MYNYDD Y BETWS

CARMARTHENSHIRE

EXCAVATION OF CAIRNS AND A STONE ALIGNMENT

Prepared by Dyfed Archaeological Trust

for Carmarthenshire County Council

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Ym mis Gorffennaf 2017, cloddiwyd dwy garnedd a rhan o res o gerrig ar Fynydd y Betws, Sir Gaerfyrddin. Roedd un o'r carneddau'n edrych yn debyg i gofeb angladdol o'r Oes Efydd. Nid oedd unrhyw dystiolaeth o gladdu yno, ond tarfwyd ar ganol y garnedd yn ddiweddar. Nid oedd unrhyw arteffactau i ddyddio'r garnedd yn bresennol, na deunydd wedi'i garbonadu oedd yn addas i'w ddyddio trwy brofion radiocarbon. Roedd yr ail ganfyddiad yn bentwr bach, syml o gerrig. Roedd chwe arteffact fflint a thri darn o wydr Rhufeinig wedi cael eu darganfod gerllaw, a dychwelodd y profion radiocarbon ar y siarcol yn y pridd ganlyniadau sy'n ei ddyddio rhwng dechrau'r bumed ganrif AD a chanol y chweched ganrif AD. Canfuwyd pedair ffos fach ar draws y rhes gerrig 717 metr o hyd. Gwelwyd bod y cerrig bach yn y rhes wedi cael eu gosod ar ben y tir, neu, yn fwy tebygol, wedi cael eu gosod mewn toriad bach yn y pridd ar y pryd. Er nad oedd tystiolaeth ar gyfer dyddio, mae'n fwy tebygol mai dyddiad cynhanesyddol sydd gan y rhes gerrig.

SUMMARY

In July 2017, two cairns and a part of a stone alignment on Mynydd y Betws, Carmarthenshire were excavated. One of the cairns had the appearance of a Bronze Age funerary monument. No evidence for a burial was present, although the centre of the cairn had been disturbed in recent times. No artefacts to date the cairn were found and there was no carbonised material suitable for radiocarbon dating. The second cairn was a simple, small mound of stones. Six flint artefacts and three sherds of Roman glass were found in association with it, and charcoal in the buried soil returned a radiocarbon date with a range from the early 5th century AD to the mid-6th century AD. Four small trenches were excavated across the 717m long stone alignment. The small stones of the alignment were found to have been placed directly on the ground or more probably inserted into a small cut in the contemporary turf and topsoil. Although no dating evidence was found, a prehistoric date for the alignment is favoured.

INTRODUCTION

Mynydd y Betws is approximately 770ha of open moorland in south-east Carmarthenshire rising from 250m above sea level along its western, northern and eastern fringes to over 340m at its highest point (Fig. 1). It merges with larger blocks of moorland lying to the south. Although the general area is called Mynydd y Betws, parts of the moorland have specific names: Foel; Banc Cwmhelen; and Bancbryn. Geology is the Carboniferous Upper and Middle Coal Measures Series, which includes seams of anthracite coals and iron ore, but the surface geology is mostly weathered sandstone (British Geological Survey). Past exploitation of the coal seams is evidenced by two concentric lines of hundreds of shallow shafts on the north-facing slopes of Bancbryn. Other old working can be seen on the moorland fringes. Soils are typical of upland types – acid loams with a wet, peaty surface (Cranford University). Peat deposits can be found in hollows and valley bottoms.

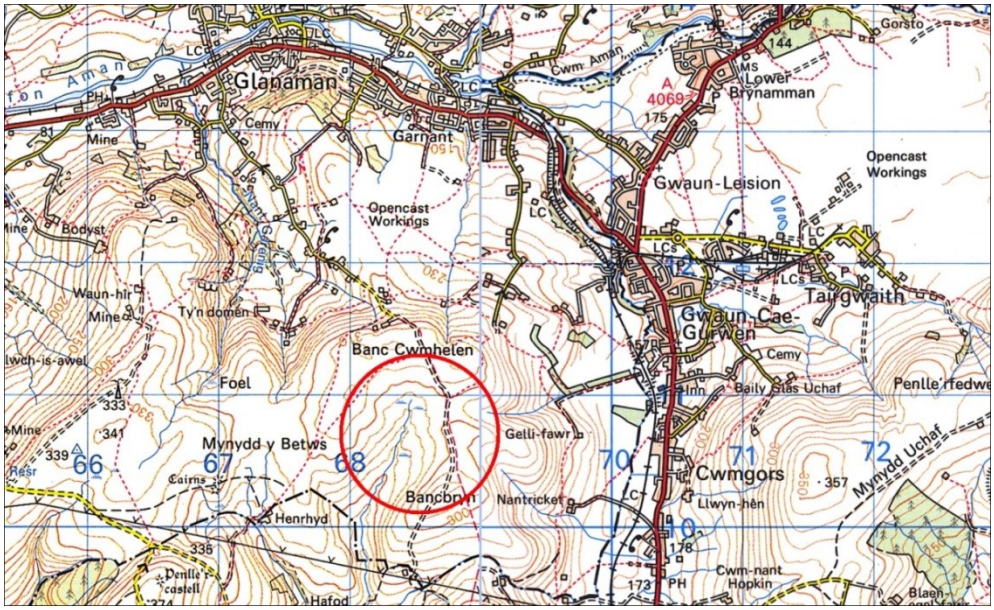


Figure 1. General location of the project circled in red, centred on NGR SN68541068
*(*Reproduced from the 2016 Ordnance Survey 1:50,000 scale Landranger Map with the permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright Dyfed Archaeological Trust, Corner House, 6 Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AF. Licence No 100020930)

Archaeological sites on the moorland consist of evidence for coal mining, as mentioned above, and for deserted settlements – houses, cottages and small-holdings. The date of use these settlements is unclear, but it is likely that most were abandoned during the nineteenth century. However, the archaeological record is dominated by prehistoric monuments. These mainly consist of low, roughly circular mounds of stones, labelled cairns on Ordnance Survey maps, and are considered most likely to be round barrows otherwise called burial mounds dating to the Early Bronze Age, c.2500BC – 1500BC. Round barrows are the most common prehistoric monument in Wales, with over 2500 known. In lowland areas they are usually earth-built and in upland areas they are mounds of stones (Fig. 2), as on Mynydd y Betws. However, the exact number on Mynydd y Betws is unknown, as no comprehensive survey across the whole moorland has been undertaken, but it may be several hundred, as Dr S Gerrard's work on Bancbryn has demonstrated that there may be 40 or 50 cairns in a single group in a relatively small area (Fig. 3). Prior to the excavations reported on here, no intrusive investigation, or at least any known intrusive investigation, had taken place on any of the cairns, and thus categorising them as Bronze Age burial monuments has been done purely on their surface morphology. Ordnance Survey investigators in the 1950s and 60s had considered many of them to be the result clearing land of stone in preparation for cultivation (they were then classified as clearance cairns), and is highly likely that some of the Mynydd y Betws examples are a result of this activity, particularly small, amorphous cairns occurring in groups on south-facing slopes suitable for agriculture. The current opinion of archaeologists is that they are indeed Bronze Age round barrows.

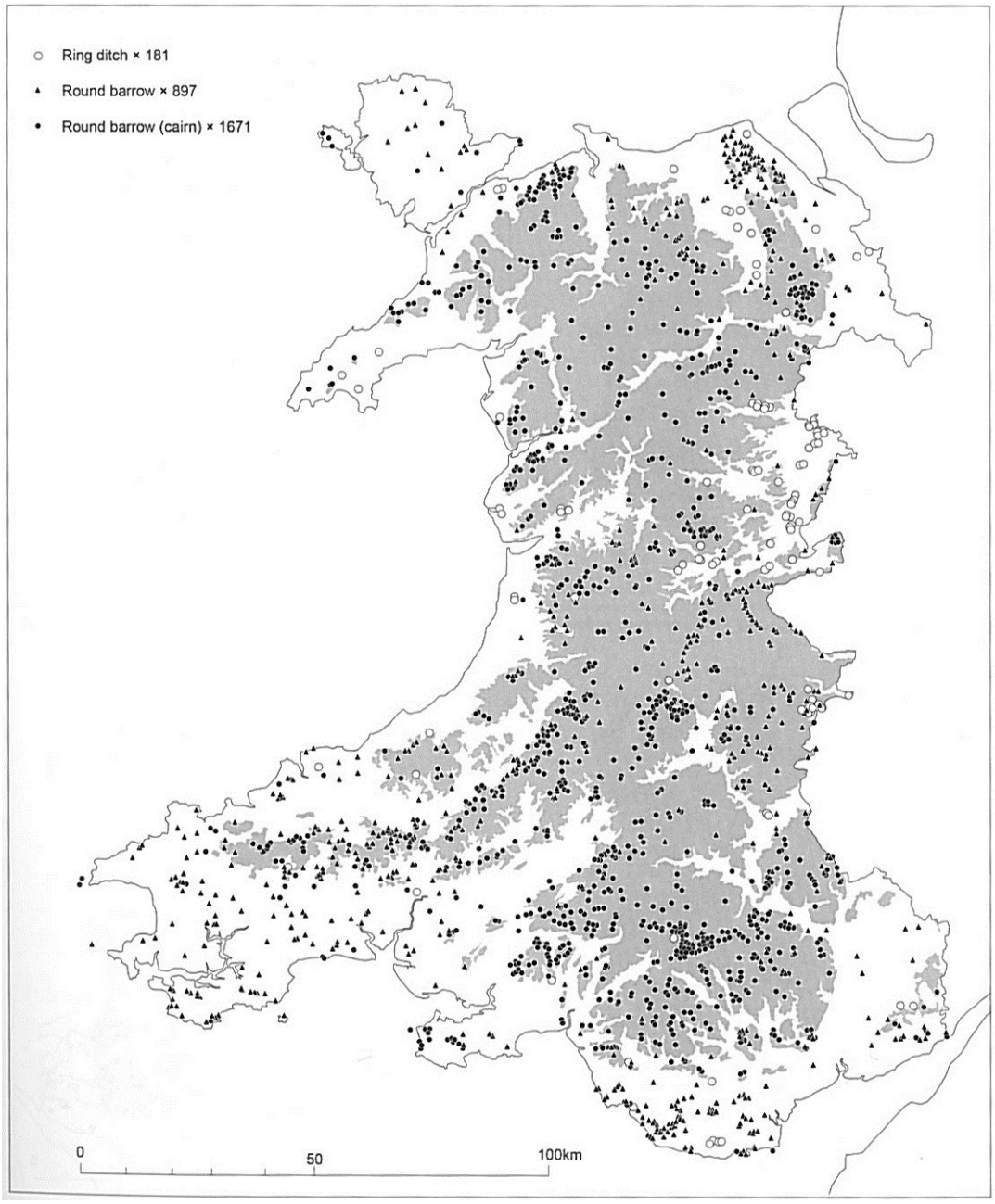


Figure 2. Distribution of round barrows in Wales, from Britnell 2013)

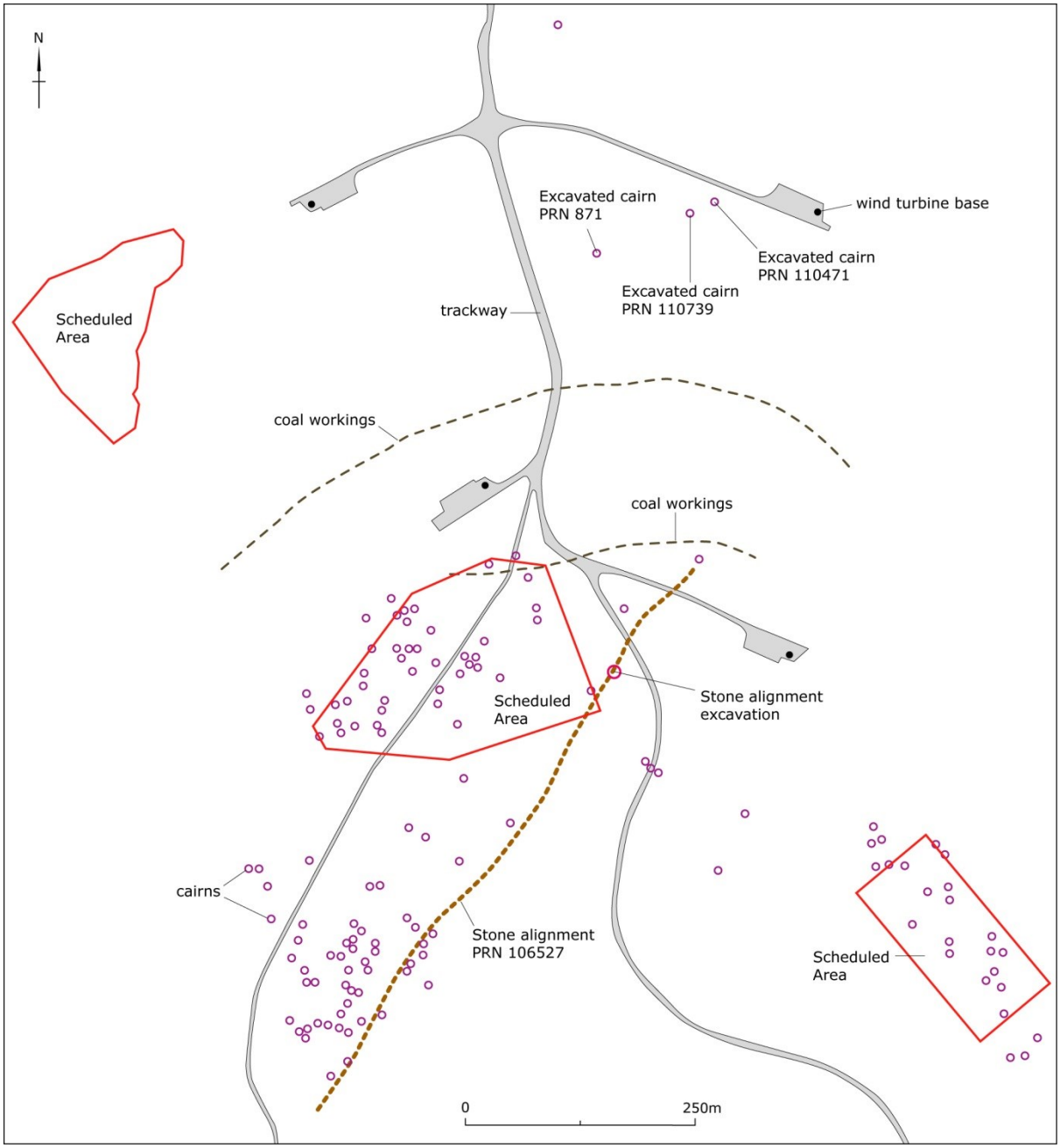


Figure 3. Map showing the location of sites within the Mynydd y Betws project area, including and the location of the excavations. Cairns marked as red circles. Data on locations of cairns supplied by S Gerrard

A long stone alignment, discovered by Dr Gerrard in 2012, is likely to be associated with groups of cairns. Long single alignments (greater than 100m) consisting of mainly small stones (less than 0.3m high) are found only in SW Britain (https://stonerows.wordpress.com/research/minilithic-rows/) Long double, triple and multiple stone alignments are also mainly confined to the same region, but a few examples exist in Caithness and Sutherland, Northern Scotland. A total of 18 long rows composed chiefly from small stones are known. These represent over 5% of the total number of stone alignments in Great Britain. This group does not include rows where most of the stones are small but where one or more of the stones are large (greater than 0.8m high). The map (Fig. 4) illustrates examples of the type of alignment

identified at Bancbryn are found only in SW Britain. The reasons for this discrete distribution are unclear, but Bancbryn fits comfortably within the known parameters for this form of stone alignment.

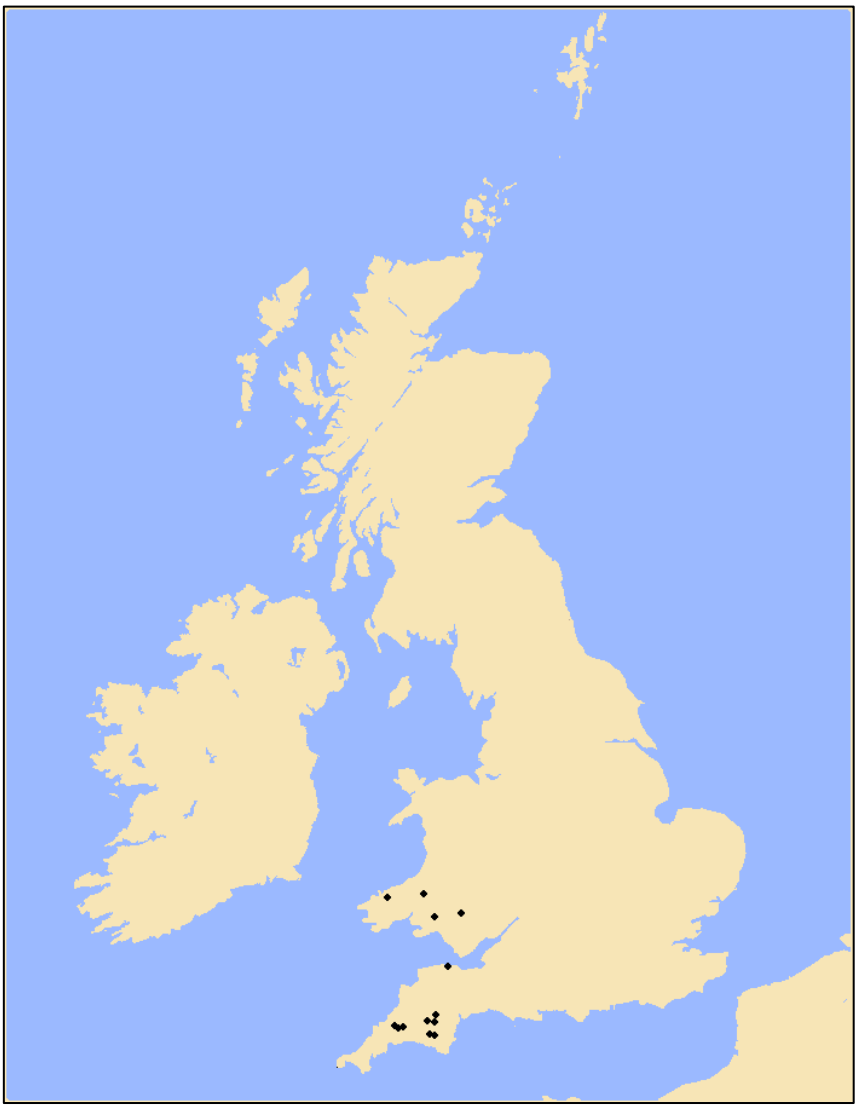


Figure 4. Distribution of long stone alignments consisting mainly of small stones

In 2005 Cambrian Renewable Energy Ltd submitted a planning application to Carmarthenshire County Council (application no. E10446) for a windfarm on Mynydd y Betws. Included in the application was an Environmental Statement, Appendix 5 of which was an archaeological assessment. This assessment was revised in 2006. Carmarthenshire County Council granted planning consent on 10 June 2009, with a condition that no development should take place until a programme of archaeological work has been implemented. Cotswold Archaeology undertook this work for ESBi Engineering on behalf of Cambrian Renewable Energy Ltd between November 2010 and June 2012. Archaeological evidence from this work was largely negative and is not described further (Wright 2012). Information for the work on the stone row is briefly described below in the relevant section. The windfarm developers, as part of a Section 106 Agreement, made funds available for archaeological work.

In April 2017, Dyfed Archaeological Trust applied to Carmarthenshire County Council Planning Services for funding from the Section 106 funds for a community archaeological project, including: volunteer excavations; school visits to the excavations; open days for members of the public to visit the excavations; and web-based interpretation of the archaeology on Mynydd y Betws and the excavations. This report describes the results of the work funded by the Section 106 Agreement. Three sites were comprehensively excavated over 12 days in July 2017 (10-21 July): two possible Bronze Age round barrows and part of the stone alignment, and two less intensively investigated. Dr S Gerrard directed the excavation of the stone alignment, F Murphy mound 871 and K Murphy mound 110471 and mound 110739.

THE EXCAVATIONS

Mound 110471

K Murphy

Background

Dr S Gerrard identified a low mound as the possible site of a Bronze Age round barrow in February 2012 during the construction of athe? windfarm. The mound lay immediately outside the easement for the windfarm, was roughly circular, *c*.5m in diameter, rose no more than 0.2-0.3 m above the surrounding moorland and was mainly visible due to the low vegetation on the mound which contrasted to the prevailing tussocky moorland grass (Fig. 5). The mound lies at SN 68946 10707 at just under 300m above sea level and although not in a prominent position it commands panoramic views to the NE through to the SE. It has been assigned record no. 110471 on the Dyfed Sites and Monuments Record.

Figure 5. Photograph of mound 110471 taken during construction of the wind farm (Photo: S Gerrard)

The Excavation

Removal of vegetation and topsoil using mattocks and spades revealed a stony mound on the top of which there was little more than a root mat 70mm thick. Soil gradually thickened on the slopes of the mound, eventually achieving a thickness of *c*.0.25m away from the mound. The soil (101) was a very fine sandy loam, with a black upper horizon with a high organic content and a dark brown less organic lower horizon. A sherd of Roman glass (129 – see glass report) was found in the topsoil.

The mound itself (henceforth called a cairn) was roughly oval in plan approximately 6m E-W and 4.5m N-S and consisted of up to three layers of generally sub-angular stones on average 0.2m x 0.2m x 0.1m, but some much larger, and many smaller stones (102). The interstices were filled with dark brown very fine sandy loam and roots. (Figs. 6-8). There were no kerb-stones or other structural features to the cairn. The overall impression was that the stones had simply been thrown into a heap. Two sherds of Roman glass (121 from the same vessel as 129 found in the topsoil and 122 – see glass report) and five worked flints (123-127 – see flint report) were found amongst the cairn stones.

Figure 6. Photograph of mound 110471showing the top of the cairn after removal of topsoil

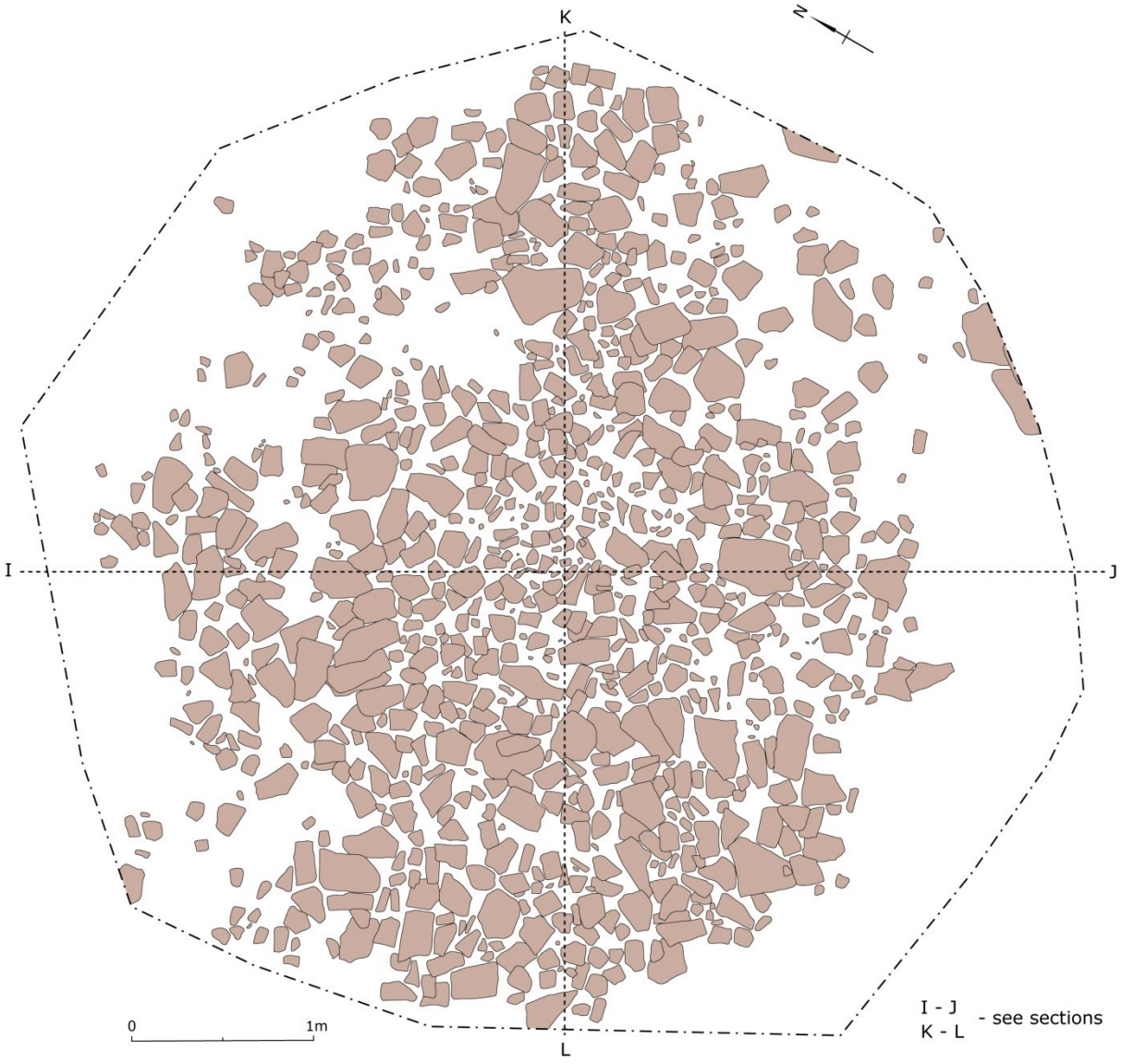


Figure 7. 110471 - plan of the cairn

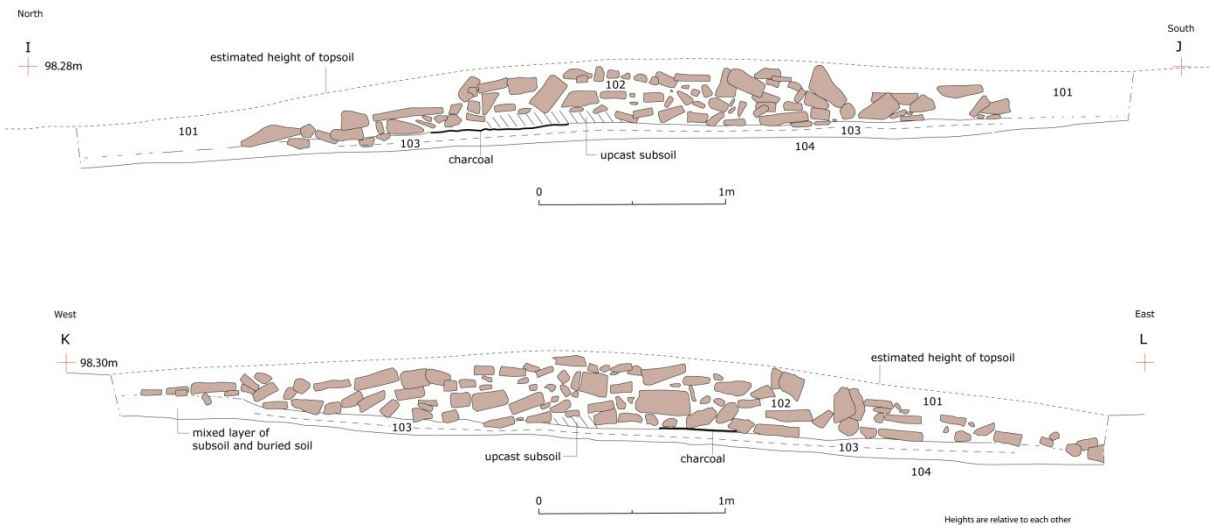


Figure 8. 110471 - sections of the cairn

Removal of the cairn (102) revealed a very fine sandy loam buried soil (103); it only survived where sealed by the cairn. Where best preserved it was up to 50mm thick and consisted of a sticky dark brown/black upper horizon and a lower grey-brown horizon. Charcoal fragments were present throughout the soil, but to the south-west of the centre of the cairn a concentration of charcoal fragments rested on and was mixed in with the soil. Analysis of the charcoal showed that it consisted of hazelnut shell fragments, oat grains and other cereal grains as well as oak, hazel, blackthorn and birch charcoal. A radio carbon date spanning a range from the early 5th century AD to the mid-6th century AD - 412-568 cal AD (SUERC-76017) - was obtained from hazelnut shell fragments.

Below the buried soil the upper geological deposits consisted of heavily iron-stained mottled orange/brown/yellow fine sand with numerous pieces of degraded sandstone (104). Pockets of this deposit were soft and stone-free and here four or five shallow grooves (105), just a few millimetres deep, were cut into it and filled with material similar to the buried soil (Figs. 9, 10). These are considered to be plough or ard marks.

The site was restored after the excavation.

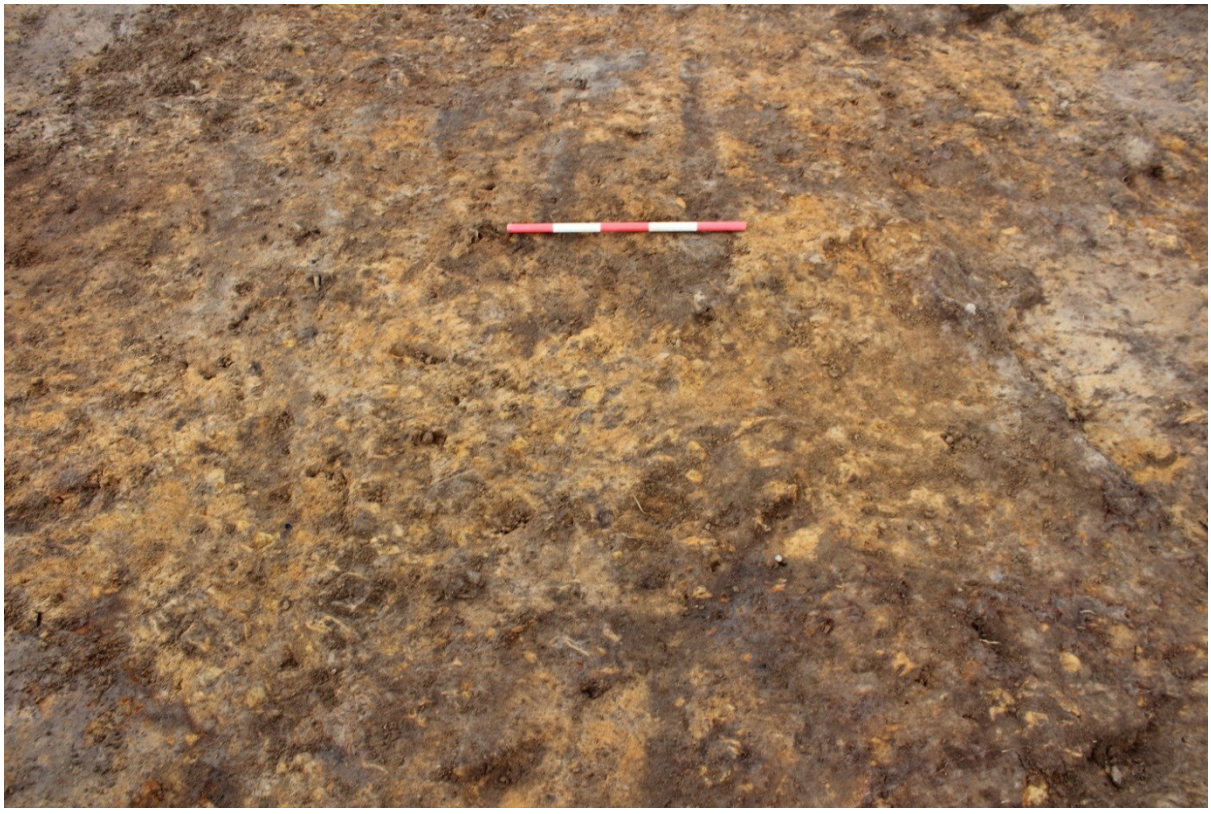


Figure 9. Photograph of plough or ard marks below cairn 110471

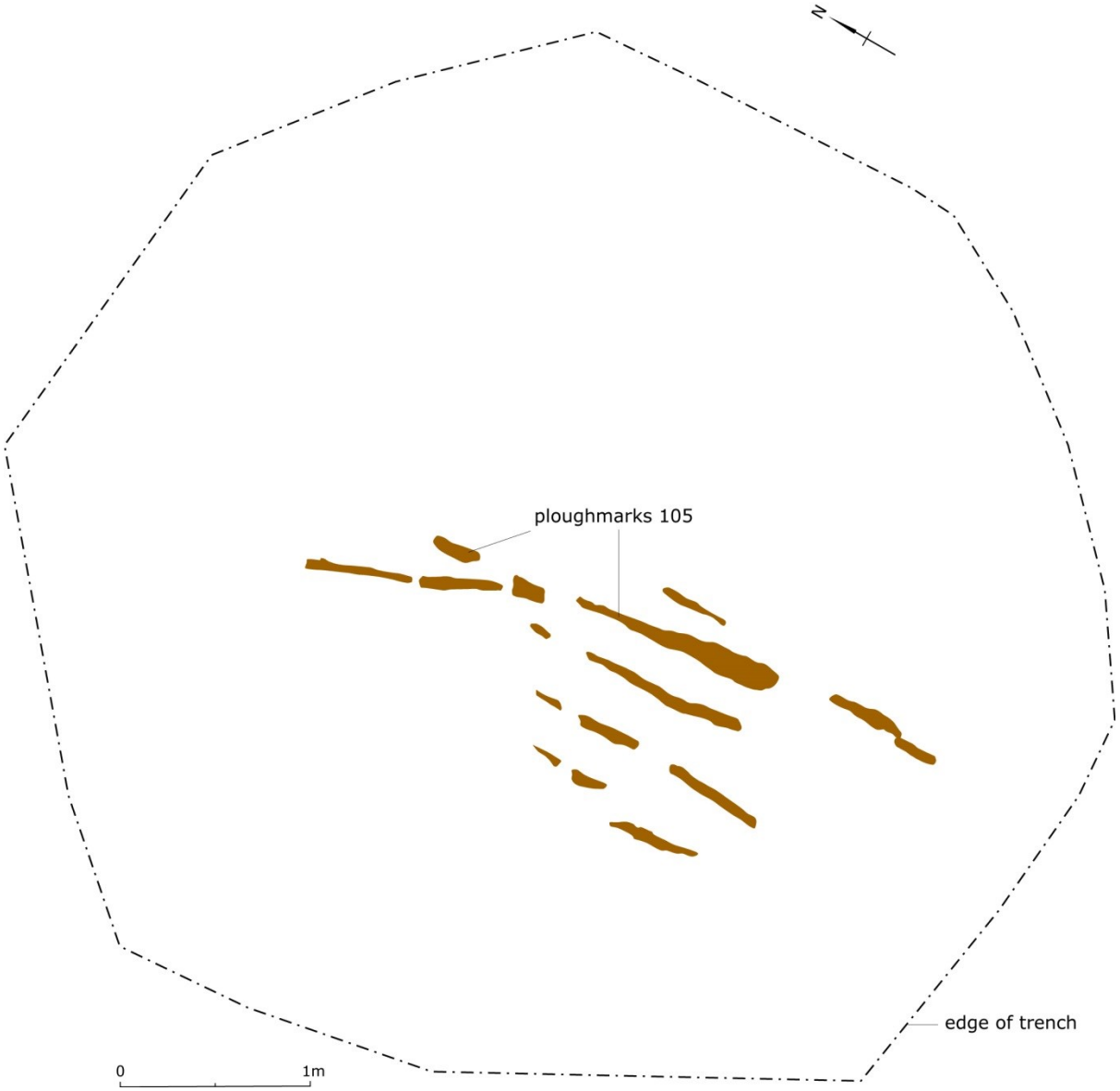


Figure 10. Plan of plough or ard marks below cairn 110471

Discussion

The early medieval radiocarbon date (412-568 cal AD) clearly demonstrates that this cairn is not a Bronze Age funerary monument as must have been constructed after AD 5th-6th centuries. It is possible it is a recent construction, however, it is more likely to date around or soon after the 5th-6th centuries as it is difficult to envisage how the relatively delicate layer of charcoal, from which the radiocarbon date was obtained, could have been preserved. The nearest known Roman sites to Mynydd y Betws are Loughor fort 12km to the south and Llandeilo fort 13km to the north and so the three sherds of Roman glass associated with the cairn are intriguing, but little can be said about them. Taken together, the radiocarbon date and the glass are evidence of previously unrecognised Roman and early medieval activity on Mynydd y Betws, but the nature of this activity is elusive.

Mound 871

F Murphy

Background

The Ordnance Survey first recorded this mound in 1958 and described it as a circular earthwork approximately 5m diameter and 0.4m high, with the centre excavated to ground level lying on open moorland at national grid reference SN68818 10651. It was assumed to be a Bronze Age round barrow. It is labelled on modern Ordnance Survey large scale maps as 'Cairn' and is recorded on the Dyfed Historic Environmental Record under record no. 871 and named Plas-y-Coed. It lies in a fairly prominent position at a little over 300m above sea level on the crest of a low ridge within a wide saddle. Prior to excavation in 2017 the mound was as described in 1958, although an estimate of 8-9m in diameter seemed more realistic than 5m, and it was clearly, at least in part, stone-constructed. An obviously feature of the mound was a central, circular hollow, mention by the Ordnance Survey. Heather was the predominant vegetation on the mound, which contrasted with the surrounding rough, wet moorland grass. It had suffered possible damage on its north side caused by quad bikes (Fig. 11). The mound was excavated over 12 days in July 2017 (10-21 July).

Figure 11. Photograph of mound 871 prior to excavation (Photo: S Gerrard)

The excavation

The mound (henceforth termed 'cairn') was divided into quarters and the vegetation and topsoil removed from the SW and NE quadrants. It was planned to expose the whole of the cairn, but as it took the first five days of the excavation to remove the dense woody heather roots and soil (1) from two of the quadrants this proved to be unachievable

Therefore only within the SE and NW quadrants was the central part of the cairn investigated (Fig. 12).

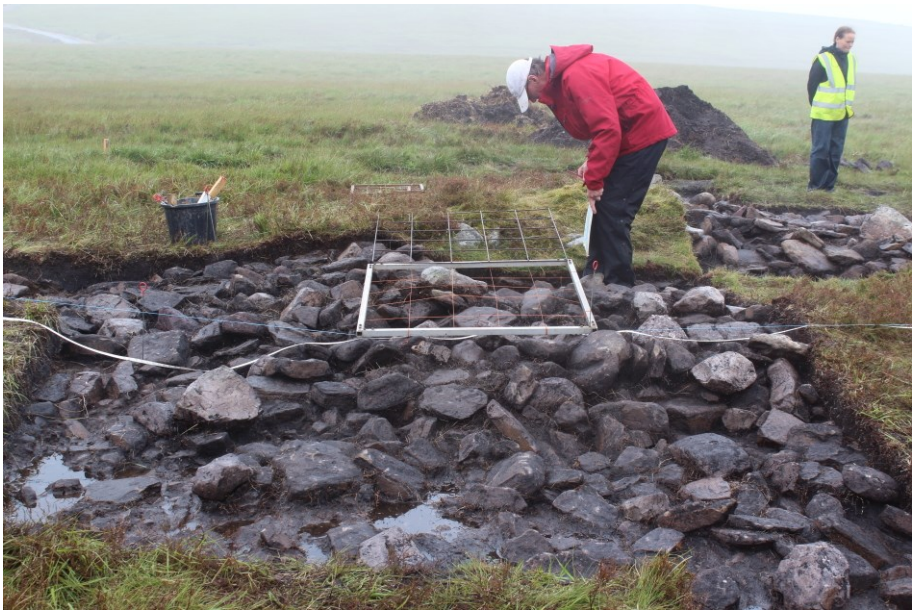


Figure 12. Planning the top of cairn 871 after removal of topsoil

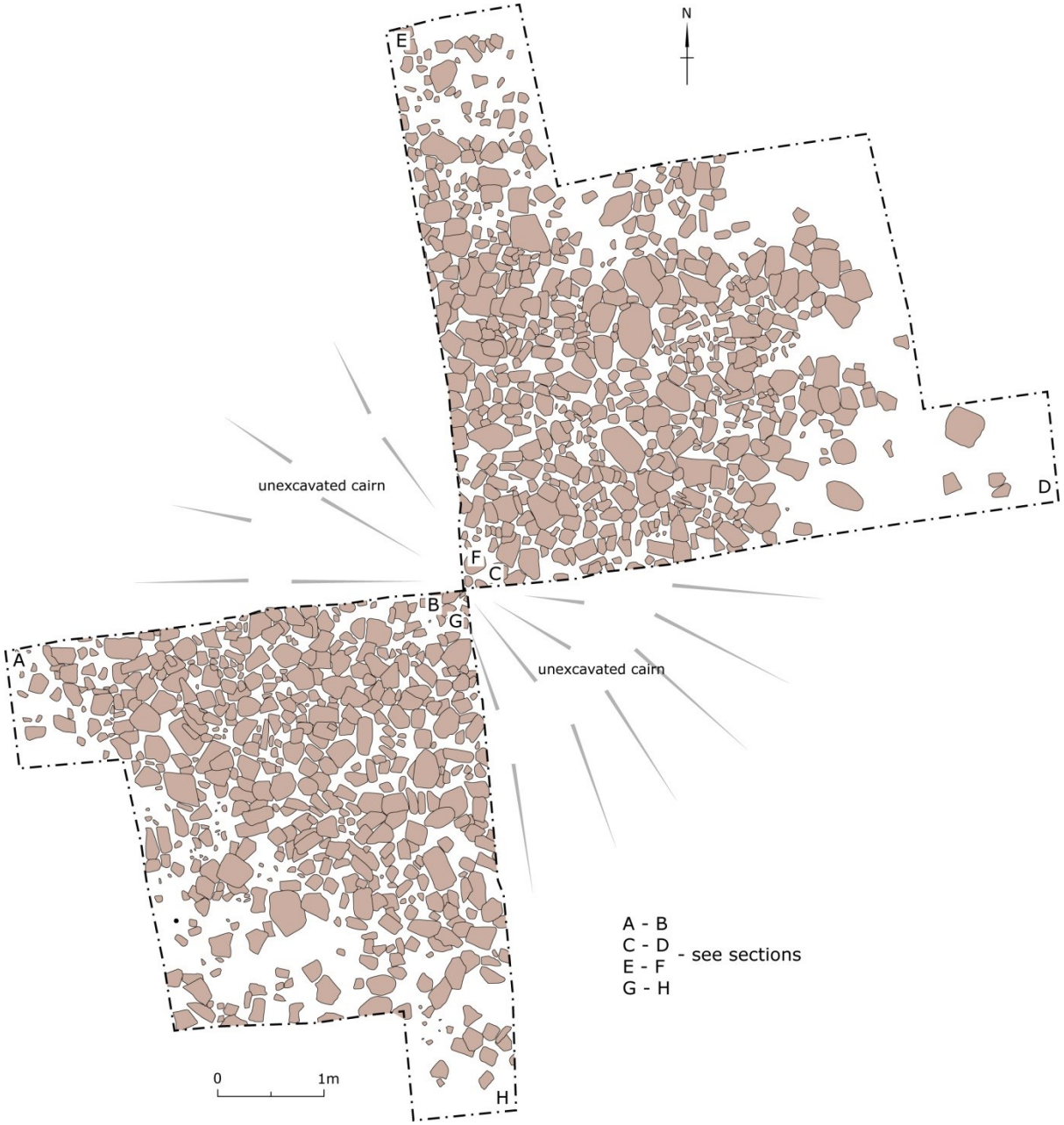


Figure 13. Plan of cairn 871

On excavation the stone-spread of the cairn (3) was almost 10m in diameter. The stones varied in size, but on average were sub-rectangular, 0.3m x 0.2m x 0.2m, but with some larger, rounded boulders and a number of smaller stones (Figs. 12, 13). Interstices were filled with a dark brown fine sandy loam (2). This soil was deeper in the central hollow of the mound and contained numerous fragments of mid- to late twentieth-century sherds of glass and a complete jam jar.

Figure 14. Cairn 871 after removal of the uppermost stones and outer stones revealing edging stones

Removal of the uppermost stones revealed that a number of larger stones or boulders appeared to define an outer edge to the cairn, as highlighted in (Figs. 14, 15). Stones from outside these edging stones were removed revealing that the boulders formed an approximate circle 5.5m diameter, if projected across the two unexcavated quadrants. A light greyish-brown fine silty sand with no obvious horizons within it (4) lay below the cairn both inside and outside the circle of boulders. This layer was thicker under the stones within the circle, and it seemed as if it had been partly removed outside the circle or built up within the circle, and was possibly representative of a former buried soil. Four worked flints (51-54 – see flint report) were found in layer (4) and all came from around the outer edge of the cairn.

Figure 15. Plan of cairn 871 with edging stones highlighted and showing expanded area of central excavation

In the time available it was not possible to remove all the stones within the SE and NW quadrants. Slots running parallel with the exposed sections were excavated down to the top of upper geological deposit; heavily iron-stained mottled orange/brown/yellow fine sand with numerous pieces of degraded sandstone (5). This allowed sections through the cairn to be recorded (Fig.16). Following this a 3m square trench was opened in the centre of the cairn (Figs.15, 17) to the top of the upper geological deposits. All elements of the cairn were carefully excavated within this central trench but no traces of any archaeological features in the buried soil (4) or cut into the geological deposits (5) were recorded, nor were any artefacts recovered.

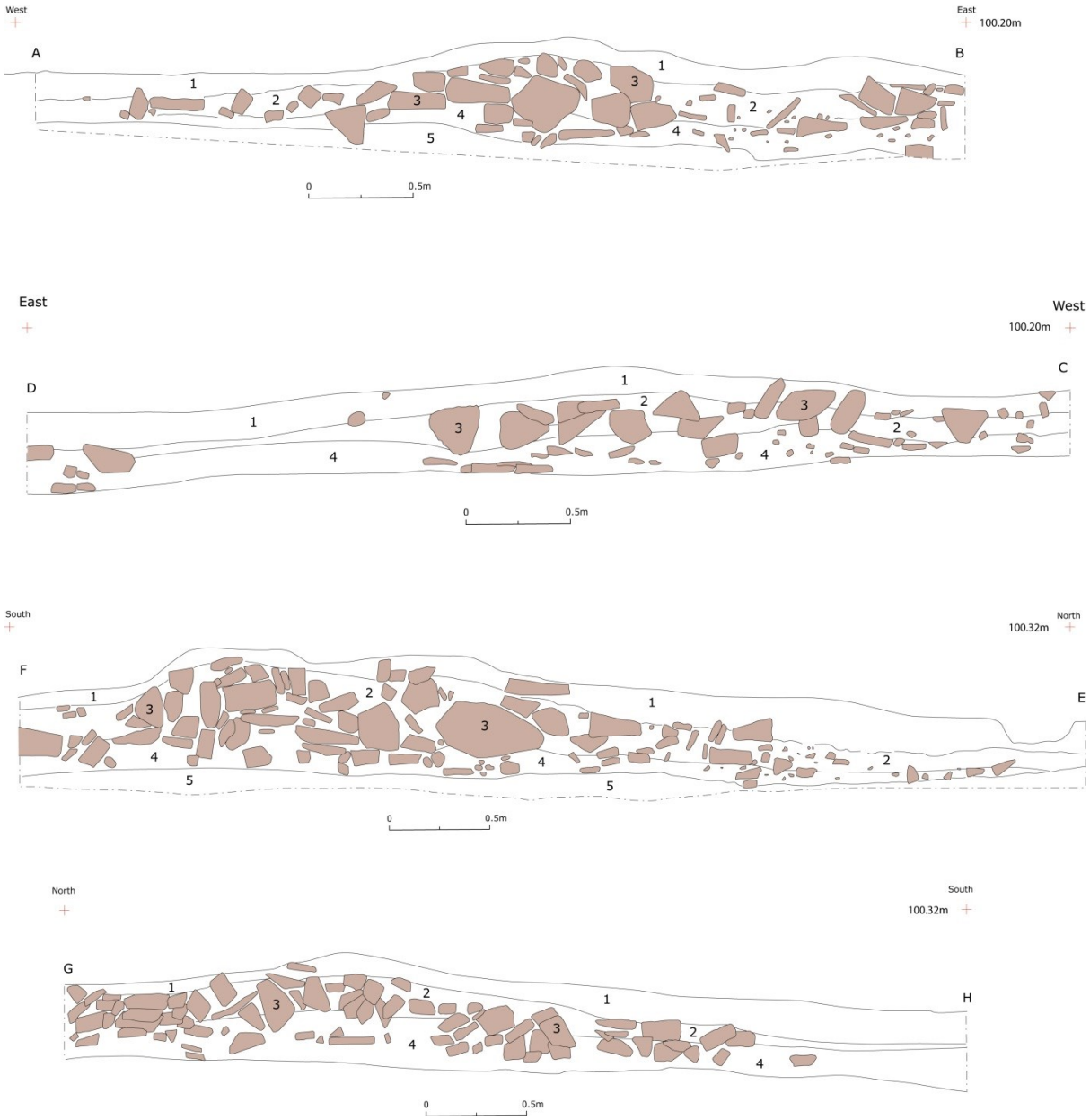


Figure 16. Sections of cairn 871

Figure 17. Photograph taken after the removal of the centre of cairn 871 showing the top of the geological deposits

Discussion

The location of the cairn in a fairly prominent position on a low ridge and circle of boulders forming a rough kerb suggest that this monument was a Bronze Age round barrow. Unfortunately there was no evidence for a burial and there were no artefacts of prehistoric date apart from the four flints. It would appear that the centre of the cairn had been excavated prior to the Ordnance Survey identifying the site in 1958. It may be that the glass from the hollow is evidence that this excavation took place not long prior to 1958, but it is more likely that an antiquary excavated the site, perhaps in the nineteenth century and that the glass is from rubbish disposal or even the remains of a picnic. A burial may have been incorporated in the cairn, rather than more commonly in a grave below the cairn. If it had been a cremation burial one would have expected to find small fragments of burnt bone overlooked by the original excavator.

It is interesting to note that as the possible buried soil exhibited no clear horizon it is likely to have been disturbed and mixed prior to and during the construction of the cairn. The cairn stones both inside and outside the circles of edging stones lay directly on or were pressed into this buried soil so preserving it. The stones outside the circle of edging stones appeared to have tumbled from the cairn. The buried soil outside the ring would not have been present if, for instance, the stones outside the ring had been thrown there during an antiquary's excavation in the nineteenth century. It is therefore likely that the stones inside and outside the ring were placed or came to rest on this soil within a short time of each other.

The site was restored after the excavation.

Mound 110739

K Murphy

Lying at grid reference SN 68916 10690 approximately 40m east of mound 110471, mound 110739 was recognised by Dr S Gerrard – the low heather vegetation covering it contrasting with the surrounding moorland grassland. A narrow trench confirmed that this newly discovered mound was very similar to cairn 110471, though slightly smaller. No work other than removing vegetation and soil and exposing the top of the cairn (Fig.18).

Figure 18.The cairn of mound 110739

Monolith

K Murphy

A narrow trench was excavated to expose one side of a substantial boulder lying between mounds 110471 and 110739. It was thought possible that the boulder was earth-fast and thus associated with the mounds. On excavation it was found to be resting on the surface of the modern organic soil (Fig. 19). This does not necessarily mean that it is not of some antiquity – see report on the stone row below.

Figure 19. Excavation of the monolith

Bancbryn stone alignment 106527

Dr S Gerrard

Background

The stone alignment at Bancbryn was identified in January 2012 following a moorland fire which had removed the dense vegetation cover. The alignment stands within a rich prehistoric funerary landscape (Fig.3). The alignment measures 717m long and consists of at least 173 stones. The upper end of the alignment is defined by a small cairn and the lower end by a large recumbent stone. In common with all accepted prehistoric long rows consisting mainly of small stones the plan form of the row is sinuous, with several shifts in orientation being visible along its length. The size of the individual stones varies as do the gaps between them. Both of these characteristics are consistent with prehistoric rows of this type. Significantly, the upper 300m length of the row is aligned precisely on the far distant headland of Hartland Point in North Devon, whilst Exmoor is present at the limit of visibility along a length of about 50m within the vicinity of the area excavated in 2017. Precise visual links of the type identified at Bancbryn are found at all long stone alignments and most of the shorter ones.

A short length of the row confined within the outline of a proposed windfarm access road was excavated by Cotswold Archaeology (Wright, J., 2012). The subsequent report concluded that whilst a prehistoric origin could not be wholly dismissed, an historic explanation for the feature was more probable. This conclusion did not fit comfortably with the available evidence. Further fieldwork undertaken both at Bancbryn and similar sites in SW Britain strongly suggested the prehistoric interpretation was the more plausible of the two https://stonerows.wordpress.com

The excavation

Four trenches were excavated entirely by hand with spades and mattocks used to remove the turf whilst the remainder was examined using trowels. Grid reference SN 6883 1020 (Figs. 20-23). Three stones of the alignment were examined together with an

area between two of them. Trenches 1 and 2 (which measured 2m long by 0.5m wide) were placed at right angles across a stone. On completion the area between them (Trench 3) was removed carefully. Trench 4 also originally measured 2m long by 0.5m wide and was extended following the discovery of cut (308). Following excavation all trenches were backfilled. The stone (303) in Trench 1 was lifted, but nothing was found below. Inclement weather prevented the examination of the ground below stone (309) in Trench 4.

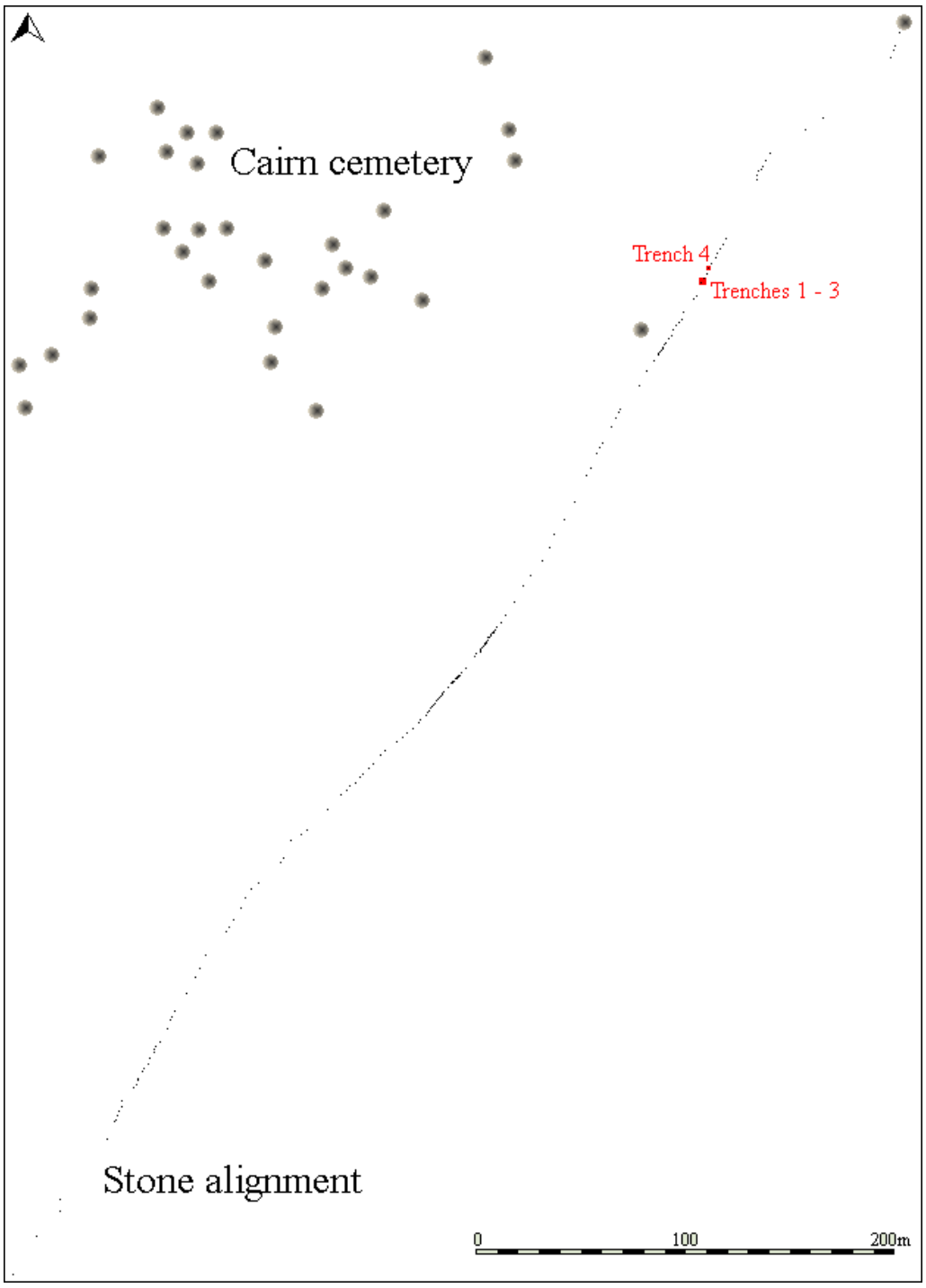


Figure 20. Plan showing the stone alignment in relation to the northern cairn cemetery and the location of the excavation trenches

Detailed planning of the stones in the vicinity of the excavation trenches was carried out. All stones were quartzite and partly rounded. The tables below provide details of the stones. See also Figure 21.

The height of each stone above the surrounding turf was measured:

A = 0.06m	B = -0.04m	C = 0.04m	D = 0.04m	E = 0.16m	F= 0.01m
G = 0.16m	H = 0.18m	I = 0.05m	J = 0.07m	K = 0.03m	L = 0.06m
M = 0.06m					

The relative level of the stones from a temporary bench mark were:

A = 98.81m	B = 98.67m	C = 98.69m	D = 98.55m	E = 98.57m	F = 98.28m
G = 98.18m	H = 98.08m	I = 97.86m	J = 97.77m	K = 97.56m	L = 97.16m
M = 97.12m					

Six sections were recorded during the course of the work. The positions of these are shown on Figure 21. These provided an insight into the stratigraphy.

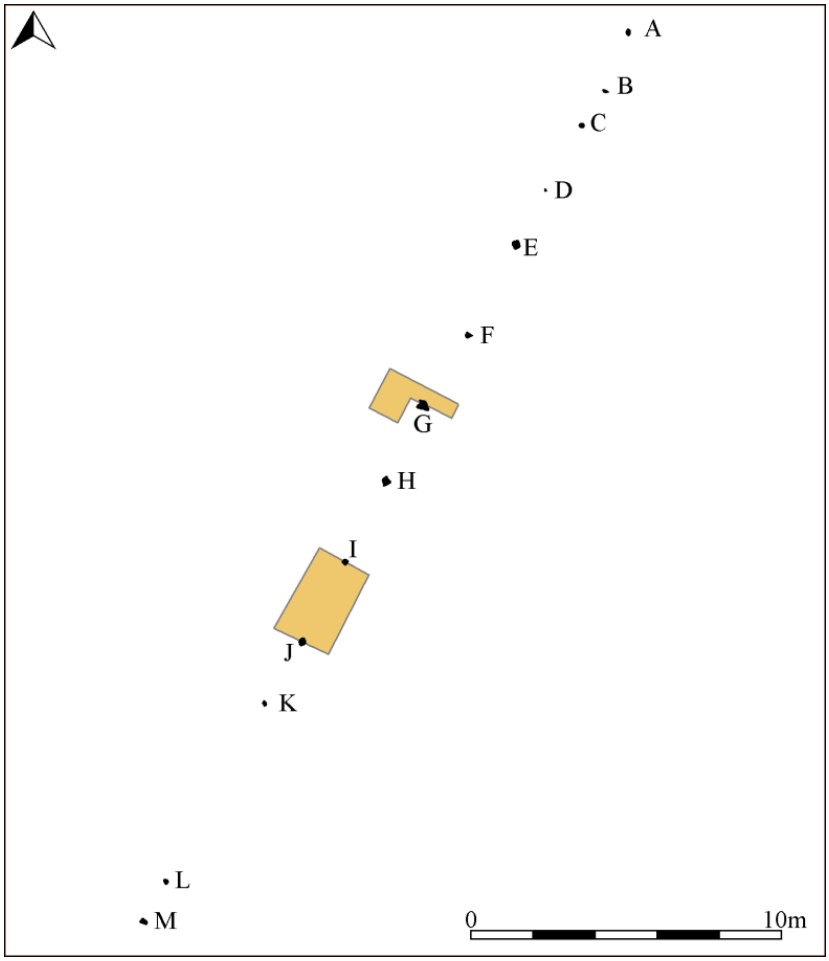


Figure 21. Plan of the stones in the vicinity of the excavation

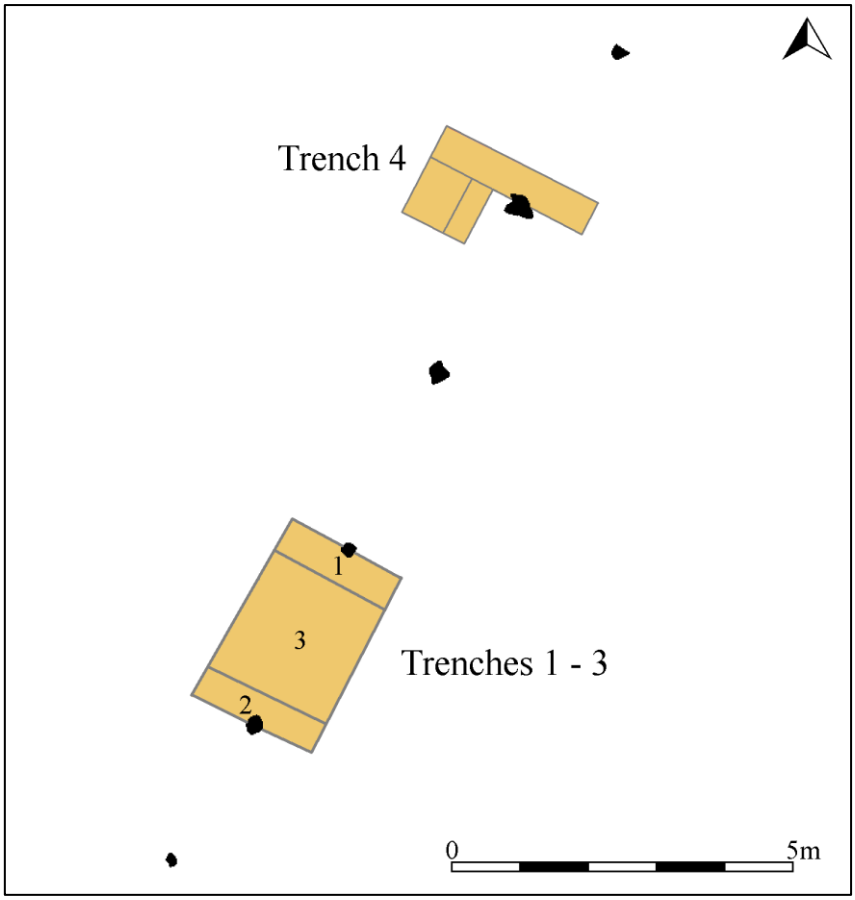


Figure 22. Plan showing the position and extent of the stone alignment excavation trenches

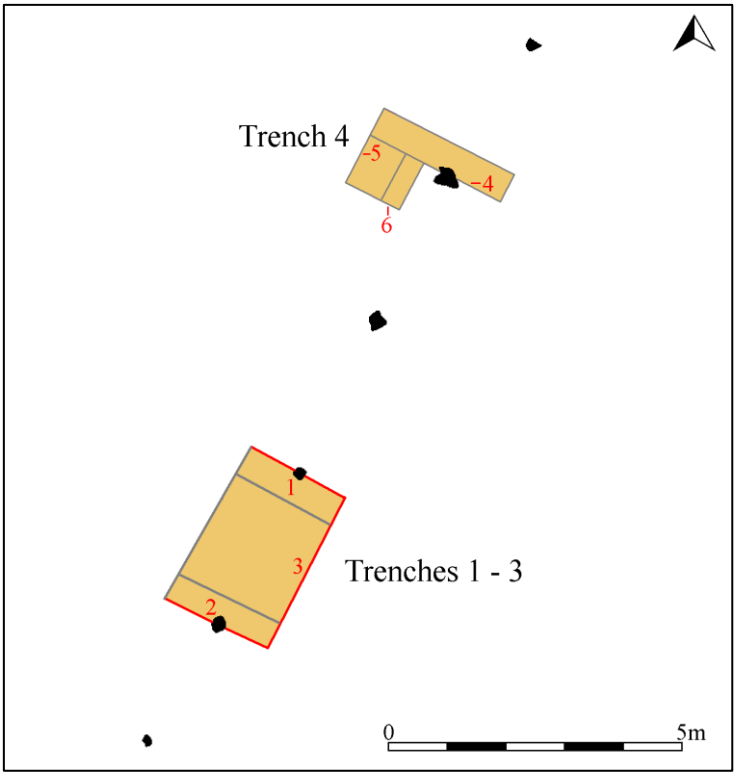


Figure 23. Plan showing the position of stone alignment recorded sections

Trench 1 (Figs. 24, 25). A 2m long by 0.5m wide trench was cut at right angles across stone I (303). A solitary layer of peaty black soil (301) was found below the turf. This sat directly upon the underlying natural (302) which is a hard compacted layer with occasional sub-angular quartzite pebbles embedded into a silty clay matrix containing nodules of decomposed sandstone fragments. Stone (303) was embedded into the upper half of the profile. There was no trace of any socket hole or propping stones, but given the relatively small size of the stone it could have been either placed directly on the ground or more probably inserted into a small cut in the contemporary turf and topsoil. Both scenarios are consistent with the evidence.

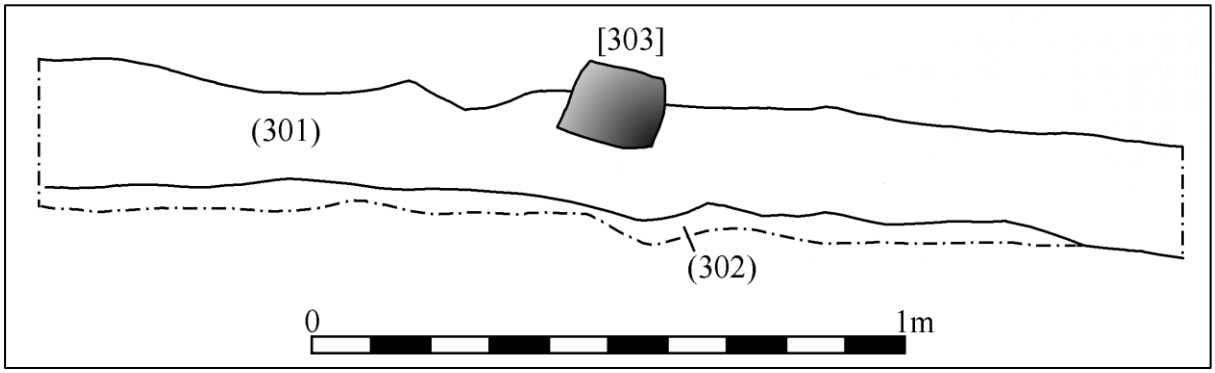


Figure 24. Section No. 1. Southwest-facing section across stone (303) in Trench 1 of the stone alignment

Figure 25. Section No. 1 Southwest-facing section across stone (303) in Trench 1. The stone in the foreground is embedded into the subsoil (302). Two stones forming part of the alignments are visible in the background.

Trench 2 (Figs. 26, 27). A 2m long by 0.5m wide trench was cut at right angles across stone J (304). The results from this trench were identical to those found in Trench 1 and the same conclusions are therefore equally valid.

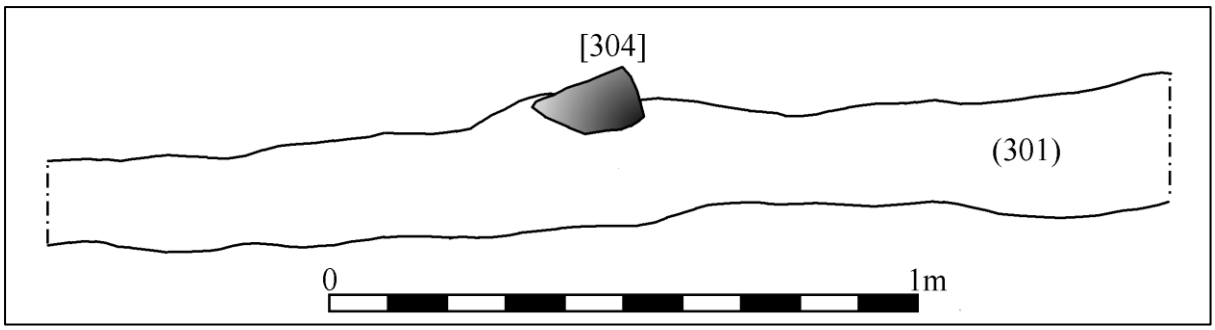


Figure 26. Section No. 2. Northeast-facing section across stone (304) in Trench 2 of the stone alignment

Figure 27. Section No. 2. Northeast-facing section across stone (304) in Trench 2of the stone alignment. The smaller stones within the base of the trench were embedded into subsoil (302)

Trench 3 (Figs. 28-35). This trench was excavated to examine the area between Trenches 1 and 2. Open area methodology was used with the turf being removed by spade and mattock and the remainder being trowelled. No evidence for an associated trackway or earlier ploughing was found and no further stone alignment stones were discovered. A small number of large stones were uncovered, but all of these were naturally embedded into the upper surface of the subsoil (302) during a solifluction episode at the end of the last glaciation. The absence of any stones within the peaty layer confirmed that the only identifiable human activity within this area was the erection of the stone alignment.

Figure 28. Trench 3 across stone alignment prior to excavation. The area between Trench 1 (foreground) and Trench 2 (beyond) was opened to establish whether there were any features or structures between the two visible stones.

Figure 29. Excavating Trench 3 of the stone alignment. View from northwest

Figure 30. Trench 3 of stone alignment. Removal of the turf revealed a peaty soil containing no stones. The absence of stone strongly suggests that this deposit has not been disturbed during the historic period. In addition no traces of ploughing were found. The only event identified by the work was the creation of the stone alignment

Figure 31. Trench 3 of stone alignment. The lower part of peaty soil (301). No stones were found in this layer. The stones protruding through the surface were all embedded into the underlying subsoil (301). View from north (Scales 1m and 250mm)

Figure 32. The subsoil within Trenches 1 – 3 of the stone alignment. The stones within the excavated area were all embedded into subsoil (302). The only stones within peaty later (301) were stones (303) and (304) forming part of the stone alignment. View from south (Scales 1m and 250mm)

Figure 33. The two large stones either side of the scale were naturally embedded into subsoil (302) and would have come to rest here towards the end of the last glaciation. The stone (303) on the left forms part of the stone alignment. Its position is consistent with erection in the prehistoric period. View from south west (Scale 250mm)

Figure 34. Removal of the two largest stones within Trench 3 revealed that they were embedded into natural subsoil (302)

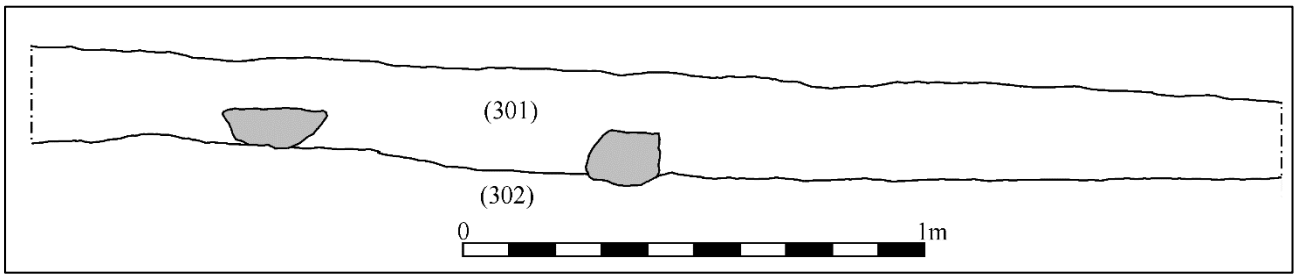


Figure 35 Section No. 3. Northwest-facing section forming south edge of Trenches 1, 2 and 3

Trench 4 (Figs. 36-49). This trench was excavated to examine stone G (Figure 6). A 2m long by 0.5m wide trench was excavated across the stone at right angles to the orientation of the alignment. This showed the stone sat within the peaty soil (305) which in this area was remarkably shallow. In the northern part of the trench a cut (308) filled with peaty soil (307) and a thin layer of dark brown silt (310) was identified, excavated and recorded in Section No. 4. The northern part of the trench was then extended to examine this feature. This work revealed that it formed part of a hollow which ran across the contour. This hollow contained a series of water borne deposits (310) and (311) and a few small pebbles. No artefacts were recovered. The most likely interpretation is this feature was a gully formed by fast flowing water in the period prior to the accumulation of soil on this part of the hillside. A date shortly after active solifluction ceased seems most probable. Excavation of stone (309) was prevented by inclement weather conditions.

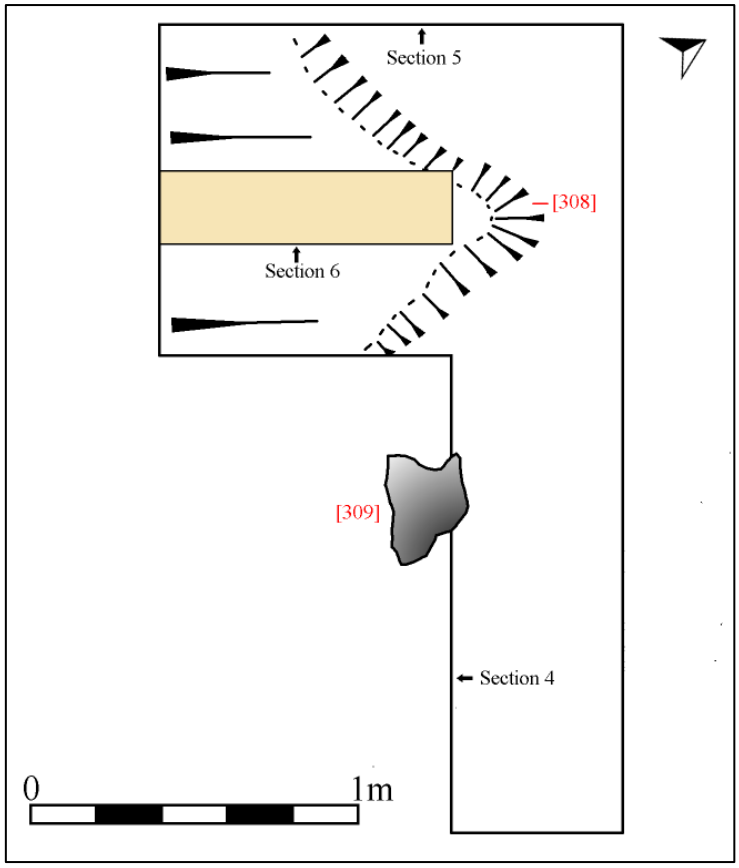


Figure 36. Plan of Trench 4 of the stone alignment showing position of hollow (308), stone (309) and sections

Figure 37. Trench 4 prior to excavation. View from south west (Scale 250mm)

Figure 38. Peaty soil (307) filled feature (308) in the south west corner of the original trench. View from north east (Scale 250mm)

Figure 39. Following the removal of the fill it was clear that the feature extended north west and south west beyond the trench. The trench was extended 0.50m to the north west and 0.90m to the south west in order to assess it properly. At this stage it was thought possible that it may have been formed by the quarrying of an embedded stone.

Figure 40. At this stage in the excavation the possibility of the hollow representing a small stone quarry pit was attractive. View from north east (Scales 1m and 250mm)

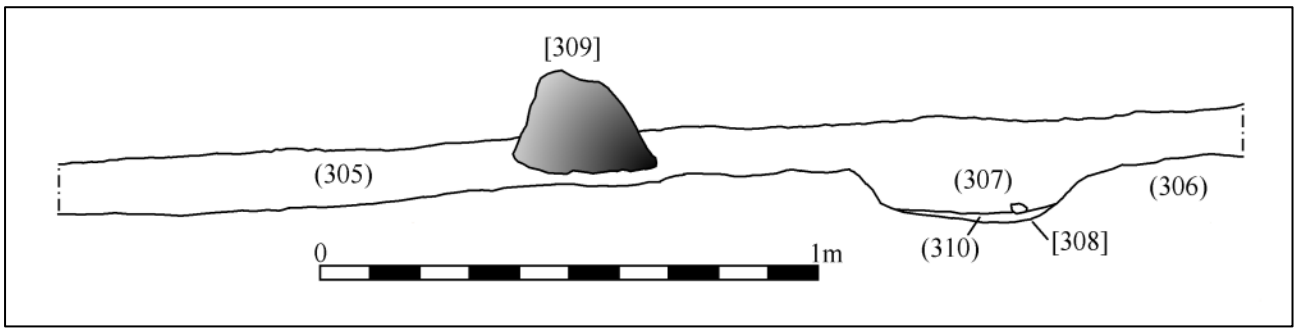


Figure 41. Section No. 4. North east-facing section forming south west edge of Trench 4. Compared with the stones in Trenches 1 and 2 the stone was lower in the stratigraphy. This may because being larger it was less susceptible to frost heave. The hollow (308) was formed by post-glacial storm runoff.

Figure 42. The north western extension to the trench revealed the northern extent of the cut. View from east (Scale 250mm)

Figure 43. Cut (308) and the stone alignment. View from north east (Scale 1m and 250mm). The trench was then extended south westward in order to examine the remainder of the feature.

Figure 44. The extended trench revealed that the cut was substantial. View from north east (Scale 250mm).

Figure 45. Excavation of the cut revealed that it extended across the contour and the part found within the original trench was probably formed by turbulence in a fast flowing flash flood stream. View from north west (Scale 250mm)

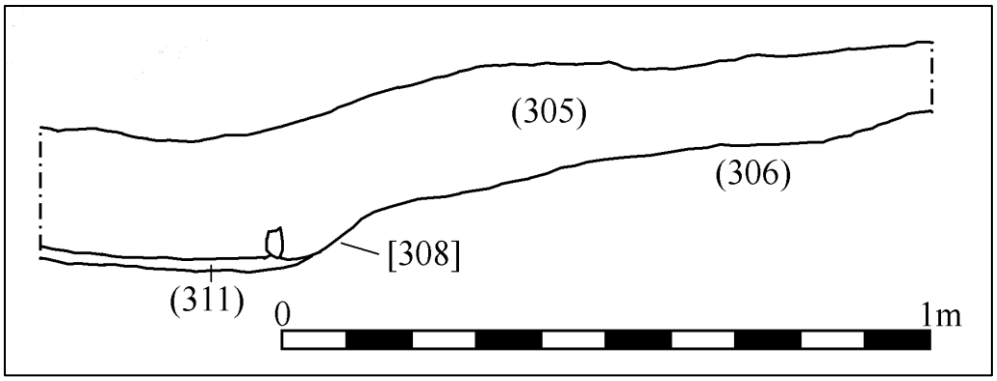


Figure 46. Section No. 5. Southeast-facing section forming north west edge of Trench 4

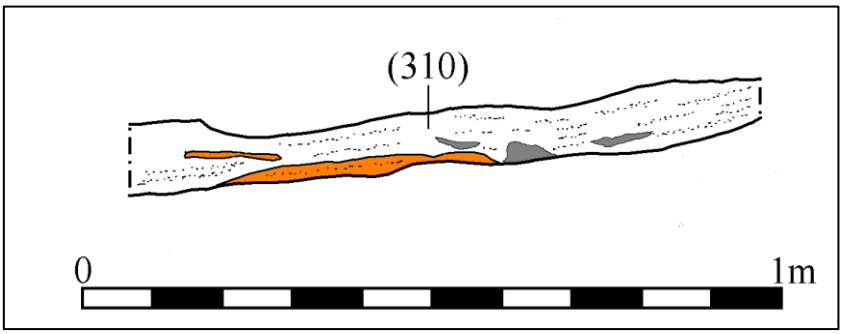


Figure 47. Section No. 6. South east facing section forming north west edge of baulk in Trench 4. This section includes the lower fill of hollow (308) and comprises water borne clays, silts and fine gravels

Figure 48. Section No. 6. Southeast-facing section forming northwest edge of baulk in Trench 4. The southern part of Section 5 is visible beyond. The water borne deposits in the lower part of hollow (308) are visible in both sections. View from south east (Scale 250mm)

Figure 49. Removal of the sediment within hollow (308) revealed no artefacts. Excavation of the northern and southern extensions was not possible, but sufficient work was carried out to identify it as a natural post-glacial surface run-off channel

Discussion

The excavations at the Bancbryn stone alignment predictably failed to provide conclusive dating evidence. Despite this, it was possible to move the debate forward. The absence of any evidence for ploughing means that a prehistoric interpretation remains valid. Historic ploughing would have destroyed such a fragile feature and therefore if evidence for this activity had been found the prehistoric explanation would have been rejected. Indeed, the only evidence for any human activity was the stone alignment itself. No trackway was found and no erosion hollows suggestive of heavy footfall or vehicles. The absence of artefacts is sadly a common characteristic of stone alignments and whilst this does not prove a prehistoric date it is consistent with the evidence.

The relatively high position of the stones within the stratigraphy may be seen as suggesting a more recent date than the prehistoric period. However, frost heave has almost certainly complicated the matter by artificially raising the stones. The peaty soil in this area is very shallow and together with the altitude provides the ideal environment for frost heave processes which would cause the stones to migrate upwards through the profile. Two possible mechanisms causing stones to migrate upward through soil profiles have been identified (Ballantyne, C.K. and Harris, C., 1994, 87 – 88). The first is frost-push and the second is frost-pull. The frost push theory relies on the fact that stone conducts cold more than the surrounding peat and every winter (perhaps on numerous occasions) an ice lens will have developed under the stones pushing them upwards. Following the thaw the stones would descend, but each time a few grains of soil will have settled under the stones resulting in their very gradual upward movement. Alternatively, the frost-push theory sees the stone being lifted with the surrounding frozen sediment and material slipping into the void below during the thawing process. Whichever process is responsible, the result is upward movement of stones providing an explanation for the apparently high position of the alignment stones. The evidence is therefore entirely consistent with the stones being placed in shallow sockets in the prehistoric period and as the soil profile has developed and deepened the stones have migrated upwards. As well as the effects of frost heave, the stratigraphic position of the stones may have also been influenced by moorland fires. Over the years these will have removed any more recent peat accumulations by a combination of burning and more significantly increased weathering from wind and water erosion of the exposed fragile surface. The removal of the upper layers in this way could also help explain the apparently elevated position of the stones.

The appearance of the stone alignment today may be very similar to its original form, although it is likely that some of the stones may have fallen over from their original position. The depth of the stones is not consistent with the early 20th century date suggested by the Cotswold Archaeology report (Wright, J. 2012, 31) unless the stones were deliberately inserted into sockets, which seems implausible. It is possible they were placed here much earlier in the historic period since their position within the stratigraphy would be similar, yet there is no known context for such arrangements of stones within the medieval period in this type of environment. An earlier date is consistent with the evidence although the lack of finds or any environmental data to support this conclusion introduces an element of uncertainty. Ironically the lack of dating evidence provides a modicum of support for the prehistoric interpretation since previous work at stone alignments has indicated a paucity of artefacts (e.g. Cholwichtown on Dartmoor where despite total excavation no artefacts or dating material was recovered (Butler, 1994, 109)).

A small number of larger stones were found much deeper within the stratigraphy. These stones were naturally embedded into the subsoil and would therefore not have been subjected to frost heave migration 'because of the low permeability of the silty-clay soil and therefore not susceptible to the formation of ice lenses. The result was that they remained in the position where they had been deposited during the solifluction process that formed the subsoil.

The absence of socket holes and propping stones simply reflects the size of the stones used to form the alignment. Whilst this means that we cannot be absolutely sure the stones were originally set in the prehistoric turf and topsoil, evidence from other sites

such as Colvannick (Attwell, D. and Gossip, J., 2015) indicates that even substantial slabs were sometimes set into the topsoil meaning that the absence of sockets is not a hindrance or indeed relevant to the prehistoric interpretation. Clearly, uncertainty remains as to whether the stones originally stood upright or not since the possibility they were simply laid on the surface cannot be entirely discounted. However, a quick experiment to find out how long it would take to firmly erect a stone in the topsoil indicated it could be easily completed in around 2 minutes. This row, therefore, does not represent a significant drain on resources, which of course would be the same for the other stone alignments consisting mainly of small stones.

Whilst the excavation failed to recover any dating material, it was possible to dismiss the interpretation that the stones were waymarkers for a track or path of relatively recent date leading from Bryn Mawr to the far side of Bancbryn. No path or track was found and there was no evidence for disturbance of the fragile peaty soil. The context for such a path is very dubious and the use of small stones which would soon have been covered in vegetation makes no sense. Furthermore, the paths leading to and from the various excavation trenches illustrated wonderfully the superfluous nature of such markers in a landscape where even little used routes soon become distinct and easy to follow. Finally, the idea that the local farmer needed a line of stones to help him across the moor immediately outside his home is verging on the ludicrous especially when one considers there was already a track which could be followed.

The stone alignment lacks any serious historic context, whilst by comparison there is a very strong prehistoric one.

- It lies within a rich prehistoric funerary landscape which is typical for rows of this type and form.
- It separates two discrete cairn cemeteries.
- It has a cairn at its upper end.
- The largest stone is at the lower end.
- It is sinuous in form which is typical for longer rows of both large and small stones
- The variable stone size is typical.
- The spacing of the stones varies.
- It has a very precise visual link with Hartland Point. Indeed, the precision of this link is such that if the orientation of the row was even a tenth of degree different it would not exist. Such a definable link with such a far point at the very limit of visibility is not something known to have happened in the historic period, whilst there is an increasing body of evidence which illustrates this is something the prehistoric stone alignment builders were very interested in.
- There is another precise visual link with Exmoor. Along a 50m length only the tip of Exmoor is visible. When walking down (SW) along the row this view is maintained. Approaching the row from the northern cairn cemetery Exmoor which is clearly visible from all the cairns slowly disappears and finally vanishes from sight at the point where

the row is crossed. Again, this type of visual relationship has more to do with prehistoric stone alignments than any feature of historic date.

Conclusion

Whilst an historic date cannot be wholly dismissed, the substantial body of cumulative evidence from fieldwork, comparative analysis, a series of precise and pertinent visual links together with the results of this excavation, provide an attractive and compelling body of evidence to support the interpretation of this feature as a stone alignment of prehistoric date. Since prehistoric stone alignments are universally accepted as enigmatic, it is perhaps fitting to find this informative site continues to hold back on providing us with the final crucial piece of evidence – its date.

VOLUNTEERS

The excavations would not have been possible without the enthusiastic help of numerous volunteers. Some gave their time for the whole 12 days of the project; others for just a day, but all contributed greatly to the success of the project, and battled on through what was a very wet mid-July. Individual motivations for participation ranged from those who 'always wanted to have a go at archaeology' and 'to see what it was like' to those who gaining field experience in preparation for a career in archaeology. In total 49 volunteers gave 1100 hours of their time to the project.

List of volunteers:

Ian Atkinson, Nigel Bailey, Eileen Basili, Sophie Bradley, Tony Combe, David Davies, Manon Davies-Lewis, Marilena Durant, Pete Francis, Eponine Haberfield-Noble, Stephen Hagget, Tommy Hagget, Michael Hartley, Jenny Higgins, Christopher James Henry, Caralinda Jefferies, Pat Jenkins, Callum Kinber, Kashnia Kirby, Geraint Lloyd, Rhys Long, Simon Morris, Bethan Murphy, Catrin Murphy, Jeremy Notman, Kenny Owen, Steffan Penhale, Bronwen Price, William Rees Price, Andrew Pyne, Lyn Richards, Lucy Rees, Fiona Richards, Peter Rowland, Nick Sargent, Mali Summers, Jonathan Thomas, Deborah Thompson, Abigail Townsend, Jude Walter, Rob Walter, Elspeth Wheeler, Alison Wheeler and Joan Wilks.

ENGAGEMENT WITH THE PUBLIC

Two visitor open days were arranged during the middle weekend of the excavation (15-16 July). Two mini-buses were organised to transport visitors from Ammanford and Glanamman. However, there was continuous, torrential rain over the two days, and although all those who had booked places on the mini-buses turned up, there were no casual visitors. In total we showed about 50 people around the excavations.

Owing to the remoteness of the excavations and the difficult access casual visitors were not encouraged, but neither were they discouraged from visiting, and each day over the two-week excavation a few people visited and were shown around the excavation.

SCHOOL VISITS

During the excavation two schools visited the site, Betws Primary School, Ammanford and Ysgol y Bedol, Garnant. An introductory lesson was held at both schools prior to the visit to introduce them to the site. In total 48 pupils from Years 3, 4, 5 and 6 visited along with 6 teachers and learning support assistants. Whilst on site pupils visited both cairns and the stone alignment and had the opportunity to take part in the excavations Fig. 50). Pupils thought about the location of the cairns and their significance in the landscape and also followed the stone alignment and debated its purpose. After lunch pupils looked at examples of Bronze Age pots and created their own replicas before heading back to school. Feedback received from the schools has been positive requesting similar days be held in years to come.

Figure 50. Pupils from Betws Primary School taking part in the excavation

SPECIALISTS' REPORTS

Radiocarbon determination

A radio carbon determination of 1566±35 BP (SUERC-76071) was obtained from carbonised hazelnut shell from layer 103 from beneath cairn 110471. This calibrates at 2 sigma to 412-568 cal AD.

Scottish Universities Environmental Research Centre
Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE
27 November 2017

Laboratory Code	SUERC-76017 (GU45563)
Submitter	Ken Murphy Dyfed Archaeological Trust Corner House 6 Carmarthen Street Llandeilo Carmarthenshire SA19 6AF
Site Reference	Mynydd y Betws
Context Reference	103
Sample Reference	171
Material	Charcoal - hazelnut shell : Corylus Avellana L.
$\delta^{13}C$ relative to VPDB	-23.3 ‰
Radiocarbon Age BP	1566 ± 35

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

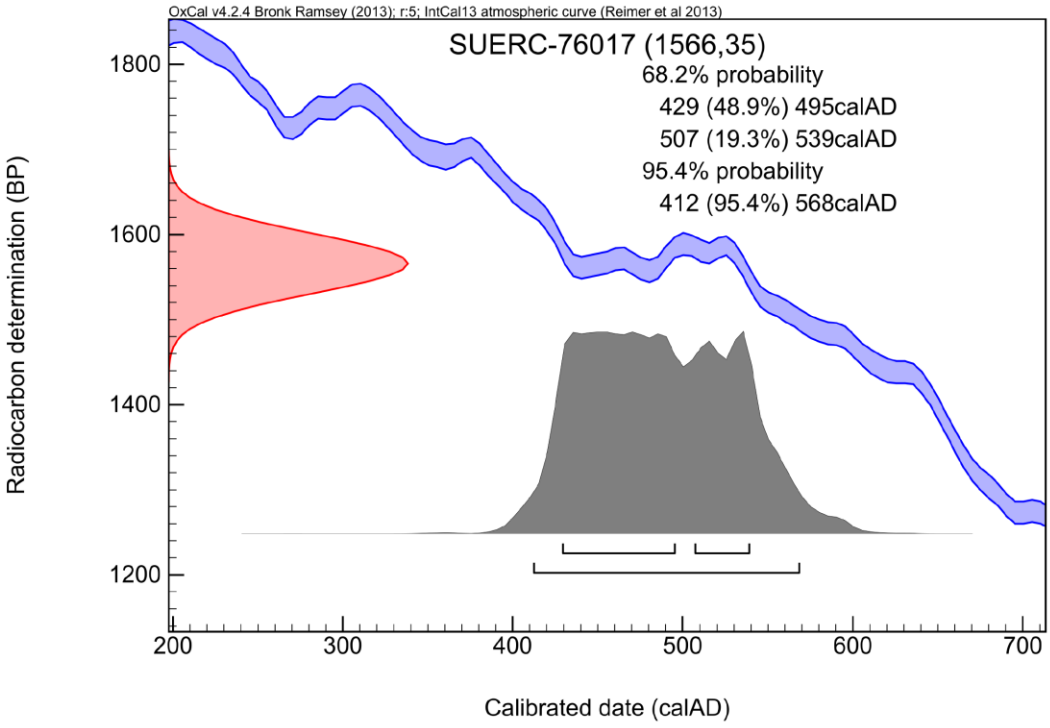
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon 58(1) pp.9-23.*

For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E. Dunbar

Checked and signed off by : P. Naysmith



The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal13 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon 51(1) pp.337-60*
† Reimer et al. (2013) *Radiocarbon 55(4) pp.1869-87*

Flints

A David

Ten flints were recovered during the Dyfed Archaeological Trust's Community Excavation Project at Mynydd y Betws, Carmarthenshire, in July 2017, which investigated two possible Bronze Age cairns and a stone alignment. Four of the flints came from the outer edge of cairn 871 (context [04]), with the remainder from cairn 11047; five of the latter came from the body of the cairn [102] and one from the underlying buried soil [103]. Details are shown in Tables 1 and 2.

Cairn 871: three flints are undiagnostic tertiary debitage, whilst the fourth piece (51) is a flake segment with steep retouch at its proximal end lending it a 'nosed' outline (Fig. 51, 1); the opposing side is a snap facet with signs of subsequent use/damage along its ventral edge. It may have been used and/or re-used as a scraper. All four pieces are of unpatinated semi-opaque grey flint with only one (53) having a vestige of cortex – insufficient to suggest a possible geological source.

Cairn 110471: the items from the body of this cairn comprise two pieces of debitage and three tools. Of the latter only (124), a convex scraper, is a recognisable formal tool type; the other two (123, 126) are informal retouched and/or utilised pieces. The scraper (Fig. 51, 2) is typical of the 'thumbnail' type, with neat inclined retouch around half its perimeter and some use/damage, with a touch of gloss, on the ventral surface. The distal end of 123 (Fig. 51, 3) has an irregular and somewhat 'nosed' outline defined by steep retouch from both the ventral and dorsal surfaces; both its lateral edges have been scarred by damage/use and it too may have been used for scraping. The third tool is a flake fragment with quite severe edge damage along one side (Fig. 51, 4). The pieces of debitage - a small flake (125) and a flake fragment (127) - are undiagnostic, as is the single flake fragment (128) from the buried soil.

Most of the pieces from cairn 110471 are unpatinated greyish flint; however, one fragment (127) has a densely patinated surface, perhaps indicative of an artefact of greater age and/or differing origin. The piece from the buried soil (128) may have a mild patina. Together with the absence of cortex, none of these features help to suggest a raw material source.

Overall summary: these few flints are not very informative. Their association with potential Bronze Age features may be entirely fortuitous, being as likely the residue from prolonged prehistoric use of the wider upland landscape. The thumbnail scraper, however, certainly has Early Bronze Age associations (in both sepulchral and domestic contexts) and the informal tools and debitage - although not technologically or typologically diagnostic - could also be of this age (although 'probably post-Mesolithic' would be a safer description). The signs of utilisation and breakage, and the small size of the pieces (maximum dimension: 36mm) suggests that flint raw material was scarce, perhaps found in local drift deposits, or collected from coastal exposures to the south.

Table 1: **Cairn 871** (PRN 871)

Small Find No.	**Context**	
51	04	retouched flake/scraper
52	04	rejuvenation flake
53	04	flake frag (in two pieces)

54	04	flake

Table 2: **Cairn 11047** (PRN 110471)

Small Find No.	**Context**	
123	102	retouched and utilised flake
124	102	convex ('thumbnail') scraper
125	102	flake
126	102	utilised flake frag
127	102	patinated flake frag
128	103	?patinated flake frag

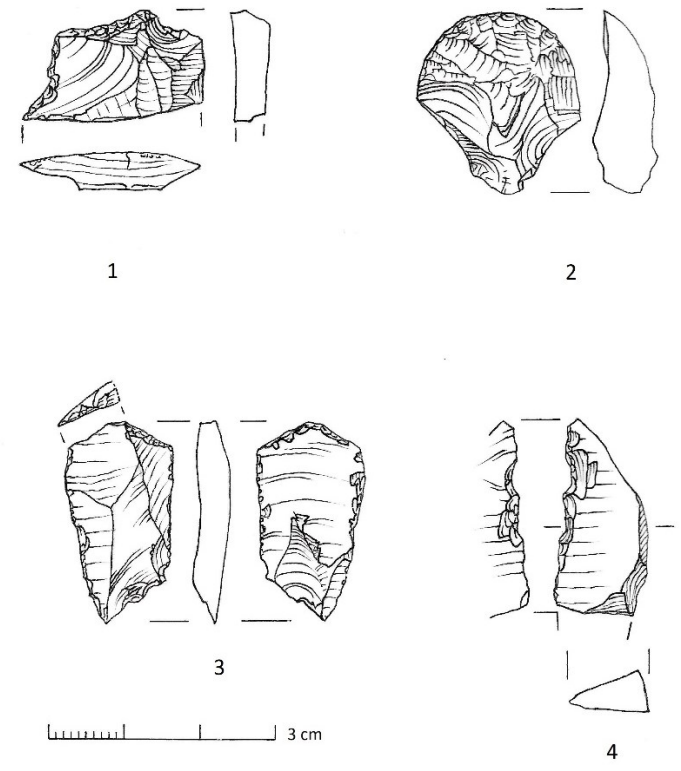


Figure 51. Flints

Roman Glass

D Brennan

Three sherds of Roman glass were found during the excavation of Mound 110471.

129 from topsoil (101). Fragment of free-blown vessel glass, pale green with numerous small bubbles, evidence of heat-distortion and subsequent surface weathering. The surviving portion is part of a pushed-in open base ring with a low concave base. The exact form could not be identified as this type of base profile is found on both globular jars (Isings 1957, Form 67c) and on long-necked handled jugs which have the same rounded body profile (*idem*, Form 52). A mid-late first or early second century date is likely. At this period, glass wares were imported from the Rhineland and other areas of the north-western provinces (Price and Cottam 1998, 5).

121 from cairn (102). A small fragment from the same vessel was recovered from context 102.

122 from cairn 102. Rim fragment from mould-blown bottle, natural coloured blue/green glass. Rim edge bent out, up, in and then flattened giving a slight diagonal profile. Evidence of wear visible at the edge of the rim. Part of the cylindrical neck survives below. Rim diameter c.50mm.

This piece is from an extremely common form of bottle that is found across the Roman Empire during the first and second centuries AD. Blue/green cylindrical, square (Isings 1957, forms 51 and 50) and other prismatic bottles were produced, all of them sharing the same type of rim, cylindrical neck and angled strap handle. They were made in a range of sizes, and were used to store and transport olive oil and other liquids. Numerous parallels are found in glass assemblages across Britain (see: Price and Cottam 1998, 191-200). Amongst examples from excavated sites in West Wales are fragments found at the Roman fort at Dolaucothi (Brennan in Burnham & Burnham 2004, 131-2, fig.2.89, nos. 4-7) and from within the Roman town of Carmarthen (Brennan in James 2003, 344, fig.8.14, nos. 23-26).

Plant Macro Fossil and Charcoal Identifications

C. J. Griffiths

Introduction

Excavations of cairn PRN 110471 at Mynydd y Betws, uncovered a layer of charcoal rich sediment beneath the stones of the cairn. Two samples from the sediment were received, one a large 9.5L soil sample and a small sample of c. 5 fragments of wood charcoal. The aim of the analysis was to recover plant remains and identifiable charcoal in order to obtain a radiometric date and give any indication of the economy or the environment for the cairn.

Method

The large soil sample was sieved using a wash over technique, the sample was soaked in a weak hydrogen peroxide solution to disaggregate the soil and enhance the flotation of

the charcoal. The flot was washed through a set of 2mm, 1mm, 500µm and 250µm sieves, the residue was sieved onto 2mm and 250µm sieves and then dry sieved through 4mm, 2mm, 1mm, 500µm and 250µm sieves.

The sample was analysed using a Wild M5 stereomicroscope, identification of the plant remains was by comparison with modern reference material and the use of seed atlases. Nomenclature follows Stace (1991)

The small charcoal sample 172 was washed on a 250µm mesh.

The charcoal from this and the larger soil sample was idenitified using a Leica DMR microscope with an incident light source.

Results – Plant macro fossils (Table 1)

Context 103, Sample 171, a large charcoal rich sample with a sandy matrix. Once sieved numerous quartz crystals were noted in the residue.

The identifiable plant remains from the sample other than wood charcoal were scarce given the volume of material. However, a small quantity of *Corylus avellana* L. (hazel) nut shell fragments were retrieved from both the flot and residue. Also present were cereal remains including *Avena* sp. (Oat) grains and cereal grains too badly preserved to be identified to species.

Other remains included *Ranunculus repens* L. (Creeping buttercup), *Rumex* sp. (Dock), *Ulex europaeus* L. (Gorse) and *Bromus* sp. (Brome) seeds. Also present were fragments of monocotyledenous stem/rhizome.

Context 103, Sample 172

This sample contained about 5 fragments of wood charcoal and no other plant remains.

Charcoal Identification (Table 2)

The five fragments of charcoal from sample 172 and 50 fragments taken randomly from sample 171 were identified. Over all the most frequent charcoal was *Quercus* spp. (Oak), with *Alnus glutinosus* (L.) Gaertner (Alder) the second. The other species present included *Corylus avellana* L. (Hazel), *Prunus spinosa* L. (Blackthorn) and *Betula* spp. (Birch).

Discussion

The charcoal from beneath the cairn was composed primarily of wood charcoal with other plant remains scarce.

The presence of oat and cereal grains indicate the possiblity of arable agriculture in the vicinity of the cairn, although it is not possible to identify the oat to being a domesticated species due to the lack of floret bases or pedicels.

The seeds recovered from the sample are species commonly found in habitats such as grassland, wet grassland, disturbed ground, arable or cultivated or in the case of gorse, heath or grassland. Fragments of monocotyledenous stem/rhizome material were also present, which may suggest that the plant remains could have been brought on to the site with the wood and were accidentally incorporated into the assemblage.However

given the presence of the cereal grains, the straw or dried grass may have been brought to the site deliberately.

The hazel nut shell fragments may also have been brought to the site deliberately as a food source or more likely they were incorporated into the assemblage accidentally along with the hazel wood identified from the charcoal analysis

The charcoal from the deposit provides evidence for the availablity of oak as well as alder, birch, hazel and blackthorn in the area, the species suggest that an edge of woodland environment was being exploited. The charcoal was on the whole well preserved, with some round wood present, suggesting that younger wood was being used, especially for the diffuse porous species, alder, birch and hazel. Caution should be taken when interpreting charcoal assemblages as the fragmented nature of the charcoal may only represent a small amount of actual wood present.

Conclusion

The plant remains from the site provide tentative evidence of agriculture in the area with the presence both arable and grassland species. The presence of hazel nut shell fragments may indicate that woodland species were also being utilised as a food source, however the presence of hazel charcoal may also suggest that the nuts were accidentally collected with the wood.

The evidence of the charcoal and plant remains suggests that the wood was possibly collected from the edge of a wooded area where oak was growing along with the bushier species of alder, birch, hazel and blackthorn. The seeds and other plant remains indicate a grassland environment with some possible arable agriculture. The cereal and weed seeds may have arrived at the site either accidentally, for example with the wood or may have been brought deliberately to the site by human agent, possibly as a form of tinder.

Table 1 The Plant Macro Fossils

Context	**103**	**Habitat Preference**
Sample	**171**	
Volume	**9.5L**	
Avena sp./Poaceae - grain (Oat)	2	A, G
Cereal indet – grain	2	A
Ranunculus repens L. (Creeping buttercup)	1	G, Gw, B, M, C
Corylus avellana L. (Hazel) nut shell frags.	12	W
Rumex sp. (Dock)	2	G, D, A, M, B
Ulex europaeus L. (Gorse)	1	H, W, G
Medicago sp. / *Trifolium* sp. (Medicks/ clover)	1	G, D
Bromus sp. (Bromes)	1	G, Gw, D, A
Seed indet.	1	
Monocotyledenous stem/rhizome frags	2	

Wood charcoal	+++++	
Other material		
Cf Glass/quartz crystal	1	
Small flint frag.	1	
Cf. Metal work waste	1	

A = arable and cultivated, G = grass, D = disturbed, H = heaths, M = marshes, fens and bogs, W = woods, hedgerows, scrub, w = wet

Table 2 Charcoal Identification

Context	**103**	**103**	**Habitat Preference**	
Sample	**171**	**172**		
Species				
Querus spp. (Oak)	22	3	W	25
Betula sp. (Birch)	1		W, H	1
Alnus glutinosus (L.) Gaertner (Alder)	15		Ww,	15
Corylus avellana L. (Hazel)	9	2	W	11
Prunus spinosa L. (Blackthorn)	3		W	3
Total	**50**	**5**		**55**

W = woods, hedgerows, scrub, w = wet

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MYNYDD Y BETWS
CARMARTHENSHIRE
EXCAVATION OF CAIRNS AND A STONE ALIGNMENT

RHIF YR ADRODDIAD / REPORT NO. 2017/41
RHIF Y DIGWYDDIAD / EVENT RECORD NO. 110470

Medi 2017

September 2017

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

Ken Murphy

Swydd / Position: DIRECTOR

Llofnod / Signature  Dyddiad /Date 04.12.2017

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

Frances Murphy

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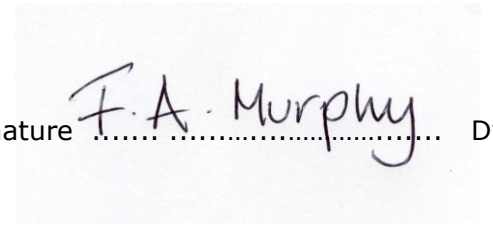
Llofnod / Signature  Dyddiad/Date 05.12.2017

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

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