of the pit; the partial remains of a fragmented and largely disarticulated inhumation of an adolescent/young adult, 13 to 21 years of age (see report by Keefe and Holst). A line of vertebrae recognised in the field suggested that the body was not completely skeletonised before deposition in the pit. A radiocarbon date of 2190–1950 cal. BC (SUERC-36628) was obtained from the human bone of Burial 3. Pollen analysis of the organic layer (45) and of soil from the cremation deposit indicates that a flora tribute of meadowsweet (*Filipendula*) and other flowers had been placed in the grave (see report by Caseldine). One triangular fastener and 72 circular jet beads were mixed in with the mass of bone (see report by Davis). Several of the circular beads butted each other in a tube arrangement, indicating that they had been still strung when placed with the inhumation. Over the inhumation the grave had been backfilled with medium/large quartz stones, similar in character to those lining the grave, but smaller, and some rounded shale boulders (some of this backfill can be seen in Fig. 6). Very little soil occupied the interstices of the backfill, even in the upper levels immediately below modern topsoil. A small amount of cremated bone (Burial 4, an adult: approximately 2.5% of a complete adult cremation was present) and a little charcoal were found in a discrete area in the western end of the

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Fig. 8. Photograph taken after the removal of the stony fill from grave 43 showing the *in situ* cremation, the quartz blocks lining the sides of the grave and the earlier boulder (101) at the south-east end of the grave.

backfill. A radiocarbon date of 2030–1780 cal. BC (SUERC-36629) was obtained from the human bone of Burial 4.

Two to three metres to the north-west of the grave and on the same north-west/south-east alignment lay a rectangular area of charcoal (23), 1.5m long and 1.3m wide, seemingly composed of a single piece of burnt oak, possibly a plank or straight branch, lying within a setting of medium-sized stones on the top of the surviving barrow mound, and associated with some plant remains (see report by Caseldine and Griffiths). It lay directly below topsoil and therefore it is unknown whether the wood originally occupied the bottom of a pit cut from much a higher level or whether it was deposited within the barrow during construction. A radiocarbon date of 2465–2210 cal. BC (SUERC-37911) was obtained from the wood (23).

Two straight, parallel, shallow gullies of unknown date and function ran across the 2009 excavation trench, cut into bedrock, to the east of the barrow (not shown on plan). A perforated stone (111) was found in one (see report by Murphy). However, both lay outside the limits of the 2010 excavation and were not investigated in any detail.

Interpretation of Barrow 2

Even from the very limited area investigated it is clear that pre-barrow activity was taking place. This was difficult to characterise, but the most obvious element was the dolerite boulder (101). It is unclear whether it ever stood upright: there was no evidence of a socket, but the edge on its north-west side was

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flat indicating that it could have been placed on end, standing *c.* 1.2m high. There is also no evidence to indicate whether the stone was moved to the site by human agency, or whether was an *in situ* glacial erratic. Certainly there is now no obvious evidence for glacial erratics in the vicinity, but this is not surprising given the intensively cultivated landscape. It can be debated whether the stone was transported by human or natural agency, and whether it was ever placed upright, but what is certain is that prior to barrow construction it was prostrate, and had been for some time for the soil to form over its edges, and that the barrow was roughly centred over it. It could be argued that a primary cremation burial beneath the centre of the barrow was placed next to this stone, and that this postulated primary burial was removed by the digging of the later grave pit (43).

Several potential phases of barrow mound were recognised, although owing to the damaged nature of the site it was not possible to satisfactorily disentangle then. It is possible that a *c.* 12m diameter primary mound comprising a stack of turf and soil surrounded by a stone kerb (106) was later extended and re-centred by the construction of a turf kerb (105) and additional barrow mound material (24). However, as noted above, it is possible that all these elements represent stages in one phase of barrow construction. Sometime after the construction of barrow mound a large grave pit (43) was excavated through its centre. The dimensions of the grave suggest it was dug to take an extended inhumation, not the fragmented and disarticulated inhumation that was placed in it. It would seem likely that the excavators of this pit targeted, removed and dispersed the primary burial. It is not possible to judge whether the excavators were aware of the existence of the boulder beneath the barrow, or whether they encountered it by chance whilst removing the primary burial. Either way, the boulder formed the east end of the grave. The grave was backfilled with quartz and other stones, and it is possible that the very large mound of quartz stones removed during the 1960s to 1980s was added as a capping to the barrow at the same time.

The preferred interpretation for Burial 4 is that it is the disturbed remains of the primary burial. Alternatively, it could be a secondary, token cremation burial placed in the stone backfill of grave pit 43, or even it may be a secondary burial originally placed within the top of the barrow, from which position burnt bones from it filtered down into the loose stone fill of grave pit 43. The radiocarbon dates for Burials 3 and 4 overlap, and therefore are not helpful in distinguishing which burial was the earlier.

It is of note that the burnt plank/branch (102) beneath the barrow, the large secondary grave (43) cut through the barrow and the burnt plank/branch (23) resting on the surviving surface of the barrow are all on the same alignment. This suggests the former presence of some form of external marking by landscape features, cosmical alignments, constructions such as standing stones upright posts or other barrows. On this last point it does seen as if the three features mentioned above align on Barrow 3, 100m to the north-west.

RADIOCARBON DATING

Eight AMS determinations were provided by the Scottish Environmental Research Centre, Glasgow. The calibrated dates are calculated by OxCal v4.1.7, with atmospheric data from Reimer *et al.* (2009).

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BARROW 1

SUERC-36626
Sample and context: cremated human bone from Burial 1
Radiocarbon age: 3725±35BP
Calibrated range at 2 sigma: 2275–2255 and 2210–2025 cal. BC

SUERC-36627
Sample and context: cremated human bone from Burial 2
Radiocarbon age: 3640±35BP
Calibrated range at 2 sigma: 2135—2080 and 2065—1910 cal. BC

SUERC-37910
Sample and context: carbonised hazelnut shell from fill 53 of pit 52 sealed by the buried soil beneath Barrow 1
Radiocarbon age: 4570±35BP
Calibrated range at 2 sigma: 3495–3460 and 3375–3310 and 3300–3280 and 3275–3265 and 3240–3100 cal. BC

BARROW 2

SUERC-36628
Sample and context: human bone from inhumation Burial 3
Radiocarbon age: 3675±35BP
Calibrated range at 2 sigma: 2190–2180 and 2145–1950 cal. BC

SUERC-36629
Sample and context: cremated human bone from Burial 4
Result BP: 3570±35
Calibrated range at 2 sigma: 2030–1870 and 1865–1810 and 1805–1780 cal. BC

SUERC-37911
Sample and context: oak charcoal (three growth rings, quite fast grown) from plank or branch 23 on top of Barrow 2
Radiocarbon age: 3860±35BP
Calibrated range at 2 sigma: 2465–2270 and 2260–2210 cal. BC

SUERC-37915
Sample and context: oak charcoal (16 growth rings, quite slow grown) from plank or branch 102 resting on buried soil beneath Barrow 2
Radiocarbon age: 3715±35BP
Calibrated range at 2 sigma: 2205–2020 and 1995–1980 cal. BC

SUERC-37916
Sample and context: hazel charcoal from charcoal spread resting on buried soil beneath Barrow 2.
Radiocarbon age: 3730±35BP
Calibrated range at 2 sigma: 2275–2255 and 2230–2225 and 2210–2030 cal. B

PREHISTORIC POTTERY
By Alex Gibson

Thirteen sherds of pottery, the largest 400 × 300mm, with a total weight of 84g, and probably representing less than 5% of the vessel, were recovered from the backfill of grave pit 7 and overlying layers in Barrow 1. Cremated bone (Burial 2) was found in the same contexts. The sherds average between 6 and 11mm thick. They are in a fairly soft but well-fired fabric with pinkish-brown surfaces and a grey core. The breaks are old and abraded, and the fabric is therefore largely obscured. However, it would appear to contain some grog and also rounded stone (quartzite?) up to 5mm across. Coil breaks are visible. One sherd seems to have a slightly grittier fabric than the others and small rounded quartz grains are visible, but this sherd lacks an internal surface. It may represent a sherd from a different, perhaps smaller, vessel,

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but this is by no means certain. None of the sherds exhibit any formal or decorative traits.

In the absence of decoration and/or formal traits such as carinations or cavetto zones, or distinctive fabric groups, the attribution of hand-built prehistoric pottery to a particular tradition or date is difficult and largely subjective. The thickness of the sherds and the distinctive pink-brown fabric would seem consistent with a vessel in the Urn or Food Vessel series of the Early Bronze Age. Included in this broad group are Food Vessel vases and bowls, Food Vessel Urns (including those with plastic decoration, Collared and Cordoned Urns. Urn may be a more accurate identification of these sherds given their thickness, in which case they are likely to date to the first half of the second millennium cal. BC (Sheridan 2004; Needham 2005). The sherds are likely to represent the remains of a vessel accompanying a disturbed cremation burial. Unfortunately cremation burials are found with both Food Vessel and Urns in Wales so this does little to narrow the identification of the vessel.

STONE
By Ken Murphy

Perforated stone (Fig. 9)
Perforated water-worn stone (111) measuring 61 × 41 × 14mm. The irregular central perforation has been made by pecking from both sides, resulting in an hour-glass shaped hole *c*. 20mm diameter on the stone's surface tapering to *c*. 9mm. There are slight percussion marks on one end of the stone. Found in an undated shallow gully to the east of Barrow 2.

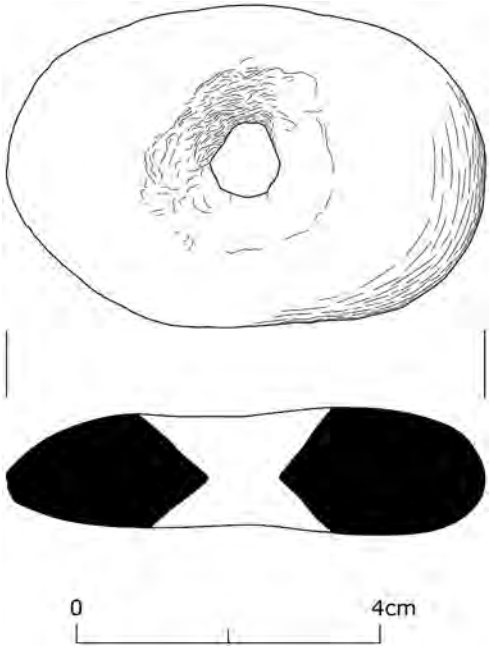

Fig. 9. Perforated stone object.

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Flint (not illustrated)
Small, undiagnostic, white flint flake, 22 × 17mm across, from context 6, possibly associated with Burial 2.

Hammerstone (not illustrated)
A water-worn igneous stone (probably rhyolite) 105 × 52 × 25mm with percussion marks and some flaking on one end. The stone fits comfortably into the palm of a hand. From the interface of the buried turf line and buried soil (26, 41) beneath Barrow 2.

JET NECKLACE
By Mary Davis

The jet necklace was found in the large pit grave (43) that had been dug through the centre of the mound of Barrow 2 mixed with Burial 3, the burial of a young adult/adolescent aged between 13 and 21, of unknown sex, dated to 2180–1950 cal. BC. The necklace consists of 72 beads and a fastener and can be classed as a single-strand disc bead necklace (Figs 10 and 11) consisting of one triangular and 72 circular jet beads. Similar necklaces occur within Early Bronze Age graves, and where human remains have been reliably sexed, they have nearly all been identified as female burials (Sheridan in press).

The flat triangular piece with a central transverse perforation forming part of the necklace is the most common type of fastener found with disc bead necklaces (Sheridan in press). The beads from Pant y Butler, which are between 9.1mm and 12.6mm in diameter, are some of the largest disc beads recorded from the Early Bronze Age in terms of both their diameter and their width/thickness. Most disc beads range from 5–10mm in diameter, though slightly larger beads have been found at Barbush Quarry, Dunblane (Sheridan and Davis 2002), with diameters ranging between 9–11.3 mm. Another noticeable

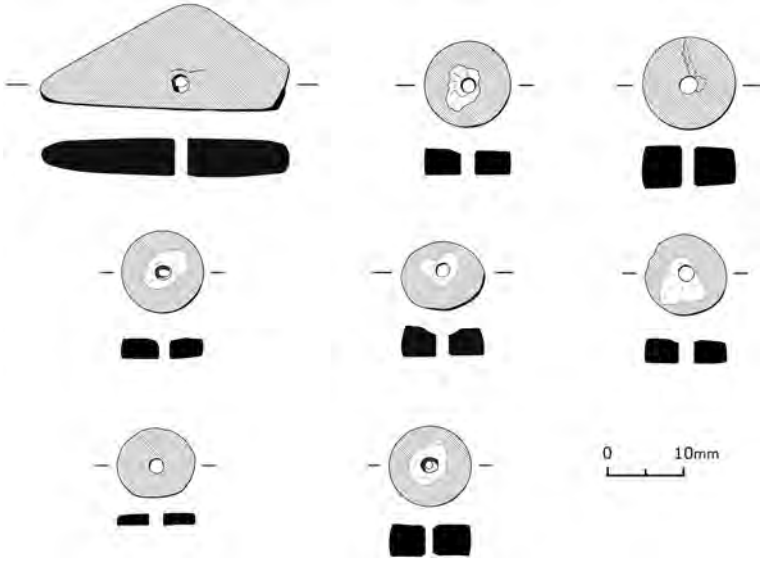

Fig. 10. A selection of the jet beads.

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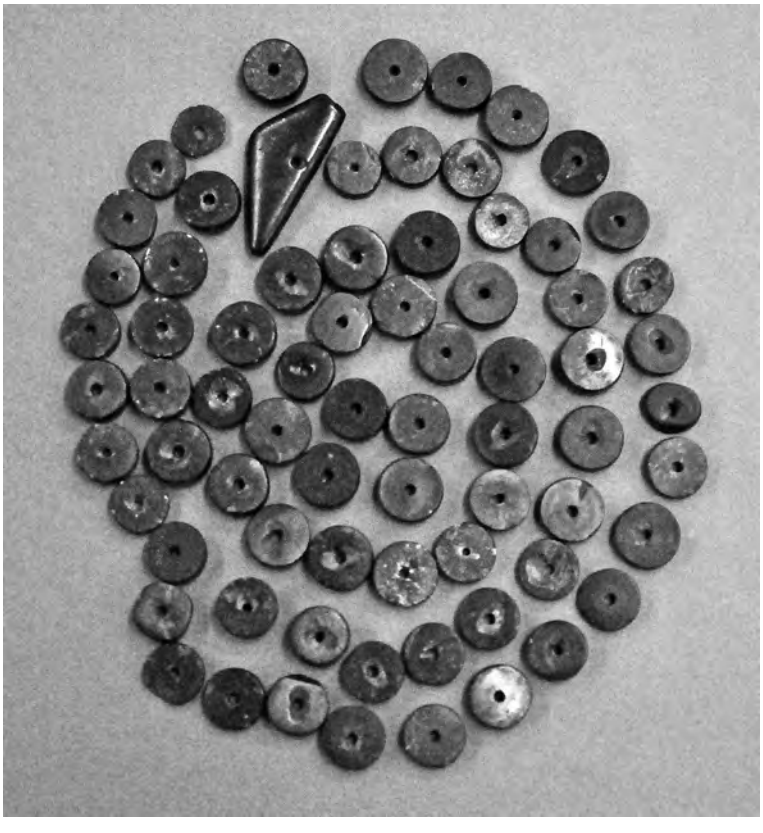

Fig. 11. The jet beads and fastener.

aspect of these beads is their width; not only does this vary considerably from 1–5.6 mm (with a mean average of 3.6mm), many of them are very thick, and the vast majority are noticeably wedge-shaped. There is little consistency in the degree of width in relation to the diameter of the beads. Disc beads with a large diameter like those at Pant y Butler are more common in the north of Britain, but these are usually relatively thin and flat. The Pant y Butler beads are more varied in width and mostly wedge-shaped. These are characteristics which have been noted on beads with much smaller diameters (Sheridan in press), which makes them unusual.

Many disc bead necklaces show some gradation in diameter, with the largest ones towards the centre, tapering down in size towards each end, as, for example, in the case of the necklace from West Water Reservoir, Peeblesshire (Hunter and Davis 2000). There is no noticeable positioning of beads from the Pant y Butler necklace, however, most being scattered and recovered individually. A small number were lifted in relation to each other, but none of these appeared to show any particular arrangement in terms of size or face-to-face placing.

The beads have all been carefully and individually made, some are parallel-sided, but most have a very slight convex curve on their edges. The perforations are all perpendicular, and relatively narrow averaging *c*. 2 mm in diameter. All except four, or possibly five of the beads had been drilled from one side only, and the working on one face around the drilled perforation sometimes formed a shape reflecting the wider part

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Fig. 12. Details of jet beads and fastener.
a Disc bead showing how one face has been drilled into. **b** Striations on the face of one of the disc beads from polishing down with an abrasive agent. The small unworn perforation stands in comparison with that in the first image. **c** The polished outer face of a disc bead, with 'nibbling' at the edge. **d** Triangular fastener with one point broken and repolished, and the perforation showing use-wear.

of a drill bit, probably produced when it originally broke into the material (Fig. 12a). There is minimal evidence of rilling within the perforations, though this was observed on one example, and could indicate the use of a bow or pump drill.

The outer edge of each bead was highly polished, producing a black, glossy surface. Many of the flat inner surfaces of the discs also showed some degree of grinding down and polishing, but even where this was done to a relatively smooth finish, the surface was always matt in comparison to the edges. In some cases the polishing was probably done to help flatten the surfaces, but little attempt was made to even up the thickness of the beads.

It is likely that each bead was individually shaped and perforated, before being ground down to a more even shape and then polished (Redvers-Jones, in Sheridan and Davies 2002). Polishing was probably initially done using an abrasive such as sandstone, and rough striations are still visible on some of the inner faces of the beads (Fig. 12b). More refined polishing would be achieved by using a series of less abrasive agents until a final high polish was achieved, as on the outer edges of the Pant y Butler examples (Shepherd 1981). Further evidence that each of the Pant y Butler beads was individually manufactured comes from the presence of transverse scratches ('nibble striations' or 'nibbling') on the narrow, outer edge of some beads (Fig. 12c); these seem to represent secondary additional scratches onto individual beads to help achieve a convex, as opposed to a perpendicular bead edge (Sheridan in press).

The perforations on all the beads are small with crisp edges and show very little traces of use; equally the flat surfaces do not show much sign of wear on wear. Although all the disc beads look new, the

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triangular fastener looks well worn, and one corner of the triangle appears to have broken away and the break repolished. The perforation on the fastener also shows signs of wear (Fig. 12d). There are cracks along the surface of the fastener characteristic of Whitby jet, North Yorkshire (Davis 1993), and it is likely this piece was acquired separately and reused as a fastener for this necklace. Although the disc beads in many necklaces of this type are made from non-jet materials, where fasteners exist they are usually made of jet (Sheridan and Davis 2002). The fact that the fastener appears to be slightly older and of a slightly different composition broadly fits this pattern.

Early Bronze Age disc beads were made from a variety of black lithic materials including jet, lignite, cannel coal, canneloid shales and organic-rich shale, such as that from Kimmeridge. These materials all contain considerable but varied hydrocarbon levels dependent on many factors including the way they were formed, and the amount of inorganic material present (Campbell Pederson 2004). All the Pant y Butler beads and the fastener were qualitatively analysed by X-ray fluorescence spectrometry to help to determine the type of material used, and whether this was consistent throughout the necklace. Spectra were assessed against known samples of jet, Kimmeridge shale and a number of cannel coals from various sources. Significant levels of certain elements and the absence of others can be indicative of material type (e.g. the presence of zirconium and zinc, with relatively low quantities of iron is indicative of jet) (Pollard *et al*. 1981; Davis 1993; Hunter *et al*. 1993). All the disc beads were very similar in their composition and appear to be jet. The fastener was very slightly different in composition to the beads, but was also jet. A few beads, had spalled or broken in the area near the perforations and showed evidence of a very black inner surface and conchoidal fracturing, another diagnostic feature of jet (Campbell Pederson 2004). Most jet from the Early Bronze Age in Britain appears to come from the Whitby area, and it is significant that this material was exported all the way down to west Wales; Bronze Age jet and jet-like artefacts have only previously been reported from the northern or eastern Wales and are relatively rare (Sheridan and Davis 1998).

HUMAN AND ANIMAL BONE

By Katie Keefe and Malin Holst

The remains of three cremation burials and one inhumation were examined using standard techniques (Cox 2000; Mays and Cox 2000; McKinley 1989; 1993; Scheuer and Black 2000a; 2000b).

Bone preservation of the cremation burials was good; that of the inhumation was poor. It was not, however, possible to observe pathologies or obtain metrical and other information. All three of the cremated bone assemblages were very well burnt, suggesting the cremation process had been skilfully completed. Only one of the cremation burials (Burial 1) contained the quantity of bone expected from modern cremation burials, but this contained two individuals. The other two cremation burials were either token burials or had been disturbed in antiquity. A full report on the osteological analysis is included with the site archive (Keefe and Holst 2011). The animal bone was identified by Matilda Holmes.

Burial 1

Cremation burial in Barrow 1, grave pit 7. Weight of cremated bone 1599.7g. Two individuals, a juvenile between 3 and 11 years old and an individual over 15 years of age are represented. The sex of juveniles cannot be determined. The older individual may have been female, but this identification was not firmly established. Cremated animal bone in this burial consisted of a scapula, humerus, radius and ulna from the left shoulder of a pig.

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Burial 2
Cremation burial in Barrow 1, from backfill of grave pit 7 and overlying layers of the secondary burial (Burial 1). Weight of cremated bone 666.9g. Probably one individual represented: adult, sex not determined. This individual had an ossicle in the skull (an additional little bone in one of the cranial sutures). 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. A fragment of cremated animal bone in this burial was from a medium-sized animal.

Burial 3
Inhumation in Barrow 2, grave pit 43. Probably one individual represented, a young adult/adolescent aged between 13 and 21. Sex not determined. The individual had been redeposited in this grave from is original resting place, as the bones were in a compacted mass, 0.5m by 0.4m, disarticulated and fragmented. During excavation a number of articulated vertebrae were noted, suggesting that the individual had not rested in their primary place of deposition long enough for complete skeletonisation to occur. Approximately 15% of the skeleton survived, some loss being due to the acidic soil conditions. Hard, grey pumice-like material adhered to much of the bone.

Burial 4
Cremation burial in Barrow 2, from backfill of Grave pit 43. Weight of cremated bone 40.9g. Probably one individual represented, an adult, sex not determined.

POLLEN EVIDENCE FROM BURIAL 3
By Astrid E. Caseldine

Pollen analysis focused on the pollen evidence associated with Burial 3, the redeposited remains of an adolescent /young adult dated to 2180–1950 cal. BC and from the grave pit (43) for that burial found in Barrow 2. At the bottom of the pit was a thin, dark organic layer (45) which was sampled on a grid basis to the west of the burial. Selected samples (520B, 520C, 520D, 520E, 520F, 520K, 520M, 520R) were examined from this layer as well as samples (537, 538) from the burial deposit itself.

The results are presented in Figure 13. Some variation in the assemblages is evident, at least to some extent reflecting the distribution of the samples, and attributable to the presence and abundance or absence of three main taxa, namely meadowsweet/dropwort (*Filipendula*), goldenrod (*Solidago virgaurea*) type and yarrow (*Achillea*) type. The assemblages from the two samples (537 and 538) from Burial 3 are very similar. Meadowsweet pollen is abundant in both, making up *c*. 50% of total land pollen (TLP). Grass (Poaceae) pollen is relatively well represented along with alder (*Alnus)* and hazel (*Corylus avellana* type). Of the other herb taxa, ribwort plantain (*Plantago lanceolata*) is most frequent. Oak (*Quercus*) is present in low amounts. Spore values are also quite low. Charcoal concentrations are higher in one sample (537) than the other.

The assemblages from the three samples (520K, 520M, 520R) from the organic layer nearest to the burial deposit also show similarities to each other but differ from those from the burial itself. Most noticeably meadowsweet values are much lower in the three samples, although the percentage of meadowsweet in the sample (520R) from nearest to the cremation is comparatively high. Other noticeable differences are higher hazel, grass, ribwort plantain and buttercup (*Ranunculus*) values in the organic layer samples compared with the cremation samples. A single Cerealia type grain belonging to the *Avena-Triticum* (oat-wheat) pollen group is present in 520K. Alder values are only marginally higher but indeterminate pollen

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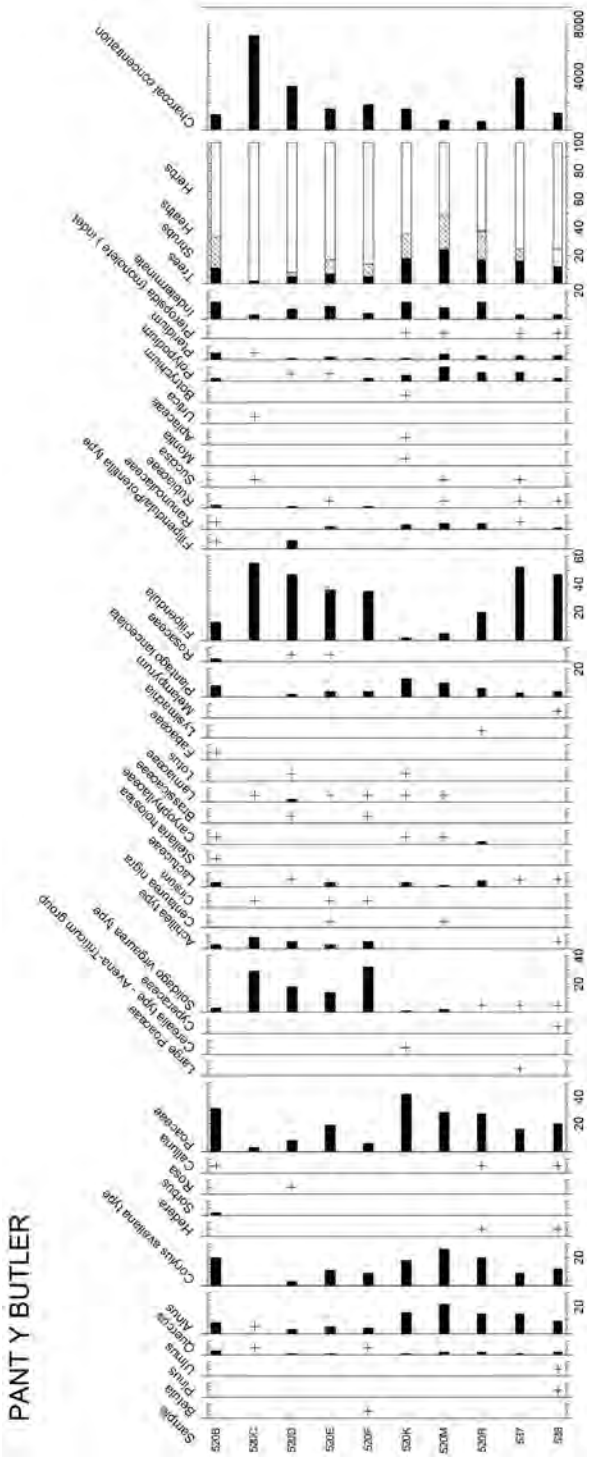

Fig. 13. Pollen diagram from samples from Burial 3 at Pant y Butler.

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values are noticeably higher. Charcoal concentration values are similar to or lower than sample 538 from the burial.

The pollen assemblages from four samples (520C, 520D, 520E, 520F) from towards the western end of the grave pit are similar to those from burial deposit samples 537 and 538 in that meadowsweet pollen is abundant but differ from them and the previous samples from the organic layer in that pollen of goldenrod type pollen is also plentiful. The samples also differ in that yarrow type pollen is well represented, whilst alder values are lower. Values for hazel, ribwort plantain and grasses in these samples are also lower than in the previous samples from the organic layer but some of the samples are similar to those in the burial deposit samples. There is also some variation within this group of four samples, namely both goldenrod type and yarrow type values are higher in samples 520C and 520F compared with samples 520D and 520E while the reverse is true of indeterminate pollen. Charcoal concentration values are similar to those from the burial deposit samples in that two of the samples (520E, 520F) are broadly similar to that from sample 538 and two (520C, 520D) are higher as in sample 537.

The final sample (520B), from the west end of the pit, is similar to samples 520K, 520M and 520R. Meadowsweet values are low while hazel, grass and ribwort plantain values are relatively high. However, yarrow type values are similar to those in in samples 520D and 520E as are indeterminate pollen values. Charcoal concentration values are relatively low but comparable to charcoal concentrations in burial deposit sample 538.

The abundance and distinct variation in the distribution of certain pollen taxa, suggests there may have been some deliberate placement of plant material in the grave pit and with the burial deposit itself. The taxa suggesting deliberate deposition of plant remains are meadowsweet/dropwort, most likely the former as dropwort commonly occurs in calcareous grassland, and goldenrod type and yarrow type, both of which include a number of other species. The possibility of later intrusive material cannot be totally ruled out but *Filipendula* pollen is entomophilous and therefore aerial deposition is unlikely to account for the abundance and variations in representation of the *Filipendula* pollen. The possible deliberate placement of plant material with the burial is of interest because it is a secondary internment and it is possible that the necklace of jet beads may also have been included with the skeleton at this stage as well, rather than at the primary place of deposition.

The high percentage of meadowsweet, goldenrod type and yarrow type pollen affects the representation of the other taxa. Excluding these taxa from the pollen sum, the evidence suggests the contemporary environment in the surrounding area may have comprised grassland with grassland weeds such as ribwort plantain and buttercup along with some hazel and alder woodland and limited oak woodland but, given that the source of this pollen is uncertain, probably mainly aerial deposition although it could have been brought in with other plant material, it may not be entirely representative. It might also be affected by how long the grave pit was open. The presence of cereal pollen in one sample suggests that there was also some cultivation in the area.

Meadowsweet is found in a range of habitats including marshes and fens and beside rivers as well as in wet woods and grassland. Similarly taxa belonging to goldenrod type and yarrow type occur in a range of habitats and would probably have been readily available. If these taxa were deliberately collected as a floral tribute then they may give some indication of when the burial occurred. Meadowsweet flowers between June and September and, for example, yarrow between June and August and goldenrod between July and September (Clapham *et al.* 1987), suggesting late summer to early autumn. The presence of immature grains of *Filipendula* within the assemblages may be indicative of flowerheads (Dickson 1978; Bohncke 1983; Whittington 1993; Tipping 1994; Clarke 1999).

The evidence from Pant y Butler is in keeping with the evidence from other sites in Britain including Fan Foel (see Hughes and Murphy 2013 for a wider discussion) where *Filipendula* is considered to

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represent a floral tribute and perhaps gives some insight into the burial rites taking place in west Wales in the Bronze Age.

CHARRED PLANT REMAINS AND CHARCOAL

By Astrid E. Caseldine and Catherine J. Griffiths

CHARRED PLANT REMAINS

Samples were taken from the two round barrows for the recovery of charred plant remains primarily with a view to gaining information about the environment at the site and surrounding area. However, as well as information about the environment, charred plant remains can sometimes indicate the use of plant remains as offerings in ritual activity associated with burials. The results are presented in Tables 1 and 2. Samples where only wood charcoal was recovered are not included in the tables but are mentioned in the text.

Charred plant remains from Barrow 1

Samples from Barrow 1 were from two cremation burials (Burials 1 and 2) in grave pit 7, the burnt stone and charcoal fill (53) of a shallow pit (52), a spread of burnt stone and charcoal (19) in a shallow depression adjacent to the pit and a spread of charcoal and burnt soil (505) within an old turf (5) (Table 1).

The pit and adjacent patch of charcoal in a hollow were the earliest two features recognised. The sample from the pit (52) was the richest from the barrow and produced a relatively large number of hazelnut (*Corylus avellana*) shell fragments and a few weed seeds, including common nettle (*Urtica dioica*) and sheep's sorrel (*Rumex acetosella*), as well as grass (Poaceae) remains. A radiocarbon determination of 3495–3100 cal. BC (SUERC-37910) was obtained from some of the hazelnut shell. The concentration of hazelnut shell suggests collection of hazelnuts for food with the waste material used as fuel, rather than hazelnuts collected incidentally along with wood for fuel. Common nettle and sheep's sorrel are found in a range of habitats including grassland while nettle is also commonly found where there is some nitrogen enrichment as a result of animals defecating. A few hazelnut shell fragments also occurred in the sample from the hollow (19) containing burnt material along with possibly fragments of onion couch grass tuber (cf. *Arrhenatherum elatius* Var *Bulbosum*) and lesser celandine (cf. *Ranunculus ficaria*) type tuber, both of which occur in grassland. The former is absent from grassland where there is heavy grazing and trampling by livestock and the latter occurs in damp grassland. Both species occur in hedgerows and onion couch grass is also found in arable fields where it spreads and is difficult to eradicate because of its method of propagation. The patch of charcoal (505) within the turf produced only wood charcoal, apart from a few fragments of charred bone.

Charred plant remains other than wood charcoal were scarce from the two cremation burials. Indeed the samples (501, 504 and 506) from the fill containing Burial 2 produced only wood charcoal. The assemblage (sample 502) from Burial 1 included seeds of ribwort plantain (*Plantago lanceolata*), possibly onion couch grass tubers and frequent grass stem and rhizome material, indicating grassland and probably representing remains from the funeral pyre, either material burnt *in situ* or collected as tinder.

Charred plant remains from Barrow 2

The samples from Barrow 2 were from a burial deposit (Burial 3) and a cremation burial (Burials 4), the mound (31, 32), an organic layer (45) at the base of the grave pit (43), shallow pits (47, 49, 62, 64, 95),

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Table 1. Charred plant remains from Pant y Butler Barrow 1

Feature	pit 52	hollow 19	cremation Burial 1	habitat preference
Context	53	19	09	
Sample	513	515	502	
cf. *Ranunculus ficaria* L. (lesser celandine) – tuber	–	1	–	B,G,W,w
Urtica dioica L. (common nettle)	1	–	–	A,D,G,M,n
Corylus avellana L. (hazel) – nut shell frags	339	7	–	W
cf. *Corylus avellana* L. (hazel) – nut kernel	2	–	–	
Rumex acetosella L. (sheep's sorrel)	1	–	–	A,G,H,a,s,o
Plantago lanceolata L. (ribwort plantain)	–	–	4	G,o
cf. *Arrhenatherum elatius* Var. *bulbosum* (Willd.) St Amans (onion couch) – tuber/stem frags	–	1	2	A,G,W
Poaceae (grasses)	1	–	–	C,D,G,H, M,R,W,d,o,w
Poaceae small rhizome/stem frags	7	–	81	
large rhizome/tuber frags	–	–	2	
cf. rhizome/tuber frags	1	–	2	
root	3	–	–	
wood charcoal	+	+	+	

Ecological preferences; A = arable & cultivated; B = bank side, pond margins; C = coastal; D = disturbed ground, wasteland; H = heaths, moors; M = marshes, fens, bogs; R = road sides; W = woods, hedgerows, scrub; a = acid soils, calcifuge; d = dry; n = nitrogen enriched; o = open ground; s = sandy soils; w = damp,wet. + = present

planks 102 and 23, charcoal spreads (103 and 104) and two hollows (40, 109), probably natural features (Table 2).

The only plant remains from the charcoal rich soil (35) of the hollow (40), thought to be an old root channel or tree bole, were a few root fragments and wood charcoal, whereas a hazelnut fragment and a few grass fragments, including possibly of onion couch grass were recovered from the fill (110) of a similar depression (109). Samples from the series of shallow pits (47, 49, 62, 64, and 95) beneath the barrow produced very little charred material, only wood charcoal and even this was scarce in most of them. Similarly only wood charcoal was recovered from the plank (102) associated with the buried turf but it was much more abundant and provided a date of 2205–1980 cal. BC (SUERC-37915). However, as well as charcoal, the charcoal spreads (103, 104) associated with the buried turf both yielded grass remains, including possibly onion couch grass. The grass remains were particularly frequent in charcoal spread 104 which also contained other remains including possible lesser celandine type tuber and grass, sheep's sorrel and ribwort plantain seeds, all also indicative of grassland. In addition hazelnut shell was present and hazel charcoal from the spread gave a date of 2275–2030 cal. BC (SUERC-37916). The disturbed cremation Burial 4 is considered to be the primary burial and radiocarbon determinations support the view that it was broadly contemporary with the plank (102) and the charcoal spreads (103, 104). Only a few grass remains were recovered from the fill containing the cremation burial.

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Table 2. Charred plant remains from Pant y Butler Barrow 2

Feature	hollow 40	hollow 109	plank 23	charcoal 103	charcoal 104	mound 31	mound 31	mound 31	grave pit 43	grave pit 43	grave pit 43	cemation Burial 4	habitat preference
Context	35	110	23	103	104	31	31	32	45	45	107	44	
Sample	507	534	503	530	531	509	511	518	521	536	532	118	
Ranunculus sp. (buttercup)	–	–	–	–	–	1	1	–	–	–	–	–	A,B,C,G,M,W,w
cf. *Ranunculus ficaria* type (lesser celandine) – tuber	–	–	–	–	1	19	–	–	–	–	–	–	B,G,W,w
Corylus avellana L. (hazel) – nut shell frags	–	1	5	–	3	1	–	–	1	–	5	–	W
Stellaria media (L.) Villars (common chickweed)	–	–	–	–	–	–	–	1	–	–	–	–	A,C,D,G,n
Rumex acetosella L. (sheep's sorrel)	–	–	–	–	1	–	–	–	–	–	–	–	A, G, H, a s, o
Viola sp. (Violets)	–	–	–	–	–	1	–	–	–	–	–	–	A,D,G,H,M,W
Potentilla spp. (cinquefoils)	–	–	–	–	–	–	2	–	–	–	–	–	D,G,H,M,R,a,d,l,o
Potentilla/Fragaria vesca L. (cinqufoil/wild strawberry)	–	–	–	–	–	1	–	–	–	–	–	–	D,G,H,M,R,a,d,l,o/W
Trifolium type (clovers)	–	–	–	–	–	3	–	1	–	–	–	–	C,D,G,o,s
Ajuga reptans L. (bugle)	–	–	–	–	–	2	–	–	–	–	–	–	Gw,W
Plantago lanceolata L. (ribwort plantain)	–	–	–	–	1	5	–	–	–	–	–	–	G,o
Galium aparine L. (cleavers)	–	–	–	–	–	2	–	–	–	–	–	–	A,DW,o
cf. *Arrhenatherum elatius* Var. *bulbosum* (Willd.) St Amans (onion couch) – tuber/stem frags	–	1	4	2	5	–	11	–	1	2	3	–	A,G,W
Poaceae (grasses)	–	–	–	–	1	–	–	–	–	–	–	–	C,D,G,H,M,R, W,d,o,w
Poaceae small rhizome/stem frags	–	10	10	2	131	306	51	182	10	–	12	12	
large rhizome/tuber/ stem frags	–	–	1	–	7	97	10	19	4	–	–	–	
root frags	6	–	–	–	1	1	2	–	–	–	–	–	
Pteridium aquilinum L. – leaf frags (bracken)	–	–	–	–	–	1	–	–	–	–	–	–	G,H,M,W,a,d
seeds indet.	–	1	1	–	5	3	–	2	–	–	–	–	
wood charcoal	+	+	+	+	+	+	+	+	+	+	+	+	

Ecological preferences; A = arable & cultivated; B = bank side, pond margins; C = coastal; D = disturbed ground, wasteland; H = heaths, moors; M = marshes, fens, bogs; R = road sides; W = woods, hedgerows, scrub; a = acid soils, calcifuge; d = dry; n = nitrogen enriched; o = open ground; s = sandy soils; w = damp, wet. + = present

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Charred plant remains from the barrow mound (31, 32) samples all produced frequent grass stem and rhizome fragments and other remains present in one or more of the samples included possibly lesser celandine tuber and onion couch grass remains, clover (*Trifolium*) type, buttercup (*Ranunculus* sp.), cinquefoils/wild strawberry (*Potentilla*/*Fragaria vesca)*, violets (*Viola* sp.), ribwort plantain, cleavers (*Galium aparine*), common chickweed (*Stellaria media*) and bugle (*Ajuga reptans*). Again the plant remains are consistent with the burning of turf and an open environment, although some can be found in woodland or scrub. Sample 519 from the mound (32) produced only wood charcoal.

Few plant remains were recovered from the samples from the fill (45) at the base of the grave pit (43) but they included some possible onion couch grass, other grass remains and a hazelnut shell fragment. A similar assemblage occurred in a sample of darker soil (107) within the stone fill (44) of the grave pit (43), whereas only wood charcoal was recovered from samples (537, 538) from Burial 3 and, as Burial 3 is a secondary inhumation, the charcoal is presumably not directly related but derived from adjacent deposits.

Finally, an oak plank or burnt branch (23) around two to three metres north-west of the grave and lying within a stone setting within the top of the mound yielded a few plant remains apart from wood charcoal, namely hazelnut, possibly onion couch grass and other rhizome and tuber remains. A date of 2465–2210 cal. BC (SUERC-37911) was obtained from oak charcoal from the 'plank'. The 'plank' is thought to be possibly contemporary with Burial 3 and a few charred bone fragments were present in the sample. The earlier date may indicate the plank was from old wood from a tree of some age.

Discussion of the charred plant remains

The earliest evidence is from the shallow pit (52) containing hazelnut shell, some of which gave a date of 3495–3100 cal. BC, suggesting Neolithic activity. The hazelnut may represent deliberate collection of wild foodstuffs as well as the presence of hazel woodland. Otherwise the charred remains, apart from wood charcoal, from the pit and the other samples from the barrows indicate the burning of grasses, either *in situ* or as tinder, and the presence of grassland at the site following clearance activity.

Of note is the possible presence of onion couch tubers in a number of samples. The tubers commonly occur in Bronze Age cremation graves in north-western and central Europe and several interpretations for their presence have been put forward (Roehrs *et al.* 2012). These include the use of the bulbs as a food source (Engelmark 1984; Preiss *et al.* 2005), although recent work has suggested that the tubers are inedible (Mears and Hillman 2007). It has also been suggested from their occurrence in grave contexts that they may have been associated with grave rituals or death cult activities (Engelmark 1984), representing symbols of growth and regeneration or used as a ritual food deposit for the final journey (Robinson 1994), but it is argued that their presence as a burial gift is difficult to prove when they only occur in small amounts and there are no other gifts or food remains (Roehrs *et al.* 2012). However, as already mentioned grasses including onion couch grass may have been used as tinder for the funeral pyre. Robinson (1988) has argued that the grasses could easily have been uprooted for this purpose and that burial sites were probably built near abandoned agricultural land or on ungrazed grassland, both of which would have favoured *Arrhenatherum*. In addition Stevens (2008) has suggested that the whole layer of top-soil, including *Arrhenatherum* plants, could have been removed to provide a fire barrier and then added to the funeral pyre, while Roehrs *et al.* (2012) suggest that the absence of cereal grains, weed seeds or fruits makes it likely that *Arrhenatherum* remains derive from plants collected for tinder. As previously suggested, although there is a possibility that the onion couch grass remains at Pant y Butler could represent ritual activity, the most likely explanation for their presence is as a result of *in situ* burning or their use as tinder for the funeral pyre. Similarly the presence of possibly lesser celandine tubers probably represents the burning of grassland, although it has been suggested that lesser celandine might have been used as food as well as for medicinal purposes (Mason and Hather 2000).

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CHARCOAL

A limited amount of charcoal was identified from Pant y Butler with a view to gaining some information about the woodland environment and exploitation of the woodland resource. The results are presented in Tables 3 and 4.

The assemblage from the two barrows is dominated by oak (*Quercus* spp.) with a moderate amount of hazel (*Corylus avellana*) and occasional other taxa, namely ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), blackthorn (*Prunus spinosa*), cherries/blackthorn (*Prunus* sp.) and possibly another species belonging to the Rosaceae family.

Charcoal from Barrow 1

The assemblage from Burial 1, taken from the bottom of fill 9, largely comprised oak although hazel and blackthorn were also represented. Of three samples from deposits associated with Burial 2, two consisted only of oak whereas the third also contained hazel and Rosaceae. Charcoal from the fill (10, 53) of a shallow pit (52) mainly consisted of hazel though oak was present while charcoal from an area of charcoal and burnt soil (505) within an old turf (5) mainly comprised oak but hazel was also present.

Charcoal from Barrow 2

Charcoal from samples associated with Burial 3 (108) was entirely oak, while that from the thin organic layer (45) at the base of the grave pit (43) was also oak, apart from a fragment of hazel. In contrast charcoal from Burial 4 was dominated by hazel, although oak was again present. Cremation Burial 4 was a small discrete area of burnt bone located within top of the stone fill (44) of the grave pit (43)

The two charred planks or straight branches, 23 and 102, were identified as oak although there was also some roundwood in the sample (503) from plank 23 and this proved to be alder and hazel. Two patches of burning, 103 and 104, consisted of oak and oak and hazel, respectively. Ash and alder, as well as oak and hazel, were identified from the barrow mound (31, 32). Charcoal was scarce from the shallow pits beneath the barrow but a small amount was identified from pit 95 and was oak. A mix of charcoal comprising oak, hazel and cherry/blackthorn was identified from the charcoal rich fill (35) of a hollow (40), probably a natural feature such as a tree bole or root channel.

Table 3. Charcoal identifications from Pant y Butler Barrow 1

Feature	pit 52	charcoal spread 505	cremation Burial 1	cremation Burial 2	cremation Burial 2	cremation Burial 2
Context	53	05	09	06	06	06
Sample	513	505	502	501	504	506
Quercus spp. (oak)	2	9	17	10	8	10
Corylus avellana L. (hazel)	8	3	2	–	1	–
Prunus spinosa L. (blackthorn)	–	–	1	–	–	–
Rosaceae	–	–	–	–	1	–
Total	10	12	20	10	10	10

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Table 4. Charcoal identifications from Pant y Buter Barrow 2

Feature	hollow 40	pit 95	plank 23	plank 102	charcoal spread 103	charcoal spread 104	mound 31	mound 31	mound 31	mound 31	mound 31	mound 32	mound 32	grave pit 43	Burial 3	Burial 3	cremation Burial 4
Context	35	95	23	12	103	104	31	31	31	31	31	32	32	45	108	108	44
Sample	507	524	503	529	530	531	508	509	510	511	512	518	519	536	537	538	118
Quercus spp. (oak)	6	10	55*	151*	101*	7	1	–	5	8	–	13	9	9	5	10	3
Alnus glutinosa (L.) Gaertner (alder)	–	–	2	–	–	–	–	–	–	–	–	2	–	–	–	–	–
Corylus avellana L. (hazel)	3	–	4	–	–	5*	–	7	–	2	5	5	1	1	–	–	17
Prunus sp. (cherries, blackthorn)	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fraxinus excelsior L. (ash)	–	–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–
Total	10	10	61	151	101	12	1	10	5	2	5	20	10	10	5	10	20

* includes AMS sample

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Discussion of the charcoal

The number of fragments in a sample is not necessarily a reflection of the frequency of a species in the surrounding area because of factors such as the way the charcoal of different species fragments and because certain species may have been preferentially selected. Hence numerous fragments of oak charcoal were present in samples from the charred planks but each sample represents wood from only one tree.

The earliest charcoal evidence from the site is from features from beneath the barrows. The assemblage from a shallow pit (52) beneath Barrow 1 indicates hazel and oak woodland as does the assemblage from the patch of burning (505) in the buried turf. Similarly charcoal from one of the shallow pits (95) beneath Barrow 2 also indicates the presence of oak, while oak, hazel and a rosaceous species were recovered from a natural hollow. A radiocarbon determination of 3495–3100 cal. BC (SUERC-37910) from hazelnut shell dates the assemblage from the shallow pit to the Neolithic.

The continued presence of oak woodland in the area during the early Bronze Age is demonstrated by the oak planks/branches (23,102), and occurrence of oak in the charcoal spreads (103, 104, 505) associated with the buried turf. Oak also occurs in samples from the mound (31, 32) of Barrow 2 and dominates the assemblages from Burials 1, 2 and 3, although as Burial 3 is a secondary inhumation rather than a cremation the charcoal from the burial deposit is probably not directly associated. Hazel rather than oak dominates the assemblage from cremation Burial 4, although the assemblage is small. Whether the difference in this charcoal assemblage perhaps reflects a change in the woodland available for exploitation in the area or a change in selection is difficult to say with the limited evidence.

Apart from Burial 4, hazel occurs in other cremation burial samples as well as a number of the samples from the mound (31, 32) and from charcoal spread (104) and plank (23) samples, suggesting hazel probably formed an understorey in the oak woodland. This is in keeping with pollen evidence for this period which suggests predominantly oak and hazel woodland, at least on drier ground. However, occasional other taxa in the samples demonstrate a more diverse woodland in the area, including alder, ash and rosaceous species such as blackthorn and cherry.

The charcoal from the site reflects either burning associated with clearance activity or burning associated with ritual activity and the construction of pyres. The predominance of oak in the cremation burial samples may reflect deliberate selection of oak for the funeral pyres and be of significance in the belief systems of the individuals involved, or simply reflect deliberate selection because of the burning qualities of oak or the availability of oak in the area, or a combination of factors. The dominance of oak in similar circumstances has also been noted at other sites in Wales for example Moel Goedog (Lynch 1984), Brenig (Lynch 1993), Aber Camddwr II (Caseldine 1991), Carneddau (Caseldine 1993), Fan Foel (Caseldine and Griffiths 2013) and Blaen y Cae, Bryncir (Smith 2007).

DISCUSSION

The Pant y Butler sites lie within the funerary tradition of a round mound or barrow covering a single burial of the Early Bronze Age, dating to the late third millennium to early second millennium BC. During a recent survey (Cook 2003; 2006b, 2008) almost 750 Bronze Age round barrows and over 300 possible round barrows were recorded in the three counties of south-west Wales (Carmarthenshire, Ceredigion and Pembrokeshire). Most of these lie on the high moorland of eastern Ceredigion, the Preseli Mountains of Pembrokeshire and the uplands of eastern and northern Carmarthenshire, where they comprise mounds of stones. In the lowland areas agricultural degradation over the past few millennia has undoubtedly erased many sites from the landscape, accounting for their sparser distribution. Observations made by Cook (ibid.) during her survey suggest that the turf, soil and stone construction of the Pant y Butler sites are

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typical of the barrows found in the lowlands of south-west Wales (and indeed across lowland Britain), observations confirmed by a few comparable excavated examples in the region. For instance, at Goodwin's Row (Murphy 1990), 20 kilometres to the south in Carmarthenshire, a turf mound was surrounded by a stone kerb, and a similar construction was noted a few kilometres away during excavation of a group of barrows at Cross Hands (Fox 1925).

Apart from the indeterminate Bronze Age pottery sherds from Barrow 1 and the jet bead necklace from Barrow 2, we are reliant on radiocarbon determinations for dating the Pant y Butler remains. One date, from pit 52 sealed by the buried soil beneath Barrow 1, dating to between 3495–3100 cal. BC (SUERC-37910), is a millennium earlier than the other seven dates from the site. Although it seems too much of a coincidence that a Neolithic pit (which along with an adjacent hollow were the only pre-buried soil feature beneath and in the vicinity of Barrow 1) was dug close to the centre of a later Bronze Age burial mound, isolated Neolithic pits are not unknown. One containing a food deposit dating to 3640–3360 (CAR-994) at Plas Gogerddan in the north of Ceredigion (Murphy 1992), for example, and the presence of the pit below Barrow 1 may be due to be pure chance. However, the presence of Neolithic pits pre-dating the round barrow at Fan (Schlee 2013) hints at continuity in the use of space between the Neolithic into the Bronze Age.

The radiocarbon determinations associated with the two Bronze Age barrows cluster around 2100 cal. BC, with a date range from 2465 to 1780 cal. BC (Fig. 14). The two determinations from Barrow 1 overlap at two standard deviations (95% degree of confidence), with the date from the presumed primary burial slightly later than that of the secondary burial. On the basis of the radiocarbon dates it is possible to argue that there was less than a generation, and probably no more than two or three, between the burial of the two cremations at Barrow 1, with the primary cremation between 2135–2080 cal. BC and the secondary cremation no later than 2025 cal. BC.

The radiocarbon date from the 'plank' on the surface of the excavated mound of Barrow 2 is somewhat earlier than the other Bronze Age dates. Stratigraphically this is one of the latest features on the site. However, the early date may be the result of dating oak heartwood. Precise dating of the construction and use of Barrow 2 rests on the interpretation of Burial 4. If it is presumed to be a secondary burial then its radiocarbon date range demonstrates that it dates to between 2030–1780 cal. BC, and could post-date barrow construction and the placing of the inhumation (Burial 3) in the ground by as much as three centuries. However, the most likely explanation is that Burial 4 is the disturbed remains of the primary cremation burial. If this is the case then the cremation must date to the earliest part of the radiocarbon date range, that is at 2030 cal. BC, the barrow mound probably raised over the burial soon after, as dated by the hazelnut shell resting on the buried soil, whose date range ends at 2030 cal. BC. Excavation of the grave for the secondary burial, Burial 3—an inhumation accompanied by a jet bead necklace—and the removal of the primary burial, must then have taken place after 2030 cal. BC and before 1950 cal. BC (the end of the radiocarbon date range for Burial 3).

The following sequence is thus suggested by the archaeological evidence and radiocarbon dates:

Barrow 1: primary cremation burial, 2135–2080 cal. BC; secondary cremation burial and barrow construction, 2135–2025 cal. BC.
Barrow 2: primary cremation burial and barrow construction, *c*.2030 cal. BC; secondary inhumation and barrow enlargement, 2030–1950 cal. BC.

The large number of Food Vessels, Collared Urns and other urns (Savory 1980) discovered in round barrows in the region over the past two centuries demonstrates that the Pant y Butler barrows lie firmly within the Early Bronze Age burial tradition (Burrow 2011) . However, very few barrow sites in south-

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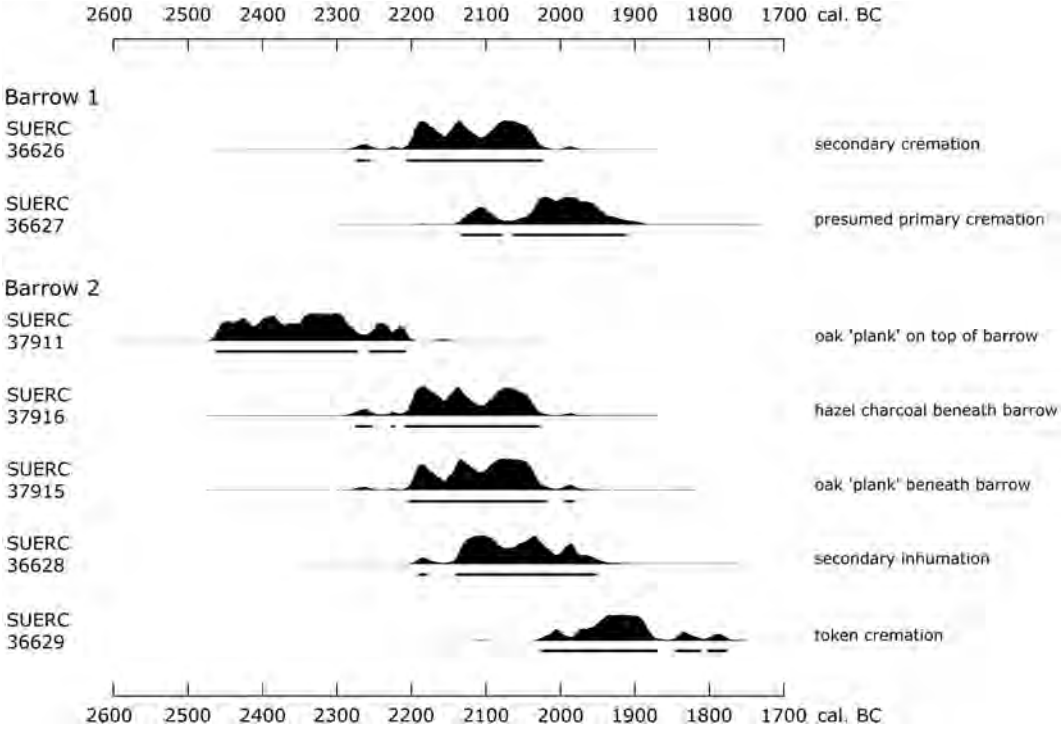

Fig. 14. Graphical illustration of the Pant y Butler Bronze Age radiocarbon dates.

west Wales have been investigated since scientific dating became normal practice, and therefore fine-grain chronologies of burial practices afforded by radiocarbon dating are not possible in the region. Where such dates are available, some are comparable to those from Pant y Butler, as from Parc Maen, Pembrokeshire (Marshall and Murphy 1991), where charcoal from beneath a cairn was dated to 2125–1690 cal. BC, and others, such as the date of 1665–1315 cal. BC from charcoal beneath a cairn at Aber Camddwr, Ceredigion (ibid.), demonstrate the long regional tradition of constructing round mounds over burials.

Across Britain, towards the end of the Early Bronze Age, cremation became the dominant form of burial (Burgess 1980, 115), after a period when cremation and inhumation co-existed. Prior to this, at the beginning of the Early Bronze Age inhumation was the dominant burial rite. Few inhumations have been recognised in south-west Wales prior to the excavation at Pant y Butler, exceptions being Beaker or Beaker-style burials at Corston Beacon (Fox and Grimes 1928) and Talbenny (Fox 1959), both in Pembrokeshire. However, it is highly likely that inhumation was employed more widely in south-west Wales after the Beaker period, as elsewhere, but has not been recognised for two main reasons. Firstly, the acid soils that cover most of the region are not conducive to the preservation of bone unless it has been cremated. Secondly, there has been very little modern excavation on Bronze Age sites compared with many other parts of Britain. Not only does cremated bone survive in acid soils, but is also easily recognisable, and numerous antiquarian records refer to the discovery of burnt bone, sometimes accompanied by grave goods, in mounds (cf. Briggs 1994, Appendix I: cairns, barrows and burials). There is, however, some evidence that inhumation was more widely practised in south-west Wales. For instance, a large, well-constructed but empty cist beneath an earth and stone mound at Castle Lloyd, Pendine, Carmarthenshire

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(Ward 1918) must surely have contained an inhumation, as must have a stone-lined pit beneath a small cairn at Aber Camddwr in north Ceredigion (Marshall and Murphy 1991). Much more unusual was a 2.5m long dug-out oak coffin in a round barrow at Disgwylfa Fawr in north Ceredigion. This has been interpreted as having contained the primary inhumation, all traces of the body having disappeared (Green 1987). Radiocarbon dates demonstrated that a smaller coffin at Disgwylfa Fawr, containing a cremation burial accompanied by a Food Vessel, was secondary to the inhumation by several centuries. The remains of a headless, dismembered child burnt *in situ* within a ring cairn (Hogg 1977), also at Aber Camddwr, falls outside the normal funerary tradition and is difficult to classify.

Given the lack of comparative material it is unknown whether the fragmented and redeposited inhumation burial at Pant y Butler barrow 2—Burial 3—is an unusual burial for the region or not. Such burials are known from elsewhere in Britain, as for example at Nosterfield Quarry, North Yorkshire (Dickson and Hopkinson 2011) where a disarticulated and incomplete skeleton of a female adult, dated to 1530–1380 cal. BC, had been placed in a shallow pit. The possible articulation of some vertebrae of the Pant y Butler example indicates that the skeleton was at least partly fleshed when it was dismembered and placed in the pit, having first been removed from its original resting place, possibly an excarnation site.

Owing to this paucity of regional data it is also unknown whether the removal of a primary cremation burial and its replacement by another cremation or inhumation burial was a common Bronze Age practice in south-west Wales, or whether Pant y Butler is a regional anomaly. The practice has been frequently recorded elsewhere in Britain. For instance William Greenwell (1877) excavated several examples in Yorkshire: such as Barrow XVII (ibid. 157) where a shallow grave in the centre of the barrow had disturbed an earlier interment; Barrow XXII (ibid.167) where a central grave containing the body of an aged woman had the imperfectly burnt bones of an adult woman in its back-fill, ‘direct evidence here of the disturbance of the primary burial’; and Barrow XXIV (ibid. 169) where a primary cremation was replaced by an inhumation of an aged man. More recently excavated examples of the practice is described by Britnell at Trelystan, Powys (1982, 133–4, fig. 11) and by Green *et al*. (1982) in Dorset. The most obvious explanation for such a practice is that a new group of people occupied the land after the first burials had been placed in the ground and one way in expressing their new ownership was by appropriating tribal burial grounds, ripping out and roughly disposing of the original burials and replacing them with the remains of their own dead. The inhumation, Burial 3, with the beads is instructive. It is possible that the new group of people had brought the bones of this young person of high status with them from their original homeland for reburial in their newly acquired land.

Alternatively, it may be that there was a tradition, not recognised because of the few modern excavations undertaken on Bronze Age burials in south-west Wales, of removing primary burials and replacing after a generation or two, possibly during a reconsecration ceremony. Whatever the reason, the excavations at Pant y Butler have revealed a little more detail of the lives and deaths of people who inhabited a part of south-west Wales four thousand years ago.

Another revealing piece of evidence is the recognition of meadowsweet and other flowers with Burial 3. Meadowsweet in graves is becoming frequently recognised right across Britain. It clearly had a specific function in burial ceremonies, these possible functions are discussed further in the Fan Foel report in this volume.

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NOTES

1. Dyfed Archaeologial Trust, Shire Hall, 8 Carmarthen Street, Llandeilo, Carmarthenshire, Wales, SA19 6AF.
2. Division of Archaeological, Geographical and Environmental Sciences, University of Bradford, Bradford, West Yorkshire, BD7 1DP.
3. National Museum Wales, Cathays Park, Cardiff CF10 3PN.
4. York Osteoarchaeology, Ivy Cottage, 75 Main Street, Bishop Wilton, York YO42 1SR.
5. School of Archaeology, History and Anthropology, University of Wales Trinity St David, Lampeter, Ceredigion SA48 7ED.
6. On the Dyfed Historic Environmental Record Barrow 1 is recorded as Primary Record Number 55929, Barrow 2 as 55928, Barrow 3 as 100636 and Barrow 4 as 100637.
7. The geophysical survey detected an 18- to 20m-diameter halo surrounding Barrow 2. This was considered to be a possible ditch (disproved during excavation) and faint anomalies to the west and north-west of this barrow hinted at possible ring-ditches; excavation showed these to be of natural origin. The smaller Barrow 1 was hardly detectable on the geophysical survey.

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