Report No: 2012RO17

Archaeological excavations at Bosiliack, Madron, Cornwall

Historic Environment Projects

Archaeological excavations at Bosiliack, Madron, Cornwall

Client	
Report Number	**2012RO17**
Date	
Status	**Draft/2nd draft/Final**
Report author(s)	**Andy M Jones**
Checked by	**Ann Preston-Jones**
Approved by	**Andrew Young**

Historic Environment, Cornwall Council
Kennall Building, Old County Hall, Station Road, Truro, Cornwall, TR1 3AY
tel (01872) 323603 fax (01872) 323811 E-mail hes@cornwall.gov.uk
www.cornwall.gov.uk

Acknowledgements

This study was commissioned by English Heritage and the Cornwall Archaeological Society and carried out by Historic Environment Projects, Cornwall Council. Funding was also provided by the Cornwall Heritage Trust

The Project Manager was Andy Jones.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

Historic Environment, Cornwall Council is a Registered Organisation with the Institute for Archaeologists

Cover illustration

House 3 from the north fully excavated

Contents

Summary 7

Location and background 9

Archaeological recording 10

The flint 22

The charcoal from house 3 24

Radiocarbon dating 24

Discussion 26

Project archive 38

Appendix A: Recorded contexts 39

Appendix B: Rhizomes 40

Appendix C: The artefacts 42

Appendix D: The samples 44

Appendix E: Rhizome graphs 45

List of Figures

Figure 1 Location map.

Figure 2 Map showing location of the Bosiliack area.

Figure 3 Plan of the Bosiliack Bronze Age settlement area.

Figure 4 Plan showing house 3.

Figure 5 North facing section across house 3.

Figure 6 The entrance into house 3 from the south.

Figure 7 Roundhouse 3 from the north.

Figure 8 Test pit 1 showing the rhizome mat.

Figure 9 Test pit 3 north facing section.

Figure 10 Bosiliack entrance grave from the south east.

Figure 11 Lynchet on southern side of the entrance grave.

Figure 12 Plan showing Houses 1 and 2.

Figure 13 Archaeological features in house 2.

Figure 14 Aerial view of the Bosiliack settlement (top left) and fields (centre) circa 1970, before scrub spread across it it (CCR/JIP 2549).

Figure 15 Pottery from houses 1 and 2.

Figure 16 Radiocarbon determinations from the 1984 and 2011 excavations.

Abbreviations

EH	English Heritage
HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
OS	Ordnance Survey

Summary

In September 2011 archaeological investigations were carried out at Bosiliack, near Lanyon in Madron parish, west Penwith. The project was undertaken to gain further information about the Bronze Age settlement by excavating one of the roundhouses and to ascertain the effects of bracken rhizomes upon buried archaeological deposits. During the course of the fieldwork stage of the project, eight 1m square test pits and a small structure, house 3 were excavated.

Here is one of the largest and best preserved prehistoric landscapes in west Cornwall. Previous archaeological recording in the area in 1984 had involved the excavation of a small entrance grave and the partial investigation of two Bronze Age roundhouses. The results from these excavations have recently been drawn together for publication (Jones and Thomas 2010; Jones and Quinnell 2011a).

This report contains the details of the 2011 fieldwork, as well as a summary of the previous campaign of recording undertaken in 1984. The format of the report follows the *Cornish Archaeology* template, since the report will eventually be published in that journal. Appendices at the end of the report provide information about the project archive.

The project was funded by English Heritage, The Cornwall Archaeological Society and the Cornwall Heritage Trust, as part of Historic Environment Cornwall Council's Scheduled Monument Management scheme. The key results are as follows:

House3

The excavation of house 3, a stone-walled roundhouse, revealed a simple structure less than 6m in diameter. There were few internal features although traces of a rab floor were identified. Disturbance had occurred to the site during the post-medieval period and further damage been caused to the upper layers in the house by bracken rhizomes. A total of 1076m of rhizomes were recorded within the house. A small assemblage of Middle Bronze Age pottery was recovered from the structure, which suggests that it was in use from around 15000-1200 cal BC. Charcoal submitted for radiocarbon dating produced two Middle Iron Age dates, revealing a later phase of activity.

The bracken investigation

Eight 1m square test pits were excavated across the prehistoric field system to examine the impact of bracken rhizomes upon the buried archaeological deposits. On average, approximately 79m length of rhizomes was recovered from each test pit, although in one case 103.3m were recorded within a single test pit

Most of the rhizomes were located in more recently formed soils: however, a substantial quantity were also recovered from what is thought to be the older soil horizon. Disturbance to this layer through rhizome activity therefore has implications for any future environmental work on the soils within the field system. Few rhizomes were recorded in the natural rab subsoil. However, where natural granite boulders outcropped through the rab, this was found to contain denser concentrations of rhizomes. This finding has significant implications for the archaeology of upland areas, which contain large numbers of stone-built structures.

The results from the project are very worthwhile because we have learnt about the impact of bracken on the buried archaeological resource and it is recommended that rhizomes are recorded during the excavation of other upland sites, so that a better picture of its impact can be developed. It is also certainly worth bearing in mind the impact that bracken may have had in the past on archaeological sites and deposits in the south west.

Following the excavation a recommendation for Scheduling has been made, and because of the light thrown on the site by the excavations, management to control scrub and bracken growth has already been initiated through a Higher Level Stewardship agreement.

Archaeological excavations at Bosiliack, Madron, Cornwall

In September 2011 archaeological investigations were carried out at Bosiliack near Lanyon in west Penwith. The project was undertaken to gain further information about the Bronze Age settlement by excavating one of the roundhouses, and to ascertain the effects of bracken rhizomes upon buried archaeological deposits. During the course of the project, eight 1m square test pits and a small structure, house 3, was excavated. Excavation of the features revealed the huge impact of bracken and led to the recovery of Middle Bronze Age pottery which suggests a second millennium cal BC date for the roundhouse. Later activity dating to the Middle Iron Age was revealed by two radiocarbon determinations.

In September 2011, Historic Environment Projects, Cornwall Council, was funded by English Heritage, the Cornwall Archaeological Society and the Cornwall Heritage Trust to undertake an archaeological project and training excavation involving investigation of the effects of bracken rhizomes on buried archaeological deposits and the excavation of a Bronze Age roundhouse at Bosiliack (Madron) (Fig 1).

Bracken is an extremely invasive plant, endemic on many moorland areas of Cornwall. Its effects in cloaking whole landscapes and hiding archaeological remains are well known but recently the work of Sandy Gerrard and the Dartmoor Bracken project has led to growing concern over the potential impact of bracken rhizomes upon buried archaeological deposits (Gerrard 1999; 2007). It was the purpose of this project to examine the effects of bracken rhizomes in west Cornwall, where the mild climate encourages bracken growth which can be far lusher than that on Dartmoor. The roundhouse settlement at Bosiliack was selected for a campaign of archaeological investigation because it was infested with bracken and more was known about it than any other Bronze Age settlement in Penwith.

The settlement, along with the nearby entrance grave, had been the subject of targeted excavation and field survey by the Institute of Cornish Studies and the Cornwall Archaeological Society in 1984 after a moorland fire had burnt off the covering vegetation. However, since the 1980s the settlement had become lost beneath a dense swathe of bracken. The project therefore had the potential to provide important data relating to the effects of rhizome infestation upon buried archaeological layers. It is also one of the largest and best preserved Bronze Age settlements in west Penwith and further targeted excavation offered the prospect of obtaining further information about the character of Bronze Age occupation within the settlement, which would compliment the results from the 1984 excavations.

Lastly, but not least, the project provided an opportunity to train members of the Cornwall Archaeological Society in the techniques of archaeological fieldwork, including the detailed recording of bracken rhizomes so that its impact upon buried archaeology could be assessed.

This paper details the results from the 2011 excavations and discusses the implications for buried archaeology of extensive rhizome infestation. Full accounts of 1984 excavations have been published elsewhere (Jones and Thomas 2010; Jones and Quinnell 2011a); however a summary of the results from these excavations (houses 1 and 2 and the entrance grave) is included to provide a context for the 2011 work. In particular, the finds from the 1984 dig are presented for the first time.

Location and background

The roundhouse settlement at Bosiliack lies in open 'rough ground' (see Dudley 2011, 4) not far from the well-known prehistoric monuments of Lanyon Quoit (Madron) and the Men-an-Tol (Madron) (Barnatt 1982, 121-4; 223-6). It is located within field systems belonging to post-medieval farmsteads, which contain lynchetted boundaries that are likely to be associated with

earlier prehistoric, Romano-British and medieval episodes of cultivation (Fig 2). Today, like so much of upland Penwith (Kirkham 2011, 25, 145; Parkes 2011, 23), the area around the settlement is not farmed and has not been grazed for the last few decades. As a result, the setting of the settlement has changed from that of an open landscape, evident in an air photo dating to *circa* 1970 (Fig 14), to one where it is no longer visible below the dense canopy of enveloping vegetation.

The settlement is situated at approximately 180-185m OD on the west facing side of a shallow valley. There are extensive views to the west, the east and the north, where Carn Galva dominates the horizon. Views to the east are less extensive as the valley side rises more steeply. Although not visible from the roundhouses, approximately 350m to the south east of the main roundhouse settlement is the Bosiliack entrance grave (Fig 1 for location), which has recently been dated to the Early Bronze Age (Jones and Thomas 2010).

The settlement consists of thirteen or more stone-walled roundhouses in an area 70m north-south by 40m east-west (Fig 3). At least four further roundhouses are dispersed singly in the surrounding fields and stubs and curvilinear lengths of walling attached to, and between, the upstanding roundhouses suggest that there may have been more than one phase of occupation within the settlement. Several of the upstanding houses appear to have been constructed on top of, or immediately adjacent to, earlier houses (houses 10, 12 and 13).

The roundhouses survive as low, stony banks with diameters of less than 10m. When the walling was exposed after the fire in 1984, most appeared to be walls with stone faces, and this has been confirmed during the excavation of houses 1, 2 and 3. Although there is no trace of an enclosure wall, most of the roundhouses seem to be sited in a roughly oval arrangement, formed by two parallel arcs, with an open space around 15m to 20m wide in the middle of the settlement. This may have acted as a communal space and / or as a yard. Some of the houses seem to be paired (for example, houses 1 and 2, and 9 and 10), although it is uncertain as to whether these pairings represent contemporary buildings or sequential construction. However, it is possible that not all the buildings were domestic and some may have been dwellings with attached non-residential buildings.

To the north and east of the roundhouse settlement, field survey in 1984 identified an area of approximately 45 hectares (Fig 2) which was covered by lengths of boulder walling, lynchetted field boundaries and occasional clearance cairns, some of which are likely to be of prehistoric date and broadly contemporary with the roundhouse settlement (see house 3 below). Other parts of the field system may be of later prehistoric or Romano-British date and some elements are more likely to be associated with the medieval and post-medieval settlements of Bosiliack, situated approximately 700m south east of the roundhouse settlement, or Lanyon, 400m to the south west.

Parts of the area have certainly seen considerable disturbance through post-medieval mining and prospecting, and during the course of the excavation of house 3, damage to archaeological features was found both to the roundhouse and to an adjacent field-wall. Post-medieval disturbance was also found to in the body of the mound of the entrance grave at the eastern edge of the project area.

Archaeological recording

A summary of the 1984 fieldwork

The fieldwork in 1984 followed a fire which had blazed across the moorland and exposed a huge number of archaeological features. Prior to the excavations, a detailed 1:200 survey of the roundhouses within the main settlement area and a 1:1000 survey of the surrounding field systems and clearance cairns and entrance grave was made by the Institute of Cornish Studies. In 1984 excavations were carried out by staff from the Institute of Cornish Studies, the

Cornwall Committee for Rescue Archaeology, and volunteers under the direction of Charles Thomas and Jeanette Ratcliffe. The two roundhouses were excavated late in the summer of 1984 as part of a wider research project which also saw the excavation of a small chambered tomb or entrance grave (Jones and Thomas 2010). The project aimed to obtain information about the date of the roundhouses, and establish the relationship between the settlement and the entrance grave (Jones and Thomas 2010; Jones and Quinnell 2011a).

The excavations were highly significant because the entrance grave at Bosiliack was the first to have its chamber excavated under modern conditions. Similarly, although a number of Bronze Age roundhouse settlements had previously been excavated in Penwith (Dudley 1941; 1956; 1957), none could be closely dated. Indeed, in contrast to the lowland Middle Bronze Age hollow-set roundhouses which now have a large number of secure radiocarbon dates associated with them (Jones and Taylor 2010, 160), upland roundhouses as a whole are poorly dated in Cornwall and currently the only other stone-walled roundhouses with associated radiocarbon determinations are those at Leskernick (Altarnun) on Bodmin Moor in the east of Cornwall (Bender *et al* 2007, 88-9).

The entrance grave

The Bosiliack entrance grave was located to the south east of the roundhouse settlement, just outside the eastern extent of the prehistoric field system. Excavation of the entrance grave revealed that it was circular with a diameter of approximately 5m, with a chamber which extended east south east to west north west from an entrance in the south east (Fig 10).

The kerb, which originally comprised 17 or 18 stones which defined the monument, was of large granite slabs which rested against the cairn. There was no evidence for the kerbstones being set within sockets.

Excavation revealed that the entrance grave was constructed upon the old land surface. The cairn comprised medium sized boulders around the outside, which were placed to support the large kerbstones. Further inside the cairn's construction became more jumbled, and included much smaller stones. The cairn probably stood to a height of around 1.5m. No artefacts were directly associated with the construction of the cairn. However, some worked flints of probable Late Neolithic or Early Bronze Age date were found within and beneath the body of the cairn (Jones and Thomas 2011).

The chamber was constructed from horizontally laid granite slabs but was small, measuring approximately 3m long by 0.6m wide, and became narrower towards the entrance which had been slightly off-set to the south east of the main body of the chamber. None of the capstones remained *in situ*; but a massive displaced capstone was found on the body of the cairn south west of the chamber. This stone had been removed in the nineteenth century by miners. Prospecting pits could be seen north of the cairn. Fortunately, the chamber was found to be undisturbed and the primary deposit on the floor of the central part of the chamber comprised cremated human bone, charcoal, pebbles and sherds from plain ceramic vessels. Analysis of the burial deposit suggested that just one individual was interred within the tomb (Jones and Thomas 2010) and two near-identical radiocarbon dates obtained on the cremated bone 3320 ± 35 BP (SUERC-15589) and 3305 ±35 BP (SUERC-15590), both calibrating to 1680 to 1500 cal BC, support this. The burial was sealed by soil containing pebbles and two flints. The entrance to the chamber had been blocked by an upright granite slab that had been placed between the flanking stones at the entrance to the chamber. On the outer side of this blocking stone, smaller granite stones and beach pebbles were placed against it. A second granite slab with a rounded top was then placed on the outer side of the small stones.

The entrance grave was located 1.5m to the north of an east-west alignment of boulders marking the upper edges of a terrace or lynchet (Fig 11). This feature was covered by a deposit

of up to 0.3 m of dark earth which may have been a cultivation soil (Jones and Thomas 2011). Artefacts from this layer included an unidentifiable piece of corroded copper alloy, flints, and a coarse granitic sherd of pottery, which appeared to be of the same fabric as those found in the chamber. However, the relationship between the entrance grave and the field system could not be established.

Houses 1 and 2

Houses 1 and 2 are located in the central part of the settlement, within the right hand arc of the roundhouses. Neither house 1 nor house 2 was entirely excavated and the walling around the houses was left *in situ*. A north-east to south-west oriented transect was laid out across the centres of the two adjoining houses, and the area to the north of this line was excavated (Fig 12). The excavated area was wedge shaped in plan and approximately 17.8m long by 4.9m wide at its western end and 5.5m wide at its eastern. This excavation area excluded the entrances into the houses, although it was evident from the survey that they faced towards the south.

The excavations revealed that houses 1 and 2 were con-joining stone walled structures, with internal diameters of less than 6m. The walling round the roundhouses was double-skinned, with large granite stones sandwiching rubble and earth cores. Natural boulders or grounders were also incorporated into the walls of the houses. The relationship between the walling of the two structures suggested that the smaller house 2 was earlier than house 1.

The earliest features in both structures were the rab floors and a partial rab floor was also found in house 3 (see below). Both roundhouses contained a range of internal features. In house 1 there were four different hearths. The radiocarbon dating of the hearths within house 1, 3010 ± 30BP, 1384-1130 cal BC (SUERC-29275), 2275 ± 30BP, 401-210 cal BC (SUERC-29276), 2240 ± 30BP, 390-206 cal BC (SUERC-29277), and 2415 ± 30BP, 746-399 cal BC (SUERC-29278) suggests that the structure is likely to have been used, at least periodically, over a considerable period of time, from the second half of the second millennium cal BC to the third century cal BC. One of the later hearths had been built up against the back wall of the structure (Jones and Quinnell 2011a). Given its close proximity to the wall, it could not have been used while there was still a roof on the house. This suggests use of the roundhouse site for a time as an open shelter. In addition to the radiocarbon dating, later occupation within house 1 was also indicated by the recovery of Iron Age pottery from the upper layers within the roundhouse (Jones and Quinnell 2011a).

In house 1 there was evidence for a post-ring, although is unclear where in this long period of activity the post-ring belongs. House 2 also seemed to have contained a post-ring, but no hearth was uncovered. However, a much smaller internal area was excavated than in house 1. A number of other cut features were recorded (Figs 13 and 14), but it is uncertain whether these represent internal divisions or were internal drainage gullies as were found within the Stannon Down (St Breward) roundhouses or the Shaugh Moor house 19 on Dartmoor (Mercer 1970; Wainwright and Smith 1980). Two identical radiocarbon determinations 2900 ± 30BP, 1211-1001 cal BC (SUERC-29274) and 2900 ± 30BP, 1211-1001 cal BC (SUERC-29279) suggest that they were broadly contemporary and date to the last centuries of the second millennium cal BC. Although radiocarbon determinations might indicate that it was a little later in date than house 1, the construction of the walling indicates otherwise, and it is quite possible that an earlier hearth lay beyond the excavated area. Given the long sequence in house 1, it is possible that house 2 could have become an annexe to house 1, or become disused and perhaps infilled during the Bronze Age.

The 2011 excavations

The excavations in 2011 included the excavation of a small roundhouse on the western side of the settlement area and eight 1m square test pits, which were hand-dug at 10m intervals along

an 80m long transect through the field system to the east of the main roundhouse group. The excavated areas were entirely hand-dug and the finds and trenches were plotted using GPS with an accuracy level of 0.03m.

House 3

The excavation continued to use the numbering system for the roundhouses that had been established by the 1984 investigations. House 3 is located on the western side of the settlement (Fig 3). Unlike many of the other structures in the settlement it appeared to be a single unit and to have a clear relationship with the field-walls.

Because neither of the roundhouses excavated in 1984 were fully excavated, the 2011 investigation was designed to include the entirety of house 3. In particular, it was decided that the entrance into the house should be included within the excavation area. A 10m excavation area was set up over the roundhouse. However, the structure was not completely excavated, as a central metre wide east-west baulk was left *in situ* to allow for future sampling purposes. Likewise, the stone-walling which defined the roundhouse was fully revealed but not excavated. Nonetheless, the excavation did involve the total exposure and planning of the wall and allowed for the complete examination of the entrance area and the immediate surroundings of the house. Importantly, it also included the investigation of the relationship between the field-wall and the roundhouse, which was not resolved by the 1984 excavations.

A methodology for recording the bracken rhizomes in the roundhouse was agreed with Sandy Gerrard of the Dartmoor Bracken Project. Prior to the commencement of the excavation the number of bracken plants within and over the walls of house 3 were recorded. A total of 255 bracken plants were recorded above the wall of the house and a further 301 were recorded inside it. The roundhouse was then gridded out in a series of 1m square boxes and the lengths of the rhizomes were recorded by context. In the end, 1076.36m of rhizome was recorded within and over the walling of house 3. Given the central baulk was not excavated; a conservative estimate would place the total at around 1500m length of rhizomes infesting the roundhouse (see Appendix B).

The following section describes the site stratigraphy from top to bottom.

The whole of the excavation area was covered by layer (100), which was formed of decomposed vegetation and humic dark brown soil, up to 0.08m thick. Beneath this was layer (101), a dark, friable peat with a high concentration of roots and rhizomes. Indeed, approximately 1018m of rhizome were recovered from layer (101), which accounted for more than 90% of the rhizomes within the roundhouse. This layer covered the excavation area and was generally less than 0.10m thick, except for within the roundhouse where it was up to 0.2m deep. Artefacts were limited to a white quartz beach pebble and a possible hammerstone SF9 which was within displaced stones from the wall (Quinnell below).

When layers (100) and (101) were removed it was found that that house 3 measured 3.8m internally and approximately 6m externally (Figs 4 and 5). Although the house wall 102 was not removed, excavation of the overlying deposits revealed that the wall was double-skinned, with large coarse-grained granite blocks holding a rubble core in place. The wall was up to 1.3m thick and up to 0.5m high. In a few places, the wall incorporated natural outcropping boulders, and in one or two places it included quartz blocks and bluish coloured tourmalised granite blocks. The most distinctive of these was located to the immediate right of the entrance (when looking into the building). It was also evident that entrance lay on the south side of the building and was approximately 0.4m wide. The entrance had been built directly over a very large natural flat slab of granite, which effectively formed the floor in the entrance area (Fig 6). However, the exact width of the entrance is uncertain because the stones on the east side of the entrance were disturbed and displaced from their original positions. Indeed, it was evident that there had

been considerable disturbance to parts of the wall, especially in the south east quadrant, and this was reflected by the tumbled stone found in layers (105) and (106) within the interior of the roundhouse. It is likely that the displacement had occurred through deliberate disturbance to the site during the post-medieval period (evidence for stone splitting and robbing was found nearby), and by natural erosion processes, through weather and rhizome action. Evidence for rhizome damage was revealed by the large number of rhizomes which seemed to be attracted to the stones within the wall. Approximately 823m of bracken rhizome was recorded above the wall, and the movement which must have occurred through the growth is likely to have caused stones to have become displaced. However, in either scenario, the damage to the site seems to have occurred long after the house had been abandoned, as tumbled stone was largely confined to the upper, post-prehistoric layers within the house.

Within the interior of house 3, layer (101) covered deposit (105). This layer comprised a near black deposit of gritty peaty soil, which was up to 0.16m thick, but in most places was less than 0.10m. It was beneath the main rhizome mat, although there was some root and rhizome penetration within it, and approximately 58m metres of rhizome were recorded in this layer. It also contained a number of displaced stones from wall 102 and slate, which must have been introduced into the site during the post-medieval period. A possible hammerstone, SF10 was also recovered from the layer (Quinnell below). Beneath layer (105) was layer (106). This deposit formed the main infill layer within the house and was up to 0.28m thick. It was a firm dark grey, gritty clay loam soil. A possible water rounded hammerstone and a few fragments of possible medieval pottery (Quinnell below) were found at the base of the layer at the junction with (107), however, it was evident that the layer had been disturbed as there were traces of animal burrowing, and further fragments of slate were recovered from it that are likely to be of post-medieval date.

Layer (107) probably represented a redeposited rab floor. It consisted of a gritty, grey compact clay loam, from the top of which charcoal and a few sherds of Middle Bronze Age pottery and a quartz beach pebble were recovered (Quinnell below). The layer was under 0.05m thick and discontinuous, indicating some degree of disturbance, and there was evidence for animal burrowing. No traces of bracken rhizomes were found, although previous infestations may have occurred. In places natural granite stones protruded between the surviving floor layer, which resulted in the floor of the structure being very uneven. It is unlikely that there had ever been a floor layer in the entrance area, where the large natural granite slab formed a flat surface. Two radiocarbon determinations were obtained on charcoal from layer (107) 2240 ± 30BP, 390-206 cal BC (SUERC-38821), and 2130 ± 30BP, 350-52 cal BC (SUERC-38822). These dates are likely to belong to a subsequent Iron Age phase of activity which was not associated with any diagnostic finds. It is possible that the interior of the house had been kept clean and that the charcoal was associated with a last use of the site.

The only internal feature, gully [108], was found to cut layer (107). Gully [108] was a north west-south east aligned feature, found in the south east quadrant of the roundhouse. It was U-shaped in section and measured 0.2m wide by 0.08m deep. Its full length was not established as it disappeared under the central baulk after 0.4m. It was filled by (109), a deposit of dark grey gritty clay loam. The function of this feature is uncertain, although similar gullies were recorded in houses 1 and 2 (Jones and Quinnell 2011a).

Below layer (107), was the natural granitic subsoil or 'rab' (110). In the area of the roundhouse, the rab was a mid brown colour, rather than the yellowish colour found elsewhere (see test pits below). This difference in colour may have been because the ground conditions were very wet in this part of the site or because the roundhouse had been sited in an area where the granite was outcropping at the surface and consequently the rab was less well developed. The rab subsoil did not cover the entirety of the structure as natural granite blocks protruded through the subsoil.

Outside the roundhouse, two features were identified. Field wall 103 was located to the north of house 3 (Fig 4). It was built of large granite blocks up to 1.2m across, with small stones between them. The wall was up to 1.5m wide. It was not excavated but clearance around the southern end of the wall revealed that it stopped short of house 3, and there was a gap of 0.3m between them. Although it is possible that the wall was robbed to build the house, it is a perhaps more probable that the field wall respected the edge of the roundhouse. Damage to wall 103 was revealed by evidence for stone spitting and by the discovery of a drilled hole through one of the larger blocks within the wall (Fig 7). This would suggest that there had been an attempt to use one of the blocks as a mellior stone for a horse whim (see Herring *et al* 2008, 20-21). Given the amount of evidence for mining in the vicinity, it is likely that this occurred during the 19th century.

A second wall, 104, was located to the south of the roundhouse (Fig 4). It was only just caught in the excavation area and was poorly-preserved, being comprised of small granite stones. It is likely to be part of the same boundary as wall 103. There was a gap of 0.8m between the end of the wall 104 and house 3 and this again suggests that the wall of the roundhouse was respected by the field wall.

Beyond these features, most of the excavated area was found to come very quickly down upon the granite bedrock and it seems that house 3 had been carefully sited at a place where the granite outcropped at surface.

The bracken test pits

Eight 1m square test pits were excavated at 10m intervals along an 80m north-south transect (Fig 3). It was located to the immediate west of house 8 at the southern end of the field system and ran to the east of the main group of roundhouses (houses 1, 4 and 9), through the prehistoric field system, where the bracken was densest. The methodology for the test pits followed that of the Dartmoor Bracken Project's rapid assessment technique (Gerrard 2011) and further onsite guidance was provided by Gordon Fisher and Janet Daynes of the Ace Archaeology Club who are closely involved with the Dartmoor Bracken Project. The area of the test pit was defined and the bracken stipes counted, so that the numbers of plants were identified. The pits were then excavated in spits within context and the length of rhizome recorded within each spit measured. The test pits were taken down to 0.05m below the level of the last recorded rhizome, which in most cases involved excavation into the natural rab subsoil. The test pits ranged in depth from 0.1m to 0.45m; although the average depth was approximately 0.3m. All four sections within each of the test pits was recorded so that the level of maximum rhizome activity could be determined.

Where outcropping granite was absent, four layers were consistently recorded within the test pits. These will be described from top to bottom. The uppermost deposit was layer (1). This layer was a loose peaty deposit, which was largely comprised of decaying vegetation. Typically this layer was up to 0.05m thick, although in some areas, where outcropping granite was more prevalent it became thicker. Rhizomes tended to be less prevalent in this layer (1), except in those sections where the deposit was thickest. Layer (2) was a dark, grey brown firm peaty soil. Typically this layer was 0.1m to 0.2m thick. It was rooty and was also the layer where most of the bracken rhizomes were recorded (Fig 8). Layer (3) was a dark grey gritty peat soil. Where present, this layer was approximately 0.05m to 0.1m thick. Rhizomes were found in this layer, especially, in the upper part of the horizon, close to the junction with layer (2). The rhizomes lessened with depth and fewer were encountered within the lower part of layer (3). Three flints were found within layer (3) (Lawson-Jones below) which suggests that there is the potential for this layer to have formed in prehistory. The disturbance to this layer through rhizome activity therefore has implications for any future environmental work on the soils within the field system. The natural granitic subsoil was numbered layer (4). Within the area of the field system

this took the form of a yellowish orange granitic rab. Few rhizomes were recorded in this deposit, however, where natural granite boulders outcropped through the rab, it was found to contain denser concentrations of rhizomes (Fig 9). This finding has significant implications for the archaeology of upland areas, which contain large numbers of stone-built structures.

No archaeological features were encountered in any of the eight test pits, and despite being sited close to several roundhouses (from south to north, houses 8, 7, 1 and 5), no finds of Middle Bronze Age date were recovered. Two of the three flints from the test pits are likely to be of Later Neolithic or Early Bronze Age date (Lawson-Jones below) and could conceivably be related to settlement activity which was contemporary with the entrance grave to the east.

The numbers of bracken plants ranged from 15 to 56 within a test pit and an overall length of 633.09m of rhizome were recorded. On average, approximately 79m length of rhizomes was recovered from each test pit, although in one case 103.3m were recorded within a single test pit (see Appendix B).

Stratigraphic summary

The archaeological investigations at Bosiliack in 2011 led to new information about the character of the Bronze Age settlement as well as the impact of the rhizomes upon the buried archaeological resource. The pottery from house 3 suggests that it was first occupied during the Middle Bronze Age with radiocarbon dates revealing subsequent inhabitation during the Iron Age.

The floor in house 3 appears to have been made up of a large granite slab and a layer of redeposited natural rab subsoil. The large slab was found in the area of the entrance and extended within and beyond the structure. It may have formed a convenient area of hard standing for the occupants of the structure. The remaining floor within the roundhouse was covered by a patchy deposit of redeposited rab, layer (107). Both of the other roundhouses (houses 1 and 2) at Bosiliack produced evidence for rab floors (Jones and Quinnell 2011a) and other roundhouses in Penwith, such as those at Trewey (Zennor) and Sperris (Towednack) (Dudley 1941; 1957) have appear to have had rab floors. Although these were identified by the excavator as being *in situ* natural subsoil, it is likely that they too were laid floors comprising redeposited rab. Unfortunately, the survival of the floor layer in house 3 was very patchy. This poor level of preservation could have been caused by wear and tear, but it is perhaps more likely to have occurred during post Bronze Age occupation disturbance to the roundhouse, through Iron Age occupation, animal, and rhizome and root activity, and perhaps by post-medieval miners, when they were robbing stone from the adjacent walls.

Unlike houses 1 and 2, which contained a range of internal features (Jones and Quinnell 2011a), house 3 contained just one gully, and there was no evidence of a post-ring or a hearth, although the latter may have been located beneath the central baulk. The small size of house 3 would have precluded the necessity for a post-ring, structure being covered by a roof which did not rest upon internal supporting posts.

However, despite the lack of internal features, a complex history of occupation, comparable to that in house 1, was demonstrated. Middle Bronze Age pottery was recovered from the floor, which is consistent with finds from the other houses and like house 1, Iron Age radiocarbon determinations 2240 ± 30BP, 390-206 cal BC (SUERC-38821), and 2130 ± 30BP, 350-52 cal BC (SUERC-38822) were obtained from the rab floor (107). This implies that the house 3 had been reused and presumably the charcoal on the floor represents the last use of the house.

The method of construction of the wall is broadly comparable with houses 1 and 2, and indeed with the recently excavated houses on Stannon Down and Leskernick (Jones and Quinnell 2011a; Mercer 1970; Bender *et al* 2008, 400), where double-skinned walls were infilled with smaller stones and / or soil. This construction technique would have given the walls strength

and have effectively insulated them too. The south facing position of the entrance is also typical of the other houses both within the settlement and across southern Britain generally (Dudley 1956; Ladle and Woodward 2009, 365).

The location of the roundhouse on outcropping granite and the incorporation of natural grounders within the wall are also found in other sites in the south west, including the roundhouses at Leskernick (Bender *et al* 2007, 404). However, use of distinctively coloured stones within the wall of the roundhouse is more difficult to immediately find parallels for, as stone texture and colour has seldom been recorded in relation to roundhouses. Contrasting use of stone has been documented within ceremonial monuments (for example, Jones and Quinnell, forthcoming) and it is perhaps unsurprising that different stones were incorporated within the building.

The adjacent field walls 103 and 105 were similar to other Bronze Age walls investigated on Bodmin Moor (Jones 2005-5). Rather than the neat construction of many of the Dartmoor reaves (Fleming 1988, 85), the large boulders appear to have been strung out in a rough line and smaller stones dumped between them. Evidence was forthcoming for a relationship between the field walls forming the western edge of the prehistoric field system and house 3. Both walls 103 and 104 stopped short of the roundhouse wall. Unlike Holne Moor on Dartmoor, where the roundhouse was clearly attached to an earlier boundary (Fleming 1988, 86), the relationship between the boundary and house 3 might suggest that the fields post-date the roundhouse or that they are broadly contemporary.

The investigation of house 3 revealed a relatively simple structure, which lacked evidence for the structural complexity of house I and house 2 (Jones and Quinnell 2011a). In part, this may have been due to its small size, and function. However, there was a considerable degree of disturbance within and to the walling of the structure, which is likely to reflect the bracken plants preference for well-drained environments (Rees and Miles 1999, 13). This is likely to have destabilised wall stones and in one case a bracken rhizome was observed to pass through and split a fault in one of the granite stones within the wall. Disturbance to the building is also very likely to have arisen through the activities of miners and /or farmers (see Kirkham, forthcoming) in the nineteenth century who may have removed stone from the site for use in new field boundaries or for industrial activity. This is certainly hinted at by the presence of cut post-medieval slates deep down within the infill of house 3 and by the evidence for stone splitting and drilling of stones within wall 102. Two or three sherds of possible medieval pottery also suggest that earlier disturbance may also have occurred. However, it also seems likely that damage has occurred through natural processes too. Some animal burrowing was evident in the floor of the house and rhizomes were present in large numbers in the upper fills, especially around and over wall 102. Damage to archaeological sites through rhizome activity has already been established in Scotland (Rees and Miles 1999, 11-15) and in the south west region: the excavation of the roundhouse at Teigncombe on Dartmoor has graphically revealed the pernicious impact of bracken upon important archaeological deposits (Gerrard 1999; 2007). Although it could be argued that rhizome damage was confined to the upper part of the stratigraphy, it is likely that earlier bracken infestations will have occurred in the past, and as excavations at Teigncombe have revealed, this may have done much to compromise the stratigraphical and structural integrity of the structure (Gerrard 2008, 23).

Damage to archaeological layers by rhizome activity was dramatically revealed by the test pitting. Although the recording of sections revealed that most of the rhizomes were found in the top 0.3m of the soil profile, a significant number were found at the junction between more recent soils and what is thought to be the start of an older, possibly prehistoric soil horizon (see Appendix E). Damage by rhizomes to this layer has negative consequences for any future palaeoenvironmental recording on the soil within the field system.

Bedrock was encountered at a shallow depth in several of the test pits and house 3 was found to largely sit directly upon the granite. This finding might suggest that there was considerably more outcropping granite at surface in the Bronze Age and has implications for how the land around the settlement may have been used in the Bronze Age

The test pitting was also of interest because it provided a 'snapshot' of activity outside the roundhouses. It is interesting to note that no Middle Bronze Age artefacts were recorded and that, as at house 3, no features were found outside the houses.

Pottery from the 2011 and 1984 roundhouse excavations

Henrietta Quinnell

Fabrics

Gabbroic Sherds have common coarse inclusions of gabbroic minerals with no apparent inclusions of non-gabbroic minerals except quartz which derives from the local Crousa Gravels and occurs almost universally in gabbroic pottery (Taylor 2011). The sherds appear to have been oxidised 5YR 4/6 yellowish red but soil conditions have softened them and altered their colour so that they appear reddish brown. This soft gabbroic fabric appears consistently in both houses 1 and 2 excavated in 1984 and in house 3 excavated in 2011. The same fabric was used both for Middle Bronze Age Trevisker and for the later, Late Bronze Age / Early Iron Age sherd, P3.

Granite derived Two variants appear to be present. One has very common inclusions of slightly water worn coarse granite derived minerals which have been added to a granite clay, the other sparse coarse granite derived minerals which appear to have been present in a granite clay. The degree of oxidisation or reduction and colour varies considerably. None of the sherds have formal or decorative characteristics so differences in petrology have not been pursued.

Condition

Most sherd edges have considerable abrasion which is probably due to acid soil conditions. A large number of the 1984 sherds have cracked into fragments since their excavation.

Pottery from 2011 excavations

Context	Description	SF No etc	Gabbroic	Details
106	Floor level	SF7	1/5	Body sherd
106	Floor level	SF7	1/27	Base angle
107	Floor level	SF12	1/14	Body sherd with part of lug
107	Floor level	Soil sample 1003	1/5	Rim sherd
Totals			4/51	

Table 1: Pottery from the 2011 excavation of house 3: sherd numbers with weight in grammes.

All four sherds, total weight 51 grammes, found were of gabbroic fabric (Table 1). A partial lug retains a finger impression at its end. Similar lugs occur in Trevisker assemblages, for example at Trethellan (Newquay) (Woodward and Cane 1991, fig 51, P68). The rim appears to have been upright and rounded. All sherds would be appropriate for a Trevisker assemblage from the Middle Bronze Age. Two or three friable pieces of fired clay from (106) may possibly of medieval or later date.

Pottery from 1984 excavations

Context	Description	Gabbroic	Granite derived	Comment

House 1				
43	Rab floor	2/8	1/3	Includes short upright rim
48	Fill of hearth pit 47	3/58		Includes illustrated sherds **P1** and **P3**
50	Fill of ? posthole 49		1/17	
14	'Occupation layer'	1/3	5/19	
Total		**6/69**	**7/39**	**Total 13/108**
House 2				
11	Top of, 'occupation layer'	4/9		
11	Sealing or 'occupation layer'	14/33		Includes flat-topped rim and sherd with tip of incised chevron
20	Fill of slot 19	1/4		
16	Fill of hearth pit 15	18/245		**P2** and flat-topped rim sherds possibly from the same vessel
Total		**37/291**		
General				
4	Bottom of, covering level over site	27/180	4/11	
8a	Leached top of rab 8 in south east of site	1/4		
8	Top of, probably rab, subsoil outside the houses	9/96	1/3	
Total		**37/280**	**4/14**	**41/294**
Totals		**80/640**	**11/53**	**91/693**

Table 2: Pottery from the 1984 excavations: sherd numbers with weight in grammes.

During the preparation of the report on the 1984 excavations (Jones and Quinnell 2011a) the pottery was not available for study but has now been examined and results have been incorporated here.

The assemblage consisted of 91 sherds, 13 from contexts within house 1, 37 from within house 2, and 37 from contexts overlying or outside the houses. The majority of the assemblage is gabbroic, with the fabric indistinguishable from that from the 2011 excavations, but some sherds both from house 1 and from contexts overlying the site are granite derived (Table 2). Many of the sherds were drawn at the time of excavation and three are reproduced here (Fig 15, 1-3).

Middle Bronze Age Trevisker

P1 F78 (48) fill of hearth pit [47] house 1 associated with SUERC-29275 calibrating to 1384 – 1130 cal BC. Gabbroic.

P2 F57 (16) fill of hearth pit [15] house 2 associated with SUERC-29274 calibrating to 1211 – 1001 cal BC. Gabbroic.

These sherds both have incised geometric decoration and a small round lug: P2 was found with a group of sherds which include several with an irregular flat-topped rim which may be from the same vessel. The probable difference in date of deposition indicated by the radiocarbon determinations is not significant as all recent work on Trevisker ceramics demonstrates very long usage of styles and decoration (for example, Woodward and Cane 1991, 122-3: Quinnell 2012). The similarities between the sherds may well reflect continuing factors influencing choice of ceramic forms in the community using the site over several centuries. There appear to be no close comparanda for P1-2, on which very small lugs are associated with incised geometric designs. Lugs on Trevisker pottery, normally situated on the girth at the base of a zone of decoration, come in a variety of different shapes, perforate or imperforate but are at least twice the size of these examples (Woodward and Cane 1991, figs 41-51; ApSimon and Greenfield 1972, figs 14, 18). However, some of the vessels from the Trelowthas barrow (Probus) have lugs of this size associated with cord-impressed decoration (Quinnell personal knowledge; Nowakowski 2007, 106-10). The records had suggested the possible presence of broad flat cordons but examination of the sherds shows that no cordons were present and the horizontal scars left by some sherds splitting along the weaknesses of overlapping coils were misinterpreted in the records.

Most Middle Bronze Age sites with Trevisker pottery tend to date from the 15th to the 13th centuries cal BC, for example Trethellan (Nowakowski 1991, 101) but the terminal date for this ceramic style remains to be clearly established. At Tremough (Penryn), Structure 392 has Trevisker pottery, albeit with some unusual features, in association with Wk-15003 calibrating to 1370 – 1040 cal BC and Wk-15002 to 1300 -1010 cal BC (Quinnell 2007, 59). The other sites with dates extending beyond the 12th century cal BC are Gwithian (Camborne) and Porthleven (Porthleven). Full analysis of Gwithian with its pottery has not yet been possible, but dates for the latest phase of Bronze Age settlement obtained during an assessment exercise indicate that this may have lasted until the 10th century cal BC (Nowakowski *et al* 2007, 30). The same is true of pits at Porthleven (Morris, forthcoming; Quinnnell, forthcoming). The subsequent ceramic style, Late Bronze Age Plain Ware, may start as early as 11th century cal BC (Quinnell in Gossip, forthcoming). The overlap between the two pottery styles appears to be of a century or more, but hopefully radiocarbon determinations from sites studied in the future will allow the chronological boundary to be more precisely established.

Late Bronze Age / Iron Age

P3 F78 (48) fill of hearth pit [47] house 1. Gabbroic. This simple out-turned rim came either from a Late Bronze Age Plain Ware vessel or belongs to the Earliest Iron Age.

Simple jar forms with everted rims occur in the Late Bronze Age Plain Ware assemblage at Higher Besore, Truro, with dates from the 10th/9th centuries cal BC (Quinnell in Gossip, forthcoming). However, the closest parallel is P7 from Trevelgue Head (Newquay) (Quinnell 2011a, fig 7.3) from which residue provided OxA-13310 calibrating to 810-670 cal BC. Trevelgue P7 is described as 'Earliest Iron Age' because the limited range of Cornish material from the 8th and 7th centuries cal BC differs from that found from the 6th to 4th centuries for which the term 'Plain Jar Group' – Early Iron Age is suggested (*ibid*). Earliest Iron Age material is well represented at Bodrifty (Madron), west Penwith, with P6 forming a reasonable parallel to Bosiliack P3 (Dudley 1956, fig 9).

P3 comes from the same context as P1, an undoubted Trevisker vessel. The two forms cannot be contemporary. The range of radiocarbon determinations from house 1 suggest that this structure continued to be used, if intermittently, during the use of the Early Iron Age Plain Jar Group and Middle Iron Age South Western Decorated Ware, although P3 is the only sherd post-dating Middle Bronze Age Trevisker. It can only be assumed that either the later use of house 1 did not involve much pottery or, more probably, that the house floor was regularly

kept clean: the scooped profile of the top of rab floor (43) supports the latter hypothesis. This later activity must have allowed the intrusion of P3 into hearth pit [47].

Comment on the 1984 and 2011 assemblages

The only significant depositional factor may be the relation of pottery to hearth pits in houses 1 and 2. The two incised and lugged sherds, P1 and P2, come from hearth pits [48] and [16], in houses 1 and 2 respectively. Both hearth pits were the only ones in each roundhouse to produce ceramics and both were respected by later features. This is especially surprising in house 1 where radiocarbon dates indicated occupation continued, if intermittently, into the Middle Iron Age. The presence of P1 and P2 in hearth pits, the latter accompanied by the largest group of stratified sherds located, may indicate an act of significant deposition rather than random disposal of rubbish.

The largest and most extensively excavated of the Bronze Age west Penwith settlements, Bodrifty, now appears, *pace* the report written over fifty years ago, as an essentially Middle Bronze Age settlement, which continued in use through the Late Bronze Age until the Iron Age, and probably to some extent into the Roman period (Dudley 1956, fig 9; Harrad 2003). The few pottery sherds found at Trewey (Dudley 1941, fig 9) can now be clearly identified from the published illustrations as of Middle Bronze Age Trevisker style but these came from only one of the three roundhouses excavated and need not preclude later activity. Neither the Bodrifty nor Trewey finds have been examined during the present study but Harrad's (2003) work makes it clear that Middle Bronze Age fabrics at Bodrifty included both gabbroic and granite derived fabrics. Rapid reassessment of the ceramics from Dudley's limited excavation at Wicca Round (Zennor) (1957, 81 and plate 4) shows definite Middle Bronze Age Trevisker ware, but of gabbroic admixture fabric, gabbroic clays to which other materials have been added. This is the most common fabric of the Cornish Middle Bronze Age. At Wicca there also are probable Late Bronze Age / Early Iron Age sherds in granite derived fabrics and a few well-made gabbroic sherds which are almost certainly Middle Iron Age. The nearby site at Sperris Croft produced few sherds (*ibid,* 80). These also have been reassessed and are made of soft gabbroic fabric uniformly reduced and most probably of Late Bronze Age or Early Iron Age: while featureless, the gabbroic fabric differs from that at Bosiliack or Sperris.

The data from Bosiliack, especially from house 1 with its long life, indicate strongly that the surviving sherds do not provide a chronological biography of the settlement. House 1 produced fewer sherds than house 2 but these were in both gabbroic and granitic derived fabrics. The larger group from house 2 has much more the appearance of a single closed group. For house 3 the pottery would be entirely consistent with a Middle Bronze Age date. However, the radiocarbon determinations make it clear that the house was also used in the Middle Iron Age. It does seem rather unlikely that Middle Bronze Age sherds would have survived so well had use of the house been continuous between the two periods and the data perhaps indicates that some houses at Bosiliack were used very intermittently. Two out of the three houses excavated at Bosiliack now have radiocarbon determinations for the Middle Iron Age, but no pottery of that date. The Middle Iron Age is a period at which pottery appears to have been in frequent use and was also well made and so survives well. The absence of Middle Iron Age ceramics highlights the fact that ceramics may not record the whole biography of use of any structure.

The Bosiliack roundhouses demonstrate ceramic variety, a variety which is matched by the differences in fabrics and dates of the material found at the four settlements in west Penwith excavated by Dudley. These may all date initially to the Middle Bronze Age and had varied amounts of use during the 1st millennium cal BC, with even some use into the Roman period. Across Cornwall, and indeed Devon, assemblages from the Late Bronze Age and the Earliest Iron Age are rare in comparison with those from the preceding Middle Bronze Age and the succeeding Early and Middle Iron Ages (Quinnell 2011b), and societies who made little use of

pottery may be inferred for the period between *c* 1000 and 600 cal BC. The gap between the radiocarbon determinations from house 3 and the date of the pottery coincides with the Late Bronze Age and Early Iron Age scarcity of ceramics. Yet in west Penwith four out of the five hut circle settlements excavated – all except Trewey - have produced evidence for activity during these centuries. Bearing in mind the comments made above about ceramics not reflecting the full biography of structures and settlements, the history of use of the settlements excavated by Dudley is only partially understood and would most likely be drastically revised by new work supported by an extensive programme of radiocarbon dating.

Stonework from the 2011 excavations

Henrietta Quinnell

There are three possible hammer stones. SF10 (105), 70 x 65 x 35mm, appears to have traces of hammerstone use across most of its surface. SF8 (106), 70 x 50 x 45 has fewer traces and retains part of a waterworn surface. SF9 (101), 60 x 60 x 35mm, has a few possible hammerstone use marks. All three are of fine-grained granite with narrow quartz veining. A small slightly waterworn cobble of tourmalinized vein breccia comes from wall 103 and may have been a curio selected for its black shiny surface: it is abraded as though through much handling. SF5 from (106) contains some fragments of slate one of which appears to have been trimmed, possible for use as a roof slate. This is presumably medieval or later and brought into the area from further east in Cornwall. Petrographic identifications have been provided by Dr Roger Taylor.

Two white quartz beach pebbles come from (101) and (107). A similar pebble F4 came from the base of topsoil in 1984. Similar white pebbles are frequent finds on Bronze Age funerary sites (Miles 1975, 41) and have been noted occasionally on later sites, for example the cliff castle at Trevelgue Head, Newquay (Quinnell 2011, 261).

The flint

Anna Lawson-Jones

This six piece assemblage comes from locally obtained, beach derived, pebble flint (Table 3). Flint and chert can form up to 50% of most Cornish beaches (Rogers 1923, 45). Colouring often varies hugely, but in this instance is dominated by pale grey-based material, much of which is flecked or mottled with cream. Faulting can occur quite frequently in Cornish pebble flint, but this is not always severe and was quite often worked around or ignored rather than abandoned, although this assemblage does include one apparently abandoned piece SF5. Interestingly this piece would have made an eminently good heavy duty scraper for use on wood. It has a bulbous, largely corticated dorsal face, making it comfortable to hold, with a good flat under-surface defined by markedly long, steep sharp edges.

As with many Cornish collections, more than half of this small group has retained its original pebble cortex (SF2, SF3, SF5 and SF11). This is largely a reflection of the small size of the raw material and often the need to maximise its use. The retained cortex on some pieces forms a natural backing (for example, SF3 and SF5), allowing a better grip (particularly for slimy, gooey tasks such as cutting and scraping meat). It also provides a safer, less sharp hold allowing greater hand-held pressure to be used. This may well have been a factor in the formation of SF3, which combines use of both the corticated and the opposing backed edge to make an easy to hold engraver-like tool.

To aid the initial working of small cores it is not unusual to see evidence for anvil use in Cornish assemblages. Knight (1991, 57-80) has looked at the use of anvils during preliminary reduction of pebbles, and found it to be a particularly good way of using smaller sized pebble flint. One piece in this assemblage was clearly produced using an anvil SF11, which left tell-tale

signs in the form of crushed distal damage. This long, thick cortical flake is likely to have been the initial removal from a pebble. Very slight damage towards the end of one edge may indicate very light cutting use wear, not possible to confirm macroscopically.

The use of both hard and soft hammers can be seen in this assemblage. Hard hammers (hammerstones) have been used in the production of most of these pieces, but clear use of a soft (bone, wood or antler) hammers can be seen in SF1 and SF4. Piece SF1 is a thinning flake, removed from a larger tool during its final shaping. At this stage in the manufacture of a larger tool a soft-hammer can remove thinner, smaller, better controlled flakes – lessening the risk of breaking or misshaping the tool. Piece SF4 is a triangular shaped piece, removed (probably by hard-hammer) from an apparently large, well-formed, soft hammered flake, which could predate the Middle Bronze Age roundhouses at this site.

Both SF1 and SF4 are made on visually different looking flint. One (SF4) is strikingly dark and the other (SF1) is uniformly pale, with no mottling at all. Both are made on markedly fine-grained flint, contrasting with the other pieces which are mottled, grainier and variably faulted. It would seem that tools requiring greater care in their production were made on 'better' quality material. Ironically, neither piece retains any cortex, making categorical raw material sourcing difficult, but there is no clear evidence to suggest a non-pebble source.

Dating

Pieces SF2, SF3, SF5 and SF11 are all considered most likely to date to the use and construction of the Middle Bronze Age roundhouses at this site. They represent material typical of a domestic setting, and are utilitarian in character, with little to suggest either care or frugality in their production. They appear to reflect the production, use and discard of pieces that were functional but not 'fancy' or valued over and above their physical usefulness.

By contrast, pieces SF1 and SF4 suggest a different approach. Both are made on different, arguably visually more attractive or striking flint, both lack cortex (possibly designed to maximise the visual appearance of whatever tools they came from), and both are the result of a much more focussed, organised approach to tool manufacture, involving the use of soft hammers and more careful reduction. It is considered likely that both pre-date the Middle Bronze Age. Neither is closely diagnostic to a particular period, but would fit well within a Late Neolithic or an Early Bronze Age reduction sequence. The lack of other similar material (from a raw material point of view) from within the immediate area of the roundhouses would further support this view, although it should be stated that had such material existed more closely associated with the houses, the technology alone would not make SF1 and SF4 out of place.

Context	Small find no.	Form / tool	Use wear	Prim., Sec., Tert.	Description
TP 3 layer (3)	SF1	Waste flake	None	T	Pale creamy grey. Thinning flake. Soft hammer removal. Complete. Thin and tear shaped.
TP 3 layer (3)	SF2	Burnt waste	None	P - pebble	Pale creamy grey, fractured, blistered broken thickly corticated part of a flake (or possibly a heat exploded pebble).
TP 6 layer (3)	SF4	Utilised flake	Yes	T	Very dark brown, high quality flint. Debitage flake from tool manufacture. Shows hard and soft hammer use. Focussed bifacial cutting? wear visible on one straight edge. Minimal use damage on opposing hinged edge.
House 5	SF3	Flaked-	Yes	S -	Pale grey fawn with paler mottling and some

U/S		flake engraver		pebble	faulting. Thick primary flake which then had its dorsal corticated side removed by flaking from the same platform – resulting in some platform damage. Crushed backing on non-corticated edge. Wear / removals at platform edge show use as an engraver-like tool.
House 3 layer (105)	SF5	Abandoned core	None	P - pebble	Pale creamy grey split pebble flake core. Severely faulted and abandoned after removal of 3 thick testing / primary flakes – most probably removed by hard hammer. Comfortable to hold.
layer (101) / wall 103	SF11	Waste? flake	Possible	P - pebble	Mottled creams and greys and poor quality / faulted. Possibly heat discoloured. Long thick split pebble flake. Has distal anvil damage. Possible very ephemeral, limited use wear, but could be post depositional damage.

Table 3: showing flint-work context and characteristics

Note; P, S and T relate to primary, secondary and tertiary core removals with P retaining 50% dorsal cortex, S retaining 2-49%, and T up to 2%.

The charcoal from house 3

Dana Challinor

Samples from four contexts within house 3 were submitted for the identification of charcoal. Three of the contexts (105, 106 and 107) came from layers associated within the roundhouse, of which one (107) was thought to be an *in situ* floor deposit. There was only one feature in the structure, a small gully [108], which was also sampled. The samples comprised both processed material, and a few larger pieces which had been spot-sampled. Standard identification procedures were followed.

The samples were dominated by large quantities of root material and modern contamination. There was little charred material and only a few identifiable charcoal fragments, which are recorded in Table 4. Two taxa were noted, *Quercus* sp. (oak) and *Cytisus / Ulex* (broom or gorse). The latter has potential suitability for radiocarbon dating.

	Context number	**105**	**106**	**107**
Quercus sp.	oak	1h		
Cytisus / Ulex	broom / gorse		1r	4
cf. *Cytisus / Ulex*	cf .broom / gorse			1r

h=heartwood; r=roundwood

Table 4: Results of the charcoal identifications

With so few identifiable charcoal fragments, it is not reasonable to make interpretations about fuel procurement or usage. However, it is worth noting that oak and broom / gorse charcoal are commonly found in charcoal assemblages of prehistoric date in Cornwall. Broom / gorse charcoal dominated the Middle Bronze to Early Iron Age roundhouse samples from earlier 1984 excavations at Bosiliack (Challinor 2011).

Radiocarbon dating

A key aim of the 2011 project was to obtain secure dating evidence from house 3. This was required to establish when the roundhouse had been occupied and to see how this fitted in with the results of the radiocarbon dating from houses 1 and 2 (Jones and Quinnell 2011a) and the

entrance grave excavated in 1984 (Jones and Thomas 2011). Radiocarbon determinations were needed to establish whether the houses had been occupied at the same time, and to see if there was any contemporaniety between the roundhouses and the entrance grave (Jones and Thomas 2010).

However, the lack of internal features together with the disturbance to the floor layer from both later activity and possibly from earlier rhizome infestations meant that only two samples of gorse / broom charcoal from layer (107) within house 3 could be selected for dating. Both samples from house 3 were submitted for accelerator mass spectrometry dating (AMS) at the Scottish Universities Environmental Research Centre (SUERC).

The probability distributions (Table 5) have been calculated using OxCal (v4.10) and all radiocarbon determinations are quoted at 95% throughout this paper unless otherwise stated.

Feature	**Lab. no**	**Age BP**	**Material**	**Calendrical years 95.4%**
House 1 Hearth [47], fill (48)	SUERC-29275	3010 ± 30	Charcoal: *Ulex*	1384-1130 BC
House 1 Hearth [45], fill (46)	SUERC-29276	2275 ± 30	Charcoal: *Ulex*	401-210 BC
House 1 Hearth [17], fill (18)	SUERC-29277	2240 ± 30	*Charcoal:* *Ulex*	390-206 BC
House 1 Hearth [9], fill (10)	SUERC-29278	2415 ± 30	Charcoal: *Ulex*	746-399 BC
House 2 Cut [15] fill (16)	SUERC-29274	2900 ± 30	Charcoal: *Ulex*	1211-1001 BC
House 2 Cut [19] fill (20)	SUERC-29279	2900 ± 30	Charcoal: *Ulex*	1211-1001 BC
House 3, layer (107)	SUERC-38821	2240 ± 30	Charcoal: *Ulex*	390-206 BC
House 3, layer (107)	SUERC-38822	2130 ± 30	Charcoal: *Ulex*	350-52 BC
Entrance grave chamber deposit	SUERC-15589	3320±35	Cremated long bone fragment	1689-1514 BC
Entrance grave chamber deposit	SUERC-15590	3305±35	Cremated skull fragment	1681-1503 BC

Table 5: Radiocarbon dates from Bosiliack houses 1, 2 and 3, and the entrance grave

Results

Neither of the newly obtained radiocarbon determinations relates to the construction of house 3, and the same is true of the dates from the previously excavated roundhouses (house 1 and 2). Unfortunately, the lack of internal features, paucity of evidence for stratigraphical complexity, and disturbance to the interior of the roundhouse meant that the determinations only relate to a single horizon of activity within the building. It has not therefore been possible to identify a comparable chronology as was developed for houses 1 and 2 (Jones and Quinnell 2011a).

The determinations from house 3 were from the floor layer (107) and they fall in the second

half of the first millennium cal BC. They point to activity in the roundhouse occurring between *c* 400 and 100 cal BC. This is later than the Middle Bronze Age determinations from houses 1 and 2; however, the Middle Bronze Age pottery was recovered from house 3, is likely to be contemporary with the dates from houses 1 and 2 (Quinnell above). Unfortunately, no charcoal or dateable residue was found in direct association with the pottery.

The Bronze Age radiocarbon determinations are much later than those from the nearby entrance grave. The earliest dates from houses 1 and 2 are two or three centuries later than those from the entrance grave, which fell in the period between 1690 and 1500 cal BC (Jones and Thomas 2010). On current evidence it is unlikely there was any chronological overlap between the use of the tomb and the three excavated houses in the settlement.

The determinations from house 3 did, however, overlap with the two latest dates from hearth pits inside house 1. This would suggest that like house 1, house 3 had been reused in the Middle to later Iron Age.

The results from the radiocarbon dating of house 3 will be included within the discussion section below.

Discussion

Detailed discussions of the results from the 1984 excavations of the entrance grave and houses I and 2 have already appeared in print elsewhere (Jones and Thomas 2010; Jones and Quinnell 2011a). The following discussion will therefore present the results from the 2011 excavations within a chronological landscape synthesis which incorporates the results from the earlier fieldwork.

The Early Bronze Age (*c* 2500-1500 cal BC)

The date for the construction of the roundhouses and field system is uncertain, the available radiocarbon determinations place activity in houses 1 and 2 between 1300 and 1100 cal BC and the pottery from house 3 is indicative of a date in the same period. Although the construction date of the settlement is uncertain, it seems likely on current evidence for roundhouse building in Cornwall that the Bosiliack roundhouses date to the middle centuries of the second millennium cal BC (Bender *et al* 2007, 88-9, Jones and Taylor 2010, 158-9). Evidence for activity predating the roundhouses takes two forms, artefactual and monumental.

The only artefactual evidence indicative of earlier activity close to the settlement area comes in the form of a small number of flints from the test pits, which may date to the later Neolithic and Early Bronze Age period. Likewise, the flint assemblage from around the Bosiliack entrance grave also suggests a later Neolithic or Early Bronze Age occupation in the wider vicinity (Jones and Thomas 2010). The presence of the flints may represent activities which were associated with a less permanent occupation, which appears to be typical of the south west region until the middle centuries of the second millennium cal BC (Jones and Quinnell 2011b).

Large numbers of prehistoric ceremonial monuments are found on the surrounding hills and downs. These include the enclosure on Carn Galva, the Nine Maidens (Madron) stone circle and Neolithic chambered tombs such as Lanyon Quoit, and especially Early Bronze Age barrows, for example those at Boskednan (Madron) which lie on the higher ground to north of the roundhouse settlement. The nearest ceremonial monument to the settlement is the entrance grave located 350m to the south east of the main group of roundhouses. Two radiocarbon determinations on cremated human remains within the tomb fell in the period between 1690 and 1500 cal BC which means that the chamber was used and closed towards the end of the Early Bronze Age (Jones and Thomas 2010).

Entrance graves are comprised of a simple undifferentiated chamber capped by flat slabs, set

within mounds or cairns which are usually between 6 to 12m in diameter, although some are larger. Several, such as Bosiliack, have mounds which are retained by large kerb stones (Jones and Thomas 2010). There are around 13 entrance graves in Penwith and around 90 have been identified in Scilly (Jones *et al* in prep). However, unlike the Scillonian entrance graves, which are frequently grouped in cemeteries close to the sea (Ashbee 1974, 74-77; Robinson 2007, 122), those in Penwith are found singly or more occasionally in pairs.

By contrast with the surrounding cairns and barrows, the entrance grave at Bosiliack was sited in a comparatively low-lying position and did not have any prominence in the wider landscape. It was also located close to the edge of a terrace or lynchet which is likely to have been formed by prehistoric agricultural activity. This proximity to settlement activity contrasts with many other ceremonial sites in the area, which are found on the higher ground and it is also unusual by being out of sight of Carn Galva (Jones in preparation). Nonetheless, the low-key setting is comparable with the dozen or so other entrance graves in Penwith which often lie within or close to areas which were enclosed in prehistory (Jones and Thomas 2010; Jones in preparation). It is therefore likely that during the second millennium cal BC some communities in Penwith, rather than building barrows in hill-top locales, chose to mark the areas that they inhabited with small megalithic tombs. This may have been a way of fixing particular kinship groups with the land upon which they lived.

The few radiocarbon determinations from entrance graves fall in the second millennium cal BC, and an Early Bronze Age date is also supported by the artefacts from excavated examples. Comparable small megalithic monuments are also found around the fringes of the Atlantic region. These include the Tramore tombs in County Waterford, the wedge tombs in the south west of Ireland radiocarbon dated to the latter part of the third millennium cal BC (Schulting *et al* 2008), and the small tombs at Clava and Bargrennen and Cairnderry in Scotland (Bradley 2000, 160; Cummings and Fowler 2007, 165-7), which have radiocarbon determinations within the early second millennium cal BC. It has been argued elsewhere that the coastal distibution of these small Bronze Age megaliths may suggest that communities in west Cornwall were in contact with other coastal communities along the Atlantic Façade and arose through the exchanging of ideas (Jones and Thomas 2011).

Unfortunately, as the Bosiliack entrance grave lay a few metres beyond the northern edge of the terrace / lynchet there was no stratigraphical relationship between the features. This meant that it was not possible to determine whether any part of the local landscape had become enclosed by the time that the tomb was constructed. It is possible that some of the elements of the field system may predate the roundhouses as the investigated terrace near to the entrance grave produced a sherd of plain pottery which was very similar to the vessels from the tomb (Jones and Thomas 2011), and it is feasible that some of the fields may already have been falling out of use, when the settlement was built. However, much of the prehistoric field system appears to relate to the roundhouse settlement (see below). It is also possible that the pottery in the terrace was residual and the field system was laid out to respect the entrance grave.

Although the date for the construction of the houses remains uncertain, radiocarbon determinations from the three excavated roundhouses place them later than the entrance grave, and even if activity in houses 1, 2 and 3 began earlier than *c* 1300 cal BC, it is, given the absence of evidence for roundhouses in Cornwall much before 1500 cal BC, unlikely that that there was any overlap between the use of the tomb and the settlement, unless other houses in the settlement are subsequently found to be much earlier. It is interesting, however, that the roundhouses were located away from the ceremonial monument complexes. Comparable zonation of landscape has been recorded in other areas of Cornwall, where Middle Bronze Age settlements have been found to be kept distinct from areas of formal ceremonial activity (Jones, forthcoming).

In summary, it is considered likely that the roundhouse settlement was set into in a space within a landscape already structured with ceremonial monuments; however, as the discovery of the flints in the test pits and the terrace / lynchet demonstrate, the area in which it was set had already been utilised before the roundhouses were constructed.

The Middle Bronze Age settlement (*c* 1500-1100 cal BC)

The settlement at Bosiliack is comprised of around thirteen stone-walled roundhouses with further houses located beyond them in the surrounding fields. All three of the excavated houses (1, 2 and 3), and many of the surveyed roundhouses, have faced stone walls with rubble cores. This construction technique is commonly found in Penwith, as at Sperris (Dudley 1957), as well as at other settlements across the south west uplands (Butler 1997, 121; Johnson and Rose 1999, 53).

The stones within the walls of the excavated houses were largely of granite; however, quartz blocks and tourmalised granite blocks were also included within the wall of house 3. The largest and most distinctive of these was located to the right of the entrance. Several writers have (Jones and MacGregor 2002; Bradley 2000, 45) have demonstrated that distinctive coloured materials could be incorporated within ceremonial monuments, and across the south west region coloured soils and quartz were included within cairns and barrows (Miles 1975; Jones and Quinnell, forthcoming). There is also evidence that quartz was used in ritualised contexts in lowland Middle Bonze Age settlements, where it was sometimes used to infill buildings or to demarcate the edges of abandoned roundhouse sites (Nowakowski 1991; Jones 1998-9). A comparable selection process may have determined the stones incorporated within the wall of house 3.

The rab floor which was poorly-preserved in house 3 was also paralleled within both house 1 and house 2. Rab floors are also regularly found in roundhouses across the uplands of Cornwall, with examples being identified at Bodrifty (Dudley 1956) and at Stannon Down (Jones 2004-5) and Rough Tor (Thompson and Birbeck 2009-10) on Bodmin Moor. Provided it is kept dry, rab is a good, compact floor material which can be easily kept clean, and it is likely that most excavated houses situated on granite had them, although in the past the use of the natural rab as flooring was not always recognised.

House 3 contained few internal features and there was no identified hearth. The lack of a post-ring was unsurprising given its small diameter. Posts would not have been necessary to support the roof and there are numerous examples of Bronze Age houses which do not have internal post-rings (for example, Heatree hut circle 2, Quinnell 1991; Stannon Down site 3, Jones 2004-5). By contrast, Bosiliack houses 1 and 2, in common with many Bronze Age roundhouses in the south west, contain post-rings, as well as hearths. The contrast in construction techniques may have linked to size of building or function. However, the lack of post-ring within house 3 may be explained by the fact that a large part of the floor was made up of a slab of natural granite, and any posts would have sat upon it with any wedging stones lost through subsequent soil disturbance.

The three excavated roundhouses at Bosiliack have been shown to have complex histories. Although the construction phase was not dated, Middle Bronze Age pottery was recovered from the floor layer of house 3 (Quinnell above) and further Bronze Age ceramics and radiocarbon determinations 1384-1130 cal BC (SUERC-29275), 1211-1001 cal BC (SUERC-29274), 1211-1001 cal BC (SUERC-29279) were obtained from houses 1 and 2. The earliest dated occupation within houses 1 and 2 therefore falls in the period *c* 1300 and 1100 cal BC. However, earlier hearths could have lain under the central baulk within house 3 or outside of the excavated transect across houses 1 and 2. The length of occupation of the unexcavated houses is unknown, although it is appears that many of them (houses 10, 12 and 13) were constructed within the ruins of earlier structures. It is therefore possible that the roundhouses

could have been constructed before *c* 1300 cal BC, or that other houses in the settlement predated them, although on the basis of what is currently known, probably not before the middle of the second millennium cal BC.

House 3 was situated over a place where the granite outcropped at surface, and a large part of the floor area was formed by a flat natural slab. Natural grounders were also found within the walls of house 1 and house 2. Within Penwith large boulders were also incorporated within excavated houses at Sperris and Wicca (Dudley 1957), and on Bodmin Moor at Leskernick, where the excavators suggested that large *in situ* stones were deliberately incorporated into the backs of houses for cosmological reasons (Bender *et al* 2007, 120). Grounders are also frequently incorporated within upland cairns in the south west, and it has been argued that their inclusion within houses may reflect an earlier ritual tradition (Jones 2008). It is possible that the permanency of the architecture and its links with earlier ritual traditions may have made the roundhouses markers of the ties between particular people and places in the landscape (Jones and Quinnell 2011a).

There is a growing understanding that during the middle of the second millennium cal BC ritualised activities were often found on settlement sites and became embedded within the routines of daily life (for example, Bradley 2005). In particular, the ritualised abandonment of Middle Bronze Age roundhouses has been recognised and it has been suggested that, like people, houses may have been conceived of as having 'life-spans', whose demise was, in common with their occupants, marked with rites. In the south west, planned abandonment has been most clearly demonstrated at lowland settlements, where rituals, involving the infilling of roundhouse hollows, and their transformation into barrow-like sites has been identified (Jones, forthcoming). Comparable activity may have occurred at upland roundhouses, and it has been argued that on abandonment some upland houses were converted into cairns (Butler 1997, 137-8). Evidence for this has been found at Bellever on Dartmoor, where excavations revealed a post-abandonment cairn within a roundhouse (Marchand and Hughes 2012). However, at Bosiliack none of the three excavated houses revealed any trace of deliberate abandonment. Instead, stone-walled upland houses may have been built with a very long life span envisaged, and formal abandonment may have been a rare event.

The houses at Bosiliack were unenclosed but set out in a roughly oval arrangement around an open central space. This could have been a communal space, such as a yard. However, and in common with most of the houses in the settlement, house 3 and houses 1 and 2, had entrances which opened towards the south, not on the central space. This orientation is frequent in Bronze Age roundhouses across the south west region (Dudley 1957; Mercer 1970; Butler 1997, 96) and across southern Britain generally (Drewett 1982; Ladle and Woodward 2009, 365). The consistent doorway alignment could indicate belief in a widely-held cosmology (Parker Pearson 1996), however, several houses at Bosiliack faced in a different direction, and the southernmost roundhouse, house 8 had a north facing entrance which looked into the settlement and towards Carn Galva. This suggests that local cosmologies may have been an important factor in house layout.

The excavated houses at Bosiliack were located within an extensive field system (Figs 2 and 3). Second millennium cal BC Bronze Age settlements across Britain have been found in association with large-scale field systems (Yates 2007, 110-1; Ladle and Woodward 2010, 358-62), and the south west region has also produced evidence for a range of enclosures and field systems, which include cultivation terraces and accreted and co-axial field systems defined by stone walls and banks (Johnson and Rose 1994, 59-74; Nowakowski *et al* 2007; Herring 2008). Although secure dating is scarce, environmental evidence from the south west indicates an expansion of farming during the middle centuries of the second millennium cal BC (Wilkinson and Straker 2008), and this is also suggested by a pair of unpublished radiocarbon dates from peat beneath field boundaries at Stannon Down, on Bodmin Moor, 1780-1520 cal BC (GU-

5172) and 1700-1490 cal BC (GU-5170) (Jones and Quinnell 2011b).

However, although roundhouses and field systems are often found in close proximity to one another (for example, Fleming 1988, 87), actual contemporaneity has seldom been demonstrated. At Bosiliack, some of the roundhouses shown on the survey look as though they might abut the boundary walls (for example, house 11 and house 8) (Fig 2). However, the excavation of house 3 revealed that there was a gap between the wall of the house and the western boundary. Although it is possible that the builders had removed stones from the boundary for use in the construction of house 3, it seems more likely that the boundary and the house are contemporary with one another, or the wall respected the position of the house and was slightly later. It should be remembered here that we are dealing with an activity landscape which was in use for, and may have changed over, some thousand years.

It is evident that Bosiliack, along with the other surviving Bronze Age settlements in Penwith, such as Sperris, Trewey and Wicca Round, all lie upon the higher ground, above more sheltered valley areas, where the settlements of medieval origin, such as Boskednan and Boswarthen are found. Excavations across the Cornish lowlands have revealed extensive evidence for Bronze Age settlement which now only survives below-ground (Jones and Quinnell 2011b). Lowland Bronze Age settlements such as Trethellan and Trevisker (ApSimon and Greenfield 1972; Nowakowski 1991) have produced large quantities of artefacts and are thought to have been inhabited all year round. It is probable that comparable Bronze Age settlements were also located in the lower-lying parts of Penwith, but they have not survived later reorganisations of the land. It is therefore likely that lower lying settlements, equivalent to Trethellan or Trevisker were contemporary with upland settlements such as Bosiliack and Sperris and that there were close relationships between the upland and lowland settlements. It is even possible that places such as Bosiliack, Sperris and Trewey and were seasonally occupied by people from the lowlands. This might account for the general paucity of artefacts from many upland settlements.

However, establishing the function of the houses and the economy for the Bosiliack settlement is difficult. In the case of house 3 the floor was poorly-preserved and the interior deposits were badly disturbed. The excavated portions of houses 1 and 2 revealed several phases of activity and large number of features; however, these did not contain much evidence for any activities within the buildings. The post-rings and hearths inside houses 1 and 2 suggest that they were dwellings (Jones and Quinnell 2011a) and it is likely that house 3 was also a dwelling. Bulk sampling for data such as charred cereal grains was not carried out in 1984, and the environmental samples from the 2011 excavations did not produce many charred plant remains. However, the charcoal assemblages from all three roundhouses contained gorse / broom, which may indicate a lack of available high-quality firewood, such as oak, which is commonly found in lowland roundhouse hearths. The vegetation represented by the charcoal is perhaps consistent with upland areas seasonally used for the grazing of cattle and sheep.

It seems likely that, as in other parts of Britain, the establishment of field systems were connected to the formal demarcation of areas for animal grazing (Yates 2007, 120). Although no faunal remains were recovered from Bosiliack, evidence for livestock has been revealed at several sites in the south west; animal footprints, including those of cattle were recorded at Shaugh Moor on Dartmoor (Smith *et al* 1981) and the identification of ruminant dairy lipids in Bronze Age vessels from the south west also suggests the importance of animals to farming (Copley *et al* 2005). Furthermore, in contrast with excavated lowland roundhouses (Nowakowski 1991), no querns or rubbing stones were recovered from the three houses excavated houses at Bosiliack (Quinnell above). This might imply that processed grain was being brought to the site, perhaps during shorter periods of occupation when animals were grazing in upland pastures.

The first millennium cal BC (*c* 1000-100 cal BC)

The excavations within house 3 and house 2, revealed evidence for subsequent Iron Age reuse of the structures. This implies that other unexcavated houses within the settlement are likely to have witnessed periods of reoccupation too.

The earliest evidence for reoccupation of the settlement at Bosiliack was found in house 1, where pottery and the radiocarbon determination from hearth [9], 2415 ± 30BP, 746-399 cal BC (SUERC-29278) indicates activity within the roundhouse during the earlier first millennium cal BC, several centuries after the house had been constructed.

However, a second episode of Middle Iron Age activity appears to have been the most widespread. It is indicated by the two radiocarbon determinations from layer (107) in house 3, 390-206 cal BC (SUERC-38821), and 350-52 cal BC (SUERC-38822), and by the hearths [45], 401-210 cal BC (SUERC-29276), and [17], 390-206 cal BC (SUERC-29277) in house 1. The latter date is identical to the earlier determination from layer (107) in house 3. This evidence indicates a focussed phase of activity between *c* 400-100 cal BC within the settlement. It also demonstrates a type of activity in which the use of ceramics was not important.

This pattern of reuse is of interest because on upland areas, such as Dartmoor and Bodmin Moor, identified Iron Age settlements are few and far between (Quinnell 1994; Johnson and Rose 1994, 74-5). Excavations at Gold Park on Dartmoor have revealed that some roundhouses continued to be constructed on the moors during the Iron Age (Gibson 1992), and excavation of Bronze Age houses across the south west have found subsequent phases of occupation. On Dartmoor, Late Bronze Age or Iron Age ceramics have been found within roundhouses at Foales Arrishes (Radford 1952), Kestor (Fox 1954) and Shaugh Moor (Wainwright and Smith 1980). At Kestor the large roundhouse inside a pound was found to contain Iron Age pottery (Fox 1954, 48-9) and recent study of the ceramics by Henrietta Quinnell has revealed that the assemblage includes both Bronze Age Trevisker Ware and Early Iron Age pottery; however radiocarbon dating of ironworking debris from Kestor shows this to be of early post-Roman date (Peter Crew pers comm. to Henrietta Quinnell). Hut 2 at Dean Moor (Fox 1957) produced iron slag which could be Iron Age. Recent excavations of a roundhouse at Teigncombe showed early Iron Age pottery associated with re-use of a Bronze Age roundhouse. In addition to artefacts, radiocarbon determinations from Shaugh Moor house 19 and structure 804 demonstrated occupations of the later Bronze Age and Early Iron Age periods (Wainwright and Smith 1980). This widespread evidence suggests that on Dartmoor, roundhouses which were originally of Bronze Age were often reoccupied in the Iron Age. Here it is worth emphasising that the great majority of data on Dartmoor roundhouses comes from antiquarian work: now that lack or scarcity of ceramics can be seen to be a first millennium BC trait, the extent of contemporary activity is hard to estimate, and almost certainly has been underestimated in the past.

A similar pattern seems to be emerging on Bodmin Moor in Cornwall. Early Iron Age pottery and a Middle Iron Age blue bead were recovered from a roundhouse at Garrow Tor (Silvester 1979; Henrietta Quinnell pers comm) and at Stannon Down a post-built structure within a Bronze Age ring cairn was dated to the Middle Iron Age (Jones 2004-5). In addition, the radiocarbon dating of Leskernick roundhouses 1 and 23 (Bender *et al* 2007, 88-9) have, like houses 3 and 1 at Bosiliack, revealed evidence for Iron Age activity. These latter sites are, like Bosiliack house 3, significant because they demonstrate the later reuse of buildings, where finds are absent, and raise the problems of the identification of Iron Age activity in upland areas, where occupation may mostly be confined to the reoccupation of older sites or the construction of ephemeral wooden structures.

The Penwith moors are lower-lying and much more favourable for occupation than either Bodmin Moor or Dartmoor. Indeed, despite the lack of recent settlement investigation,

reassessment of older excavation archives has revealed that first millennium cal BC reoccupation of Bronze Age roundhouses appears to have been a frequent occurrence (Jones and Quinnell 2011a). At Bodrifty nine roundhouses within a settlement were investigated (Dudley 1956) and as at Bosiliack, some of these houses stood over ruins of older roundhouses and several contained multiple hearths and Middle Bronze Age pottery were recovered. However, several roundhouses contained Late Bronze Age and Iron Age pottery and spindle whorls. Unfortunately, the settlement was excavated before radiocarbon dating was widely applied to settlement sites; however, no definite break in the use of Bodrifty can be seen in the ceramic record. Similarly, recent rapid reassessment of the ceramics from Dudley's excavation at Wicca Round (1957, 81 and plate 4) shows Middle Bronze Age Trevisker ware, as well as probable Late Bronze Age / Early Iron Age pottery and a few sherds which are almost certainly Middle Iron Age. The nearby roundhouse settlement at Sperris Croft produced a few sherds of pottery that are most probably Late Bronze Age or Early Iron Age in date (Jones and Quinnell 2011a). It is quite likely that all of the settlements in Penwith excavated in the 1950s which were initially dated to the Middle Bronze Age had varied amounts of use during the 1st millennium cal BC, and this is likely to be true for the unexcavated settlements in Penwith too.

At Bosiliack, the first millennium cal BC radiocarbon determinations from house 1 and house 3, and the small amount of Iron Age pottery from within house 1 suggests that at least two of the buildings in the settlement had complexes histories of reuse. However, it is not possible to say whether there was continued, if intermittent, use of the roundhouses, or if the settlement had been completely abandoned for generations before people returned and made use of the ruins.

Interestingly, the gorse / broom charcoal from house 3 is indicative of heathland conditions and this was also suggested by the charcoal assemblages from house 1 (Jones and Quinnell 2011a). The heathland conditions might suggest that houses were being (re)occupied as part of a system of upland transhumance. It is plausible that many upland roundhouses in the south west region were occupied on a seasonal basis, as part of a system of transhumance (Herring 2008). It is possible that the houses at Kestor and Dean Moor on Dartmoor (Fox 1954; 1957) were places where people grazed their animals and possibly worked locally available iron ore. The evidence from the settlement at Bosiliack is consistent with periodic reuse, with the occupation in houses 1 and 3 representing seasonal re-occupation of an older Bronze Age roundhouse. By contrast, the more extensive evidence for Iron Age activity at Bodrifty suggests that it had periods of permanent reoccupation; the quantities of Middle Iron Age and later ceramics at Bodrifty suggests that activities here were of a different kind to those at the other west Penwith settlements. There is likely to have been a complex and regionally variable relationship between permanent settlements, the use of tracts of upland grazing and the reuse, or continued use, of older settlements. It is currently uncertain as to whether there was straightforward continuity from the Bronze Age, with ongoing rights to grazing handed down over the generations, or whether large-scale reorganization occurred (Herring 2008).

The widespread reuse of Bronze Age roundhouses raises the question as to whether old buildings were used because they were convenient places of shelter or because as 'ancestral dwellings' they helped reaffirm tenure and rights to particular tracts of land. There is plenty of evidence for structures and places being reused throughout the prehistory and the Iron Age (Barrett 1999; Bradley 2002; Hingley 2009). Much of this reuse may have been linked with a desire to create or maintain links with the past and particular places. However, this did not mean that claims were based on actual 'history' or that the past was not manipulated to support fictional or mythologised claims to land ownership. At Bosiliack, the ancient roundhouses may have been used by people who continued to graze their cattle on the land which had been handed down to them through the generations, or because reorganization of the land required 'ownership' of land to be asserted through the re-occupation of 'ancestral dwellings'.

Conclusion: the future past

From the foregoing discussion it is evident that the Bronze Age settlement was used and thought about in different ways throughout the prehistory. Some times buildings were dwelt in whereas at others they were left as empty shells. Some showed evidence for being rebuilt or reused long after the original occupants had left. A recurring pattern of reuse of monuments, structures and places throughout the prehistoric and earlier medieval periods is found across Britain (for example, Bradley 2002, chapter 3; Williams 1998), and may represent a desire to make a link with the past, or an attempt to control it.

However, in the periods since the Iron Age there is less evidence for the ways that people have engaged with the settlement at Bosiliack. Folklore and superstition may have discouraged medieval farmers from destroying the roundhouses (Dudley 2011, 155); however, the location of the settlement within fairly marginal land may have meant that the amount of physical labour needed to clear the area of substantial amounts of stone was not considered worthwhile. However, as elsewhere in Penwith (Kirkham 2011, 24; forthcoming), during the nineteenth century any lingering superstitions about the site appear to have diminished and the stone within the field walls, and probably the roundhouses too, were deemed a resource for use in structures associated with mining. This is indicated by the attempted conversion of one of the field wall stones into a mellior stone and possibly by the disturbance to wall 102 around house 3, and possible the roof slate fragments from house 3 as well.

More recently attitudes to the historic environment have changed and the large number of prehistoric sites which are found across the uplands of the south west and Penwith are now valued as an important asset in their own right. It is therefore, as Graeme Kirkham (2011, 87-8) points out, deeply ironic that, at the time when there is a growing awareness of the importance of upstanding archaeological sites, extremely valuable below ground-remains are being destroyed through the infestation of the moors and upland areas by uncontrolled bracken. The recording of bracken rhizomes undertaken as part of the Bosiliack project, as well as others on Dartmoor and in Scotland (Gerrard 1999; Rees and Mills 1999) has clearly demonstrated the destructive effects of rhizomes upon buried archaeological layers and structures. The recording of the bracken rhizomes within house 3 has revealed physical damage to wall 102, and to the deposits within the building. A similar pattern was found within the test pits, where rhizome penetration was impacting upon older soil horizons within the field system. This is significant because these deposits have the potential to contain environmental and artefactual material that can tell us how people inhabited their environments, occupied their buildings, as well as provide the dating evidence which will enable us to develop better chronologies. Any damage to, or loss of these layers is therefore of considerable concern for the potential to undertake archaeological investigation in the future.

Today then, we are faced with the choice about the way that the roundhouse settlement and its wider setting is managed: to do nothing will eventually lead to an equal or greater loss of information than occurred in the post-medieval period whereas, by contrast, the careful management of Bosiliack, through the removal of the bracken (Parkes 2011, 38) should ensure that the settlement survives both as an important example, of an upstanding Bronze Age settlement but also as a significant below-ground resource for future archaeological recording.

At the time of writing, and as a direct result of the excavations, the settlement has been put forward for Scheduling and management to control scrub and bracken growth has already been initiated through a Higher Level Stewardship agreement.

Acknowledgements

The author would like to thank the English Heritage, the Cornwall Archaeological Society, and the Cornwall Heritage Trust for funding the Bosiliack project. We would also like to thank the owners, the Bolitho Estate, for permission to excavate the roundhouse, and their tenant

Stephen Bone. Chris Fry from Penwith Access and Rights of Way cleared the site before work began. Sandy Gerrard, Janet Daynes and Gordon Fisher of the Dartmoor Bracken project advised on the bracken investigation and Charles Thomas and Tony Blackman gave their support throughout the project.

Within HE, we would like to thank Ann Preston-Jones and Ann Reynolds for their assistance with the development of the project and Pete Dudley, Sean Taylor, Graeme Kirkham and Jane Marley for onsite supervision of volunteers. Thanks are also due to Les Dodd and Phil Hills for organising the survey.

The excavation team was Linda Barrow, Maria Gardiner, Barbara Gordon, Pam McInally, Ailsa Johnson, Spencer Johnson, Sally Oakley, Jo Pye, Stella Redgrave, Barbara Sanders, George Scott, Adam Sharpe, Thomas Rose-Jones, Sandra Thomas, Phil Tizzard, Jack Weir, Chris Verran, Kim Williams and Paul Young. Dave Giddings of Cornwall Archaeological Society assisted with tours of the site on the open day.

We would also like to thank Jane Read and Sean Taylor for producing the illustrations.

Bibliography

ApSimon, A, and Greenfield, E, 1972. The excavation of the Bronze Age and Iron Age settlement at Trevisker Round, St. Eval, Cornwall, *Proc Prehist Soc*, **38**, 302-81

Ashbee, P, 1974. *Ancient Scilly, from the first farmers to the early Christians*, Newton Abbot

Barnatt, J, 1982. *Prehistoric Cornwall - the ceremonial monuments*, Wellinborough

Barrett, J, 1999. The mythical landscapes of the British Iron Age, in W, Ashmore and A B, Knapp, eds, *Archaeologies of landscape,* Oxford, 253-68

Bender, B, Hamilton, S, and Tilley, C, 2007. *Stone worlds: narrative and reflexivity in landscape archaeology*, Walnut Creek

Bradley, R, 2000. *The good stones; a new investigation of the Clava cairns*, Edinburgh

Bradley, R, 2002. *The past in prehistoric societies*, London

Bradley, R. 2005 *Ritual and domestic life in prehistoric Europe*, London

Butler, J, 1997. *Dartmoor atlas of antiquities*, *volume 5*, Tiverton

Challinor, D, The charcoal, in A M Jones and H Quinnell 2011a

Copley, M, Berstan, R, Dudd, S, Aillud, S, Mukherjee, A, Straker, V, Payne, S, and Evershed, R, 2005. Processing of milk products in pottery vessels through British prehistory, *Antiquity*, **306**, 895-908

Cummings, V, and Fowler, C, 2007. *From cairn to cemetery; an archaeological investigation of the chambered cairns and Early Bronze Age mortuary deposits at Cairnderry and Bargrennan White cairn, south-west Scotland*, Brit Arch Repts, Brit Ser, **434**, Oxford

Drewett, P L, 1982. Later Bronze Age downland economy and excavations at Blackpatch, East Sussex, *Proc Prehist Soc*, **48**, 321-400

Dudley, D, 1941. A Late Bronze Age settlement on Trewey Downs, Zennor, *Arch Jour*, **98**, 105-30

Dudley, D, 1956. An excavation at Bodrifty, Mulfra, near Penzance, *Arch Jour,* **113**, 1-32

Dudley, D, 1957. Late Bronze Age and Early Iron Age settlements in Sperris Croft and Wicca Round, *J Royal Inst Cornwall*, **3**, 414-50

Dudley, P, 2011. *Goon, hal, cliff and croft, the archaeology and landscape history of west Cornwall's rough ground*, Truro

Fleming, A, 1988. *The Dartmoor reaves, investigating prehistoric land divisions*, London

Fox, A, 1954. Excavations at Kestor, *Rep Trans Devonshire Assoc*, **86**, 21-62

Fox, A, 1957. Excavations at Dean Moor, *Rep Trans Devonshire Assoc*, **89**, 21-62

Gerrard, S, 1999. *Dartmoor bracken and archaeology project interim report for the 1999 season*, privately published

Gerrard, S, 2007. *Dartmoor bracken and archaeology project interim report for the 2007 season*, privately published

Gerrard, S, 2008. *Dartmoor bracken and archaeology project interim report for the 2008 season*, privately published

Gerrard, S, 2011. *Bracken rhizome recording and assessment manual*, privately published

Gerrard, S, and Quinnell, H, 2002. *Dartmoor bracken and archaeology project interim report for the 2002 season*, privately published

Gibson, A, 1992. The excavation of an Iron Age settlement at Gold Park, Dartmoor, *Proc Devon Archaeol Soc*, **50**, 19-47

Gossip, J, forthcoming. Life outside the round - Bronze Age and Iron Age settlement at Higher Besore and Truro College, Threemilestone, Truro, *Cornish Archaeol*

Harrad, L, 2003. *The production and trade of prehistoric ceramic in Cornwall,* Unpublished PhD thesis, University of Oxford

Herring, P, 2008. Commons, communities and fields in prehistoric Cornwall, in A Chadwick ed, *Recent approaches to the archaeology of land allotment*, Brit Arch Repts, Int Ser, **1875**, Oxford, 70-95

Herring, P, Sharpe, A, Smith J R, and Colom, G, 2008. *Bodmin Moor: an archaeological survey, volume 2: the industrial and post-medieval landscapes*, London

Hingley, R, 2009. Esoteric knowledge, ancient bronze artefacts from Iron Age contexts, *Proc Prehist Soc*, **75**, 143-66

Johnson, N, and Rose, P, 1994. *Bodmin Moor: an archaeological survey, volume 1*, London

Jones, A, and MacGregor, G, 2002. *Colouring the past*, Oxford

Jones, A M, 1998-9. The excavation of a later Bronze Age structure at Callestick, *Cornish Archaeol*, **37-8**, 5-55

Jones, A M, 2004-5. Settlement and ceremony; archaeological investigations at Stannon Down, St Breward, Cornwall, *Cornish Archaeol*, **43-44**, 1-141

Jones, A M, 2008. Houses for the dead and cairns for the living: a reconsideration of the Early to Middle Bronze Age transition in south-west England, *Oxford J Archaeol,* **27**, 153–74

Jones, A M, forthcoming. Ritual, rubbish or everyday life? evidence from a Middle Bronze Age settlement in mid Cornwall, in J Morris and C Randall, eds, *Ritual in context: explaining Ritual Complexity in Archaeology*

Jones, A M, in preparation. CAS excavations at Carn Galva and Bosporthennis in 2009, *Cornish Archaeol*

Jones, A M, Breen, E, Camidge, K, Charman, D, Fyfe, R, Garrow, D, Johns, C, Kirk, T, Mills, S, Mulville, J, Pannett, A, Quinnell, H, Rainbird, P, Roberts, H M, Robinson, G,

Sawyer, K, Sturt, F, and Scaife, R in preparation *Scilly Historic Environment Research Framework resource assessment: chapter 4 Neolithic and Early Bronze Age*

Jones, A M and Quinnell, H, 2011a. Bosiliack: a later prehistoric settlement in Penwith, Cornwall, *Arch Jour* **168**, 80-117

Jones, A M, and Quinnell, H, 2011b. The Neolithic and Bronze Age periods in Cornwall, *c* 4000 cal BC to *c* 1000 cal BC: an overview of recent developments, *Cornish Archaeol*, **50**, 197-230

Jones, A M, and Quinnell, H, forthcoming. Monuments and images: new views of well-known sites. The Try menhir and cairn and barrows on the St Austell granite, *Cornish Archaeol*

Jones, A M and Taylor, S R, 2010. *Scarcewater, Pennance, Cornwall, archaeological excavation of a Bronze Age and Roman landscape*, Brit Arch Repts, Brit Ser, **516**, Oxford

Jones, A M, and Thomas, A C, 2010. Bosiliack and a reconsideration of entrance graves, *Proc Prehist Soc,* **76**, 271-96

Ladle, L, and Woodward, A, 2009. *Excavations at Bestwall Quarry, Wareham, 1992-2005, volume 1: the prehistoric landscape*, Dorchester

Kirkham, G, 2011. *Managing the historic environment on west Cornwall's rough ground*, Cornwall Council, Truro

Kirkham, G, forthcoming. 'Rip it up and spread it over the field': post-medieval agriculture and the destruction of monuments in Cornwall, *Cornish Archaeol*

Knight, J, 1991. Technological analysis of the anvil (bipolar) technique, *Lithics,* **12**, 57-80

Marchand, J, and Hughes, S. 2012. Bronze Age Bellever, settling Dartmoor in the 2nd millennium BC, *Current Archaeology*, **266**, 36-41

Mercer, R, 1970. The excavation of a Bronze Age hut-circle settlement, Stannon Down, *Cornish Archaeol*, **9**, 17-46

Miles, H, 1975. Barrows on the St Austell Granite, *Cornish Archaeol,* **14**, 5-82

Morris, B, forthcoming. The excavation of a pit group with Trevisker ceramics at Porthleven, *Cornish Archaeol*

Nowakowski, J, 1991. Trethellan Farm, Newquay: the excavation of a lowland Bronze Age settlement and Iron Age cemetery, *Cornish Archaeol*, **30**, 5-242

Nowakowski, J, 2007. Digging deeper into barrow ditches, in J Last, ed, *Beyond the grave: new perspectives on Barrows,* Oxford, 91-112

Nowakowski, J, Quinnell, H, Sturgess, H, Thomas, C, and Thorpe, C, 2007. Return to Gwithian: shifting the sands of time, *Cornish Archaeol*, **46**, 13-76

Nowakowski, J, and Quinnell, H, 2011. *Trevelgue Head, Cornwall: the importance of CK Croft Andrew's 1939 excavations for prehistoric and Roman Cornwall*, Truro

Parker Pearson, M, 1996. Food, fertility and front doors, in T, Champion and J, Collis, eds, *The Iron Age in Britain and Ireland: recent trends*, Sheffield, 117-32

Parkes, C, 2011. *Lanyon Farm, Madron, Cornwall: archaeological management assessment,* Truro (Historic Environment Service, Cornwall County Council)

Quinnell, H. 1991 The late Mrs Minters excavation of hut circles at Heatree, Manaton in 1968, *Proc Devon Archaeol Soc*, **49**, 1-24

Quinnell, H. 1994 Becoming marginal? Dartmoor in later prehistory, *Proc. Devon Archaeol. Soc.*, **52**, 75-84

Quinnell, H, 2007. Prehistoric, Roman and early medieval pottery in J, Gossip and A.M, Jones, *Archaeological investigations of a later prehistoric and a Romano-British landscape at Tremough, Penryn, Cornwall,* Brit Arch Repts, Brit Ser, **443**, Oxford, 51-78

Quinnell, H, 2011a. The pottery, in J Nowakowski and H Quinnell 2011, 144-208

Quinnell, H, 2011b. A Summary of Cornish ceramics in the first millennium BC, *Cornish Archaeology*, **50**, 231-40

Quinnell, H, 2012. Trevisker pottery: some recent studies, in W Britnell, ed, *Reflections on the Past. Essays in honour of Frances Lynch,* 146-171. Cambrian Archaeological Association

Quinnell, H, and Taylor, R, 2011. Stonework, in J Nowakowski and H Quinnell 2011, 257-79

Rees, T, and Mills, C, 1999. *Bracken and archaeology*, Edinburgh

Radford, R, 1952. Prehistoric settlements on Dartmoor and the Cornish moors, *Proc Prehist Soc*, **18**, 55-84

Robinson, G, 2007. *The prehistoric island landscape of Scilly*, Brit Arch Repts, Brit Ser, **447**, Oxford

Rogers, W, 1923. *The shingles and sands of Cornwall*, Royal Cornwall Polytechnic Society, 45-50

Schulting, R, Sheridan, A, Clarke, S, and Bronk Ramsey, C, 2008. Largantea and the dating of Irish Wedge tombs, *Jour Irish Arch*, **17**, 1-18

Silvester, R J, 1979. The relationship of first millennium settlement to the upland areas of the South West, *Proc Devon Archaeol Soc*, **37**, 176-90

Smith, G, and Harris D, 1982. The excavation of Mesolithic, Neolithic and Bronze Age settlements at Poldowrian, St. Keverne, 1980, *Cornish Archaeol*, **21**, 23-62

Smith, K, Coppen, J, Wainwright, G. and Beckett, S. 1981 The Shaugh Moor project: third report – settlement and environmental conditions, *Proc. Prehist. Soc.*, **47**, 205-74

Taylor, R, 2011. Petrography of gabbroic fabrics, in J Nowakowski and H Quinnell 2011, 149-51

Thompson, S, and Birbeck, V, 2009-10. A Time Team evaluation at Roughtor, Bodmin Moor, Cornwall, *Cornish Archaeol*, **48-9**, 265-70

Wainwright, G J. and Smith, K. 1980 The Shaugh Moor project: second report – the enclosure, *Proc Prehist Soc*, **46**, 65-122

Wilkinson, K. and Straker, V. 2008 Neolithic and Early Bronze Age environmental background, in C J, Webster, ed, *The archaeology of south west England, South West Archaeological Research Framework; resource assessment and research agenda*, Taunton, 64-73

Williams, H. 1998 Monuments in the past in Anglo-Saxon England, *World Archaeol*, **30**, 90-108

Woodward, A, and Cane, C, 1991. The Bronze Age pottery, in J, Nowakowski, 1991, 103-31

Yates, D, 2007. *Land, power and prestige: Bronze Age field systems in southern England*, Oxford

Project archive

The HE project number is **2011206**

The project's documentary, photographic and drawn archive is currently housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Field plans and copies of historic maps stored in an A2-size plastic envelope (GRE761 / 1-14).
3. Black and white photographs archived under the following index number: GBP 2213, 2214, 2215 and 2216, 1-19
4. Digital photographs stored in the directory R:\Historic Environment
5. (Images)\Sites R:\Historic Environment (Images)\SITES.A-D\Bosilliack roundhouse excavations 2011 2011206
6. English Heritage/ADS OASIS online reference: Cornwall2-127415
7. This report text is held in digital form as: G:TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites W\West Penwith bracken\2011 excavation\Report\Bosiliack Excavation Report.doc
8. The site code was: **BS11**

Appendix A: Recorded contexts

House 3

Context Number	Type (**C**ut/ **D**eposit/ **B**uild)	Description
(100)	D	Layer of loose dark brown rooty soil and decayed vegetation covering the area of house 3 and the excavation area.
(101)	D	Dark, greyish near black deposit of friable peat soil and roots. It overlay walls 102, 103, and 104, and layer (105) within the roundhouse. It covered the roundhouse and the natural boulders beyond it. It contained some tumble from wall 102. Burnt clay was also found – likely to be post-medieval.
102	B	Double-faced granite wall forming the perimeter of house 3. It was comprised of edge set large slabs with smaller stones forming the core of the wall. The large stones were up to 1.2m across and the smaller stones on average were about 0.2m. It also included natural outcropping boulders- especially on the western side and a few non granite stones – including quartz and blue tourmalised granite stones. Overall the wall was very white except for the large 'bluish' stone to the right of the doorway. The entrance was on the south side of the house, where the wall rested directly up a large flat, natural granite slab. Some disturbance had occurred on the north side of the wall – presumably from 19th century mining
103	B	Field wall to the north of house 3. It was comprised of large granite blocks over 1.2m across, with smaller stones between them of approximately 0.2m across. The wall had been disturbed, with one block showing signs of being split and a hole drilled through it. The wall ended 0.3m to the north of the roundhouse, implying that it respected the wall of house 3. This suggests that the field walls post-date the roundhouses.
104	B	Field wall to the south of house 3. It was comprised of small granite stones. It was only just caught within the excavated area – but is likely to have been a continuation from wall 103. Again there was a gap between the roundhouse wall and the field wall.
(105)	D	Dark, greyish near black deposit of gritty peat soil. It was situated beneath the main rhizome / root mat but contained occasional roots and displaced stones from wall 102. Some disturbance had occurred – animal burrowing and slate found close to north edge which must be late. Burnt clay was also found – likely to be post-medieval. It covered the interior of the roundhouse and overlay layer (106).
(106)	D	Dark, greyish deposit of firm, gritty clay loam with rare charcoal inclusions and occasional displaced stones. It was situated beneath layer (105). A few sherds of prehistoric pottery were found at the junction with layer (107), however, disturbance had occurred – animal burrowing and slate was found in the northern part of the house. It covered the interior of the roundhouse and overlay layer (107).
(107)	D	Mid, greyish brown deposit of compact, gritty clay loam – which was similar to the natural clay subsoil or rab (110). It was situated beneath layer (106). A few sherds of prehistoric pottery were found close to the junction with layer (106) and there were a few flecks of charcoal. It is possible that (107) was a floor layer, however, disturbance had occurred – animal burrowing was evident in several places and the layer did not survive across the entirety of the structure.
[108]	C	Cut for a gully within house 3. The feature was 'U' shaped in section and ran roughly north west – south east. It cut (107) and was filled by (109).
(109)	D	Dark greyish, near black fill of Gully [108]. It was a gritty clay loam fill with no obvious inclusions or artefacts.

Context Number	Type (Cut/ Deposit/ Build)	Description
(110)	D	Natural granitic clay subsoil or 'rab'. In the area of the roundhouse it was a compact deposit with a mid greyish brown colour.

Test pits 1-8

Context Number	Type (Cut/ Deposit/ Build)	Description
(1)	D	Dark, greyish near brown deposit of loose plastic, peat and vegetation. It overlay layer (2).
(2)	D	Very dark grey-brown, slightly rooty, firm peaty soil with many rhizomes. It overlay layer (3).
(3)	D	Dark grey plastic gritty peaty soil. It contained occasional roots and many rhizomes, often at the junction with layer (2). It also produced a number of flints (see below) and may have been the remnants of an prehistoric soil horizon.
(4)	D	Natural granitic clay subsoil or 'rab'. In the area of the field system transact it was a compact deposit with a yellowish to orange colour. There were few rhizomes within this layer.

Appendix B: Rhizomes

House 3

A total of 255 bracken stipes were recorded above wall 102. A further 301 stipes were recoded inside the roundhouse.

Context Number	Grid square	Rhizomes
(101)	3/2 Over wall 102	33.01m
(101)	3/3 Over wall 102	39.16m
(101)	3/4 Over wall 102	40.84m
(101)	3/5 Over wall 102	5.39m
(101)	3/6 Over wall 102	6.28m
		Sub total = 124.68m over wall 102
(101)	4/1 Over wall 102	17.75m
(101)	4/2 Over wall 102	40.03m
(105)	4/2 Over wall 102	5.88m
(101)	4/3 Inside roundhouse	68.79m

Context Number	Grid square	Rhizomes
(105)	4/3 Inside roundhouse	8.09m
(101)	4/4 Inside roundhouse	70.19m
(105)	4/4 Inside roundhouse	7.85m
(101)	4/5 Inside roundhouse	60.11m
(105)	4/5 inside roundhouse	6.99m
(101)	4/6 Over wall	19.73m
		Sub Total = 305.41m
(101)	6/1 Over wall	61.37m
(101)	6/2 Over wall	86.09m
(101)	6/3 Inside roundhouse	65.22m
(105)	6/3 Inside roundhouse	8.53m
(101)	6/4 Inside roundhouse	86.53m
(105)	6/4 Inside roundhouse	15.08m
(101)	6/5 Inside roundhouse	28.80m
(105)	6/5 Inside roundhouse	5.24m
(101)	6/6 Over wall 102	24.32m
		Sub Total = 381.08m
(101)	7/1 Over Wall 102	25.32m
(101)	7/2 Over wall 102	48.73m
(101)	7/3 Over wall 102	50.65m
(101)	7/4 Over wall 102	56.68m
(101)	7/5 Over wall 102	50.68m
(101)	7/6 Over wall 102	33.13m

Context Number	Grid square	Rhizomes
		Sub total = 265.19m over wall 102
	556 Bracken stipes	**Total 1076.36m rhizomes**

Test pits 1-8

Test Pit Number	Stipes	Rhizomes
1	28	74.67m
2	56	66.41m
3	46	103.36m
4	23	77.4m
5	15	81.69m
6	53	97.84
7	48	67.41
8	38	64.31
	Total = 307 plants	Total = 633.09m, approximately 70m per test pit

Appendix C: The artefacts

The excavations at Bosiliack led to the recovery of a small number of artefacts which included flint, pottery, pebbles and stone. The 7 flints were divided between the house 3 excavation area, where three pieces were recovered, house 5 where 1 piece was found during vegetation clearance and from the test pits where a further 3 pieces were recovered

The small assemblage of prehistoric pottery was confined to house 3, where the lower part of layer (106) and the upper surface of layer (107) produced a very small assemblage of probably Bronze Age pottery.

Pebbles and possible worked stone items were also found in association with house 3. The pebbles must have come from a stream or a beach and been taken to the roundhouse.

Evidence for later disturbance to house 3 was also provided by the recovery of slates and possibly by burnt clay found within layer (106)

Context Unstratified: House 5

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Flint		1		

SF3 flint

Context (101)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Stonework				
Stone		2		

SF9 possible hammerstone, from wall tumble within layer (101)

White quartz beach pebble

Context (101) / wall 103

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Stonework				
Flint		1		

SF11 flint, from layer (101) – found directly above wall 103

Context (105)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Pottery				
Stonework				
hammerstone		1		
Flint		1		

SF5 flint found in quadrant 2

SF10 hammerstone, from layer (105) - likely to be of prehistoric date

Context (106)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Pottery				
Bronze Age		2		
Stonework				
Pebble		1		
Slate		1		

SF6 slate, from layer (106), post-medieval

SF7, two plain sherds of prehistoric pottery, one a base angle – probably Bronze Age Found at junction with layer (107)

SF8 water rounded possible hammerstone

Context (107)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Pottery				
Bronze Age		2		
Stonework				
Pebble		1		
Stonework				
Pebble		1		

SF12, two plain sherds of prehistoric pottery – of probable Bronze Age date. Found just below the junction with layer (106)

White quartz beach pebble

Test pit 3, layer (3)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Flint		2		

SF1 flint flake

SF2 flint debitage

Test pit 6, layer (3)

MATERIAL	WEIGHT (g)	NO OF ITEMS	OBJECT NO	INTERIM BOX NO
Flint		1		

SF4 flint flake

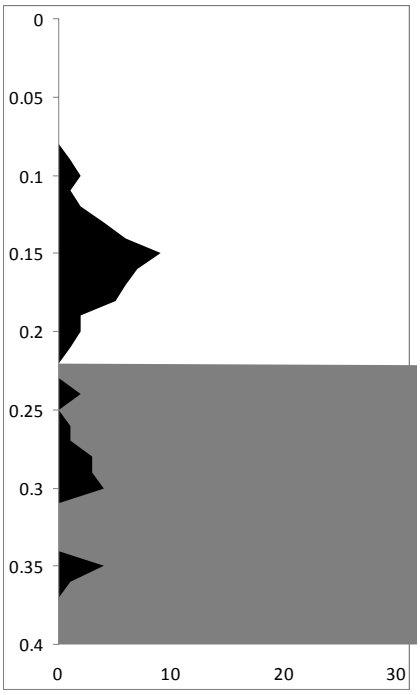
Appendix D: The samples

Sample Number	Context Number	Description
1000	(106)	10 litre sample from infill layer (106) within house 3, quadrant 1. Taken for possible dating purposes.
1001	(107)	20 litre sample from 'floor' layer (107) within house 3, quadrant 2. Taken for possible dating purposes.
1002	(109)	10 litre sample from fill (109) within gully [108], house 3. Taken for possible dating purposes.
1003	(107)	10 litre sample from 'floor' layer (107) within house 3, quadrant 1. Taken for possible dating purposes.

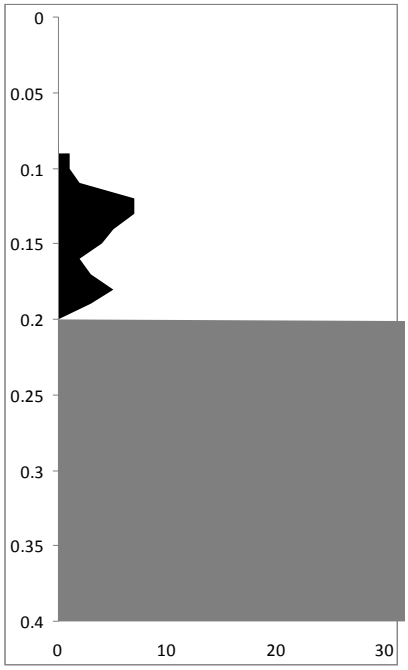
2 spot samples of charcoal were also taken from layers (105) and (106) for possible dating purposes.

Appendix E: Rhizome graphs

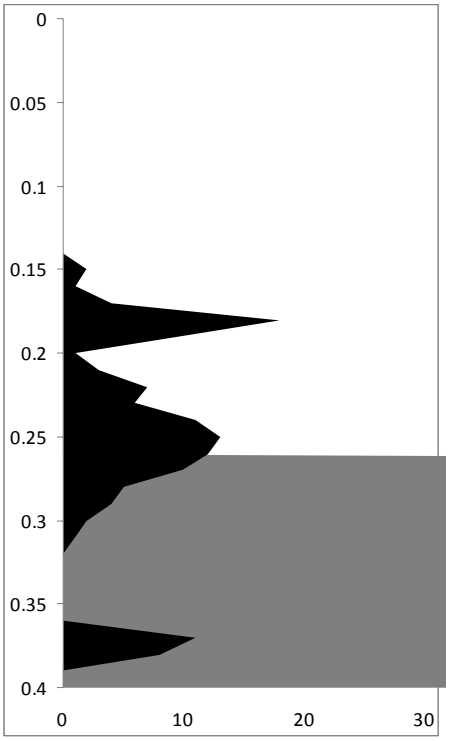
Graphs showing levels of rhizome activity. Grey shading indicates level of archaeology below string line, layer (3).



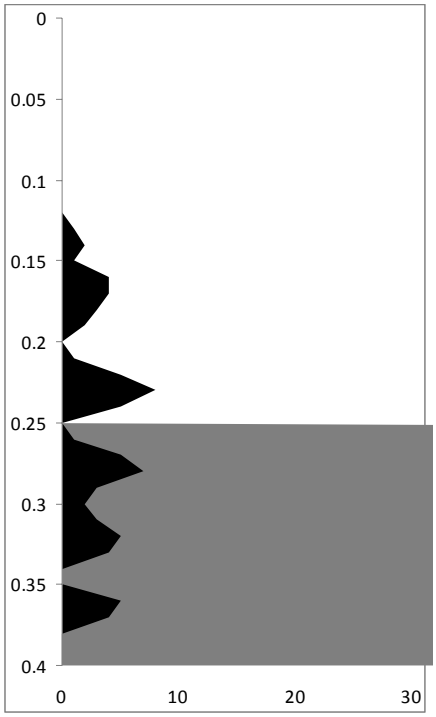
Test Pit 1 west facing section



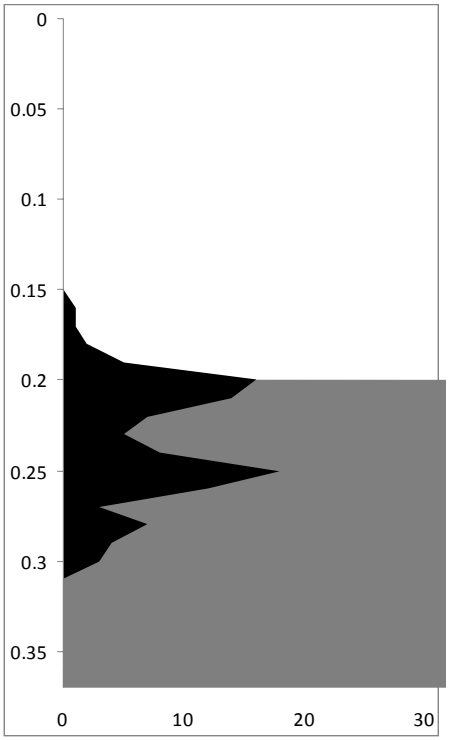
Test Pit 1 north facing section



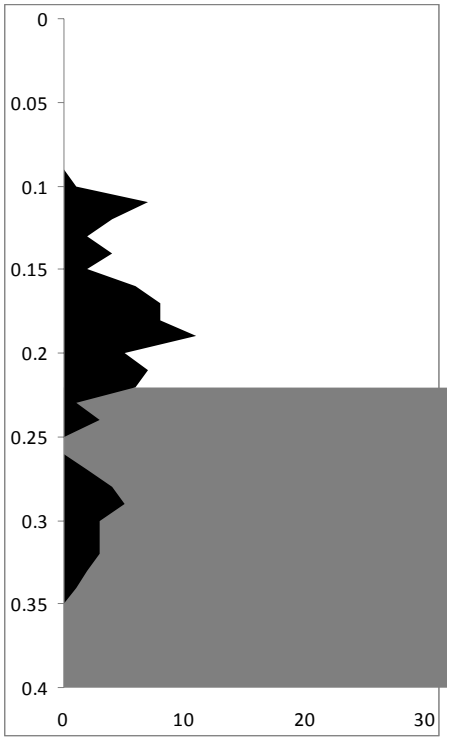
Test Pit 1 east facing section



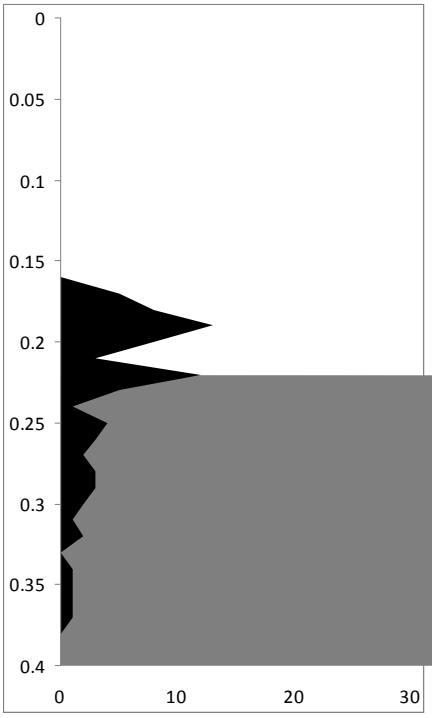
Test Pit 1 south facing section



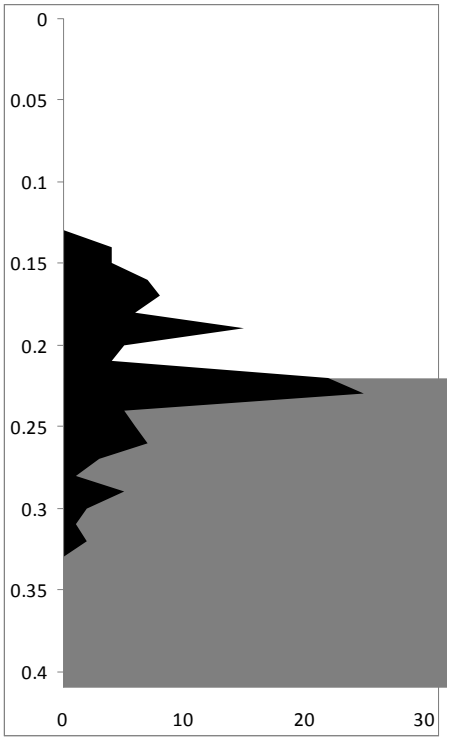
Test Pit 4 west facing section



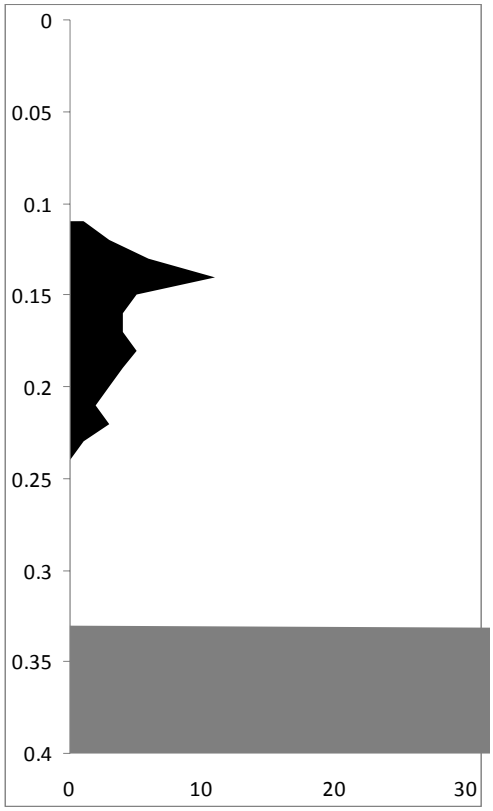
Test Pit 4 north facing section



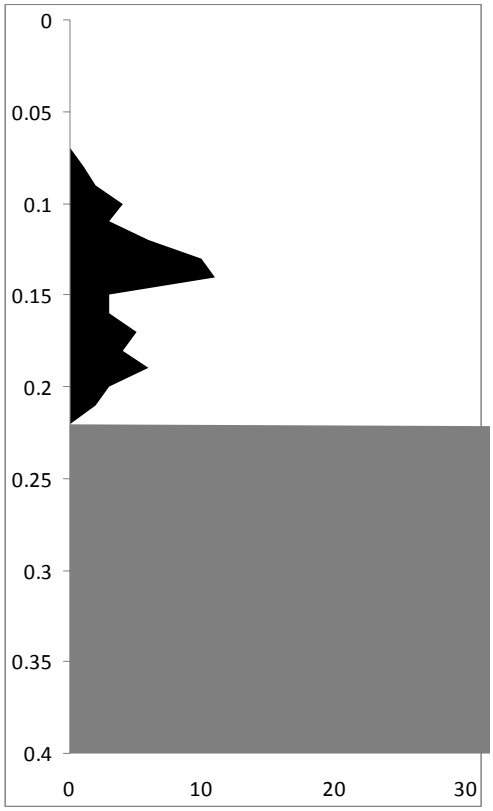
Test Pit 4 east facing section



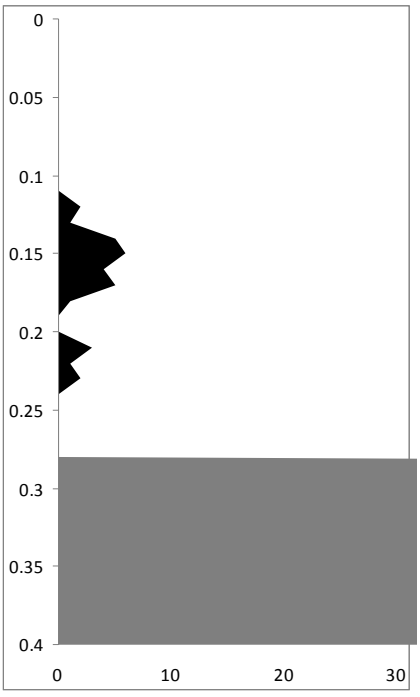
Test Pit 4 south facing section



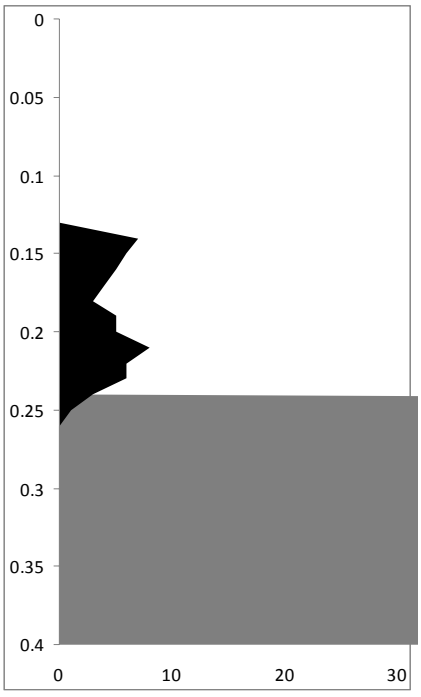
Test Pit 8 west facing section



Test Pit 8 north facing section



Test Pit 8 east facing section



Test Pit 8 south facing section

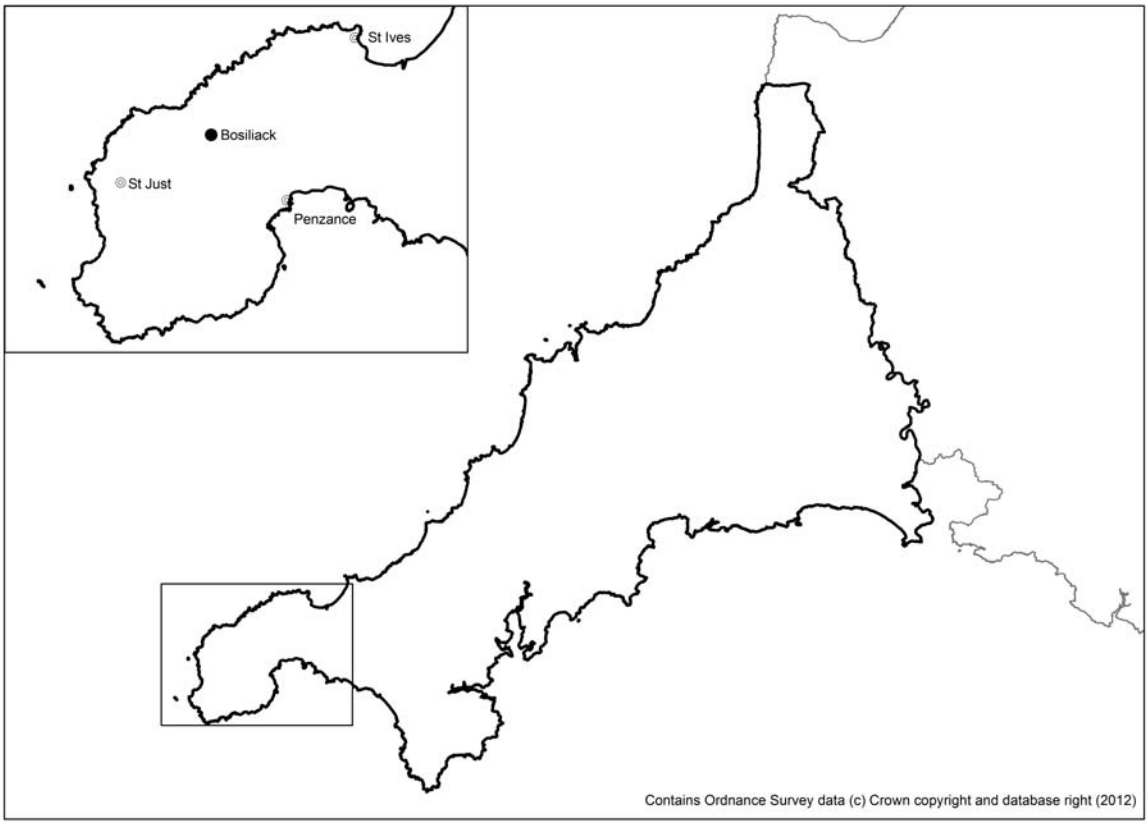


Figure 1 Location map.

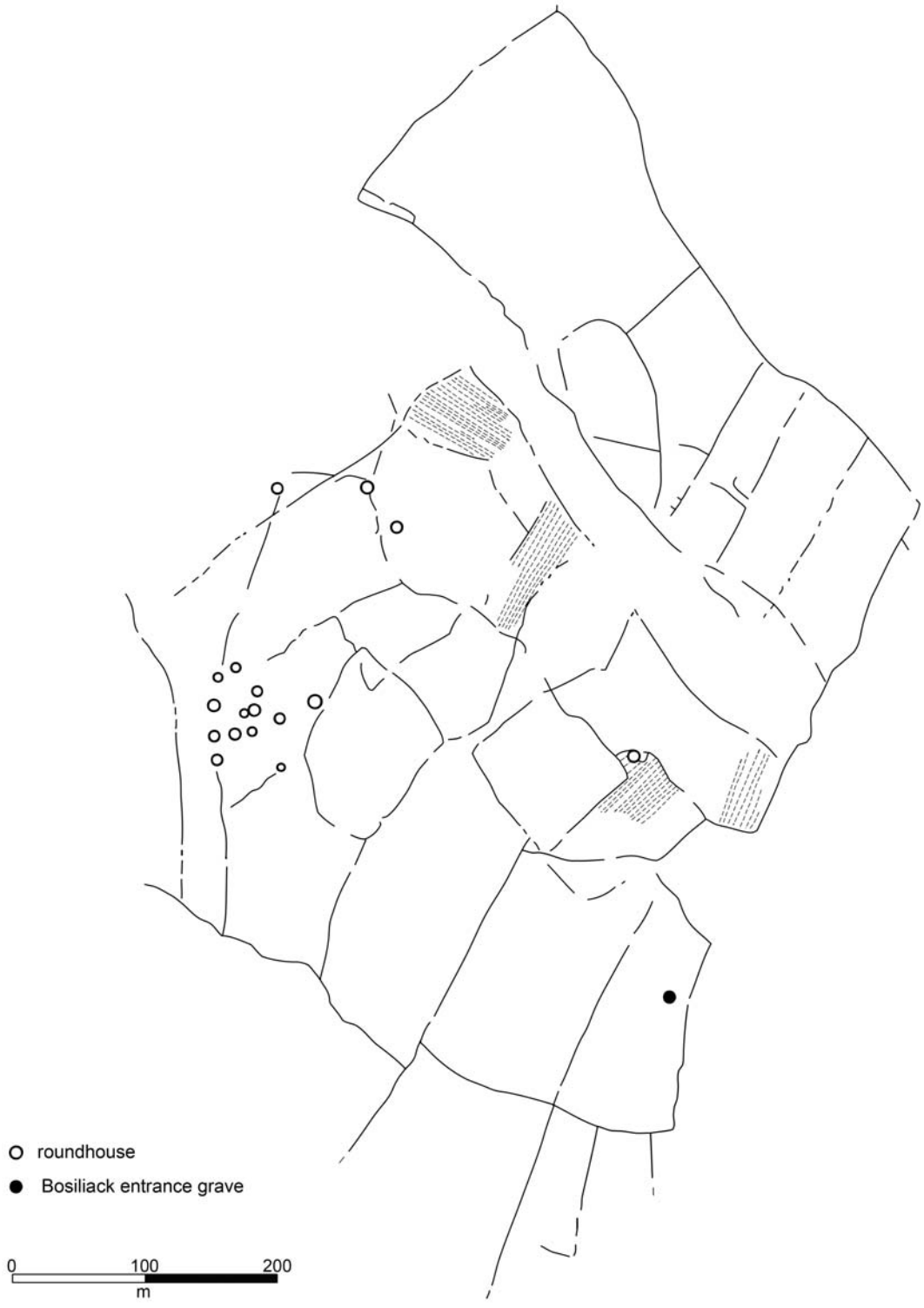


Figure 2 Map showing location of the Bosiliack area.

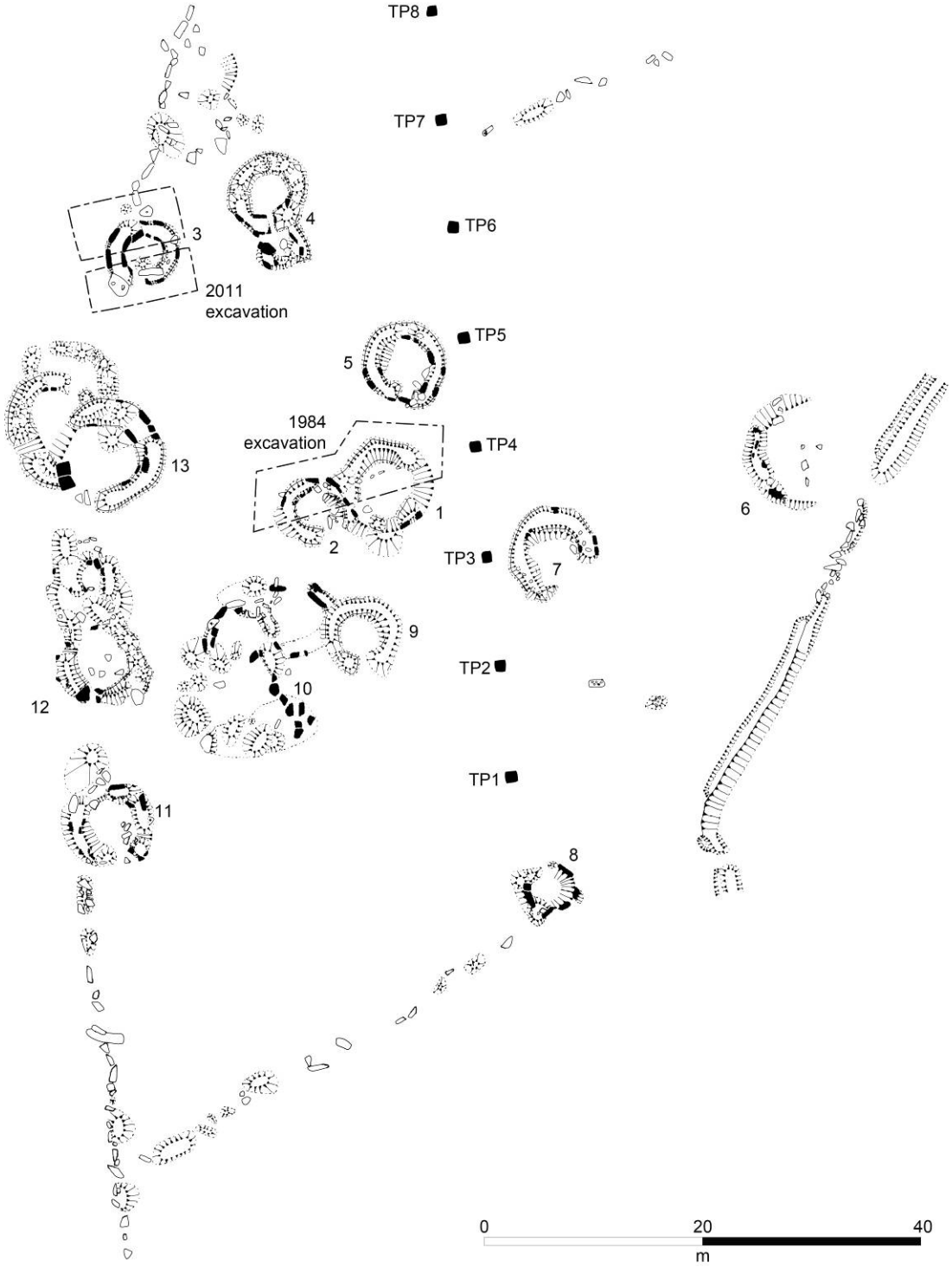


Figure 3 Plan of the Bosiliack Bronze Age settlement area.

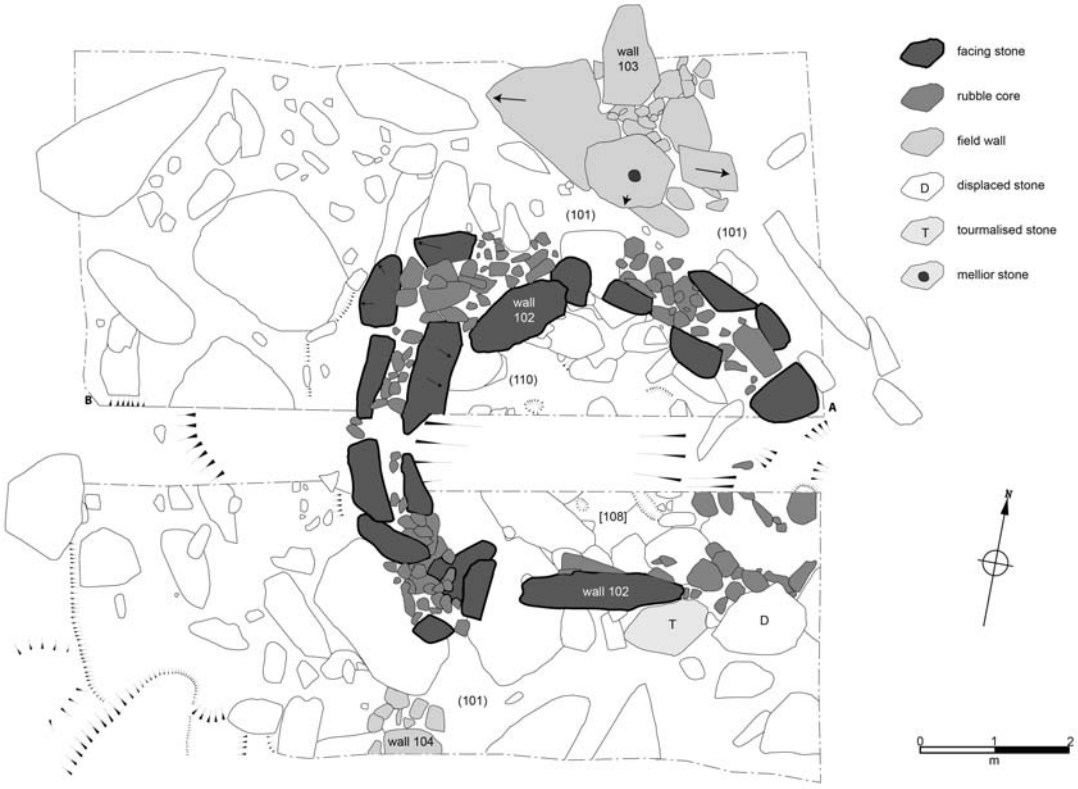


Figure 4 Plan showing house 3.

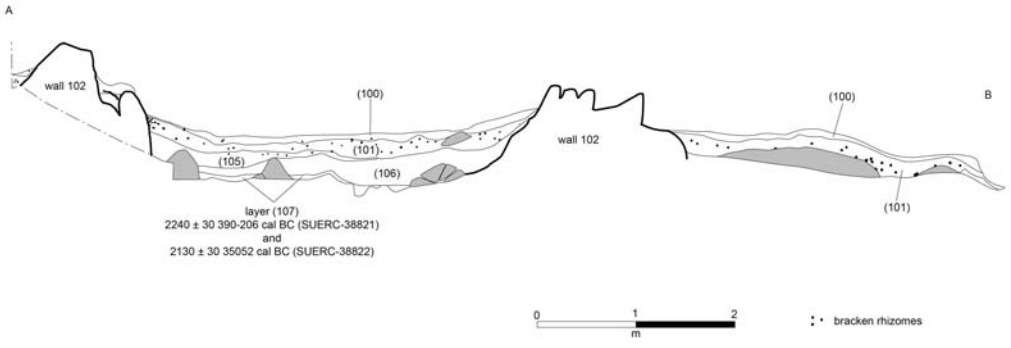


Figure 5 North facing section across house 3.

Figure 6 The entrance into house 3 from the south.

Figure 7 Roundhouse 3 from the north (note mellior stone in the foreground).

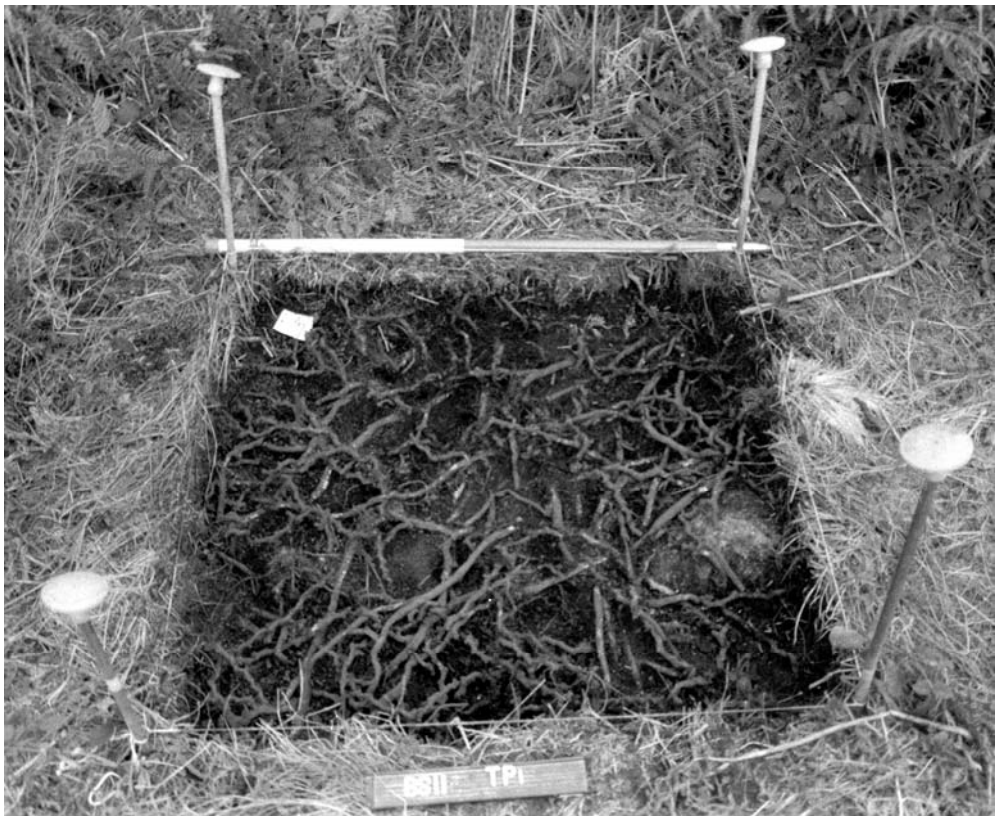


Figure 8 Test pit 1 showing the rhizome mat.

Figure 9 Test pit 3 north facing section.

Figure 10 Bosiliack entrance grave from the south east.

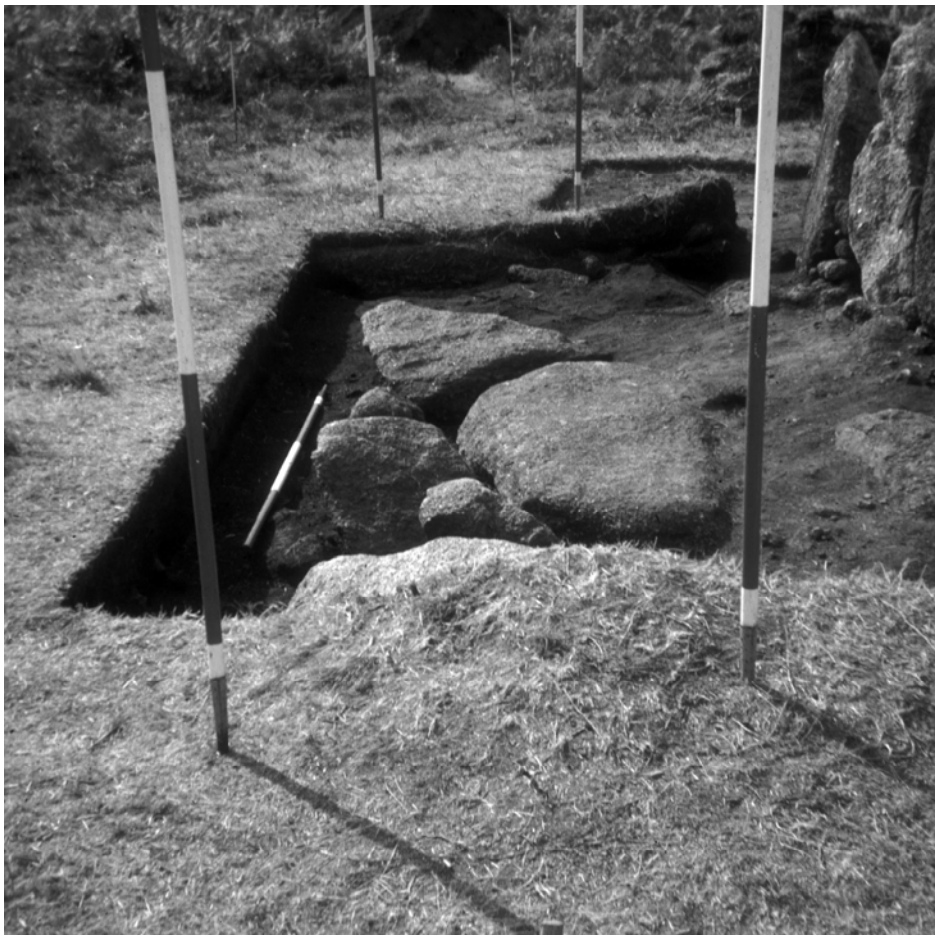


Figure 11 Lynchet on southern side of the entrance grave.

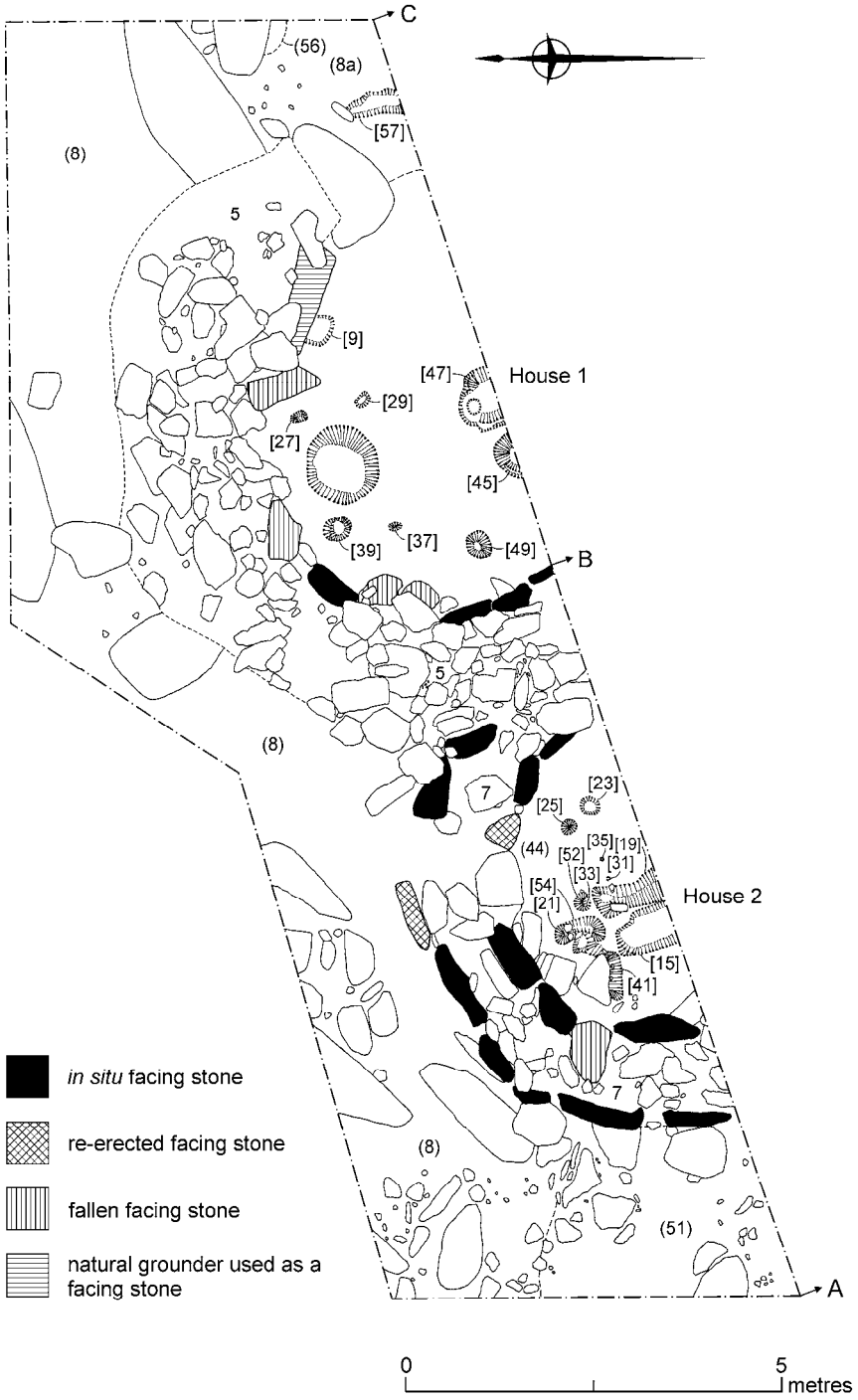


Figure 12 Plan showing Houses 1 and 2.

Figure 13 Archaeological features in house 2.

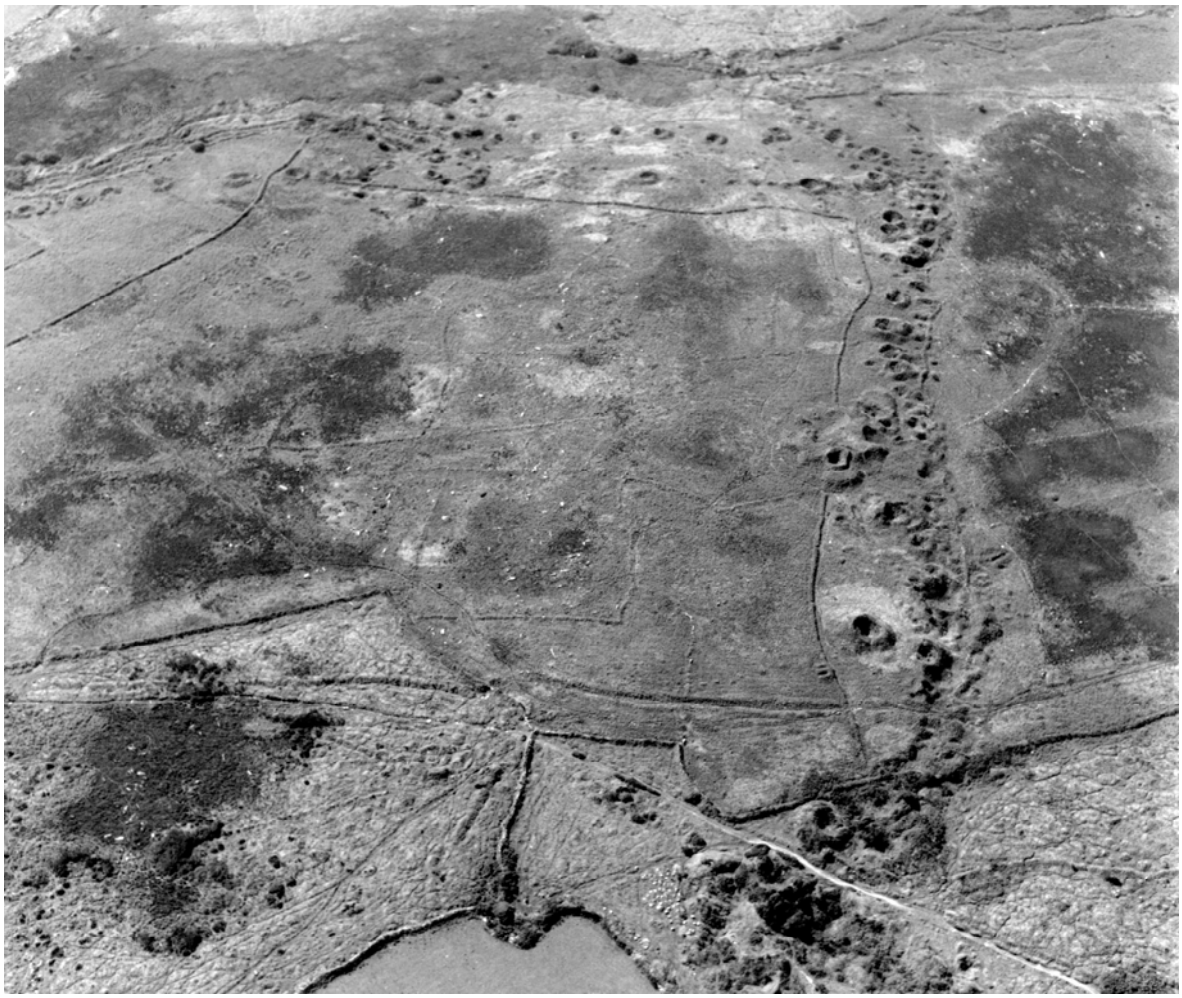


Figure 14 *Aerial view of the Bosiliack settlement (top left) and fields (centre), circa 1970, before scrub spread across it (CCR/JIP 2549).*

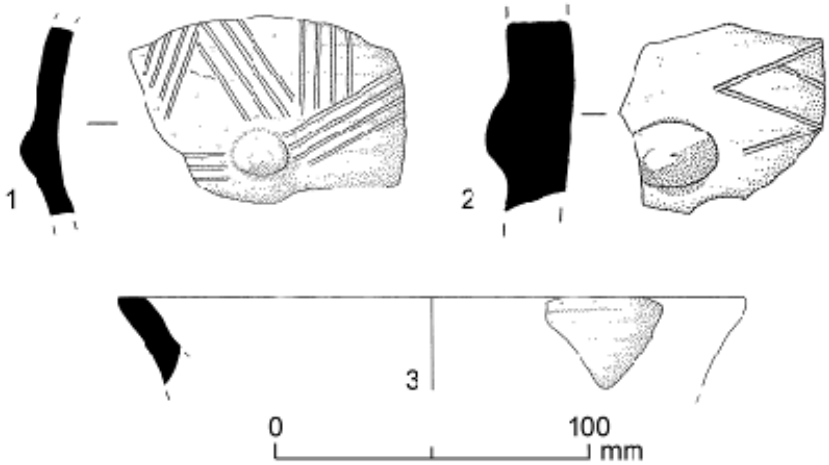


Figure 15 Pottery from houses 1 and 2.

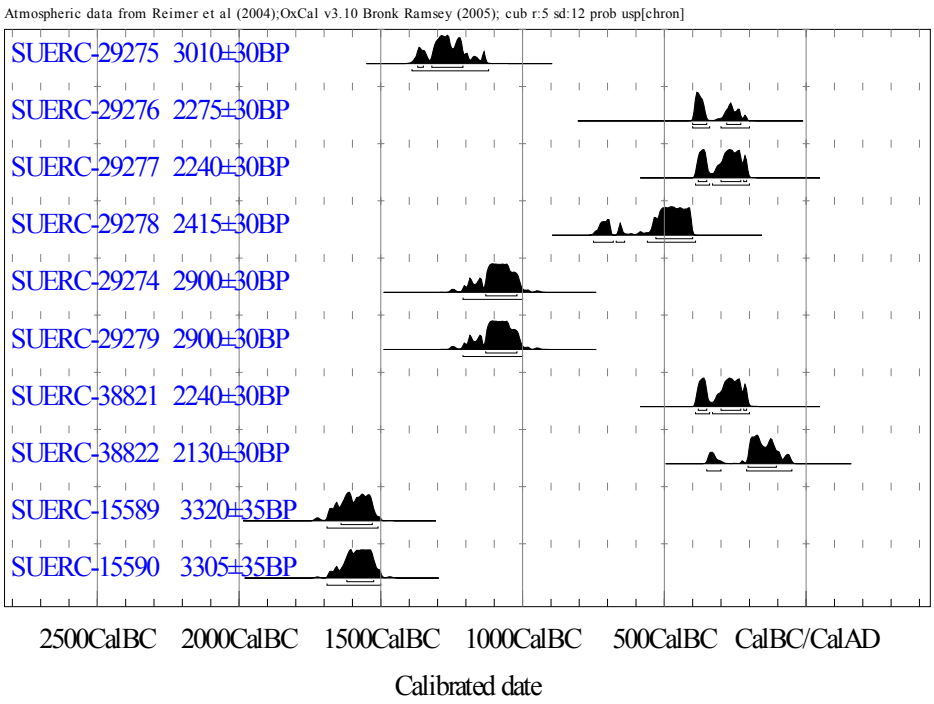


Figure 16 Radiocarbon determinations from the 1984 and 2011 excavations.