

# Excavation of Neolithic pits, three ring-ditches and a palisaded enclosure at Cwm Meudwy, Llandysul, Ceredigion, 2003

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*SUMMARY.* Two sites were excavated: Area A, a group of three ring-ditches, and Area B, a palisaded enclosure and pits/postholes. No evidence for burials or artefacts was found associated with the ring-ditches. Radiocarbon dates indicate that the ditches silted in the eighth to fourth centuries BC. A narrow and shallow gully defined the pear-shaped palisaded enclosure. It had an entrance to north-east consisting of two postholes and a possible entrance to the north-west associated with four pits/postholes. Radiocarbon dates of 3970–3785 cal. BC and cal. AD 130–350 were obtained from the postholes of the north-east entrance. Two four-post structures were identified, one within the area enclosed by the palisade and one without. A date of 380 to 170 cal. BC was obtained from a posthole of the four-post structure within the enclosure. The enclosure could date from the Neolithic to the Romano-British period, although the authors favour an Iron Age/Romano-British date. Numerous other pits and postholes were identified outside and inside the area of the enclosure, but none formed part of a definite structure. An assemblage of 65 sherds of mostly Early Neolithic pottery, with a few Late Neolithic/Early Bronze Age sherds, was recovered from several of the pits and postholes. Charcoal from four of the pit/postholes containing pottery returned radiocarbon dates broadly compatible with the Neolithic assemblage—a range of 3970 to 3510 cal. BC. Charcoal from a further pit was dated to 2030 to 1870 cal. BC.

## INTRODUCTION

The archaeological investigations at Cwm Meudwy, Llandysul, Ceredigion (SN 405419) were located on the north side of the Teifi valley at between 165m and 185m above sea level. The land slopes down to the south-west into the heavily wooded Cwm Meudwy itself, through which Nant Merwydd, a small stream, flows south towards its confluence with the river Teifi. The site lies within the Ceredigion upland massif, to the south of the Llandysul–New Quay road (A486) at Croesffordd (Fig. 1). The village of Horeb lies 1 kilometre to the north-west and the town of Llandysul about 1.5km to the south-east. Castell Gwilym a possible Iron Age or Romano-British enclosure lying 600m east is the only other known prehistoric site in the vicinity (Davies and Hogg 1994).

The investigations were undertaken during the early stages of the construction of light industrial units and an access road for a new industrial estate under the auspices of the Welsh Development Agency (WDA). An area in the north-west of the development area (Area A) was identified as being of potential archaeological significance following the identification by contractors of what seemed to be three ring-ditches after the removal of topsoil and up to 0.2m of subsoil. Most of the topsoil—and indeed the top of the subsoil—had been stripped from the development area prior to the discovery of the ring-ditches.

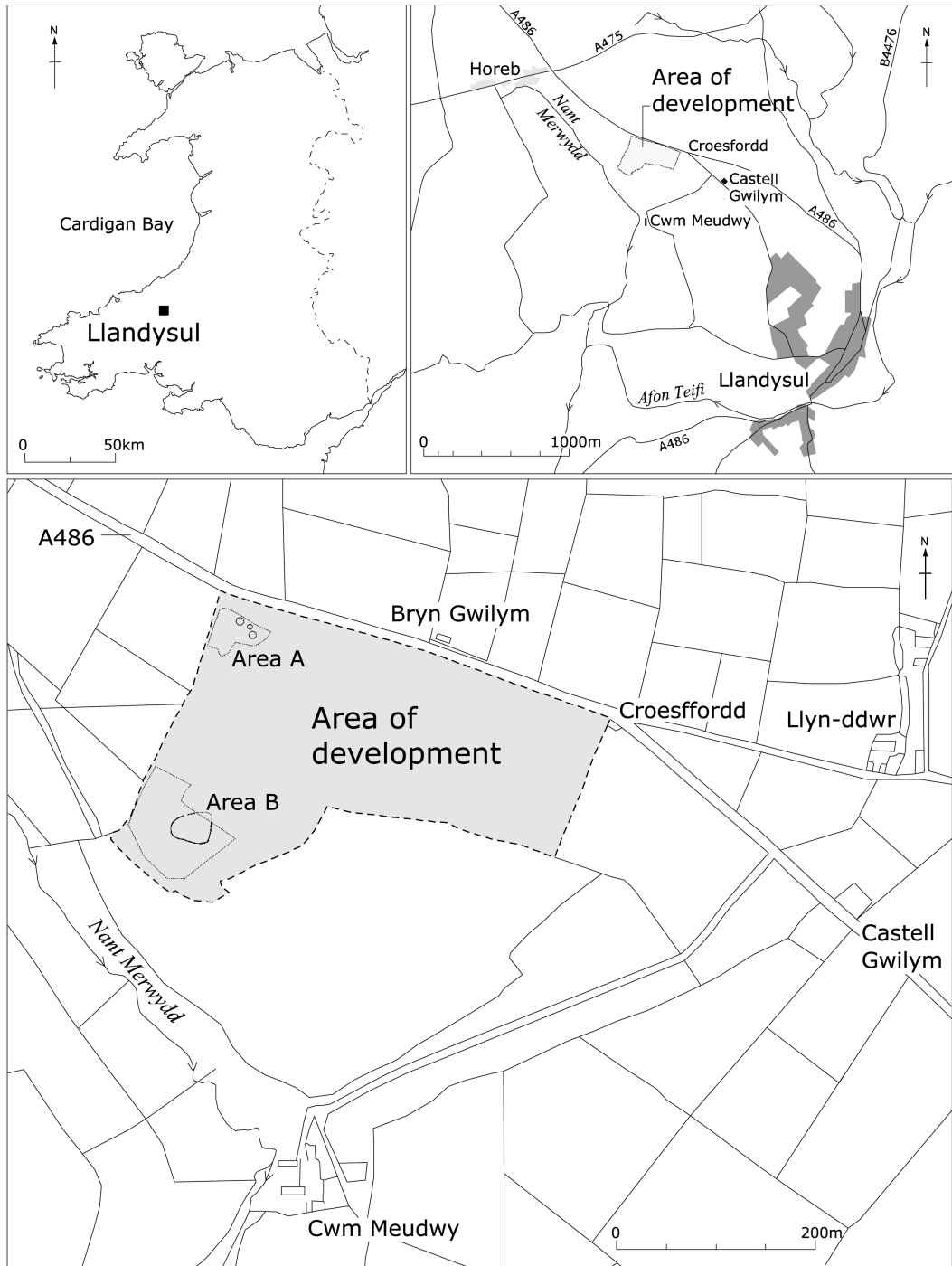


Fig. 1. Location.

However, topsoil remained in one area in the south-west corner of the development (Area B). It was agreed between the WDA and Cambria Archaeology-Heritage Management (CA-HM) that the remaining topsoil removal should be subject to archaeological monitoring. A probable palisaded enclosure and numerous pits were revealed during the monitoring, the potential importance of which prompted CA-HM to recommend a full archaeological investigation. The work was undertaken by Cambria Archaeology Field Section and was funded by the WDA, who also generously set aside five weeks in their work programme for the excavation.

The project brief required the total excavation of the two areas (A and B) including the ring-ditches and the palisaded enclosure. The excavation took place from 11 August to 12 September 2003, with a team of eleven archaeologists. For the first four weeks the weather was uncommonly warm, and the soil very dry, but during the last week there was some rain. No new features showed up in the ground surface as a result of the damper soil conditions.

The topsoil deposits varied from *c.* 0.2–0.5m in depth, and were typical brown earths of the 541j, Denbigh 1, group (Soil Survey of England and Wales 1980). They covered fluvio-glacial gravels, sands and clays, which in turn overlay Ordovician shale and weathered bedrock of the Llandeilo and Ashgill Series (British Geological Survey 1994). In both areas differences between bands of sands, gravels and clays were very pronounced and better defined than the archaeology; this was particularly the case in Area A, and was probably due to the fact that Area B was topsoil-tripped under archaeological conditions, whereas Area A was stripped to a greater depth, cutting into the upper geological horizons.

## THE EXCAVATION

### Area A

The three ring-ditches were located in Area A, which measured approximately 50m by 40m (centred on SN 40284208). This area was on the upper valley slopes, but not at the highest point, which lies some distance to the north (Figs 2 and 3). The western ring-ditch (5) was the least truncated by the stripping of overburden. The other two may have lost up to 0.2m of subsoil before archaeological investigation commenced. In each case the ditches were about 1.0m wide. The westernmost of the ring-ditches (5) was 8.2m in diameter, including the ditch, which had a U-shaped profile *c.* 0.4–0.3m deep. The eastern ring-ditch (4) was 8.15m in diameter. The ditch had a shallow, angled outer edge, and an almost vertical inner one. The sides had a very sharp break of slope to an almost flat base. It was up to 0.5m deep. The central ring-ditch (6) had a diameter of 6.5m. It appeared to have been heavily truncated, surviving only to a depth of 0.2–0.3m.

The ditches contained fills ranging from reddish-brown to orangey-brown silt. Slight differences within some of the fills were noted. In the westernmost ring (5) a lower stony fill may have been the result of erosion into the ditch from a central mound or a possible bank outside the ditch before the ditch silted up. A similar feature was also noted in the central ring-ditch (6). Profiles across the ditches show a very slight falling away of the land surface from west to east and also from north to south. However, these gradients are very gentle, and suggest that the rings were constructed on the edge of flattish land, overlooking a slightly steeper slope to the south towards Cwm Meudwy.

Two radiocarbon dates were obtained from charcoal from the basal fills of two ring-ditches: 740–710 and 530–390 cal. BC (Beta –185683, 2410±40 BP) from ditch 4, and 800–520 cal. BC (Beta-185682, 2530±40 BP) from ditch 6. Note that all radiocarbon dates are expressed calibrated to 2 sigma and are followed in parenthesis by the laboratory number and the radiocarbon age (see table below for details).

No artefacts were found, nor any bone or other evidence suggestive of burials.

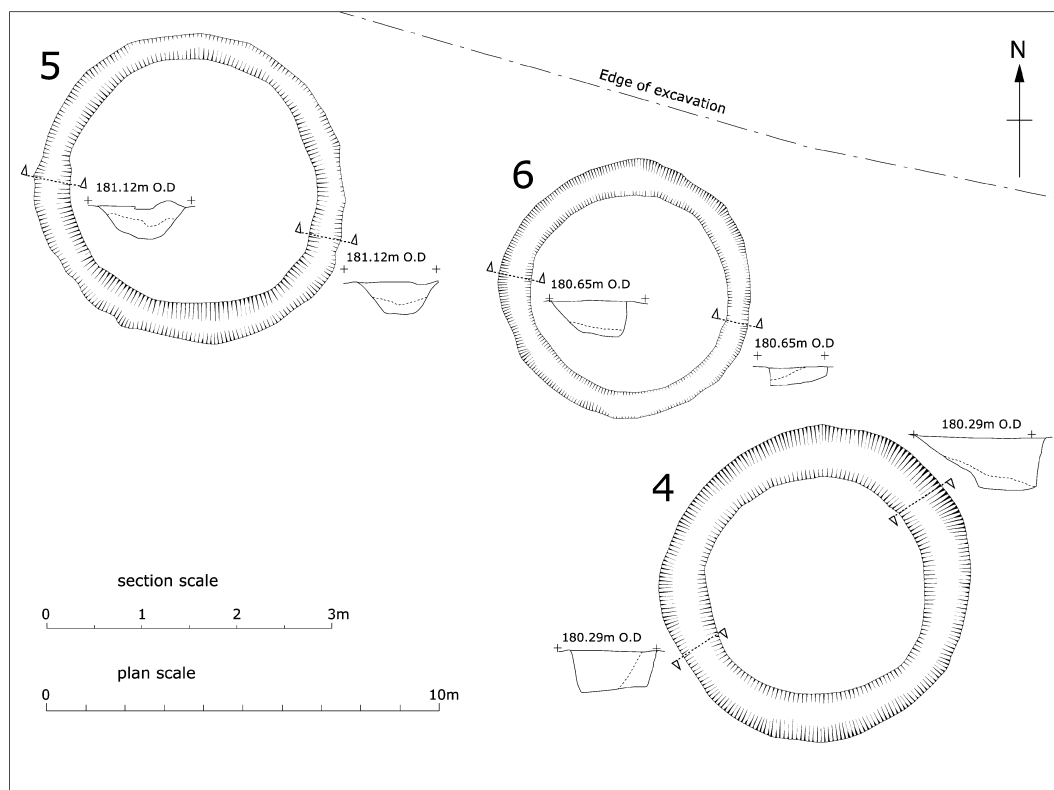


Fig. 2. Plan of Area A. The ring-ditches plan and profiles.

Other features in this part of the site were difficult to identify with any certainty and all those examined appear to have been either glacial deposition of clayey material, or the result of vegetation and root action, including a small amorphous feature containing carbonised hazelnut shells between ditches 5 and 6 (not shown on the plan).

The charred plant assemblage from Area A, from samples of the lower parts of the ring-ditch fills, was small but provides some slight evidence for cultivation and the general environmental conditions around the site. A few oat (*Avena* sp.) grains were recovered from two of the ring-ditches (4, 5) but the absence of chaff means it cannot be certain whether the oat was a cultivated or wild variety. A little indeterminate cereal was also present. A few of the weed seeds, namely orache (*Atriplex* spp.), goosefoots (*Chenopodiaceae*), bromes (*Bromus* spp.) and pale persicaria (*Persicaria lapathifolia*), provide further possible evidence for cultivation but these species are also indicative of waste ground. Other remains such as grass (*Poaceae*), ribwort plantain (*Plantago lanceolata*), docks (*Rumex* spp.) and vetches (*Vicia* spp.) indicate grassland. The occurrence of sedges (*Carex* spp) and cottongrass (*Eriophorum* sp.) suggest damp ground in the vicinity, the latter being generally found in peaty or marshy areas. Pale persicaria and bugle (*Ajuga reptans*) also commonly occur in damp habitats and bugle tends to grow particularly in shady places and woodland. Further evidence for woodland or scrub is provided by hazelnuts, and charcoal, which indicates the presence of oak (*Quercus* spp.) and ash (*Fraxinus excelsior*) as well as hazel (*Corylus avellana*). The hazelnuts could have been collected deliberately for food but their presence may simply reflect accidental collection along with wood for fuel.



Fig. 3. Ring-ditches from the air taken during a visit by a local primary school.  
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**Area B**

Area B measured approximately 90m by 70m (centred on SN 40234188) and was located about 120m south of Area A (Figs 4, 5, 6 and 7). The site lay on a gently sloping promontory. Immediately outside the excavated area the ground falls away steeply to the west, south-west and south down to the Nant Merwydd, about 40m below. To the north the land rises gently towards Area A. The main archaeological feature was a pear-shaped enclosure approximately 45m by 30m, defined by a narrow and shallow

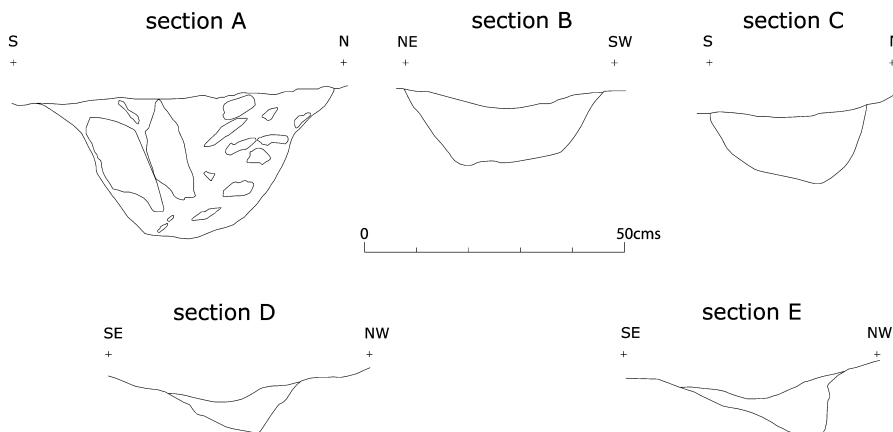
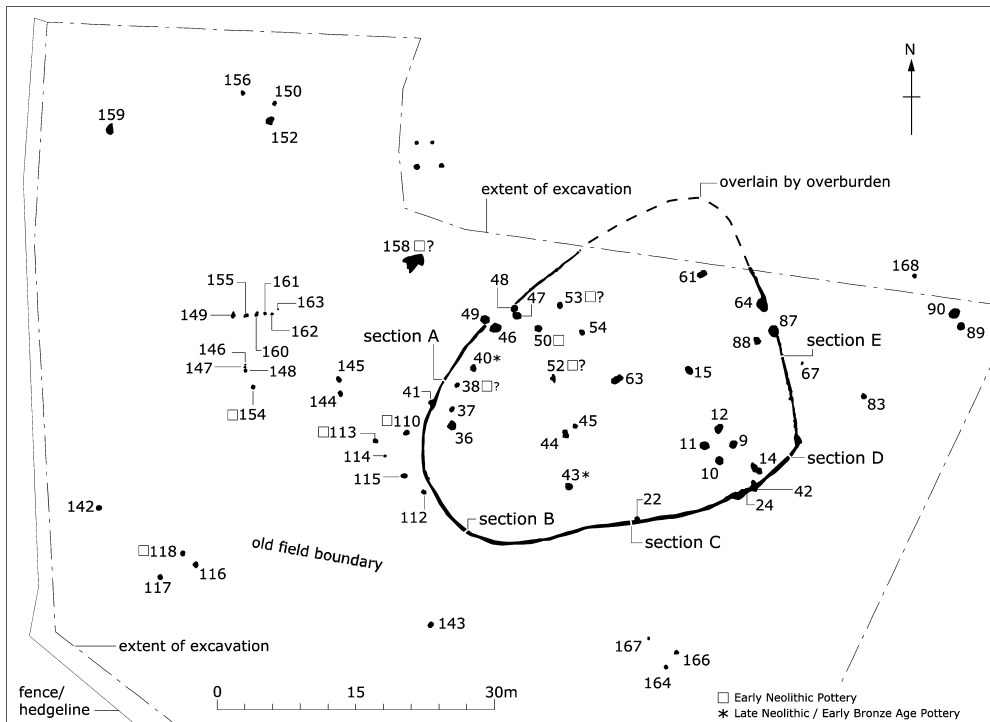


Fig. 4. Plan of Area B. The palisaded enclosure plan and profiles of palisade gully.

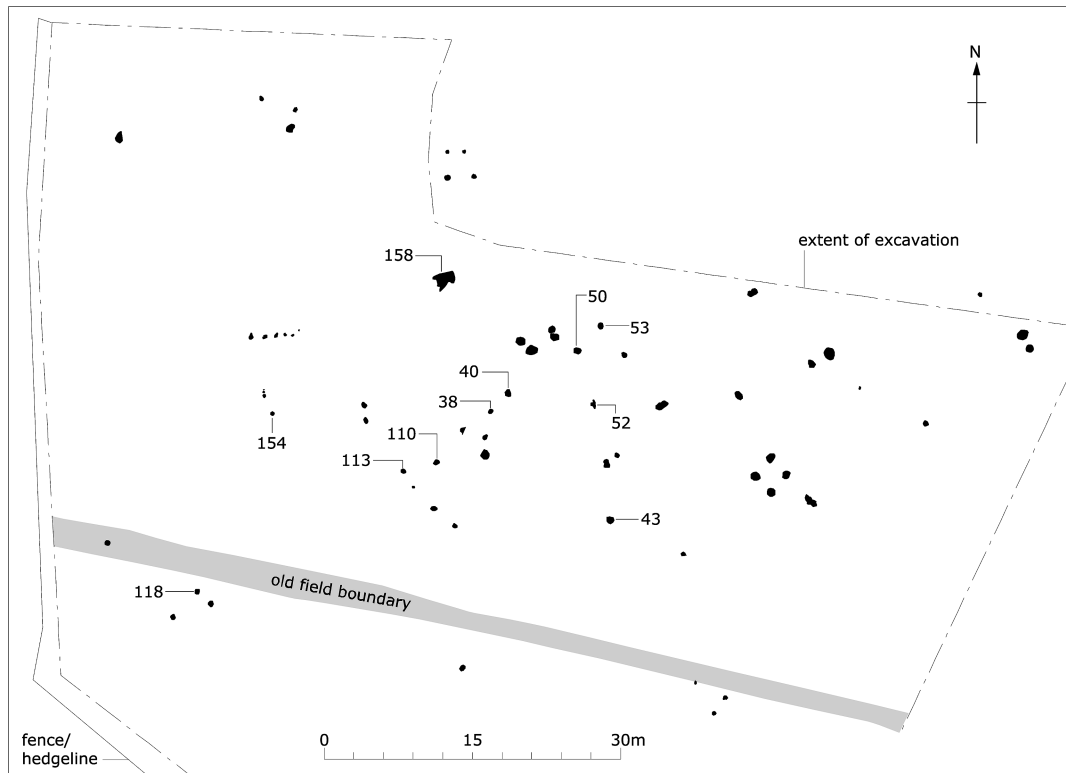


Fig. 5. Plan of Area B with the palisaded enclosure removed. Pits containing prehistoric pottery are numbered.

palisade gully (13). An old field boundary, probably post-medieval in date, ran across the site approximately west-north-west to east-south-east, south of the enclosure. More than three-quarters of the enclosure was within the area set aside for excavation; part of the northern circuit had been destroyed prior to excavation but its course had been plotted during monitoring of the topsoil strip.

#### *The palisade gully*

Sections through the fill of this gully were drawn at 5m intervals where this proved possible. A selection of these illustrates the character of the gully (Fig. 4). These show that in many areas the palisade gully was heavily plough-truncated, in the south-east corner almost completely. In the north-west sector the gully was up to 0.4m deep over a 3m long stretch, close to posthole 41 (Fig. 8). This was the deepest section of the gully; elsewhere it averaged 0.4m wide and 0.2–0.3m deep. Where there was less truncation evidence of packing stones survived defining former posts or stakes. The packing stones survived best close to the north-east entrance. However, owing to the shallow nature of the gully and the loose character of its fill it was not possible to determine the size or spacing of the posts/stakes. Postholes were also located in the gully, mainly in the south-east corner. Small postholes 22 and 24 were later than the palisade gully itself, and probably represent a repair. Near posthole 22 an area of packing stones in the gully is possibly further evidence for the repair of the palisade. The palisade cut posthole 41 in the



Fig. 6. The palisaded enclosure from the air. © *Welsh Development Agency*.

north-west segment of the enclosure. A pit (42) on the south-eastern side of the enclosure pre-dated the gully. Environmental evidence from the gully was limited to a charred leaf bud and a few widely distributed carbonised hazelnut shells.

#### *The north-east entrance*

This was represented by two postholes, 64 and 87 (respectively 1.2 by 1.0m across and 0.34m deep, and 1.2m in diameter and 0.47m deep) flanking a 2.5m wide gap. These entrance postholes contained packing stones, clear in 87 but less so in 64, defining post-pipes *c.* 0.2m diameter, both of which had a darkish brown fill (Fig. 9). The location of the postholes suggests that they were contemporaneous with the palisade gully, although no definite stratigraphic relationship was obtained owing to the shallowness of the gully. A radiocarbon date of 3970–3785 cal. BC (Beta-189116, 5080±40 BP) was obtained from posthole 64 and one of cal. AD 130–350 (Beta-189117, 1790±40 BP) from posthole 87. Owing to the loose and collapsed nature of the posthole fills it was impossible to be certain whether the samples used for dating were from the post-packing material or the post-pipe. Clearly, the sample used for dating from posthole 64 is residual or that from 87 is intrusive, or both. Apart from charcoal no environmental evidence was recovered from posthole 64, but a few remains, including wheat chaff, were recovered from 87. The presence of probable spelt wheat (*Triticum spelta*) glume bases is consistent with the Romano-





Fig. 7. The palisaded enclosure from the west with the four-post entrance in the foreground.

British radiocarbon date from this posthole. A scoop (88), south-west of posthole 87, may have been part of the entrance structure, but its very shallow nature militates against interpretation.

#### *The north-west entrance*

A second possible entrance, with four pits or postholes, 46–49 (respectively 0.94m by 0.78m and 0.46m deep, 0.91 by 0.79 and 0.25m deep, 0.98m by 0.70m and 0.27m deep, and 0.9m diameter and 0.4m deep), lay on the north-west side of the enclosure (Figs 10 and 11). None of these pits/postholes had a stratigraphic relationship with the palisade gully, possibly because all the archaeological features were very truncated, and none of the four pits or postholes was aligned with the gully. However, there did seem to be discrete terminals to the gully. Three of the features (46–48) contained what were probably packing-stones, but owing to their collapsed nature it was not possible to obtain dimensions of the posts. Features 47 and 49 also contained small quantities of burnt bone, although these proved to be too small and fragmentary to be analysed or dated. Features 46 and 49 had complex fills, with 49 the most interesting, with dark yellowish brown silty clay and charcoal in its upper and lower levels (A and C), but a lens of abundant charcoal in layer B. Hazelnut fragments from posthole 48 produced a date of 2030–1870 cal. BC (Beta-185677, 3570±40 BP). All the pits or postholes contained a quantity of hazelnuts and three of them (47–49) contained oat, and an indeterminate cereal. Weed seeds were scarce but sheep's sorrel (*Rumex acetosella*) was recorded from both 46 and 47 and hemp-nettle (*Galeopsis* sp.) occurred in both 48 and 49.



Fig. 8. Length of the palisade trench on the west side of the enclosure, with posthole 41 immediately in front of the ranging pole. Scale 1m.

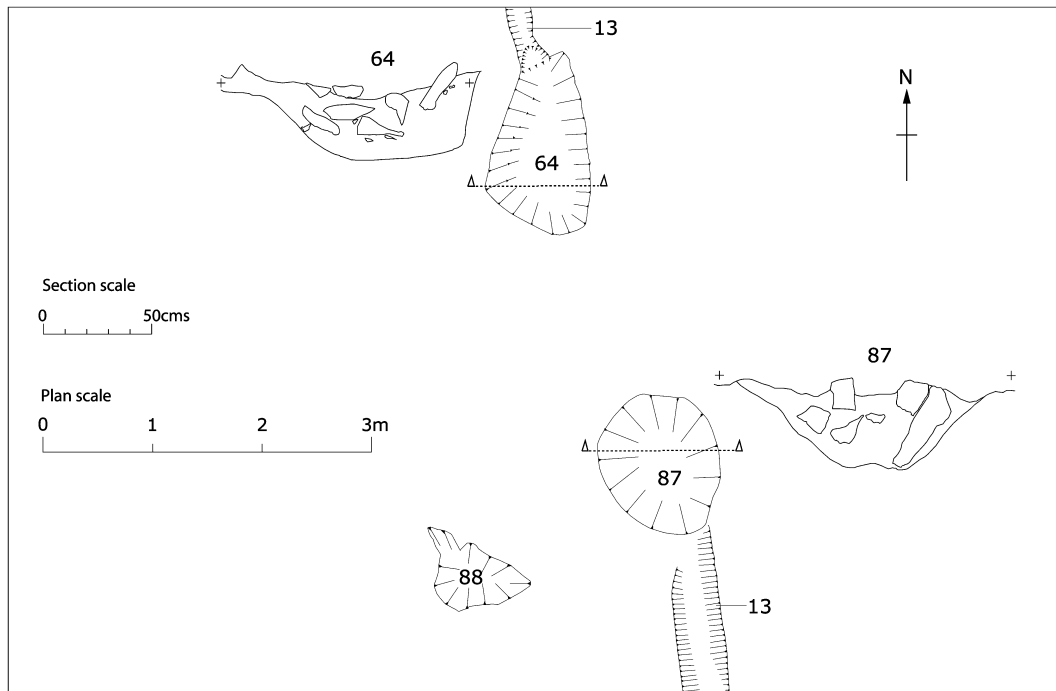


Fig. 9. North-east palisaded enclosure entrance: plan and profiles.

#### *The four-post structure*

Within the area of the enclosure, in the south-east corner, were four large postholes (9–12), with diameters ranging from 0.75m to 0.92m, and depths from 0.3m to 0.8m (Fig. 12). All four contained a charcoal-rich dark brown fill with packing-stones, indicating that they contained posts up to 0.25m diameter. The postholes clearly appear to have been associated, having a roughly square formation of approximately 2.2 by 2.2m, centre to centre. Charcoal from posthole 9 produced a radiocarbon date of 380–170 cal. BC (Beta-185681, 2250±40 BP). Unfortunately, owing to the collapsed nature of the fill it was impossible to determine whether the sample was from the packing material or the post-pipe. Two of the postholes (9, 11) produced a few plant remains, including wheat, oat and hazelnut, and a couple of weed seeds were recovered from 9.

#### *Other features in the area outlined by the palisade gully*

A small and shallow pit (50), with a diameter of 0.75m and a depth at its greatest of 0.16m, was located to the east of the north-east entrance (Figs 4 and 5). This pit contained pottery sherds from at least five vessels of Early Neolithic date. Charcoal from this pit produced a radiocarbon date of 3700–3630 cal. BC (Beta-185679, 4840±40 BP). The palaeoenvironmental assemblage was similar to that from the possible north-west entrance of four postholes in that it comprised oat, hazelnuts and indeterminate cereal, but it also contained a few grains possibly of emmer wheat (*Triticum dicoccum*), a grain of a free-threshing wheat type, several wheat grains not determinable to species level and a few barley grains. This is consistent with the radiocarbon date and pottery.

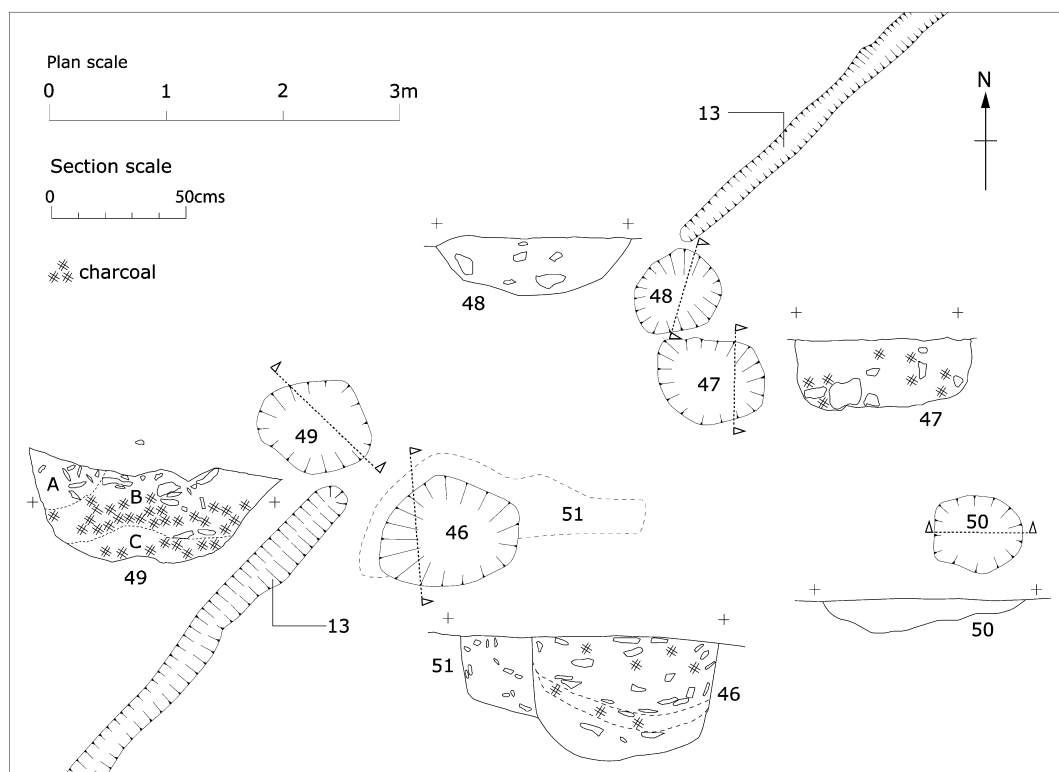


Fig. 10. North-west palisaded enclosure entrance: plan and profiles.

Several other pits were located within the area defined by the palisade gully, two of which (52, 53) contained pottery sherds of probable Early Neolithic date. A sherd of Peterborough Ware, one cereal grain and hazelnuts were found in a small isolated pit (43). Two postholes (44 and 45) were a suitable distance apart (*c.* 2.0m) to be postholes for the doorway of a roundhouse, but this of course remains conjecture. Other small pits or postholes (36, 37, 38, 40) were located in a line within the area of the enclosure roughly concentric to the palisade gully; two contained pottery sherds (38, 40). Pit 36 was the largest of the four, being 0.95m by 0.75m with a depth of 0.35m, and contained charcoal and large stones; pit 38, 0.5m by 0.54m had a depth of 0.21m, and contained a sherd of probable Early Neolithic pottery against its west side; and pit 40, 0.73m by 0.78m, with a depth of 0.26m, contained sherds of Late Neolithic/Early Bronze Age pottery in the lower levels of the fill. Three (52, 54, 61) contained oats and hazelnuts but in addition several possible emmer wheat grains were present in pit 52 and barley occurred in pit 54. In contrast to the evidence from these pits, only one indeterminate cereal grain was recovered from posthole 45. This also contained hazelnuts and several seeds of sheep's sorrel, as did a natural pit (76, not shown on plan). Pits or postholes 36, 37, 38 and 40 yielded no cereal evidence, and although hazelnuts were relatively frequent in these, other remains were scarce.

#### *Features outside the area of the palisaded enclosure*

To the west of the enclosure another posthole pair (144 and 145) could also be interpreted as entrance postholes for a roundhouse. Pit 110, 0.7m by 0.55m with a depth of 0.23m, contained sherds from two Early Neolithic vessels. Pit 113, 0.3m by 0.42m with a depth of 0.13m, also contained sherds from

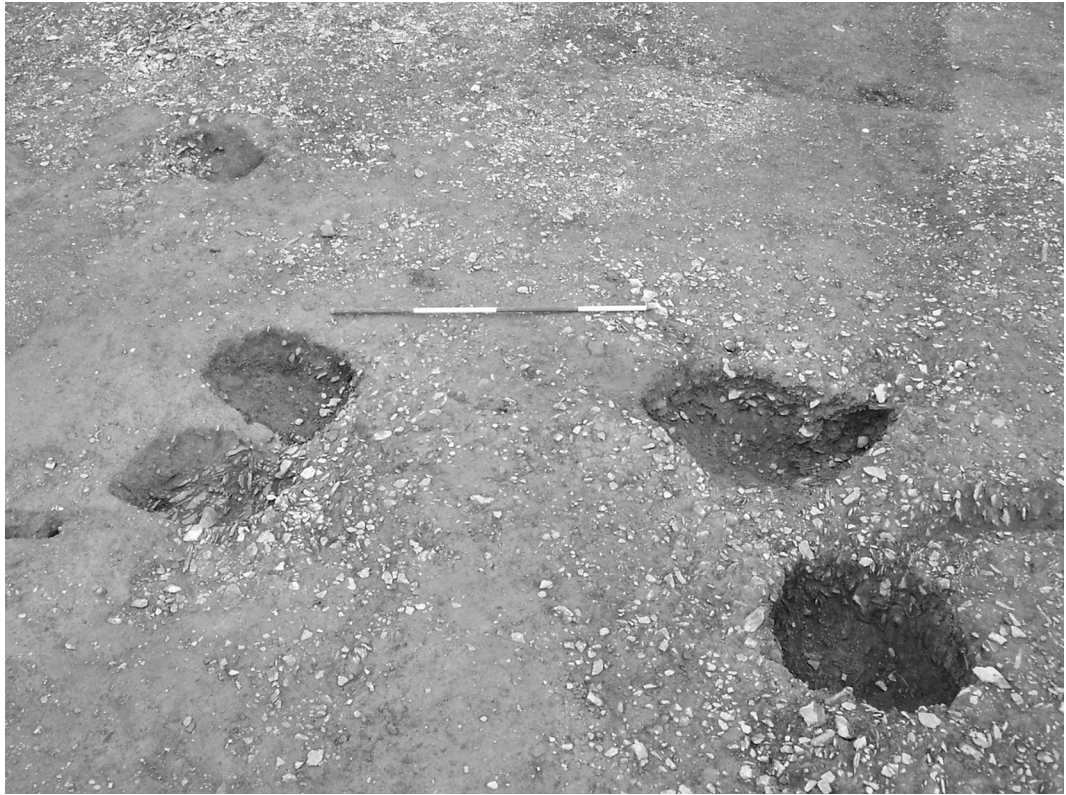


Fig. 11. Detail of the four-post entrance from the west. The terminals of the palisade gully can be seen on the right and left side of the photograph. Scale 2m.

two Early Neolithic vessels. Charcoal from pit 113 produced a radiocarbon date between 3710–3530 cal. BC and 3590–3530 cal. BC (Beta-185680, 4870±50 BP). One oat grain was found in pit 113. A possible emmer, free-threshing wheat and barley cereal grains were recorded from pit 110. Hazelnuts were present in pit/posthole 110 but absent from pit 113.

Near the western edge of the excavation, close to the old, probably post-medieval, field boundary, a small pit (142), 0.66m by 0.53m with a depth of 0.16m, contained a very charcoal-rich deposit, fragments of which produced a radiocarbon date of 3650–3510 cal. BC (Beta-185678, 4800±40 BP). A pit (154) to the west of the palisade, 0.64m by 0.6m with a depth of 0.15m, contained a small amount of wheat chaff, as well as a small sherd of Early Neolithic pottery. To the south of the field boundary, in the western area of the site, several pits or postholes were located (116, 117, 118). All of these were charcoal-rich including pit 118, 0.5m by 0.47m and 1.2m deep, that contained a single wheat grain, two sherds of Early Neolithic pottery and large stones. These were isolated features, however, and it is difficult to understand them in the context of the site as a whole. A similar small cluster of pits or postholes (164, 166, 167) in the south-eastern part of the site, south of the old field boundary, are similarly difficult to interpret. Pit 164 contained a single sheep's sorrel seed. It is of interest to note that these two groups of pits lay, presumably for many years, immediately to the south of the old field boundary, visible on the aerial photograph (Fig. 4), that would have protected them from ploughing and other agricultural damage. This



Fig. 12. The four-post structure from the north-west with the palisade trench in the background.  
Scale 2m.

boundary consisted of two parallel, shallow ditches with the position of a boundary bank indicated by a band of un-weathered bedrock between them.

To the north-west, within the area examined and recorded during the watching brief (hence not numbered on the plan), evidence for another four-post structure was uncovered. It formed a square of approximately 2.3m to the centre of the posts, with the eastern postholes more truncated by machine stripping, having lost up to 0.3m of their depth. There was evidence of post-packing in the western, less truncated postholes.

A number of other pits (67, 83, 89, 90, 168) were found to the east. Pits 89 and 90 contained burnt hazelnut shells; and 90, a large pit 1.2m by 1.0m with a depth of 0.5m also contained additionally a quantity of large stones and charcoal.

Two linear groups of features (149, 155, 161–3 and 146–8) to the west of the palisaded enclosure appear to have been stakeholes for a fence. Their sharp-edged profile and loose fills distinguishes them from other features on the site and suggests a recent date.

There was also much evidence for periglacial activity across the site. Evidence of root damage and tree boles was also recorded during the excavation. These sometimes proved to be difficult to disentangle from the archaeology. For example, posthole 46 was cut into a large glacial deposit (51), and pit 63 cut a large, irregular, natural feature (85, not shown on plan). A clover (*Trifolium* sp.) seed and a crowberry (*Empetrum nigrum*) seed were recovered from this natural feature. Feature 158, c. 2.9m across and 0.45m

deep, which appears to have been a tree bole, was probably an open hole at some time during occupation and was filled in with rocks, possibly from field clearance. Only the upper fill suggested human activity, as amongst the stones several sherds of probable Early Neolithic pottery were found, as well as several possible rowan (*Sorbus aucuparia*) seeds. Most of the area to the north-west of the enclosure, including areas examined under the watching brief, contained no identifiable archaeology.

#### RADIOCARBON DATES

All dates are AMS dates and were provided by Beta Analytic Radiocarbon Dating Laboratory, Miami, Florida. The dates were calibrated by Beta Analytic using Stuiver *et al.* 1998.

##### **Beta-189116**

*Context:* Posthole 64 of north-east entrance to palisaded enclosure

*Material:* *Prunus* sp. (blackthorn/cherry)

*Result:* 5080±40 BP

*Calibrated date:* 3970–3785 cal. BC

*Material:* *Corylus avellana* (hazelnut fragments)

*Result:* 3570±40 BP

*Calibrated date:* 2030–1870 cal. BC

##### **Beta –185680**

*Context:* Pit 113

*Material:* *Corylus avellana* (hazel charcoal)

*Result:* 4870±50 BP

*Calibrated date:* 3710–3530 and 3590–3530 cal. BC

##### **Beta-185682**

*Context:* Ring-ditch 6, basal silt deposits

*Material:* *Corylus avellana* (hazel fragments)

*Result:* 2530±40 BP

*Calibrated date:* 800–520 cal. BC

##### **Beta-185679**

*Context:* Pit 50 containing Early Neolithic pottery

*Material:* *Corylus avellana* (hazel charcoal)

*Result:* 4840±40 BP

*Calibrated date:* 3700–3630 cal. BC

##### **Beta –185683**

*Context:* Ring-ditch 4, basal silt deposits

*Material:* *Corylus avellana* (hazel fragments)

*Result:* 2410±40 BP

*Calibrated date:* 740–710 and 530–390 cal. BC

##### **Beta-185678**

*Context:* 142 Isolated pit with charcoal-rich fill

*Material:* *Alnus glutinosa* (alder charcoal)

*Result:* 4800±40 BP

*Calibrated date:* 3650–3510 cal. BC

##### **Beta-185681**

*Context:* Posthole 9 of four-post structure

*Material:* *Corylus avellana* (hazel charcoal)

*Result:* 2250±40 BP

*Calibrated date:* 380–170 cal. BC

##### **Beta-185677**

*Context:* Pit/posthole 48 of north-west entrance to palisaded enclosure

##### **Beta-189117**

*Context:* Posthole 87 of north-east entrance to palisaded enclosure

*Material:* *Prunus* sp. (blackthorn/cherry)

*Result:* 1790±40 BP

*Calibrated date:* cal. AD 130–350

## PREHISTORIC POTTERY

By Jody Deacon

A total of 65 sherds of prehistoric pottery weighing 452.60g were recovered from a series of pits from Area B. The majority of the assemblage can be dated to the Early Neolithic on the grounds of form and fabric, and by association with radiocarbon dates from two of the pits. Where decoration occurs it is limited to shallow tooled lines around the mouths of the vessel that is, in some instances, barely visible.

Two of the pits yielded sherds with fabric and decoration more characteristic of Late Neolithic or Early Bronze pottery, suggesting continuing activity on the site. All sherds were examined microscopically at  $\times 10$  magnification and fabrics categorised according to the Prehistoric Ceramics Research Group guidelines (1996). Other characteristics such as abrasion, evidence of use-wear, vessel wall thickness and surface finish were also recorded to examine variations within the assemblage. Full details are housed with the site archive.

**Fabrics**

Four fabric groups (A–D) were identified with several small sub-categories recognised within group A. However, these small differences probably represent variations between individual vessels produced by potters working within a specific technological framework rather than distinct ‘recipes’. The small overall number of diagnostic sherds and low mean sherd weight makes it difficult to infer any relationships between these variations and the form, volume or use of particular vessels. With the exception of the two sherds of vesicular fabric (B) all the Early Neolithic pottery was quartz tempered (A). Coarsely crushed quartzite was found only in the Late Neolithic Peterborough sherd.

*A. Quartz tempered*

Moderate to common angular or sub-angular crushed quartz inclusions within a matrix of quite soft, laminated clay. Six subgroups were identified:

- A.1: common angular quartz <1–3mm
- A.2: common angular quartz 1–6mm
- A.3: common angular quartz 1–3mm
- A.4: moderate angular quartz <1–3mm
- A.5: common sub-angular quartz 1–3mm
- A.5: moderate sub-angular quartz <1–3mm

*B. Vesicular*

Common angular and sub-angular voids or vesicles 1–3mm within a matrix of quite soft, laminated clay. Created by the leaching out of the material originally added to the clay, most likely a calcareous material such as calcite, limestone or shell.

*C. Quartzite tempered*

Moderate, large sub-angular quartzite fragments 6–8mm across within a quite hard but slightly laminating clay matrix.

*D. Grog and crushed rock tempered*

Sparse rounded grog 1–3mm across and sparse sub-angular crushed rock within a soft but more evenly fired clay matrix.



### Early Neolithic pottery

Nine pits in Area B produced sherds of Early Neolithic pottery. Pit 50 produced three diagnostic rim sherds (Fig. 13), one plain (SF7) and two decorated (SF3 and 4), and 12 body sherds with an associated radiocarbon date of 3700–3540 BC. A similar date of 3710–3530 BC was obtained from pit 113 which contained 6 sherds including part of the rim of a shouldered bowl (SF10). The majority of these sherds are of fabric A, with two of fabric B, and many show evidence of smoothing or burnishing on the surfaces. Facets from this process are clearly visible on SF7 (Fig. 13). The remainder of the body sherds from seven pits (38, 52, 53, 110, 118, 154 and 158) are mostly of comparable fabric and finish and are presumably of similar date.

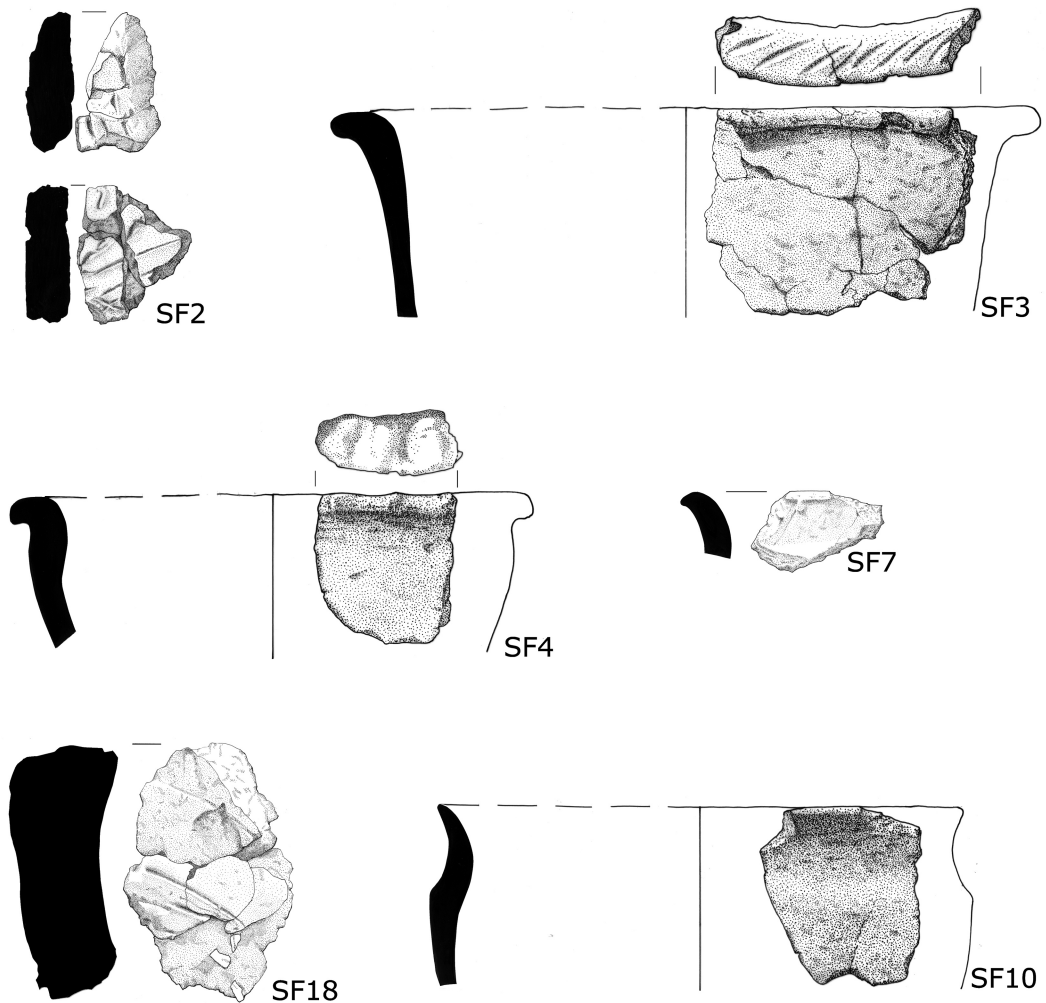


Fig. 13. Prehistoric pottery, scale 1:2.

- SF3. Context 50; Fabric A.1. Rim sherd, 7–9mm thick, from an open bowl with a rolled rim along which oblique lines have been impressed, the angle changing slightly around the rim. The vessel has a grey external surface, coarsely burnished, abraded brown internal surface, black core and a laminating texture. There are no recent breaks and the old edges are quite crisp.
- SF4. Context 50; Fabric A.3; Early Neolithic. Rim sherd, 6–11mm thick, from a bowl with a rolled everted rim and oblique shallow indentations, probably finger impressions, along its top. It has a smoothed buff/grey external surface, and abraded brown to dark grey rough internal surface and a soft black core. A small fresh break along the bottom of the sherd probably occurred during excavation and clearly shows the laminating texture of the pottery.
- SF7. Context 50; Fabric A.3; Early Neolithic. Rim sherd, 7–8mm thick, with an everted rim with horizontal burnishing on both surfaces. It is an oxidised pale orange/buff colour throughout. The accompanying body sherds share very similar characteristics and may be from the same vessel.
- SF10. Context 113; Fabric A.3; Early Neolithic. Rim sherd of a small shouldered bowl 7–8mm thick with the carination just below the rim. Both surfaces have been burnished and the everted rim tapers to a fine edge. The sherd has dark grey surfaces with a dark grey laminating core and is only slightly abraded.

#### **Late Neolithic / Early Bronze Age pottery**

Two sherds from pits 40 and 43 (Fig. 13, SF2 and SF18) within the enclosure are markedly different from the rest of the assemblage in both fabric and decoration and appear to mark use of the site during the Late Neolithic or Early Bronze Age.

- SF2. Context 40; Fabric D; Late Neolithic / Early Bronze Age. Thick walled sherds, up to 12mm thick of quite soft fabric. Oxidised orange external surface with grey/brown internal surface and core. The decoration consists of incised overlapping lines on some sherds, perhaps a herringbone pattern, and fingernail impressions on others. These techniques are sometimes found combined on Late Neolithic Grooved Ware (Wainwright and Longworth 1971) but could equally belong to an Early Bronze Age urn or food vessel. Most sherds join together and all are likely to be from one vessel. Found in the lower fill of the pit.
- SF18. Context 43; Fabric C; Peterborough Ware. Extremely thick-walled sherd 22–4mm thick, probably from near the base of a large vessel with dark grey/brown surfaces and grey core. The fabric is quite hard and many of the large inclusions break the surface. The external surface has been smoothed and unusually for this part of a vessel it is decorated with horizontal lines of fingernail or twisted-cord impression.

#### **Discussion**

Parts of at least three well-made open bowls with everted rims were present in pit 50. Open bowls have been found in Early Neolithic contexts at sites along the north and south coasts of Wales and along the borders, but there are few examples from inland locations and upland areas (Burrow 2004, 52–6, fig. 19). Examples with clearly impressed oblique lines of similar form to SF3 were found at the Early Neolithic settlement site of Clegyr Boia, Pembrokeshire (Williams 1952, fig. 12, no. 31) and Stackpole Warren, Pembrokeshire (Darvill in Benson 1990, 210–11, fig. 32, no. 56). The latter was considered to date to the Middle Neolithic but Peterson (2003, 128–9) has suggested an Early Neolithic date which may be supported by the radiocarbon date of 3700–3630 BC from pit 50 at Cwm Meudwy. Bowls with everted

rims displaying regular but faint oblique grooves recovered from Mount Pleasant, Glamorgan (Savory 1955, fig. 3, nos 1, 2 and 4) could also be of Early Neolithic date but their presence alongside Peterborough ware and Bronze Age urn fragments make this attribution uncertain.

The careful uniform impressions made along the rim of SF3 contrast markedly with the barely noticeable shallow indentations on the rim of SF4—a vessel similar in fabric and finish to sherd no. 6 from chamber II at Ty-Isaf, Powys (Grimes 1939, fig. 6) which shows comparable decoration, albeit on a different rim form. In other aspects both these vessels are well-finished with smoothed surfaces and carefully formed rims, and these shallow indentations may represent a required step in the manufacture of these bowls rather than conspicuous visual or tactile enhancement.

Carinated bowls with flared rims are known from Early Neolithic contexts across the British Isles. Vessels of similar form to SF10 pit from pit 113 are known from the pre-cairn phases at Gwernvale, Powys (Britnell and Savory 1984, 99–100, fig. 38, nos 10–11; fig. 39, nos 12–13) with a loosely associated radiocarbon date of 4000–3700 cal. BC. These vessels, and other parallels from Clegyr Boia, Pembrokeshire (Williams 1953, fig. 9, nos 2 and 7; fig. 10, nos 12–14), Dyffryn Ardudwy, Gwynedd (Powell 1973, 24–7 fig. 8, nos 1–3), and Tinkinswood, Glamorgan (Ward 1915, fig. 2, no. 4), all have a vesicular appearance caused by the leaching out of calcareous inclusions such as shell or calcite, a characteristic of much Early Neolithic pottery in Wales (see Burrow 2004, 52), and in this respect are quite different from the quartz tempered SF10.

The fairly homogenous nature of the Early Neolithic pottery fabric at Cwm Meudwy with the selection of quartz to the exclusion of other materials contrasts with other assemblages such as Clegyr Boia, Stackpole Warren, Gwernvale and Ty-Isaf, which have far more variation in their fabrics, particularly within the open bowl forms. The similarity throughout the assemblage could suggest they were all produced within a limited timescale by potters using a particular ‘recipe’ focused on the use of quartz as an added component.

There is also relative uniformity in the surface finish of the Early Neolithic pottery from Cwm Meudwy with care having been taken to smooth the external surface on nearly all sherds, although full burnishing is less common. Facets from smoothing can also be seen along to top of SF7 but these do not continue onto the internal surface of the vessel, which, in common with most of the sherds, has a rough texture with numerous quartz inclusions breaking the surface. In contrast, the carinated bowl, although produced from clay of comparable fabric, has been highly finished (possibly burnished) and has both surfaces surviving. This could suggest either different priorities at work within its manufacture or the utilisation of the vessel in a different way.

It is plausible that vessels with abraded internal surfaces have been subject to a mechanical or chemical process which did not affect the outside of the pot. It seems unlikely that this could be as a result of differential conditions within the burial environment or exposure in some way prior to deposition. The majority of the sherds within the assemblage show little evidence for use as cooking pots—there is no sooting and few residues—and it seems unlikely that the soft and laminating texture of the fabric would stand up well to prolonged heating (Elaine Morris pers. com.). One interpretation of this is that the pots were used as containers for a liquid which caused a breakdown in the soft ceramic surface, exposing the more resistant quartz inclusions. However, this seems unlikely as the abraded surfaces continue to the top of the rim on all the open bowls, which would require the vessels to be impractically filled right up to the brim. If a liquid had caused this effect a distinct change in surface would be expected lower down on the internal surface. It therefore appears that this difference demonstrates a convention in the manufacture of these bowls requiring the outside and rim of the pots to be finished well while the inside was left untreated.

The single sherd discovered in pit 43 is of the coarse, dark fabric containing large quartz inclusions that characterises the majority of Peterborough Ware in Wales, particularly Mortlake vessels (Gibson

1995, 24–29). Parallels for the fingernail impressions forming pseudo-cord decoration on the sherd from Cwm Meudwy can be found amongst the assemblage from Upper Ninepence, Powys (Gibson 1999, fig. 51, P6 and P8), while sherd P11, which also has fingernail decorations, shows similar wall thickness. A date has not been obtained for material from the pit, but dated Peterborough assemblages in Wales suggest a date after 3400 BC (Gibson 1995).

Later use of the site is also suggested by SF2 which displays an altogether different fabric and style of decoration. The addition of grog to the clay has been identified in Late Neolithic Grooved Ware pottery and in the beakers, urns and food vessels of the Early Bronze Age. A similar claim can be made for the combination of incised lines and fingernail decoration, making any identification of such a fragmentary sherd tentative.

### THE CHARRED PLANT REMAINS

By Astrid E. Caseldine and Catherine J. Griffiths

A summary of the results has been incorporated into the main text, with the full report on the charred plant remains, including tables, deposited with the site archive.

The plant macrofossil evidence from the site is scarce but the results are to a large extent in agreement with the radiocarbon dating and pottery evidence, albeit the possibility of some material being either residual or intrusive must be borne in mind. Charcoal was frequent in all features from Area B, but other charred plant remains were relatively scarce, apart from hazelnuts which occurred in most of the samples which contained any remains at all. A number of samples produced no evidence. Cereal evidence occurred in several samples but much of it was indeterminate and diagnostic elements such as chaff, which might give some indication of the date of the plant remains and hence the features, were limited. However, samples from within some groups of features do show similarities, providing some support for the suggested groupings. Weed seeds were generally rare.

The presence of probable emmer wheat, although there were no identifiable glume bases or spikelet forks to confirm this, and absence of spelt suggests an early prehistoric date for several of the features. Overall, the evidence appears to suggest early Neolithic activity at the site and that the community was engaged in small-scale cultivation. This is consistent with the pollen and plant macrofossil evidence from elsewhere in Wales (Caseldine 1990; Moore-Colyer 1998), although plant macrofossil evidence for early Neolithic cultivation is generally very rare (Caseldine 1990, in prep.). A charred plant assemblage obtained from a shallow pit at Plas Gogerddan was dated to 3640–3340 cal. BC (Caseldine 1992), a similar date to that from the shallow pit 50 at Cwm Meudwy. However, the assemblage from Plas Gogerddan was much richer and contained large quantities of emmer wheat, a small amount of barley and significant quantities of hazelnut and apple (*Malus sylvestris*). Emmer wheat, along with hazelnuts, was also recorded from the buried soil associated with the timber structure beneath the long cairn at Gwernvale (Hillman pers. com., in Britnell and Savory 1984; Caseldine in prep.). However, emmer is found on later prehistoric sites and the paucity of remains is also a feature not only confined to early prehistoric sites but also occurs on late prehistoric sites in Wales, such as Moel y Gerddi and Erw-wen (Kelly 1988).

The occurrence of spelt wheat glume bases in posthole 87, dated to cal. AD 130–350, agrees with the evidence from defended enclosures of late Iron Age and Romano-British date in west Wales, for example Llawhaden (Caseldine and Holden 1998), where spelt is generally frequent.

The charcoal assemblage indicates that mainly hazel and oak and small amounts of birch and other species were being used. The charcoal from posthole 87 suggests that cherry/blackthorn type and beech were being exploited as well as oak and hazel by cal. AD 130–350.

## DISCUSSION

### Area A

As each ring-ditch was a complete circle with a smooth, deep profile, there is no evidence to suggest that they were drainage ditches around roundhouses. There was, however, no evidence for burials within or outside the ring-ditches. Nevertheless, they seem likely to have been funerary monuments. Ring-ditches without burials are not uncommon, especially those of a similar small diameter. Parallels can be found at Springfield, Essex (Buckley *et al.* 2001), where a *c.* 8m ring-ditch, probably dated to the earlier Bronze Age on the basis of pottery, and at Plas Gogerddan, Ceredigion, where two of the three excavated ring-ditches did not have a central burial (Murphy 1992). Construction of the ring-ditches at Plas Gogerddan was dated to the first millennium BC; they were later used for Iron Age burials. A central mound is generally assumed for ring-ditches, and at Plas Gogerddan the excavator suggested that burials might have been incorporated within central mounds only to be dispersed as the mounds eroded. At Cwm Meudwy suggestions of silt lines within the ring-ditch fills indicate that there might have been a small bank outside the ditches, but this could be due to erosion of the ditch sides themselves. Allowing for loss of subsoil and topsoil the ditches may originally have been up to 1m deep; this would allow for a reasonably sized internal mound. As samples for the two radiocarbon dates were obtained from the basal fills below compact silts, and therefore intrusive contamination is unlikely, a date between 800 and 390 cal. BC is indicated for the silting of the ditches. If the ditches silted rapidly, this date range may indicate the construction and use of these monuments. This is outside the generally accepted range for funerary monuments of this type, but, as noted above, can be paralleled at Plas Gogerddan. It is possible that some of these small ring-ditches in western Wales date to the first millennium, rather than the earlier Bronze Age.

### Area B

Few of the archaeological features in Area B had a direct relationship with each other, making any phasing of the site extremely difficult, and therefore greater reliance has been placed on scientific dating methods, environmental material and the relative dating based on the pottery analysis. This is not satisfactory, as Early Neolithic to Early Bronze Age pottery was found in just eleven pits/postholes, and the seven radiocarbon dates are from discrete, dispersed features and range from the Early Neolithic to the Roman Period.

A prehistoric pottery assemblage from any period is unusual for Wales: an assemblage of Early Neolithic pottery is even more unusual. The few examples known are mostly from megalithic tombs, although pottery of this date has been recognised at settlement sites, such as Clegyr Boia, Pembrokeshire, and in several caves on Caldey Island, also in Pembrokeshire (Burrow 2003, 52–60). At Cwm Meudwy the pottery was found mostly in pits and postholes, but none from the palisade gully itself or from features directly connected with it such as entrance postholes. Several of the pits/postholes from which pottery and radiocarbon dates were obtained from lie in a line (38, 40, 50, 53, 110 and 113), and together with other pits and postholes (Fig. 5) form a rectangle. However, given the disparate character of these features it would be unwise to pursue this analysis.

The issue of the three later radiocarbon dates from the site needs to be addressed. The Bronze Age date from a posthole from the western entrance is an isolated date, but it is broadly compatible with the two sherds of Late Neolithic/Early Bronze Age pottery from pits 40 and 43. Together, this indicates use of the site beyond the Early Neolithic. The Iron Age date from the four-post structure and the Romano-British date from the north-east entrance also signal later activity.

The two four-post structures are the only clearly defined buildings at Cwm Meudwy. Four-post structures are generally considered to be raised-floor storage buildings with a date range from the Late

Bronze Age through to the Late Iron Age (Gent 1983, 245), although examples are also known from the Middle Bronze Age and Roman Period. In south-west Wales they are exclusively found in later Iron Age defended settlements, as at Llawhaden, Pembrokeshire (Williams and Mytum 1998) and Penycloed, Carmarthenshire (Murphy 1985). However, finding four-posters that are not contemporary with the rest of a site is not unknown. At the Atlantic Trading Estate, Barry, Glamorgan, a four-poster was dated to the Iron Age due to the discovery of 'a rim and a basal angle of a vessel of Iron Age date' (Sell 1998, 11), although the rest of the site was interpreted as Bronze Age from evidence derived from pottery and other small finds. The radiocarbon date of 380–170 cal. BC from Cwm Meudwy is therefore exactly what one would have expected from this structure, and its location within an enclosure is consistent with other examples across Britain where, according to Gent (1983, 253), only 10 per cent of such structures occur in open settlements (i.e. not within defensible or non-defensible enclosures). The four-poster lying to the north-west of the enclosure is clearly part of the 10 per cent. However, given that excavation has concentrated on enclosed settlements, with less on unenclosed settlements, perhaps these statistics are unsurprising. It is possible, therefore, that the palisaded enclosure with the four-poster(s) and posthole pairs representing possible entrances to roundhouses, such as 44 and 45, are Iron Age. The absence of material culture of this period is not a problem in south-west Wales: only very small assemblages of pottery, dating to the later Iron Age or early Romano-British period, are found on complete excavations of defended enclosures (Williams and Mytum 1998; Murphy 1985). The Romano-British period radiocarbon date from a posthole of the north-east entrance may indicate continued occupation into this period, may be from intrusive material, or, indeed, may date the construction of the palisaded enclosure.

On the basis of the above information it would seem that there are two possible ways to interpret the site chronology:

1. Most of the remains, including the palisaded enclosure, are Neolithic. There is later use of the site, possibly including the four-post structures. However, the charcoal samples from the two entrance pits/postholes (48 and 87) that provided Bronze Age and Romano-British dates were from intrusive contamination (root action/animals); an entirely feasible possibility given that the samples for AMS dating weighed less than 0.5g and the analysis of the charred plant remains indicated penetration into what appeared to be natural features.
2. There is a strong Neolithic element to the site represented by a group of pits containing pottery, but most of the structural remains, including the palisaded enclosure, are Iron Age or Romano-British.

Early Neolithic settlement sites in Wales are rare. A well-preserved site was excavated at the rocky hilltop of Clegyr Boia, Pembrokeshire, where a rectangular hut was found, one of at least three wooden houses on the site (Williams 1952; Lynch *et al.* 2000). A later prehistoric stone rampart protected a second house, which had been burnt down. In the case of Llandegai, Gwynedd, where postholes probably representing a Neolithic building were found, preservation was probably due to protection by an external bank of a henge (Lynch and Musson 2004, 27–32). At Gwernvale, Powys, evidence for a sub-rectangular Neolithic building was found in the form of bedding-trenches and separate postholes. It was similar in plan to the Early Neolithic buildings at Llandegai, and possibly those at Clegyr Boia, and was located under a later Severn-Cotswold style long cairn (Britnell and Savory 1984, 139). At Rhos-y-Clegyrn, Fishguard, Pembrokeshire, huts of sub-rectangular plan were dated to the Neolithic on stylistic grounds, the identification of probable Neolithic Peterborough Ware pottery, and from environmental analysis, although the structures themselves were either lightly constructed (Lewis 1974) or badly damaged. It seems that in many cases the ability to identify Neolithic domestic structures archaeologically has depended upon their being protected from damage by later prehistoric constructions such as barrows or

other earthworks. The absence of such protection may help to explain why the Neolithic evidence at Cwm Meudwy is so hard to interpret, despite such good dating evidence, as the site was heavily truncated prior to excavation. The spatial analysis of the pits and postholes reveals very little. There was nothing that could be interpreted as a sub-rectangular or other shaped building. Indeed, in common with another recently recognised prehistoric site, that at Llanilar, Ceredigion (Briggs 1997, 16–23), the context of Neolithic pottery is difficult to characterise owing to plough-truncation. However, recent finds of Neolithic pottery are starting to provide an indication of more widespread and complex human presence in west Wales than has been previously recognised.

No radiocarbon dates were obtained from material from the palisade gully, and the radiocarbon dates from the entrance postholes conflict with each other. The enclosure could be of any date from the Neolithic to the Romano-British period, and, indeed, beyond. However, the pottery from Cwm Meudwy and evidence from other sites suggests a Neolithic or Iron Age date, and it is these two options that are considered here in more detail. Most Neolithic palisades, and certainly those identified in Wales, can be shown to be much larger, and of quite different character to the one at Cwm Meudwy. Although the overall corpus of later Neolithic palisade enclosures is a small one (Gibson 2002, 15), Cwm Meudwy is not characteristic of any of them. The radiocarbon date of 3970–3785 cal. BC obtained from posthole 64 may therefore be residual, and the date of cal. AD 130–350 obtained from the other entrance posthole 87 may more closely indicate the date of the enclosure. This date, however, as described above, could well have been obtained from intrusive material.

In support of a later date, the enclosure at Cwm Meudwy bears a number of similarities with an enclosure at Moel y Gerddi, near Harlech, Gwynedd, which was excavated in 1980 and 1981 (Kelly 1988, 101–51). Whilst the enclosure at this site approximated to a circle compared with Cwm Meudwy's pear shape, in many other ways the two were remarkably similar. The enclosure had two entranceways, although they were opposite each other, west–east, and there was a single four-post structure, located in the lee of the palisade. Clear evidence for a single central roundhouse with a ring of supporting posts was found at Moel y Gerddi, and it is possible that the truncated remains of postholes 44 and 45 at Cwm Meudwy were once part of a similar structure. The palisade posts at Moel y Gerddi were 'formed by the gap between stones and slabs laid edge-on along the sides of the trench' (Kelly 1988, 107), which is similar to the evidence found in the less truncated parts of the palisade gully at Cwm Meudwy. Parts of the enclosure were hewn out of the bedrock at both sites as well. As at Cwm Meudwy there were no finds from the gully. Radiocarbon dates were also inconsistent, with a date of 3656–3370 cal. BC from the palisade gully, and the fill of one of the two postholes flanking the east gap returned a date of 759 cal. BC – cal. AD 0. Nevertheless the excavators attributed an Iron Age date to the enclosure, with evidence of the site having been occupied in the Neolithic period. This interpretation of an Iron Age date for the enclosure, especially since late dates were obtained from the entrance posthole 87 and the four-poster posthole 9, seems most likely to be appropriate at Cwm Meudwy as well. Enclosure A on Swillington Common, West Yorkshire, is a second Iron Age parallel for Cwm Meudwy (Howell 2001, 56, fig. 45 and pl. 4). Here, a D-shaped enclosure was made up of 163 closely spaced postholes. The site had been severely plough-truncated and virtually no internal features survived, but radiocarbon dates calibrated to two sigma of 790–400 cal. BC, 758–261 cal. BC and 397–167 cal. BC from three of the palisade postholes are broadly comparable, if a little earlier, with the Iron Age date from Cwm Meudwy.

Palisades pre-dating defences constructed of substantial banks and ditches are a recognised characteristic of the Iron Age, with examples in south-west Wales at Drim Camp (Williams and Mytum 1998, 53) and Castell Henllys (H. Mytum pers. com.). It is possible to argue that Cwm Meudwy was a similar settlement, but for which no substantial defences were later provided. If the palisaded enclosure at Cwm Meudwy is indeed Iron Age in date then it is of great significance as our knowledge of this

period in south-west Wales is dominated by evidence from hillforts and defended enclosures, with over 900 such sites recorded on the regional Historic Environment Record. In contrast, evidence for undefended settlements is limited to two sites from Stackpole Warren (Benson *et al.* 1990), and to hut groups and field systems on Skomer Island, Pembrokeshire (Evans 1990) and Bernard's Well Mountain, Pembrokeshire, although the date of the two latter sites, other than broadly prehistoric, has yet to be established.

In summary, the authors' preferred interpretation is for Early Neolithic activity at Area B, with use of the site in the later Neolithic/Early Bronze Age. The duration and nature of this activity is unclear. In the Iron Age or Romano British period an enclosure surrounded by a palisade was constructed, with four-post structures suggesting domestic/agricultural use. At Area A three round barrows were built in the eighth to fourth centuries BC.

### Acknowledgements

Thanks are due first and foremost to the Welsh Development Agency, and their project manager Graham Kell, who financed this project and made available the time to enable it to take place, and to their Clerk of Works John Williams, who provided much valuable assistance to the project, particularly in its early stages. Hughie Devine of Jones Brothers of Henllan Ltd, the Site Manager, also provided a lot of help, particularly with the provision of welfare facilities for the excavation team. The local community, who visited the site in such large numbers on the final Saturday, are thanked for their interest and enthusiasm. The excavation team are of course all thanked, as without them none of this would have been possible. Finally we would wish to thank all those who offered help, advice and encouragement. If we have forgotten to mention them by name then we hope that they will accept our apologies.

### NOTES

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### BIBLIOGRAPHY

- Benson, D. G., Evans, J. G., Williams, G. H., Darvill, T. and David, A., 1990. 'Excavations at Stackpole Warren, Dyfed', *Proceedings of the Prehistoric Society* 56, 179–245.
- Briggs, C. S., 1997. 'A Neolithic and Early Bronze Age settlement and burial complex at Llanilar, Ceredigion', *Archaeol. Cambrensis* 146, 13–59.
- Britnell, W. J. and Savory, H. N., 1984. *Gwernvale and Penywyrlod: Two Neolithic Long Cairns in the Black Mountains of Brecknock*, Cambrian Archaeological Monographs No. 2 (Cardiff: Cambrian Archaeological Association).
- British Geological Survey 1994. *The Rocks of Wales – Geological Map of Wales* (Nottingham).
- Buckley, D. G., Hedges, J. D. and Brown, N., 2001. 'Excavations at a Neolithic cursus, Springfield, Essex, 1979–85', *Proceedings of the Prehistoric Society* 67, 101–62.



- Burrow, S., 2004. *Catalogue of the Mesolithic and Neolithic Collections in the National Museums and Galleries of Wales* (Cardiff: National Museums & Galleries of Wales).
- Caseldine, A., 1990. *Environmental Archaeology in Wales* (Lampeter: St David's University College and Cadw).
- Caseldine, A. E., 1992. 'The Neolithic carbonized plant remains from pit 206', in K. Murphy, 'Plas Gogerddan, Dyfed: a multi-period burial and ritual site', *Archaeological Journal* 149, 24–6.
- Caseldine, A. E. and Holden, T. G., 1998. 'The carbonised plant remains', in G. Williams and H. Mytum, *Llwhaden, Dyfed: Excavations on a group of small defended enclosures, 1980–4*. British Archaeological Reports, British Series 275 (Oxford), 105–18.
- Davies, J. L. and Hogg, A. H. A., 1994. 'The Iron Age', in J. L. Davies and D. P. Kirby (eds), *Cardiganshire County History. Volume 1: From the Earliest Times to the Coming of the Normans* (Cardiff: Cardiganshire Antiquarian Society), 219–74.
- Evans, J. G., 1990. 'An archaeological survey of Skomer, Dyfed', *Proceedings of the Prehistoric Society* 56, 247–67.
- Gent, H., 1983. 'Centralized storage in later prehistoric Britain', *Proceedings of the Prehistoric Society* 49, 243–68.
- Gibson, A. M., 1995. 'First impressions: a review of Peterborough ware from Wales', in I. A. Kinnes and G. Varndell (eds.), *Unbaked urns of rudely shape*, Oxbow Monograph 55 (Oxford: Oxbow), 22–49.
- 1999. *The Walton Basin Project: Excavation and Survey in a Prehistoric Landscape, 1993–1997*, Research Report 118 (York: Council for British Archaeology).
- (ed.), 2002. *Behind Wooden Walls: Neolithic Palisaded Enclosures in Europe*. British Archaeological Reports, International Series 1013 (Oxford).
- Grimes, W. F., 1939. 'The excavation of Ty-Isaf Long Cairn, Brecknockshire', *Proceedings of the Prehistoric Society* 5, 119–42.
- Howells, J. K., 2001. 'Swillington Common', in I. Roberts, A. Burgess and D. Berg (eds), *A New Link to the Past: The Archaeological Landscape of the M1–A1 Link Road*, Yorkshire Archaeology 7, West Yorkshire Archaeology Service, 47–68.
- Kelly, R. S., 1988. 'Two late prehistoric circular enclosures near Harlech, Gwynedd', *Proceedings of the Prehistoric Society* 54, 101–51.
- Lewis, J. M., 1974. 'Excavations at Rhos-y-Clegyrn prehistoric site, St. Nicholas, Pembs', *Archaeol. Cambrensis* 123, 13–42.
- Lynch, F. M., Aldhouse-Green, S. and Davies, J. L., 2000. *Prehistoric Wales* (Stroud).
- Lynch, F. and Musson, C., 2004. 'A prehistoric and early medieval complex at Llandegai, near Bangor, North Wales', *Archaeol. Cambrensis* 150, 17–142.
- Moore-Colyer, R., 1998. 'Agriculture in Wales before and during the Second Millennium BC', *Archaeol. Cambrensis* 145, 15–33.
- Murphy, K., 1985. 'Excavations at Penycoed, Llangynog, Dyfed 1983', *Carmarthenshire Antiquary* 21, 75–112.
- 1992. 'Plas Gogerddan, Dyfed: a multi-period burial and ritual site', *Archaeological Journal* 149, 1–38.
- PCRG 1995. *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, Prehistoric Ceramics Research Group Occasional Publications 1 and 2.
- Peterson, R., 2003. *Neolithic Pottery from Wales. Traditions of Construction and Use*, British Archaeological Reports, British Series 344 (Oxford).
- Powell, T. G. E., 1973. 'Excavation of the megalithic chambered cairn at Dyffyn Ardudwy, Merioneth, Wales', *Archaeologia* 104, 1–49.

- Savory, H. N. 1955. 'The excavation of a Neolithic dwelling and a Bronze Age cairn at Mount Pleasant farm, Nottage (Glam.)', *Transactions of the Cardiff Naturalists Society* 81, 75–9.
- Sell, S. H., 1998. 'Excavations of a Bronze Age settlement at the Atlantic Trading Estate, Barry, South Glamorgan', *Studia Celtica* 32, 1–26.
- Soil Survey of England and Wales 1980. *Map of England and Wales: Soils* (London).
- Stuiver, M. *et al.* 1998. *Radiocarbon* 40(3), 1041–83.
- Wainwright, G. J. and Longworth, I. H., 1971. *Durrington walls Excavations 1966–1969* (London: Society of Antiquaries).
- Ward, J., 1916. 'The St. Nicholas chambered tumulus, Glamorgan II', *Archaeol. Cambrensis* 16, 239–94.
- Williams, A., 1952. 'Clegyr Boia, St. Davids, Pembrokeshire: excavation in 1943', *Archaeol. Cambrensis* 102, 20–52.
- Williams, G. and Mytum, H., 1998. *Llawhaden, Dyfed: Excavations on a Group of Small Defended Enclosures, 1980–4*, British Archaeological Reports, British Series 275 (Oxford).

*Published with the aid of a grant from Cambria Archaeology*