

# CORNISH ARCHAEOLOGY

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2008

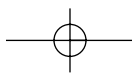
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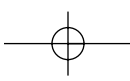
GRAEME KIRKHAM AND PETER HERRING



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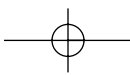




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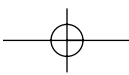
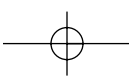
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# The excavation of a multi-period archaeological landscape at Trenowah, St Austell, Cornwall, 1997

CHARLES JOHNS

with SARNIA BUTCHER, ROWENA GALE, ANNA LAWSON-JONES, JULIE JONES,  
HENRIETTA QUINNELL and ROGER TAYLOR

*During the summer of 1997, Cornwall Archaeological Unit (now Historic Environment, Cornwall Council) carried out a programme of archaeological recording over an area of approximately 1.3 ha during construction of the St Austell North-East Distributor Road.*

*The investigations revealed 14 small pits of probable Early Neolithic date, a hollow containing Middle Bronze Age pottery, a Late Bronze Age post-built structure, two Early Iron Age pits of ritual purpose, components of an Early Iron Age field system, three Middle to Late Iron Age enclosures and a curvilinear ditch of Romano-British date. In addition, numerous features associated with post-medieval mining activity were uncovered.*

*A large number of quernstones and quernstone fragments were recovered, some of which may have been used for grinding metal ores. There was evidence for structured or ritual deposition of objects extending from the Early Neolithic to the Middle Iron Age.*

*The pottery assemblage, although small, is important because it spans the Early Neolithic to Iron Age periods and is associated with secure radiocarbon dates and stratigraphically related archaeological features. The small Early Iron Age assemblage is of particular value because it provides a range of vessels from undisturbed contexts, including a previously unknown form, and provides a dating framework for them.*

In July 1995 Cornwall Archaeological Unit (CAU) was commissioned by the Design Consultancy, Transport and Estates, Cornwall County Council, to carry out an archaeological assessment of the proposed route of the St Austell North-East Distributor Road (Fig 2). The assessment comprised a preliminary desk-based study followed by a walkover survey of the road corridor (Johns 1995).

Subsequent evaluation included a geophysical survey (Shiel 1995) in a sample area of the road corridor at Trenowah. Six adjacent survey areas totalling approximately 5.2 ha were investigated using a fluxgate gradiometer (Fig 2). The survey recorded a number of field systems and possible

enclosures; in particular two sub-circular and numerous pit-type anomalies suggested that significant remains of prehistoric occupation had survived (Shiel 1995, 4). Trial trenching and ground survey were carried out on selected areas where archaeological features had been identified (Thomas and Johns 1995).

The evaluation demonstrated the need for a comprehensive programme of archaeological mitigation in the event of road construction proceeding. Financial limitations required that the main focus was on the prehistoric field systems at Trenowah identified by the geophysical survey. These offered good opportunities for enhancing understanding of prehistoric land division in

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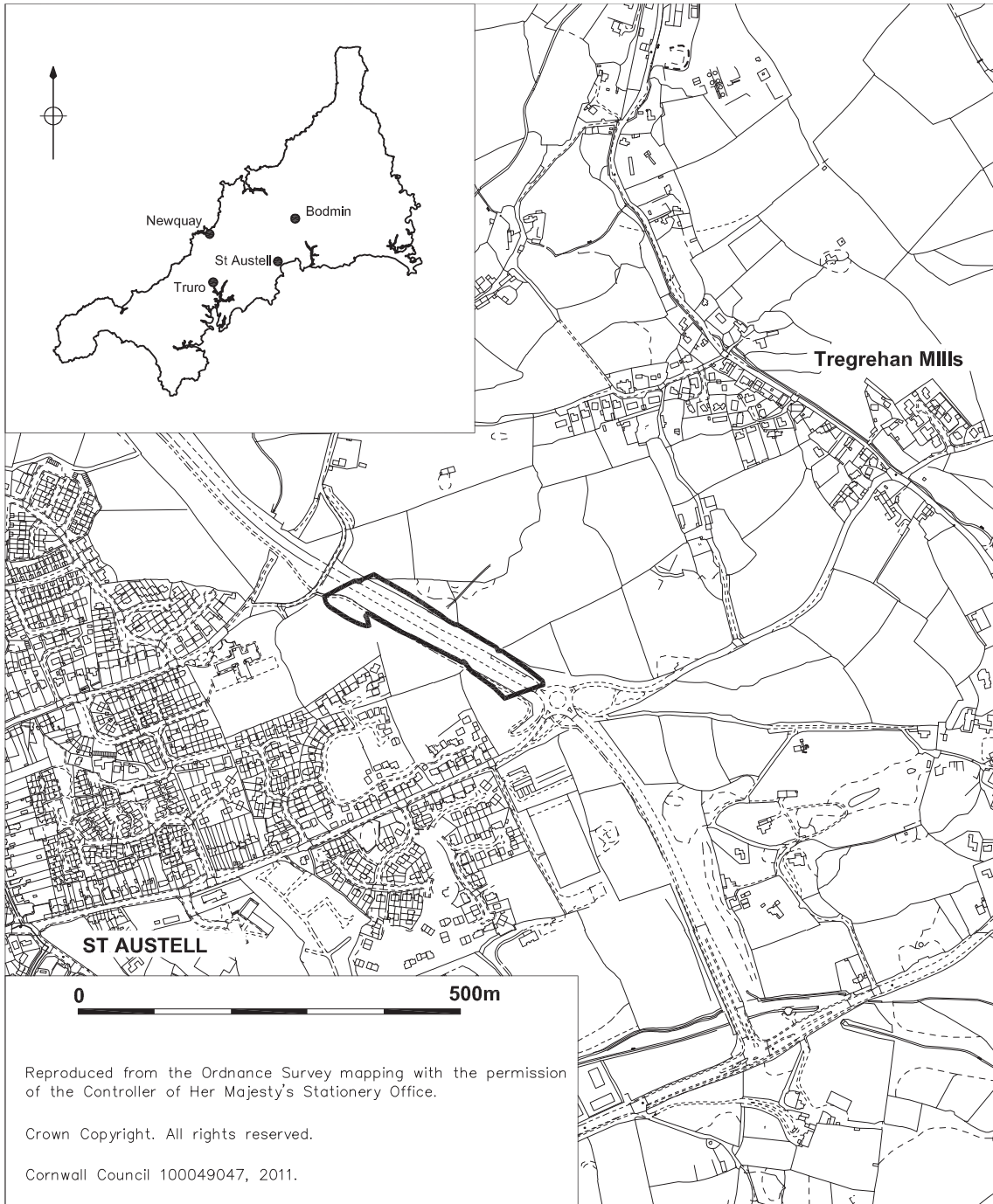


Fig 1 The location of the site within the wider St Austell area



# THE EXCAVATION OF A MULTI-PERIOD ARCHAEOLOGICAL LANDSCAPE AT TRENOWAH

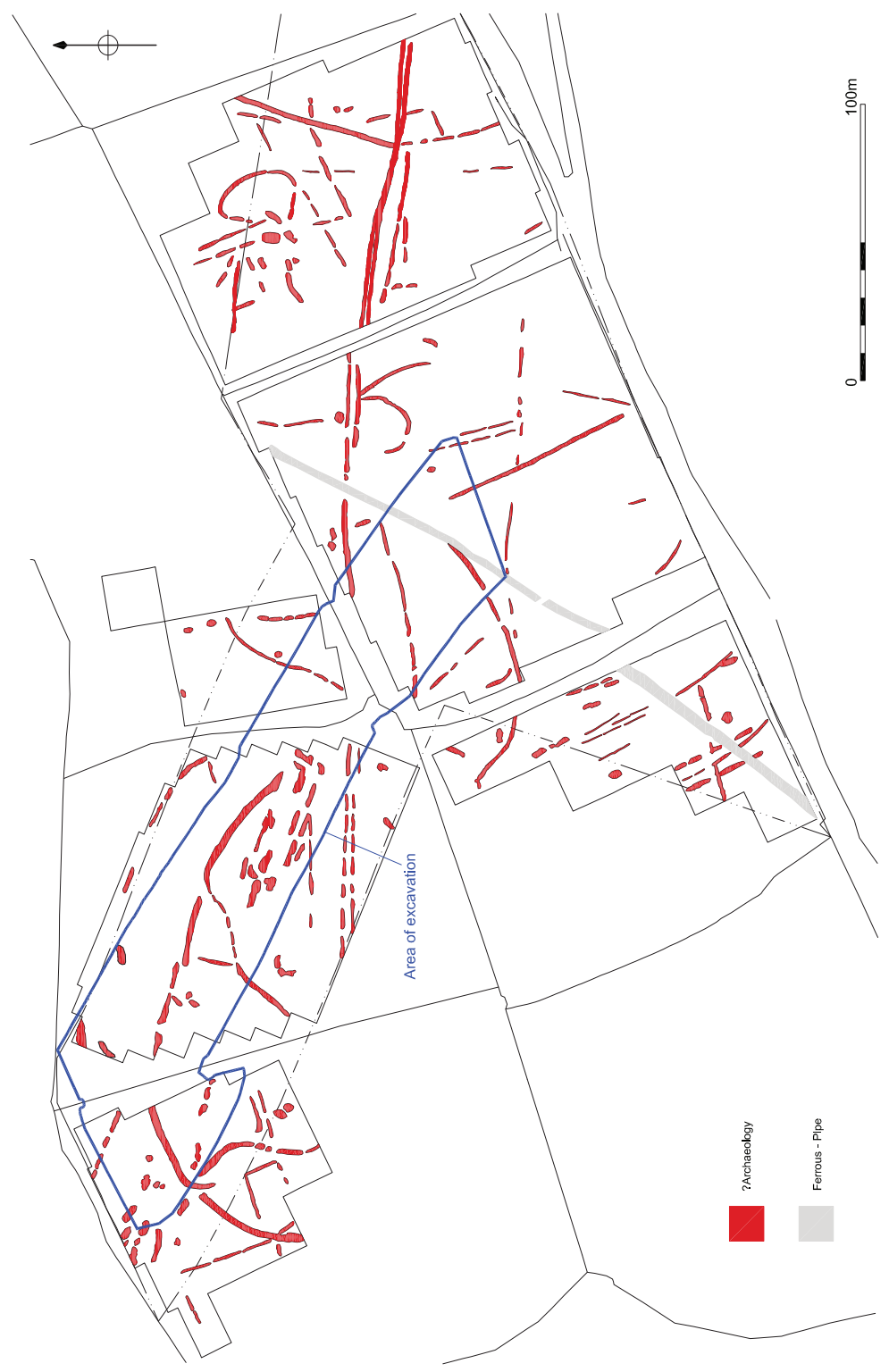


Fig 2 Interpretation of the geophysical survey results.



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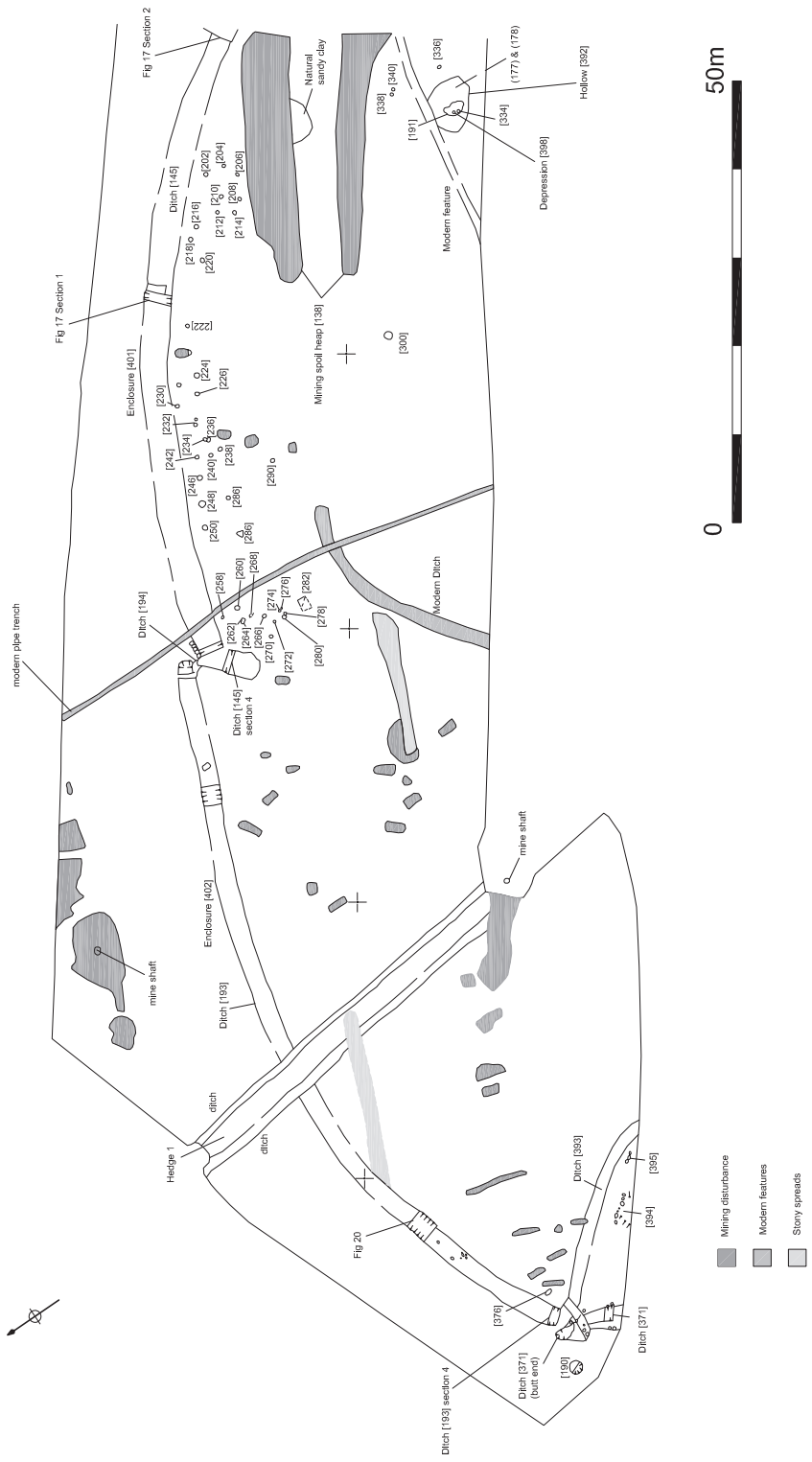


Fig 4 Trenowah site plan (north).

CHARLES JOHNS

Cornwall and the early development of the landscape. Other sites identified along the road corridor were mainly associated with post-medieval mining or agricultural activity.

## Location and historic landscape setting

The site is situated on a south-facing hill slope overlooking St Austell Bay on the north-eastern outskirts of St Austell, between Trenowah Road and Boscoppa Lane (centred at NGR SX 04000 53400, Fig 2). It lies between 65m and 75m OD. The seaward view is framed by Black Head to the west and Gribben Head to the east with Crinnis Hill towards the centre.

The geology of the area is mapped as Meadfoot Beds: calcareous slate, grit and thin limestone of the Lower Devonian period (Sheet 347 Bodmin, Geological Survey of Great Britain); the slaty natural subsoil is known locally as shillet. Soils are recorded as brown earths comprising stagnogley soils and brown podzolic soils (OS Soil Survey of England and Wales 1974).

The fields at Trenowah (colour plate 1) were characterised as Anciently Enclosed Land (AEL), defined as the long-established agricultural heartland of Cornwall, with farming settlements documented before the seventeenth century AD and strip-based or irregular field patterns with either medieval or prehistoric origins (Cornwall County Council 1996).

The area selected for archaeological investigation, totalling approximately 1.3 ha, was within the road corridor, which had been redefined in order to avoid a possible later prehistoric or Romano-British round identified by the geophysical survey. The area included at least two large curvilinear enclosures, numerous linear boundaries and a large, stone-revetted mining spoil heap. A possible barrow, identified during the walkover survey, was shown by geophysics and trial trenching to be a large heap of stones produced by mining activity; it lay just beyond the northern edge of the area of excavation.

## The excavations

Excavations took place over four weeks in July and August 1997. The core CAU team was assisted by volunteers from Cornwall Archaeological

Society and students from various academic institutions.

Topsoil and subsoil were stripped by a mechanical swing shovel under archaeological supervision. The excavation strategy was to start at the southern end of the site and work towards the northern end. Complex areas were hand-cleaned and given as detailed an investigation as the limited time and resources allowed.

The results of the excavations are described by period below.

### Early Neolithic activity

#### *Pits at the southern end of the site*

At the southern end of the site (Fig 3) were 13 small pits: [24], [26], [28], [30], [32], [34], [36], [38], [41], [44], [56], [161], [165]. These ranged in size from 1.3m to 0.2m long, 1m to 0.2m wide and 0.1m to 0.4m deep but were typically between 0.5m and 1m long, 0.4 - 0.75m wide and 0.25m deep. The fills were typically dark yellowish-brown silty clay with frequent shillet stones and occasional charcoal flecks, and two contained some quartz fragments. Two pits, [38] and [41], adjacent to each other in the southern group, had a basal fill of charcoal-rich, dark brown silty, sandy clay, possibly indicating *in situ* burning (Fig 5). These pits, [38] and [41], also produced flint flakes of Neolithic or Bronze Age date. Pit [41] had burnt red edges and contained a layer (43) with much charcoal at the bottom; the charcoal-rich primary fill (40) of pit [38] produced a radiocarbon date of 3130-2920 cal BC at a probability of 65.3 per cent, 4429 ±41 BP (Wk-11935).

#### *Pit [300]*

About 135m north of the cluster of pits, a little north of the centre of the site, lay a small isolated sub-circular pit [300], 1.2m in diameter and 0.2m deep (Figs 4 and 6), filled with charcoal-rich, brown sandy clay (299). It contained a flint blade of broadly Neolithic date, three white quartz fragments and an Early Neolithic potsherd (P1), the only pottery of this period from the site (Fig 26).

### Middle Bronze Age activity

An area of Bronze Age activity was identified extending over an area of some 40 sq m to the west

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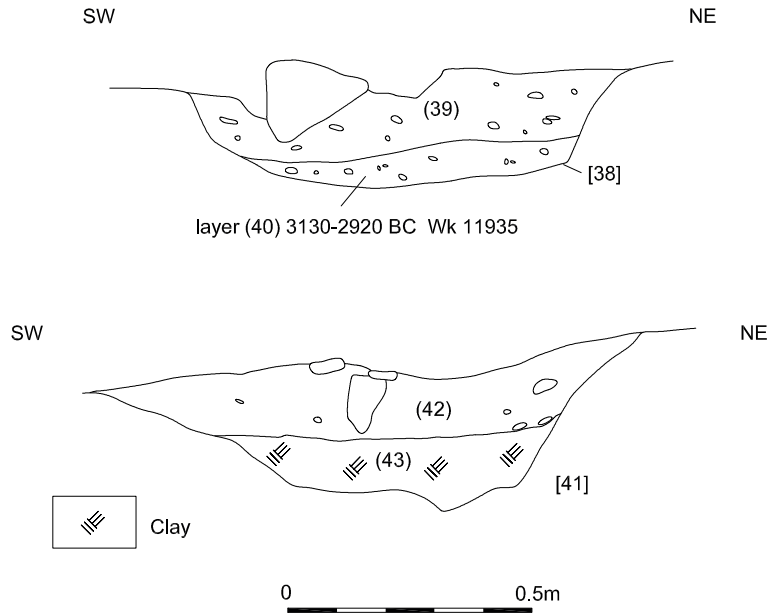


Fig 5 Sections through Early Neolithic pits [38] and [41].

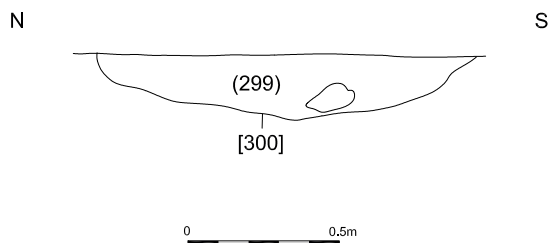


Fig 6 Section through Early Neolithic pit [300].

of the centre of the site (Figs 3, 7 and 8), where weathering of the machined subsoil horizon exposed smooth pebbles and sherds of abraded pottery in the surface of deposits (177) and (178). These layers of charcoal-rich, brown sandy, silty clay sealed and filled an oval hollow [392] 6.2m long by 5m wide and 0.17m deep. The floor of the hollow was cut into the shillet but did not appear to be otherwise prepared except for the excavation of a slight depression [397] north of centre in which two pits, [191] and [334], had been dug; a stakehole [344] lay just outside [397] to the south (Figs 7 and 8). Context (192), the basal fill of [191], contained

a single sherd of Bronze Age pottery and 24 white quartz fragments. A patch of red clay (333) in the top of [334] may represent re-deposited hearth material. Sealing the depression [397] was a thin layer of silty clay (332). Just outside the edge of the hollow was a small pit or posthole [336]. The hollow was cut on its north-east side by shallow linear feature [180]/[302], a possible post-medieval field boundary ditch.

The hollow produced an assemblage of 102 sherds of Trevisker ware (Fig 26.2-7). Two radiocarbon determinations of 1460-1260 cal BC (93.3 per cent probability), 3112  $\pm$ 42 BP (Wk-11930), from context (177), and 1530-1300 cal BC, 3155  $\pm$ 50 BP (Wk-11932), from (192), the fill of pit [191], indicate activity in the fifteenth or fourteenth centuries cal BC.

Two small pits [338] and [340] were situated 3m east of hollow [392] (Fig 4). The fill of [338] contained four cassiterite pebbles and that of [340] a single pebble which appeared to have been deliberately broken. There was no direct evidence that these pits were contemporary with hollow [392].

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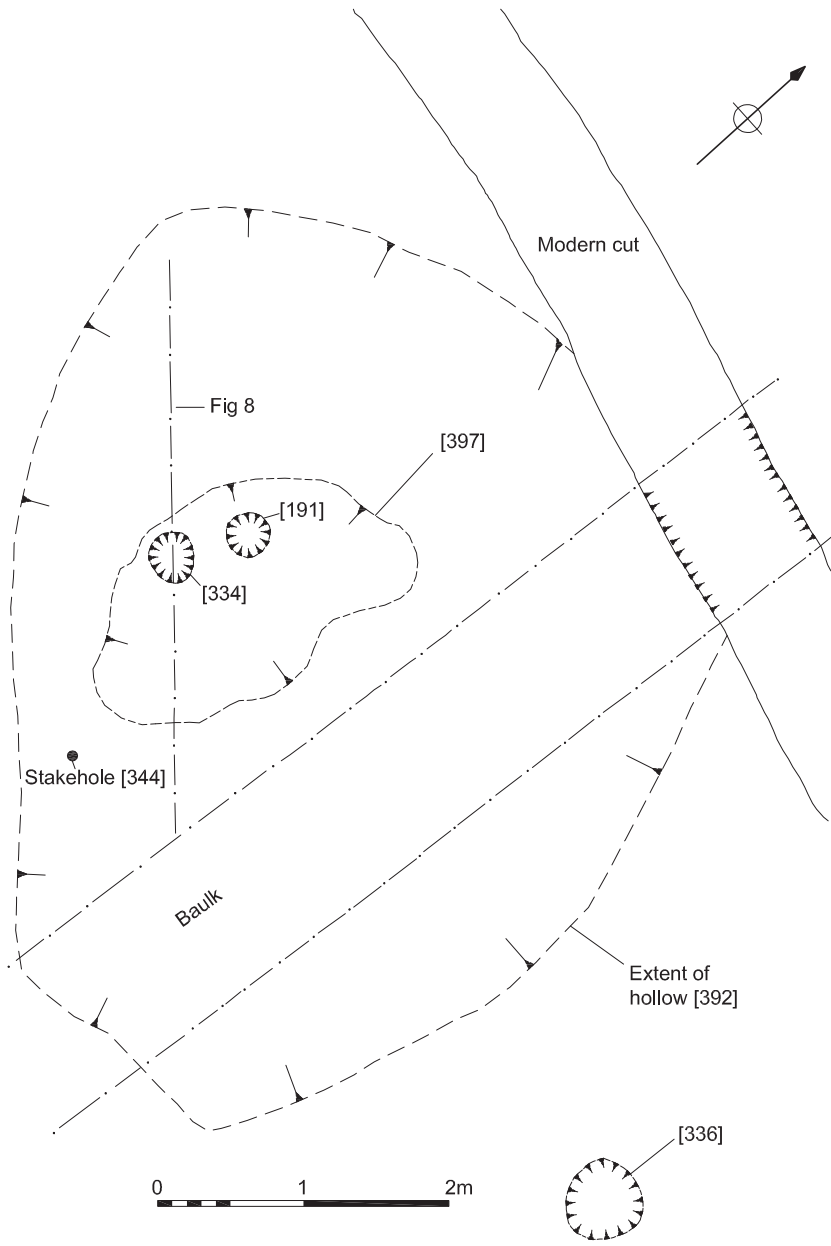


Fig 7 Plan of Middle Bronze Age hollow [392].

**Late Bronze Age activity**

Located south east of the centre of the site was a rectangular structure [129] approximately 5m long by 3.4m wide, comprising six shallow postholes or pits: [105], [107], [109], [111], [113], [115] (Figs 3, 9 and 10). There were no surviving floor levels

and the postholes themselves had evidently been truncated because in their surviving state they would have provided scant settings for posts. Three small, abraded gabbroic and non-distinctive potsherds were recovered from context (104), the fill of [105], and another three sherds from (108),

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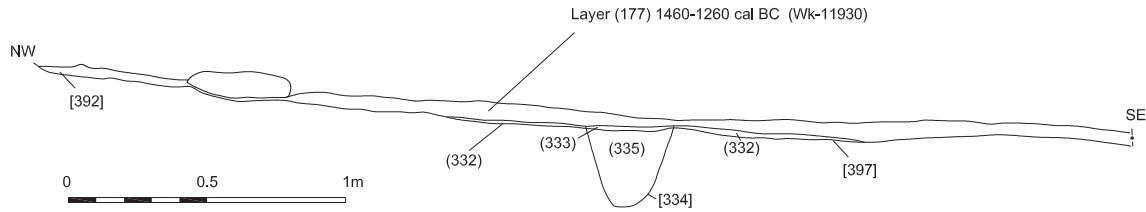


Fig 8 Section through Middle Bronze Age hollow [392].

the fill of [109]. A radiocarbon determination of 980-800 cal BC, 2722 ±44 BP (Wk-11933), from context (108) suggests a Late Bronze Age date for this structure.

**Early Iron Age activity**

*Pits [298] and [345]*

Towards the centre of the site were two pits, [345] and [298], 7m apart on an east-west alignment (Fig 3). Pit [345] was 1.1m in diameter by 0.32m deep and pit [298] 1m in diameter by 0.18m deep; both contained similar fills of loose, brown sandy clay (Fig 11). Two large potsherds forming the rim and shoulder of a carinated vessel and a looped handle sherd (**P10** and **P11**, Fig 27) were recovered from (297), the fill of [298]. Pit [345] produced a varied

assemblage of finds (colour plate 2): pottery (including **P9**, Fig 27.9), saddle querns and rubbing stones, both whole and broken, and water-worn pebbles. Its fill (346) gave a radiocarbon determination of 800-520 cal BC, 2529 ±41 BP (Wk-11934).

*Stony bank [183] and ditch [184]*

Some 26m south of pits [298] and [345] was a stony bank [183] 0.63m wide and 0.35m high oriented south west – north east. The excavated portion was approximately 7m long but the bank extended into the unexcavated area to the north east (Fig 3). The bank [183] was set into the top of ditch [184], 0.8m wide by 0.3m deep, which was traceable for a further 16m to the south west, terminating at ditch [65]. It seems probable that this

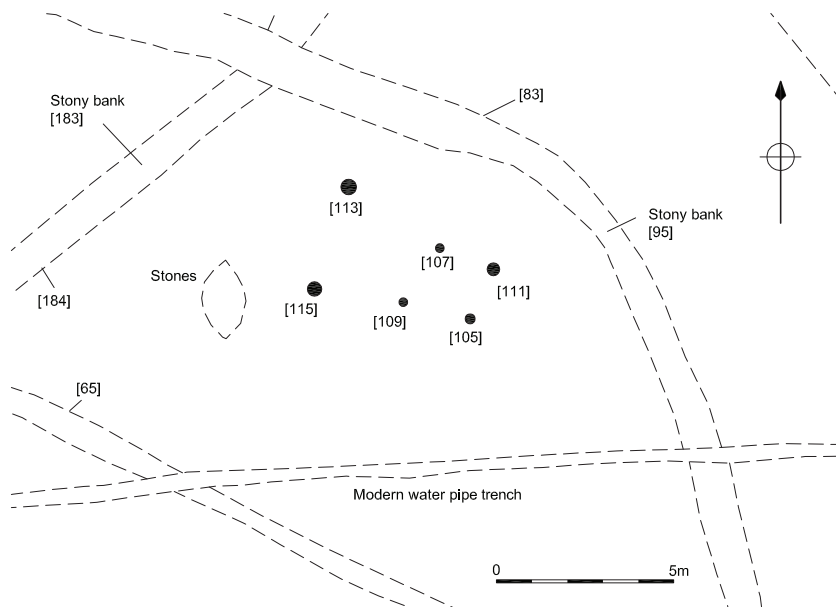


Fig 9 Plan of Late Bronze Age structure [129].

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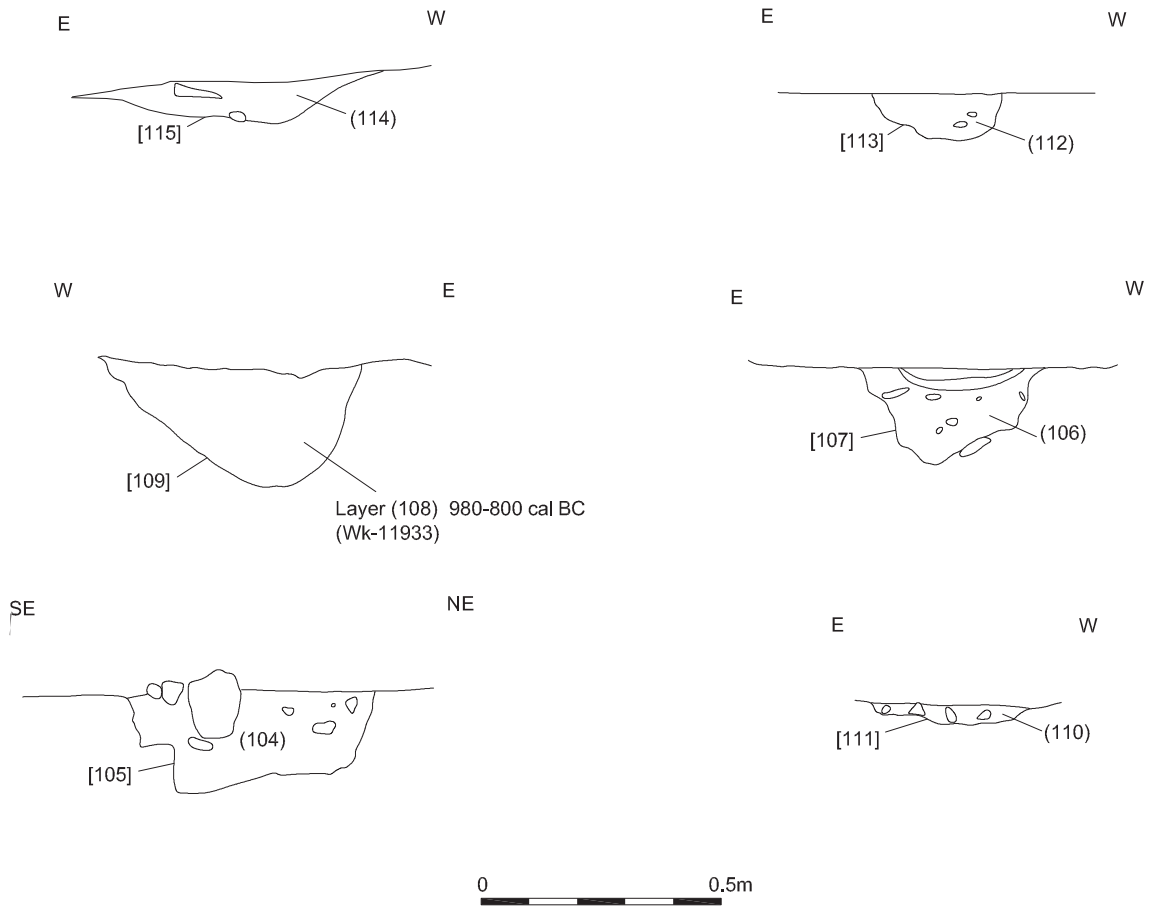


Fig 10 Sections through the postholes and pits comprising possible Late Bronze Age structure [129].

was a boundary ditch that had silted up and been re-established by the construction of the bank (Fig 12). Layer (186), the basal fill of ditch [184], produced an Early to Middle Iron Age radiocarbon determination of 600-390 cal BC (75.3 per cent probability), 2405 ±43 BP (Wk-11938).

#### *Ditches [65] and [69]*

Features [65] and [69] were a pair of linear ditches running approximately east – west for a distance of 94m across the south-eastern end of the site (Figs 3, 29). Both were of similar dimensions, up to 1m wide and 0.7m deep. The two ditches were on approximately the same alignment, converging towards the ends but separated in the middle by a

gap up to 2.5m wide. Excavation demonstrated that [65] was the earlier of the two. In some of the excavated segments there was a shallow shelf cut into the south-western edge of [65], upon which were the vestiges of a probable stone revetment for an earthen bank formed by the spoil flung up from the ditch (Figs 13 and 14).

Ditch [65] had filled gradually and its line seems to have been re-established by a row of stones placed in the upper layer of its fill, context (100). A new ditch [79] was subsequently excavated on a similar alignment; this filled and was re-cut as ditch [69]. Eight sherds of Early Iron Age pottery were recovered from ditch [65], including **P14** (Fig 27.14). Ditch [69] also contained distinctive late Early Iron Age pottery and its middle fill (67)



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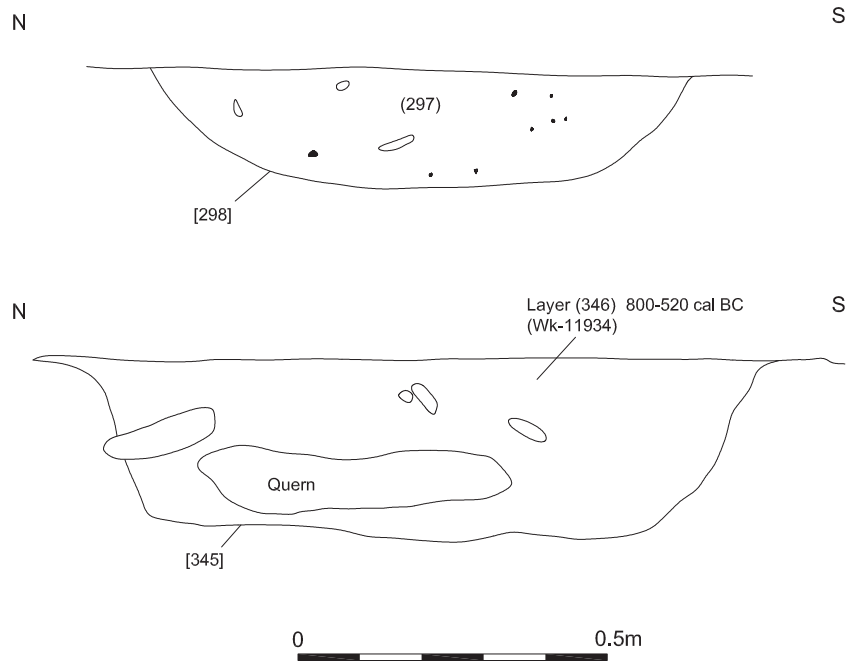


Fig 11 Sections through Early Iron Age pits [298] and [345].

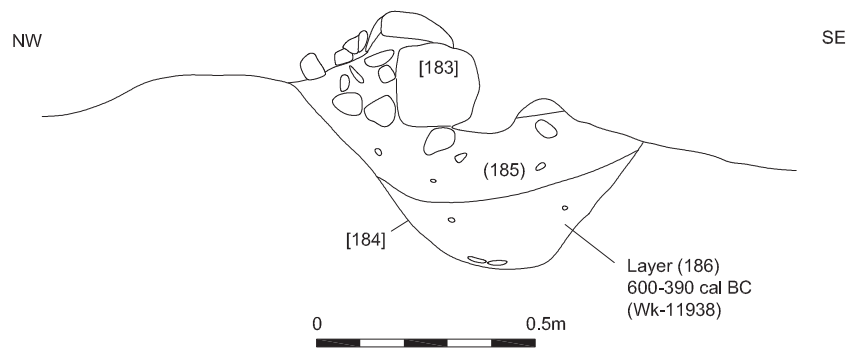


Fig 12 Section through ditch [184] and stony bank [183].

produced a radiocarbon date of 770-400 cal BC, 2460 ±49 BC (Wk-11940). Fill (88) from ditch [69] also produced an unusual iron object, possibly a brooch or clasp (Fig 25) (Butcher, below).

#### Ditches [122] and [155] / [163]

Ditch [122] ran approximately east – west and was 16.5m long by 1.85m wide and 0.86m deep, with rounded terminals at either end (Fig 3). It was not

stratigraphically linked to any other features but produced a sherd of Early Iron Age pottery (**P12**; Fig 27.12) from its basal fill (125) (Fig 15). The eastern end lay 3.5m north of ditches [65] / [69], beginning at the point where these converged, the western end was 1m north of [65] / [69], terminating just east of another stony bank [173].

Ditch [155] / [163] (Figs 3 and 16) lay roughly parallel to and 6m south of [122] and ran for 19m to the edge of the excavated area. It was 1.43m wide

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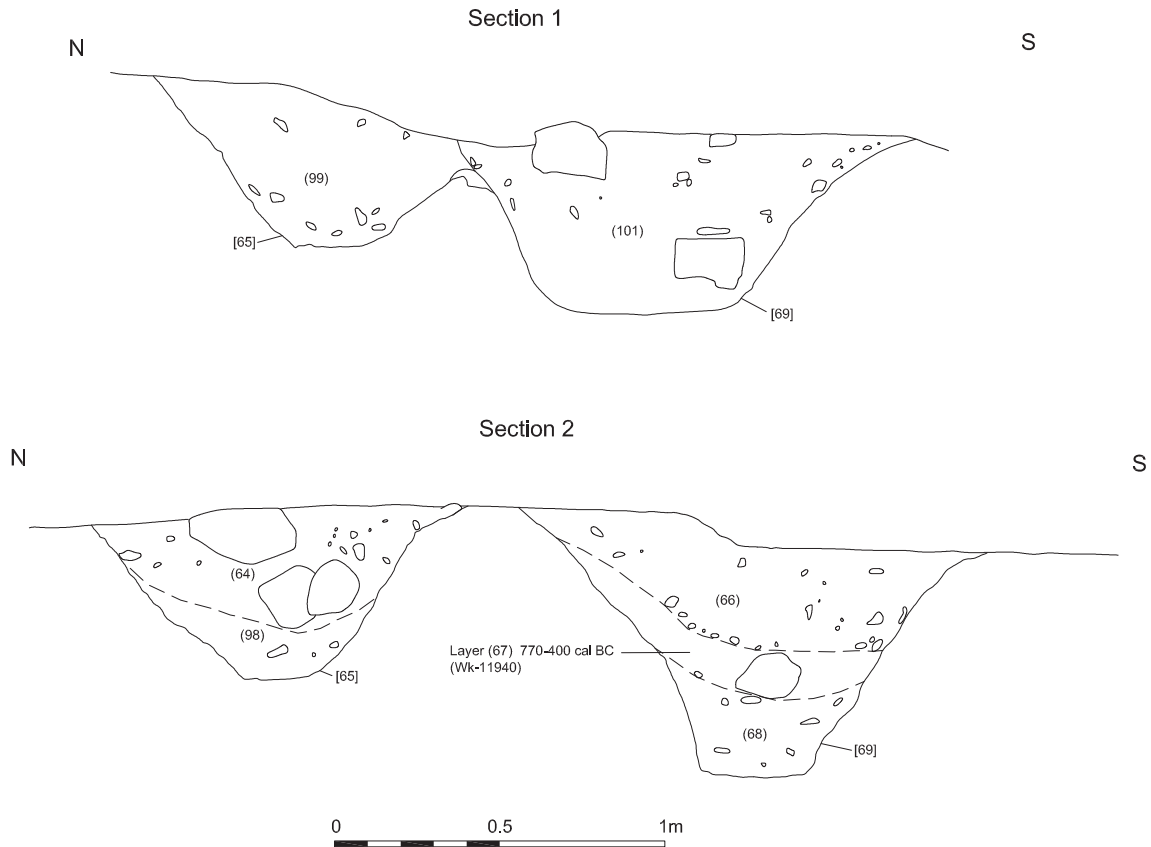


Fig 13 Sections through ditches [65] and [69].

and 0.88m deep and produced a sherd of Early Iron Age pottery from its upper fill (118) (P13, Fig 27.13). This feature ran up to the entrance of a Middle to Late Iron Age enclosure [400] (described below).

Parallel to [155] / [163] was ditch [121] whose ends were not located; [121] was 0.5m wide and 0.38m deep (Figs 3 and 16). Granite object S12 with traces of percussive use was recovered from fill (162) of ditch [121].

### Middle to Late Iron Age activity

#### Enclosure [401]; ditch [145]

Ditch [145] was a substantial curvilinear rock-cut feature defining the north-eastern edge of a large enclosure [401] located north of the centre of the

site (Figs 4, 29). The ditch was approximately 80m in length and 3m wide, oriented north west – south east. Four sections were excavated, two mechanically and two by hand. At the southern end it was 0.85m deep with a flat base and a single fill (146). Towards the middle, however, it was up to 2.4m deep with complex fills (Fig 17). Three possible re-cuts were identified in this section: [152], [153] and [154].

Thirty-six cut features [202]-[290] were identified within a 10m-wide zone running parallel to the inner edge of [145], ranging in form from shallow scoops to substantial post-settings with *in situ* packing stones; for example, [246] (Fig 18). From the northern terminal they extended south, with a gap towards the middle, petering out some 25m north of the southern terminal (Fig 4). Some postholes, for example, [282] and [290], were

## THE EXCAVATION OF A MULTI-PERIOD ARCHAEOLOGICAL LANDSCAPE AT TRENOWAH



Fig 14 Ditches [65] and [69].

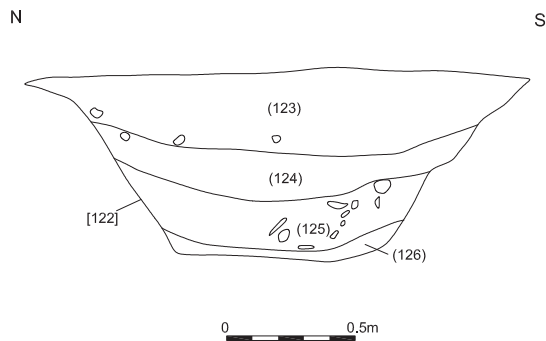


Fig 15 Section through ditch [122].

isolated from the possible line of the revetment and may not have been associated with it.

Enclosure [401] is interpreted as a stock-proof enclosure with the postholes representing a palisade or revetment, which was renewed at least once, for an earthen bank on the inner edge of the ditch.

At the southern end of enclosure [401] were two postholes, [141] and [144] (Fig 3). Posthole [141] was about 0.5m in diameter but only 0.06m deep;

[144] was of similar diameter and 0.26m deep. A greenstone rubber was recovered from the fill of [141], which also contained three wheat and barley grains and a small weed assemblage typical of arable cultivation (Jones, below).

At the south-eastern end of the enclosure a stony bank [173] aligned north – south was traceable for 26m from the southern edge of the excavated area (Fig 3). The bank was approximately 0.8m wide by 0.15m high and built of medium to large stones (up to 0.45m in length) placed in a construction cut or infilled gully [171], the northern end of which was linked to the southern terminal of ditch [145] by a short, narrower gully [176] (Fig 3). A radiocarbon determination of cal AD 970-1160 (94.4 per cent probability),  $999 \pm 44$  BP (Wk-11939) was obtained from (175), the fill of [176]. Either this is an anomalous determination or, if correct, suggests that [145] was visible as a landscape feature at the end of the early medieval period and that [171], [176] and [173] represent a re-utilisation of it.

The north-western end of [145] curved to the south west for a short distance and terminated, the postholes continuing adjacent to its south side

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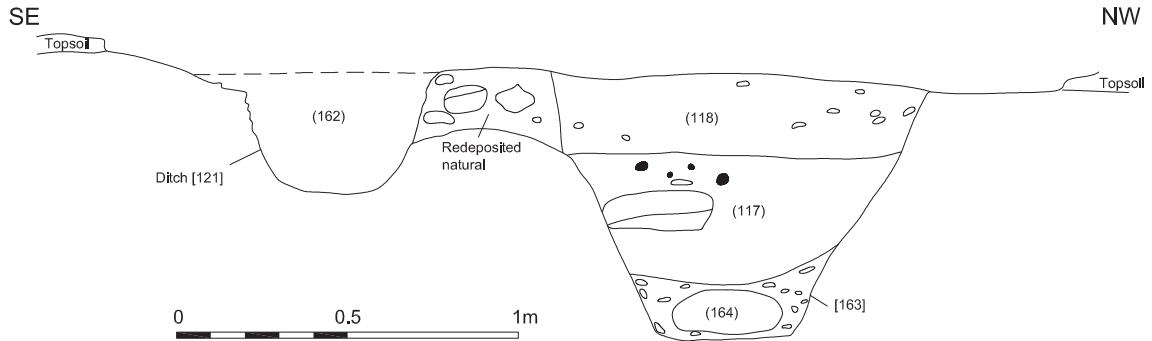


Fig 16 Section through ditches [121] and [155] / [163]

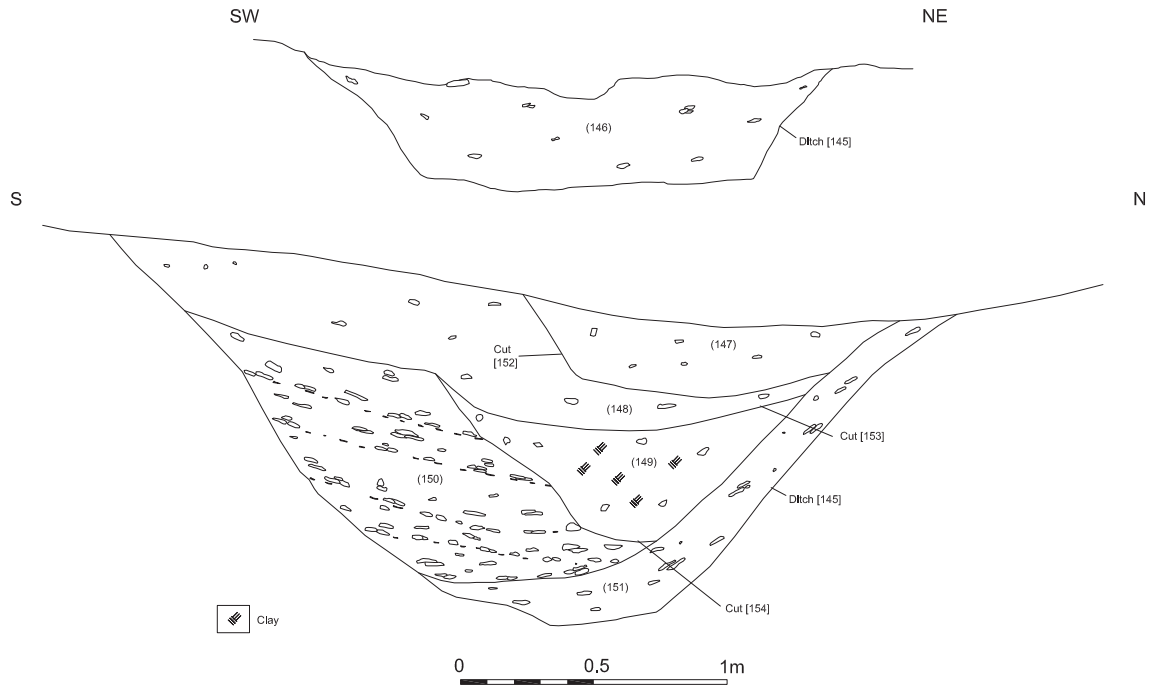


Fig 17 Sections through ditch [145].

(Fig 4). The terminal was linked by a short ditch [194] to the southern terminal of another large curvilinear ditch [193], which lay on a similar alignment to [145]. The sides of the ditches, [194] and [193], were stone-revetted at their junction, but not along the remainder of their length (Fig 19), as far as could be determined from limited sectioning. The geophysical survey appeared to show [145] curving to the south west and continuing to the

edge of the surveyed area (Fig 2); no evidence of this continuation was revealed during the excavation although the area was cleaned and checked several times.

Ditch [145] contained a residual sherd of Early Iron Age pottery (**P8**; Fig 27) and the shoulder of a South Western Decorated jar (**P15**; Fig 27) of a form which could date from the second or first centuries BC (Quinnell, below). If so, ditch [145]

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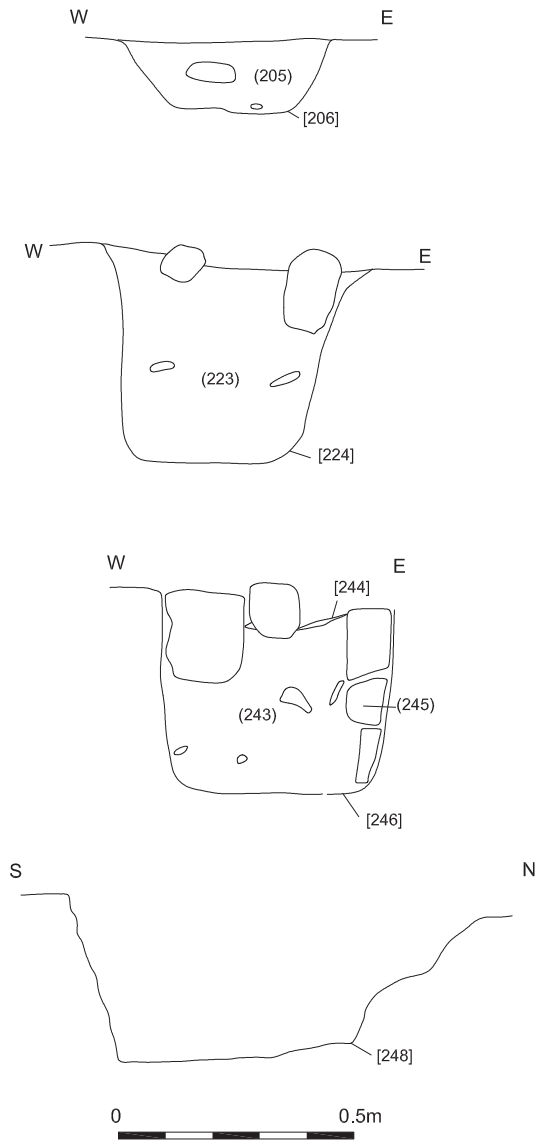


Fig 18 Sections through postholes [206], [224], [246]; profile through [248].

may have been in use at the same time as ditch [15] at the southern end of the site (below).

#### Enclosure [402] and ditches [193], [371] and [393]

The curving ditch [193] lay roughly east – west, continuing the alignment of ditch [145]. It was 86m

long and 2.5m wide and either formed the northern side of a second large enclosure [402] or an extension of [401] (Figs 4, 29). By contrast with ditch [145] there were no postholes on its inner edge. The ditch was generally up to 0.9m deep and flat-bottomed (Fig 20), but at its western end it became deeper (up to 1.7m). Here it curved abruptly, continuing as ditch [393], apparently forming the south-western side of enclosure [402].

Ditch [393], which terminated in a butt-end at this sharp change of alignment in [193], may represent a continuation of enclosure [402] to the south east. Ditch [371], at right angles to these, may have been part of an additional enclosure. The ditches were stone revetted at this junction. Just outside the apex of the enclosure was a small pit or substantial posthole [190], 1.4m in diameter and 0.2m deep, containing a large quantity of charcoal fragments, and just inside it another cut feature [376], 1.2m in diameter and 0.12m deep. Two rows of stones or postholes [394] and [395] just beyond ditch [393] to the south west were planned but not excavated because of time restrictions.

Although no dating evidence was recovered from ditch [193], enclosure [402] appeared to be an accretive extension to enclosure [401] and, although post-dating the latter, probably broadly contemporary. There was no evidence for any gateway or boundary between the two enclosures and the extension process may have begun soon after completion of ditch [145].

#### Ditch [15]

Ditch [15] was a shallow linear feature 0.9m wide by 0.18m deep (Fig 21). It ran approximately parallel to and 16m south of the Early Iron Age ditches [65] and [69] (Figs 3, 29). At its eastern end a gap of about 10m divided it from the western terminal of ditch [52], which may represent the opposing element of a south-facing entrance. From this eastern terminal it could be traced for 43m upslope to the west before petering out. Ditch [15] produced a radiocarbon determination of 370-50 cal BC, 2159 ±44 BP (Wk-11937).

North of the gap between ditches [15] and [52] were stony spreads (20) and (21) overlying tree root disturbance. Layer (20) also overlay a small pit or large posthole [16]; layer (21) produced two sherds of Middle to Late Iron Age pottery and also overlay an oval pit [62].

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Fig 19 The junction of ditches [145] and [193].

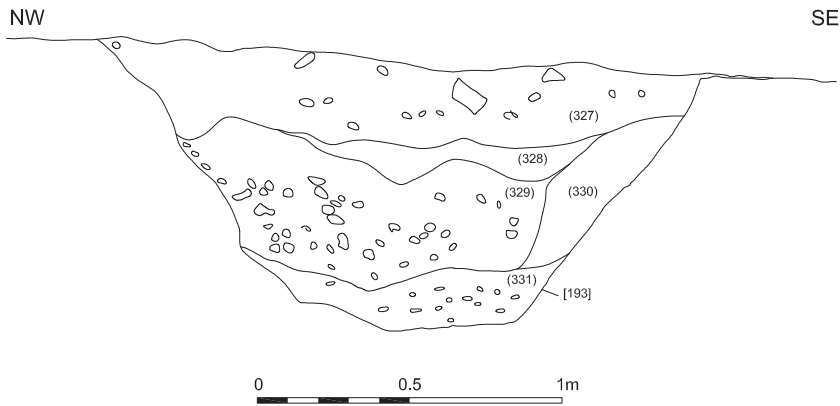


Fig 20 Section through ditch[193].

In this general area, north east of ditch [15], there were two other shallow, truncated, linear features without dating evidence, ending in terminals or fading out. These were features [60] (with pit or posthole [22] at its eastern end) and [403]. The scenario in this area seems to be a succession of

curvilinear enclosures – including that represented by ditch [10] (below) – with south-east facing entrances (Fig 3), part of a wider pattern of accretive enclosures suggested by the geophysical survey (Fig 2).

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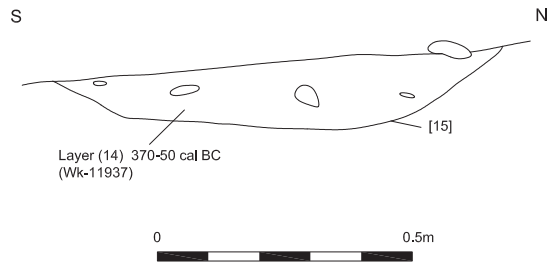


Fig 21 Section through ditch [15].

*Enclosure [400]; stony bank [95]*

South of the centre of the site was a sub-oval enclosure [400], 30m wide and more than 40m long (the western extent lay beyond the edge of the excavated area), with its long axis oriented east – west (Figs 3, 23). The enclosure was formed by a low stony bank [95], 0.7m high, apparently built in a foundation trench [83] (Fig 22). This trench cut through the Early Iron Age ditches [184] and [69], but appeared to respect the position of the possible Late Bronze Age structure [129].

Bank [95] was remarkable in that, although not detected by the geophysical survey, it survived only

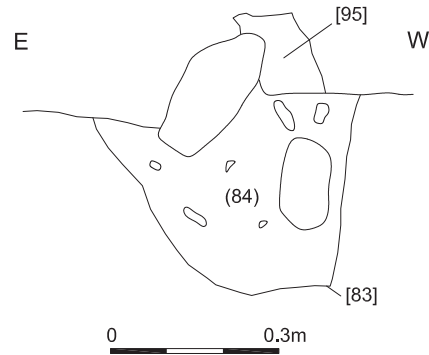


Fig 22 Section through stony bank [95] and ditch [83].

0.2m below the modern ground surface and was exceptionally well preserved in parts, the enclosure that it formed being a focus for this area of the site (Fig 23). It was built of locally-derived stone and two saddle querns had been incorporated into its structure.

On the western side of the enclosure was an entrance, where [83] culminated in a butt end. Just beyond this terminal were a substantial posthole [116] with a gap of 4m between it and a large



Fig 23 Enclosure [400], looking north west.

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orthostat [396]. South of this was a straggling stony bank [397], assumed to be a continuation of [95] (Fig 3).

There was no dating evidence from enclosure [400]. However it was stratigraphically later than the Early Iron Age features [69], [183] and [184]. It pre-dated the medieval-derived field pattern, so therefore could belong to the Middle-Late Iron Age, Romano-British or Early Medieval periods.

*Postholes [364, [366], [368], [370], [388], [390]*

At the south-east corner of the site was a group of six postholes (Fig 3). These were not excavated but a sherd of Middle Iron Age pottery was recovered from the surface of (387), the fill of posthole [388], on the last day of the excavation.

### Romano-British activity

A radiocarbon determination of 40 cal BC – 180 cal AD (93.1 per cent probability), 1925 ±41 BP [Wk-11936] from ditch [10] suggests that some activity continued at the south end of the site into the Roman period, although no contemporary ceramics can be identified. Ditch [10] was curvilinear, aligned south west – north east, with a deep profile terminating to the north east in a rounded butt end (Figs 3, 24). Ditch [10] was curvilinear, aligned south west – north east, with a deep profile terminating to the north east in a rounded butt end (Figs 3, 24). At its east end was a gap of about 8m and then the rounded south-west terminal of ditch [48], which may represent the opposing side of an east-facing entrance. A large clay-lined posthole

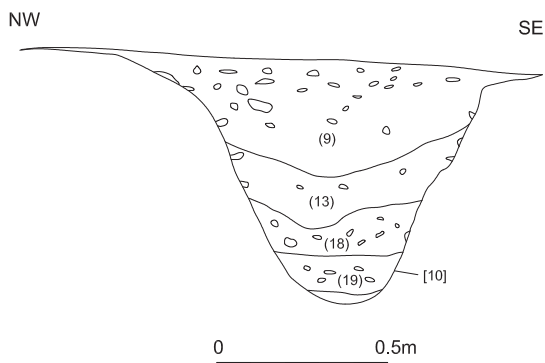


Fig 24 Section through ditch [10].

[347] adjacent to the terminal of [48] may indicate the position of a gatepost.

Ditches [10] and [48] possibly re-defined the lines of earlier ditches [404] and [54] respectively; these were shallow, possibly truncated ditches, and again could represent opposing terminals of a south-east facing entrance 5m wide. Posthole [50] lay 0.8m west of [54].

### Undated features

There were a number of features which, although probably of prehistoric date, did not produce or were not stratigraphically linked to datable features and therefore must remain floating in the overall interpretative framework. These include a group of six postholes – [350], [352], [354], [356], [358], [360] – located south of early Iron Age pit [345], which do not form a readily identifiable structure, a possible north east – south west alignment of small pits or postholes [399], [136] and [386] across the centre of the site and two small pits [200] and [383] lying to the north of enclosure [400] (Fig 3).

### Medieval activity

The existing field pattern on and adjacent to the site was predominantly medieval in origin, associated with the settlement of Trenowah, first recorded in 1296 as *Trenewyth* (Gover 1948). The place-name is derived from the Cornish elements *tre-*, a farm estate, and *nowyth*, new (Padel 1985, 172–3, 223–32).

The layout of the fields, sub-rectilinear with sinuous field boundaries, had remained relatively unaltered since the 1840 tithe survey for the parish of St Austell. Three field boundaries – hedges 1, 2 and 3 (Figs 3 and 4) – removed during machining were recorded photographically and their cross-sections drawn. The field boundaries in the area were typically stone-faced earth banks.

### Post-medieval mining activity

To the east of the excavated area was the site of Trenoweth mine, to the north east that of Boscoppa mine and south of Trenowah Road lay the site of Wheal Eliza Consols. Other mines and areas of mining activity lay along and in the vicinity of the road corridor. Within the area of excavation were numerous infilled prospecting pits and



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shafts, identifiable by their sharply defined edges and rubble fills. These were surveyed but not excavated. Of particular note was a large sub-rectangular mound [138] of clay and shillet 42m long by 9.7m wide and 0.74m high (Fig 4). It was revetted on its north, west and east sides with drystone walling [137]. A stone-lined air shaft [167] 0.35m square was located near the centre of the site, south west of enclosure [400] (Fig 3). The shaft was 1.9m deep, below which it appeared to open out, possibly into the roof of an adit.

## The finds

### Metalwork

#### *Iron object*

##### *Sarnia Butcher*

An incomplete iron object (Fig 25) was recovered from fill (88) in ditch [69]. It consists of two rods of rectangular section (approximately 4mm by 2mm), with an overall length of approximately 100mm to the re-curved end of the bar. They are connected at one end by a most unusual mechanism: one rod (A) is slotted through an expanded disc on the other (B), and is itself expanded and bent so that the tips of both just meet.

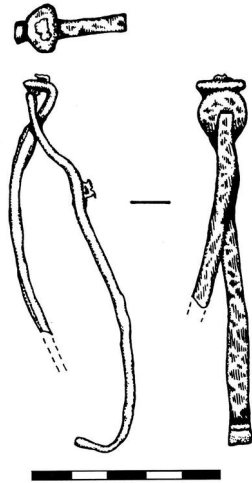


Fig 25 The iron object, possibly a brooch or clasp, recovered from fill (88) in ditch [69]. Scale in 1 cm intervals. (Drawing: Carl Thorpe.)

Both rods are broken at the other end but A, the longer, is arched and then curved downwards towards B. It seems probable that originally they formed one continuous loop and Carl Thorpe suggests that if this was squeezed it would separate the hinged ends. The clip thus formed would not be very strong: the ends are curved in outline and only a small area would meet. It might, however, be sufficient to grip cloth and thus be an unorthodox form of brooch, perhaps a local development, unless anything similar can be located elsewhere.

Ditch [69] was dated by pottery and radiocarbon determination to the Early Iron Age, 770–400 cal BC, 2460±49 BP (Wk-11940).

#### *Iron rivet*

##### *Henrietta Quinnell*

A rivet from (310), fill of ditch [145], extremely corroded, with a rectangular shaft 4mm × 6mm across surviving 15mm in length, with the head slightly expanded through hammering. Immediately below the head the rivet passes through a scrap of plate 20mm across and 2mm thick, which may be the remnant of an artefact. Nails were uncommon in the Iron Age and not generally used for carpentry but do occur, for example, very occasionally throughout the sequence at Danebury hillfort in Hampshire (Sellwood 1984; Cunliffe and Poole 1991, 333–54). The reports on the ironwork from Danebury include a number of illustrations of artefacts such as knife and saw blades in which rivets comparable in size to that from (310) occur. The presence of South Western Decorated in (310) indicates a Later Iron Age date for the rivet and associated artefact fragment.

### The prehistoric pottery

*Henrietta Quinnell*, with petrographic comment by Roger Taylor

The assemblage consists of 176 sherds weighing 1360g and ranges in date from the Early Neolithic to the Middle Iron Age. Fabric and form are discussed under successive period headings. Examples of gabbroic, gabbroic admixture and granitic fabric were scanned by Roger Taylor who confirmed their petrography. Terminology follows that recommended by the Prehistoric Ceramics Research Group (1997). Abrasion classification

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throughout follows the system devised by Sorenson (1996) for the study of Bronze Age midden material at Runnymede:

- Grade 1 is low abrasion. 'The sherd has fresh breaks as indicated by the 'freshness' of the colour of the core, the unaltered surface, sharp corners and edges, and by the presence of pieces of temper which constituted obvious obtrusions' (*ibid*, 67).
- Grade 2 is medium abrasion. 'Some abrasion indicated by the absence of fresh breaks and patinated core colour, but sharp corners are still present'.
- Grade 3 is high abrasion. 'High abrasion is indicated by rounded corners and edges, the outline of the sherd is rounded, and its surface may be eroded'.

Sorenson explains that the scheme provides only a generalised guide and that the processes that lead to different grades of abrasion may differ in different circumstances, but at Runnymede low abrasion is generally linked to rapid, undisturbed midden accumulation.

#### Early Neolithic (Fig 26)

**P1** from context (299) in pit [300]. Single sherd, 72g, abrasion 2. Elongated oval lug with rounded profile and slight upturn; probable rounded shape in plan view, edge damaged. Fabric with hard compact matrix and moderate rock inclusions, some of vein quartz up to 7mm. Yellowish red 5YR 5/8.

Roger Taylor has provided a detailed description of the petrography:

#### INCLUSIONS

Quartz – white and glassy clear vein quartz, large very angular fraction, up to 3–8 mm, much angular quartz sand less than 1mm;

Rock fragments – micaceous slate, silvery cleavage fragments with rounded edges, up to 2mm, many smaller fragments less than 1mm;

Limonite – soft, dark brown irregular sub-rounded grains about 0.5 mm;

Hematite – one angular, brownish red grain, 2mm;

Mica – flakes of muscovite in the matrix less than 0.2mm.

#### COMMENT

The abundance of quartz sand and vein quartz could indicate a source south west towards Truro on the Gramscatho Sandstone formation. The absence of any granitic content also indicates that the sherd is not local to the site. Deliberately crushed vein quartz is a distinctive feature.

**P1** is the only Early Neolithic sherd from the site. This form of lug is not paralleled in the published assemblages from Trethellan (Woodward and Cane 1991) or Trevisker (ApSimon and Greenfield 1972), nor among the Trevisker material published by Patchett (1944; 1950). The closest parallels on Trevisker vessels appear to be those on P1 and P2 from the cairn at Chysauster (Tomalin 1996), but these, described as 'tongue lugs', have square cross-sections. Some Cornish Collared Urns have broadly similar lugs (Patchett 1944, fig 8) but in these the fabric is usually soft and poorly worked. Closer parallels, both for the type of lug and of fabric, may be found in the Early Neolithic; for example P90, P103, P124, from Carn Brea (Smith 1981). The Carn Brea Neolithic material is all gabbroic, but well-made fabrics with vein quartz inclusions are now being recognized from Early Neolithic contexts in Cornwall and Devon (Quinnell 2002–3). These occur at Helman Tor, fabric C and include a lug P25 similar to **P1** (Smith 1997, fig 8). The published description of fabric C is misleading as examination of the assemblage shows the presence of white vein quartz rather than quartzite. The Helman Tor assemblage has several similar lugs in gabbroic and ferruginous fabrics, for example P11, P26 and P36. The range of fabrics present at Helman Tor illustrates the wide variety in use in Early Neolithic Cornwall (Quinnell 2002–3).

The presence of Early Neolithic activity on the site is supported by the radiocarbon determination 3130–2920 cal BC (65.3 per cent probability), 4429 ±41 BP (Wk-11935) from (38) in pit [40] at the other end of the site and by the broad character of the lithic assemblage (Lawson-Jones, below). While the radiocarbon determination Wk-11935 cannot be linked directly to **P1** and pit [300] it falls within the later range of those associated with Early Neolithic ceramics at Helman Tor (Mercer 1997, 21).

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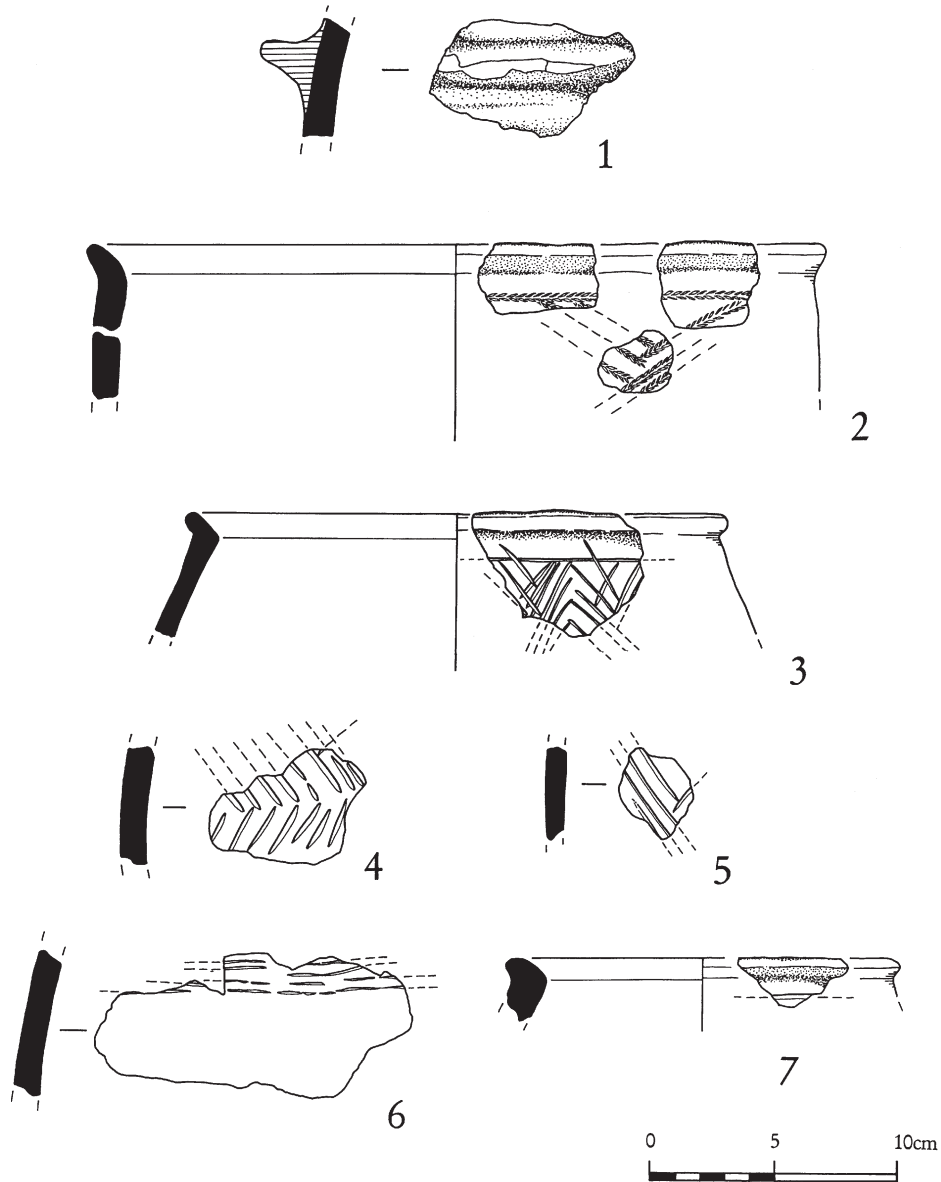


Fig 26 Early Neolithic pottery: **P1** from (299). Middle Bronze Age Trevisker pottery: **P2-7** from (177) / (178) in hollow [392]. (Drawings: Carl Thorpe.)

*Middle Bronze Age Trevisker assemblage from hollow (392) (Fig 26)*

The assemblage consists of 102 sherds, weighing 642g, in gabbroic admixture fabric. Gabbroic admixture fabric has a gabbroic matrix with added fragments of other rock. These fragments vary in

frequency from common to abundant with a modal size of between 2mm and 4mm. Each of the six vessels distinguished, **P2-P7**, show Trevisker characteristics in form and decoration and had slight but distinctive differences in inclusions. The scan by Roger Taylor confirmed the fabric as

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**Table 1** Details of Middle Bronze Age Trevisker ceramic assemblage: all gabbroic admixture

Context	Sherds		
	Number	Weight	Abrasion
(191) in pit [192]	2	16g	2/3
(332) layer in base of hollow [392]	34	92g	2/3
(177) / (178) infill of hollow [392]	<b>P2</b> 6	87g	1/2
	<b>P3</b> 2	50g	1/2
	<b>P4</b> 1	37g	2
	<b>P5</b> 3	23g	2
	<b>P6</b> 4	98g	2
	<b>P7</b> 4	45g	2
	46	194g	2
Total for (177)/ (178) 66	534g		
<b>Totals</b>	<b>102</b>	<b>642g</b>	

gabbroic admixture but with some variation in matrix and inclusions. The fabric is generally soft and colour varies from dark reddish grey 5YR 4/2 to yellowish red 5YR /6, sometimes on the same vessel. The use of gabbroic admixture is usual in Trevisker assemblages (Parker Pearson 1990, 19).

There is a marked difference between the sherds in (332), on the base of the hollow, and those in contexts (177) and (178), the upper fills. The former average 2.1g in weight and are very abraded, the latter average 8g and are much less abraded. Presumably the difference relates to trampling on (332), while comparatively fresh material was brought in for the infill.

Five of the vessels represented in the infill – **P3–7** – have incised decoration and had been little worn before breakage; one (**P2**) had cord-impressed decoration and was very worn, although freshly broken. Early studies of Trevisker material (Patchett 1944; ApSimon and Greenfield 1972) suggested that there might be chronological distinctions in decorative methods, with incision generally later than cord impression. Parker Pearson (1990; 1995) has approached classification of the pottery on a functional basis, defining ‘styles’ of different sizes which appear appropriate for different functions such as storage, cooking and eating and drinking; he also demonstrated some links between decorative method and vessel style. Woodward and Cane (1991, table 2) have provided a useful correlation of the various classifications for Trevisker material. Parker Pearson’s style 1, large storage vessels with impressed cord decoration, is

represented by **P2**; **P3–P7** belong to style 3/4, small cooking, storage or eating vessels with incised decoration. The two radiocarbon determinations, 1460-1260 cal BC (93.3 per cent probability), 3112 ± 42 BP (Wk-11930) from (177) and 1530-1300 cal BC, 3155 ± 50 BP (Wk-11932) from pit fill (192), place **P2–P7** in the fifteenth or fourteenth centuries cal BC. These may be compared with the rather broader spread, from many more determinations, of 1500-1200 cal BC for Trethellan (Nowakowski 1991, 102); none of the Trenowah vessels would be out of place in the Trethellan assemblage.

At present it is difficult to determine chronological trends in Trevisker material, and the Trenowah assemblage is too small to assist; the problems with typology and chronology are succinctly summarized by Woodward and Cane (1991, 123). However, one feature merits further examination, the exceptionally worn state of **P2**, the only style 1 vessel with plaited-cord decoration present. This may, of course, be a matter of chance. However, at two sites vessels of this kind appear to have been curated. At Callestick, Perranzabuloe, sherds of style 1 P5 were both inserted in a structure built around the tenth century BC and probably used for religious activities and incorporated in its deliberate infill two or three centuries later (Quinnell 1998–9). At Penhale Moor, Indian Queens, cord-impressed sherds were noted as being more worn than those with other decoration (Quinnell in Nowakowski 1998, II, 210); this site, yet to be published, appears to have fulfilled a domestic function. It may well be that large decorated style 1 storage vessels, the production of which needed considerable skill, were especially valued and, in some cases, retained because of this value some considerable time after breakage.

#### DESCRIPTION OF VESSELS ILLUSTRATED (Fig 26.2–7)

**P2** (from (177) / (178) in hollow [392] infill). Sherds from large vessel, rim with internal bevel and external expansion. Impressed decoration of ‘plaited cord’ type in which the twist of two closely set cords goes in opposite directions. A pattern of opposed diagonal lines has a horizontal border surviving at the top; this form of bordered decoration is one of the most common on Trevisker assemblages (Woodward and Cane 1991; Quinnell forthcoming a). The size of the vessel, with an internal rim diameter of approximately 260mm,

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indicates Parker Pearson's (1990) style 1, for storage. The vessel had been very much worn before breakage.

**P3** (from (177)/(178) in hollow [392] infill) Rim with internal bevel and external expansion. Decorated with narrow, sharp incisions forming a similar design to the impressions on **P2**. Frequent parallels at Trethellan (Woodward and Cane 1991) and Trevisker (ApSimon and Greenfield 1972). Parker Pearson style 3/4, small storage or cooking vessels. Little wear before breakage.

**P4** (from (177)/(178) in hollow [392] infill) Girth sherd with incised herringbone pattern. Probably from a style 3/4 vessel. A little wear before breakage.

**P5** (from (177)/(178) in hollow [392] infill) Body sherds (only one illustrated) with deep incisions forming pattern as on **P3**; probably from a style 3/4 vessel. A little wear before breakage.

**P6** (from (177)/(178) in hollow [392] infill) Girth sherds from, on size, a style 3/4 vessel, with sharply incised horizontal lines. Compare no 23 from Trethellan (Woodward and Cane 1991, fig 44). Vessel appears to have been little worn before breakage but one sherd, out of the four present, had subsequently become very eroded.

**P7** (from (177)/(178) in hollow [392] infill) Rim with internal bevel and external expansion; a single incised line beneath. A further sherd, from the girth, with a horizontal incised line, appears on fabric to come from this vessel. Small version of style 3/4. Wear before breakage difficult to assess.

#### *Late Bronze Age structure [129]*

All sherds are gabbroic but are small and abraded. There are no formal or decorative features and the fabric has no distinctive characteristics. Radiocarbon determination 980-800 cal BC, 2722 ±44 BP (Wk-11933) from (108) is appropriate for a date in the Late Bronze Age.

#### *Early Iron Age*

A total of 41 sherds weighing 554g are gabbroic and a single sherd, **P8**, weighing 8g is of a sparsely quartz-tempered fabric discussed below. Of the

**Table 2** Details of pottery from structure [129]

Context	Sherds		
	Number	Weight	Abrasion
(104) in posthole [105]	3	10g	3
(108) in posthole [107]	3	5g	3
<b>Total</b>	6	15g	

gabbroic sherds, 30, weighing 346g, have been classified as 'gabbroic' and a further 11 sherds, 208g, are 'well-made gabbroic'. 'Well-made gabbroic' has a compact matrix, inclusions usually of small size and a good burnish on the exterior surface. It was widely used for South Western Decorated ware of the Middle Iron Age and Cordoned Ware of the Late Iron Age and has only otherwise been noted at Trevelgue for later Early Iron Age forms (Quinnell forthcoming b). 'Gabbroic' fabric generally has a more open matrix with a wider range of sizes for inclusions than the 'well made' fabric, and is more poorly finished, never being burnished.

**P13**, from ditch [163], and **P14**, a second similar vessel from ditch [65] are of a distinctive Cornish type, with carinated shoulder, concave neck and simple rounded rim with a diameter usually, but not always, narrower than the girth. These jars occur at Carn Euny where they were classified as 'Po. 2' and ascribed to early contexts (Elsdon 1978, 400); occupation at Carn Euny definitely started in the fifth century and could be earlier. Vessels of **P13**/Po.2 type occur at other sites such as Halligye (Elsdon and Quinnell forthcoming) and the Rumps (Brooks 1974) at which, as at Carn Euny, they are succeeded by South Western Decorated ware. At Trevelgue (Quinnell forthcoming b) jars of **P13**/Po.2 have been classed as JB2.4, following an extension of the Danebury classification for Iron Age ceramics (Cunliffe 1984) to Cornwall, and arguments are put forward to group JB2.4 jars as part of a distinctive 'Plain Jar Group' (PJG) ceramic phase in the later Early Iron Age immediately preceding the introduction of Middle Iron Age South Western Decorated Ware. At Boden Vean (Quinnell forthcoming c) a range of JB2.4 and other Plain Jar Group forms come from contexts with radiocarbon determinations, for which statistical modeling indicates dating within the fourth century BC. Consideration of the radiocarbon determinations from both Trevelgue and Boden has allowed the suggestion that the Plain

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**Table 3** Early and Middle Iron Age ceramics by fabric presented in probable chronological order:  
s = sherds, g = weight, abr = abrasion

Context	Well-made gabbro			Gabbro			Other			Comment
	s	g	abr	s	g	abr	s	g	abr	
<b>Early Iron Age</b>										
(315) in ditch [145], enclosure [401]							1	8	2/3	<b>P8</b> sparse quartz, residual
(346) in pit [345]	2	12	2	16	138	2				<b>P9</b> well made; gabbroic; includes base angle
(349) in pit [345]	2	37	2							includes neck angle as <b>P14</b>
(297) in pit [298]	2	39	2	1	43	2				<b>P10</b> well made; <b>P11</b> gabbroic
(125) in ditch [122]	1	28	2							<b>P12</b>
(118) in ditch [163], in entrance to enclosure [400]	3	81	1/2	5	110	1/2				<b>P13</b> gabbroic
(103) in ditch [65]				1	1	1/2				rim tip
(92) in ditch [65]				4	37	1/2				<b>P14</b> ; other sherds from similar vessel
(66) in ditch [69]				2	16	1/2				rim tip with tooled line
(132) in top of ditch [69]	1	11	1/2	1	1	1/2				
<b>Middle Iron Age</b>										
(310) in ditch [145], enclosure [401]	17	42	1				1	8	2/3	<b>P15</b> well made; one granitic sherd
(317) in ditch [145], enclosure [401]				3	6	2/3	1	3	2/3	one granitic sherd
(21) stony spread between terminals [46], [48] on line of ditch [15]	1	3	2	1	3	3				
(387) in posthole [388], extreme south of site				1	4	1				
<b>Totals</b>	29	253		35	359		3	19		2s, 11g granitic, 1s, 8g sparse quartz

Jar Group belongs principally to the sixth to fourth centuries BC.

**P13** and **P14** come from contexts connected with the suggested coaxial ditched field system (see below). Ditch [69] from that system produced a determination of 770-400 cal BC, 2460 ± 49 BP (Wk-11940), and ditch [184] produced a determination of 600-390 cal BC (75.3 per cent probability), 2405 ± 43 BP (Wk-11938). These determinations belong somewhere in the eighth to fifth centuries BC, allowing the possibility that vessels of the **P13** JB2.4 type may have a longer date range than suggested as a result of work at Trevelgue and Boden. A currency of several centuries would explain the comparative frequency of this form among Early Iron Age assemblages in Cornwall.

Pit [345] with **P9**, possibly a decorated version of a JB2.4 vessel, has a radiocarbon determination

of 800-520 cal BC, 2529 ± 41 BP (Wk-11934). Pit [298] was regarded by the excavator as sufficiently similar to [345] to be grouped as contemporary with it. Pit [298] produced **P10** which is so far unique in Cornwall or indeed in Devon. However, **P10** would readily find parallels among the furrowed bowls of Early Iron Age Wessex. These are grouped by Cunliffe (1991, 64-66, figs A:2, A:6) as Earlier and Later All Cannings. A more recent study, based on the excavation of Houghton Down, Stockbridge, assigns these bowls to the Earliest Iron Age of Wessex with a date range of c 800-470 BC (Cunliffe and Poole 2000, 17; also Brown 2000, fig 6.34). Wessex furrowed bowls therefore are currently assigned a date range comparable to the dates for **P13** type jars at Trenowah and to the determination from pit [345].

There has been no indication previously that furrowed bowls occurred in Cornwall but the range

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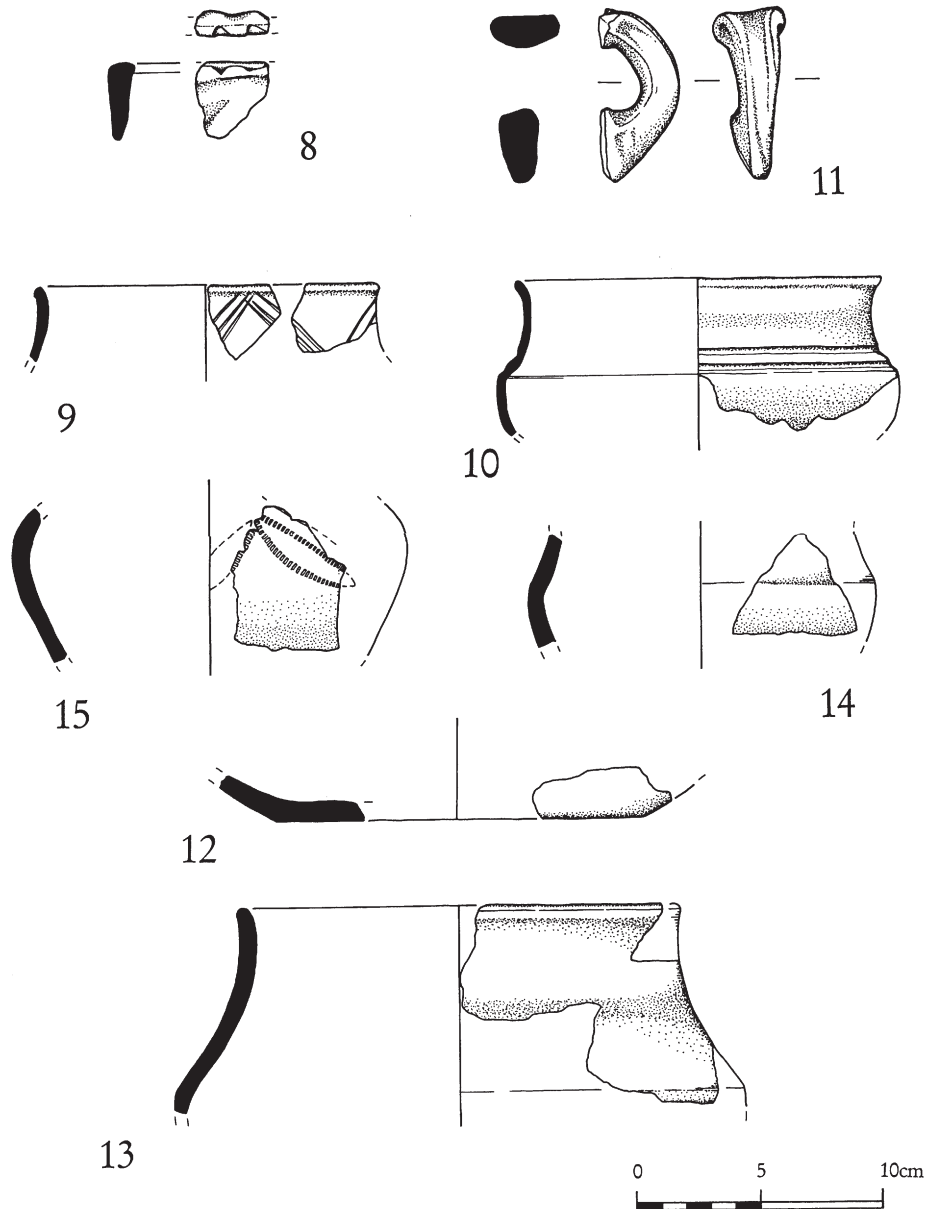


Fig 27 Early Iron Age pottery: **P8** residual in (315)[145], **P9** (346)[345], **P10** (297)[298], **P11** (297)[298], **P12** (125)[122], **P13** (118)[163], **P14** (92)[65]. Middle Iron Age **P15** (310)[145]. (Drawings: Carl Thorpe.)

of published Early Iron Age forms is very small (Quinnell 1986, 112) and it is unlikely that all forms present have been recognised. In fact, fig 22, no 2, in granitic fabric from Maen Castle appears remarkably like a small piece of a thicker bowl of

this shape (Patchett 1954–5). Recently an Early Iron Age sherd of Glauconitic sandy ware from Wiltshire has been identified from St Michael's Mount (Quinnell 2000, 42), another link with Wessex which was completely unexpected. It is fortunate

that such a substantial part of **P10** survived. Smaller sherds of similar vessels may easily have escaped identification. **P10** demonstrates both a very high standard of potting in gabbroic fabric during the Early Iron Age and the copying of artefacts brought in from elsewhere. Furrowed bowls themselves are considered to be copies of Late Bronze Age sheet metal bowls such as the Welby Bowl (Cunliffe 1991, 65); **P10** may therefore be either a direct copy of such a bowl or a copy of a ceramic copy. **P10** is of very high quality and therefore appropriate for some special form of deposition. The sherd appears to have had some wear after breakage and was possibly curated before deposition. This would provide some equivalence in behaviour to the deposition of stone artefacts in presumptively contemporary pit [345].

On initial examination **P10** was considered to be a variant of Late Iron Age Cordoned ware. There are no close similarities between it and Cordoned ware vessels but there was considerable experimentation with forms in this style (Quinnell 2004) and the outside possibility remains, given no direct dating for pit [298], that the vessel is in fact a Cordoned ware variant. However the general appearance of the fabric differs from that of Cordoned ware and is generally similar to, although thinner than, other Iron Age vessels from the site.

Overall, the small Early Iron Age assemblage from Trenowah is of great value because, occurring in contexts undisturbed by later activity, it provides a range of vessels including a previously unknown form with limited but consistent dating, a salutary reminder of just how little is known about Cornish ceramics of this period.

#### DESCRIPTION OF ILLUSTRATED VESSELS (Fig 27.8–14)

**P8** residual in (315), fill of ditch [145]. Abraded flat-topped rim from large vessel, with slight internal expansion, fingernail impressions on rim top. Reduced very dark grey 5YR 3/1, fabric non-gabbroic with no obvious inclusions. Roger Taylor comments that there are 'very sparse angular quartz grains less than 1mm, some limonite grains but the sherd is essentially without temper'.

This form of rim, usually from large shouldered jars, occurs across Southern Britain in contexts which are sixth century BC or rather earlier, for example at Danebury (Brown 1991). No example of a similar rim has been published from Cornwall; in Devon it is present in the assemblage associated

with an Early Iron Age hut circle at Dainton (Willis and Rogers 1951, fig 6)..

**P9** (346) in pit [345]. Rim of vessel with concave neck, well-made gabbro. Reddish brown 5YR 5/3. Good burnish survives on parts of both surfaces but rim very worn. Decoration of groups of lightly incised lines. Possibly from a decorated version of JB2.4. Closest comparandum no 7, fig 9 from Bodrifty (Dudley 1956).

**P10** (297) in pit [298]. Carinated bowl in thin, well-made gabbro, but not apparently wheel-made. Two deeply incised grooves above carination. Generally reddish yellow 5YR 6/4 but originally had surface burnish which shows traces of dark grey or black, possibly the result of an applied coating. Much worn before breakage. No close parallels known from Cornwall or south-west Britain (see above).

**P11** (297) in pit [298]. Vertical handle, gabbroic, broad at top with slight central groove and narrowing toward base. Yellowish red 5YR 5/6. Surface originally smoothed, possibly burnished, and may, as **P10**, have had some form of dark coating. Handles do not otherwise occur in Cornwall before an early, 'Formative', phase of South Western Decorated Ware (Quinnell forthcoming b; Elsdon and Quinnell forthcoming).

**P12** (125) in ditch [122]. Base, well made gabbro; burnish on both surfaces suggests this comes from an open form of bowl or platter. Light reddish brown 5YR 6/4.

**P13** (118) in ditch [163]. Jar with simple rounded rim, convex neck and slightly carinated shoulder. Gabbroic, surface smoothed, generally dark reddish grey 5YR 4/2.

**P14** (920) in ditch [65]. Neck and shoulder of JB2.4 jar similar to **P13**, in fabric, form and finish. Another similar vessel is represented by sherds from this context.

#### *Middle Iron Age*

Eighteen sherds weighing 45g are well made gabbroic, five gabbroic, 13g. There are two of granitic fabric weighing 11g, which are likely to source to the St Austell granite. These small sherds are very abraded and could be residual in ditch [145]. Generally in the Middle Iron Age gabbroic fabrics become predominant with the establishment



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of the South Western Decorated style, a predominance which has been reinforced by work done since its initial recognition in the 1970s and 80s (Quinnell 1986, 114). However some assemblages, notably that at Trevelgue (Quinnell forthcoming b), have a proportion of South Western Decorated Wares in granitic fabrics.

The only distinctive piece is **P15**, South Western Decorated Ware with a broad range from third to first centuries BC (Quinnell forthcoming b). Sharply shouldered jars with rouletted decoration such as **P15** have been generally argued to be early (Elsdon 1978, 403). This early date is based on misapprehension, based on very limited data, of the unpublished stratigraphic sequence at Trevelgue by Michael Avery (Quinnell 2003), supported by the situation at Castle Dore at which two vessels generally similar to **P15** were the only distinctive ceramics underlying the earthworks (Radford 1951). Examination of the Trevelgue stratigraphy demonstrates that rouletted forms may not be the earliest in the South Western Decorated repertoire, but were used in conjunction with other styles throughout the later period of its currency, a situation supported by the data from Halligye (Elsdon and Quinnell forthcoming) and consistent with the occurrence of rouletted material at Carn Euny itself in association with a radiocarbon determination of 160 cal BC – AD 350 cal (HAR-335; Christie 1978, 430). **P15** may well be second or first century cal BC. If so, ditch [145] of enclosure [401] may have been in use at the same time as ditch [15] at the other end of the site, which yielded a determination of 370-50 cal BC, 2159 ± 44 BP (Wk-11937).

Generally the quantity of pottery on Middle Iron Age sites in Cornwall is greater than on those of the earlier part of the period. However, the small portions of features for which resources allowed excavation, and uncertainties about the character of activities on the site, make it impossible to usefully apply this observation to the situation at Trenowah. The same applies to the lack of Late Iron Age Cordoned wares and of Romano-Cornish material, which generally see the trend of increased ceramic use and discard continue. The determination of 40 cal BC – AD 180 cal (93.1 per cent probability), 1925 ± 41 BP (Wk-11936), from ditch [10] suggests that some activity continued on the south end of the site into the Roman period but no contemporary ceramics can be identified.

ILLUSTRATED SHERD (Fig 27.15)

**P15** (310) in ditch [145]. Shoulder of South Western Decorated jar, well made gabbroic fabric but smoothed rather than burnished. Reduced dark grey 5YR 4/1. Sharply angled shoulder decorated with rouletted leaf pattern; an incised line also present.

### Stone artefacts

*Henrietta Quinnell*, with comment on petrography and wear by *Roger Taylor*

The majority of stone retrieved during the excavation proved to be unworked pieces which would have been present on site. The location, just off the edge of the St Austell granite, ensured a mix of weathered granite fragments, quartz eroded from veins and fractured along lines of weakness, and pieces of limonite (gossan) weathered from the surface of mineral lodes in the soil and subsoil over the Meadfoot Beds. Details of identifications are recorded in the archive report (Johns 2000, 35–40). The weathered state of many of the rocks, especially those of granite, and traces of ferruginous staining had caused many pieces to be recorded as burnt and sometimes worn. In fact, only three pieces, two from pit [345] and one unstratified, have been burnt.

All stone brought on to the site had some intended use and may thus be classified as artefacts (Table 4). This included pebbles and cobbles, most from local streams but some from the coast around St Austell Bay. Hard granite used for cereal processing was either selected from the surface of the granite outcrop to the north or brought in from stream or beach; weathered granite available on site would have been too soft. Only short distances of 1–2 km were involved but care and effort was obviously expended to ensure appropriate materials for tasks involving stone. For example, the number of hard fine-grained quartz tourmaline stream cobbles present suggests that this material was being deliberately selected for its combination of hardness and texture while the work of transporting the 55 kg gabbro beach boulder **S2** for use as a saddle quern must have been considerable.

The range of stone tools is limited to saddle querns, mullers (which were used with saddle querns) and rubbing stones. The latter vary in size but have wear traces likely to derive from working soft materials such as cloth or leather

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(these are sometimes described as lapstones or slickstones). Cassiterite was a valuable resource. White beach pebbles, on the other hand, have no obvious function but are sufficiently frequent to suggest that they have been collected to serve some purpose. Overall, the limited range of stone tools is likely to relate to the function of the site as a field and enclosure system, on which crop processing and other craft activities sometimes took place, rather than a domestic settlement. The striking feature is the duration of this limited activity from the Middle Bronze Age until the early Roman period.

One feature which recurs from Middle Bronze Age to Middle Iron Age contexts is the deliberate breakage of artefacts. Those thus recorded have impact fractures but it is quite possible that objects could also have been broken in ways which left no detectable trace and thus be poorly represented in the archaeological record. Deliberate breakage of stone artefacts has rarely been recorded for Cornwall, probably because skilled geological examination with this possibility in mind has rarely

taken place. Several mullers such as no 95 from the Late Bronze Age structure at Callestick appear to have been deliberately broken (Quinnell and Taylor 1998–9), while a saddle quern (F501) appears to have been purposefully smashed before burial in the levelling of Middle Bronze Age house 648 at Trethellan (Nowakowski 1991, 145). The infill of the Callestick structure and the Trethellan house both display complexities of deposition which are presumed to relate to the formal ending of activity in these buildings. It seems reasonable to interpret the burial of deliberately broken artefacts as relating to significant events in the use of the site. Those in Middle Bronze Age hollow [392], the various ditches and postholes in the entrance area to enclosure [400] and the postholes within enclosure [401] could all relate to termination of use of these particular features. The two broken rubbing stones in pit [345], however, belong to a large collection of stonework buried in a pit of unknown function, the burial of which could relate to some significant episode in the development of the site (Fig 11 and colour plate 2).

**Table 4** Details of stone artefacts.

frags = fragments, ph = posthole, pt = part of, sm = smashed/deliberate breakage, bt = burnt

<i>Context</i>	<i>Artefacts with use-wear</i>	<i>Artefacts, no wear traces</i>
(335) fill of ph [334] in MBA hollow [392] (177)/(178) infill MBA hollow [392]	<b>S1</b> muller, granite, pt Muller, river cobble, Meadfoot Beds siliceous gritstone from contact zone, hard, slight use as muller, pt, sm Rubbing stone, river cobble, hornfels from contact zone, soft, broken before slight use as ? rubbing stone	
(341) fill of MBA pit [340]		White quartz beach pebble Cassiterite pebble, sm 34g 4 cassiterite pebbles, 392g River cobble, hornfels sediment, too friable for use, pt
(339) fill of MBA pit [338] (104) in ph [105]; LBA structure [129]		2 white quartz beach pebbles Chert beach pebble, pt, bt <b>S5</b> schorl rock beach boulder Unused fine-grained quartz tourmaline stream cobble Altered granite stream cobble 2 quartz tourmaline stream cobbles, pts Altered elvan cobble, pt, bt Quartz tourmaline pebble
(346) in EIA pit [345]	<b>S2</b> double-sided saddle quern, later percussive use, gabbro beach boulder <b>S3</b> saddle quern, granite, pt Rubbing stone, fine-grained quartz tourmaline stream cobble, pt Rubbing stone, fine-grained quartz tourmaline stream cobble, sm <b>S4</b> rubbing stone, fine-grained quartz tourmaline stream cobble, sm, Rubbing stone, hard metamorphosed volcanic ash beach cobble	
(125) in ditch [122], EIA co-axial fields	<b>S6</b> muller reusing saddle quern frag, greisen cobble, pt <b>S7</b> rubbing stone, sandstone beach pebble Muller, fine-grained granite cobble, 2 frags, sm	Siliceous hornfels beach pebble Friable quartz tourmaline cobble, pt Gabbroic greenstone beach cobble, pt

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Table 4 continued

<i>Context</i>	<i>Artefacts with use-wear</i>	<i>Artefacts, no wear traces</i>
(123) in ditch [122], EIA co-axial fields [95] stony bank; MIA enclosure, [400], possibly redeposited	<b>S8</b> double-side saddle quern with subsequent percussive use, fine-grained granite, pt <b>S9</b> saddle quern with subsequent percussive use, fine-grained granite, pt	Exotic quartzite beach pebble Soft quartz tourmaline cobble, pt
(117) in [163], EIA co-axial fields	<b>S10</b> double-side saddle quern, granite, pt, sm <b>S11</b> rubbing stone, white quartz beach pebble	Elvan beach pebble
(118) fill of ditch [163], EIA co-axial fields (162) in ditch [121], turn of ditch [163], EIA co-axial fields	Rubbing stone, quartzite beach pebble Rubbing stone, fine-grained tourmalinized granite cobble, slight use, pt <b>S12</b> block with some percussive use, coarse granite, pt	
ditch [65], EIA co-axial fields (120) in ditch [65], EIA	<b>S13</b> saddle quern, granite, pt, sm <b>S14</b> muller, fine-grained tourmalinized granite cobble	
[181] = ditch [65], EIA co-axial fields co-axial fields	<b>S15</b> saddle quern, granite, pt	
(88) in ditch [69], EIA co-axial fields (132) in [130] = ditch [69], EIA coaxial fields	Muller, fine-grained granite cobble, pt	Flint beach pebble
(205) in posthole [206] in MIA enclosure [401] (247) in posthole [248] in MIA enclosure [401]	<b>S16</b> muller, quartz tourmaline cobble, pt, sm <b>S17</b> double-sided saddle quern, granite grounder, pt, sm	
(223) in posthole [224] in MIA enclosure [401]	<b>S18</b> muller, fine-grained granite beach cobble, pt, sm	
(140) in posthole [141], entrance MIA enclosure [400] [21] MIA stone surface (9) fill of RB ditch [10] (17) fill of pit [16], date uncertain [46] ? RB ditch (63) in pit [62], date uncertain (71) fill of ditch [70], Unstratified	Rubbing stone, dolerite/greenstone beach cobble, slight use, pt, sm  <b>S19</b> rubbing stone, granite cobble White quartz beach pebble  Rubbing stone, exotic quartzite beach pebble, pt Muller, elvan cobble, pt, sm <b>S20</b> saddle quern, fine-grained granite, pt <b>S21</b> double-sided saddle quern, fine-grained granite, pt, sm	White quartz beach pebble  White quartz beach pebble White quartz beach pebble White quartz beach pebble Greisen cobble, pt

*Saddle querns*

All the saddle querns present belong to contexts which are definitely or probably Early Iron Age; this includes **S8** and **S9** which may be re-deposited in Middle Iron Age stony bank [95]. Detailed comparanda are few because saddle querns had a long currency and very few sites can be demonstrated to have had only Early Iron Age occupation. At Trenowah two querns **S13** and **S17** show traces of dressing around their perimeters, a common feature from the Middle Bronze Age onwards. More unusual are four querns or quern fragments which have surface dressing. These are **S2** from pit [345], **S8** and **S9** from bank [95] and

unstratified **S21**, all double sided except **S9**. All show facets of having been surface dressed by grinding around the hollows subsequently formed by saddle quern abrasion. This surface dressing appears not to have been noted before. This may be because no secure group of querns of this date from the area has been published. In the long phase of saddle quern use in Cornwall, from at least the Middle Bronze Age until the Roman period, blocks appear to have been selected on account of surfaces which were suitable for grinding without dressing, although grinding could remove traces of dressing completely. The only reason for surface dressing would appear to be to provide some improvement in the grinding process

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These five querns, and no others, show traces of subsequent percussive activity, pounding with a hard rock (none of which were identified). In some cases, notably the boulder quern **S2** from pit [345], this percussive activity has resulted in distinct hollows but with additional pitting beyond their edges (colour plate 2). On the double-sided querns, except **S21**, percussive pitting is found on both faces. (Traces of this percussive pitting, and no other use, were noted on **S12**.) In effect the hollows of used saddle querns have subsequently been used as mortars, either for plant processing or for breaking up minerals. Roger Taylor considers that the percussive marks are more likely to have resulted from the pounding of hard rather than soft materials.

*Mullers and rubbing stones*

These occur in contexts from Middle Bronze Age to Middle Iron Age date. Throughout this period mullers are on occasion dressed around their perimeters to neat ovals, as at Trethellan Farm (Nowkowski 1991, 141–4) or Boleigh fogou (Quinnell 2000-1), but no such dressed examples are present at Trenowah. While the limited sample of the site excavated should be remembered, it is possible that the absence of dressed mullers relates to differences between crop processing activities carried out in fields and houses. Dressed mullers may have been used for the final preparation of flour, likely to have been carried out in domestic contexts.

*White beach pebbles*

Nine of these are recorded from contexts from the Middle Bronze Age to Middle Iron Age, one of which (**S11**) showed signs of use as a rubbing stone. These may have been collected for functional purposes; quartz pebbles can take a lot of use before displaying signs of wear. However white quartz pebbles are found on Early Bronze Age barrow sites (Miles 1975, 72) and appear to be something of a south-western characteristic. It is possible that these pebbles may have been collected for some symbolic value, a tradition surviving from a period before the establishment of the site with its fields and enclosures.

*Cassiterite*

The cassiterite is alluvial. Its weight makes it unlikely that it would have been a surface deposit in a river gravel. The pieces may either have been dug from the base of a stream or river or from tin ground. The pebble weighing 34g from (341) has a fracture likely to be deliberate. The four pebbles from [339] together weigh 392g but only one displays a fracture which is likely to be natural. Pits [340] and [338] containing (341) and (339) respectively are situated a little to the east of hollow [392] but were considered as contemporary because they were generally similar to features within the hollow (Fig 4). A Middle Bronze Age date is therefore probable.

A 'large deposit' of cassiterite pebbles was recorded from late levels in structure B at Trevisker, itself a late feature in the Bronze Age use of the site (ApSimon and Greenfield 1972, 312); two small pieces of metal indicated on-site bronze working. There was more extensive evidence of bronze working at Trethellan (Nowkowski 1991, 133–6) but no cassiterite was recorded. A cassiterite pebble and a tiny globule of worked material from Dean Moor (Fox 1957, 73) appear still to be the only material linked to tin working from Bronze Age settlements in south-west Britain.

*Descriptions of selected stone artefacts*

**S1** (335) in MBA hollow [392]. Broken muller, weathered surface fragment of megacrystic granite, 160mm by 86mm thick by 100mm surviving length. Grinding surface slightly worn before breakage along line of weakness in rock.

**S2** Early Iron Age pit [345]. (Fig 11; colour plate 2) Beach boulder, weight about 55 kg, of gabbroic greenstone, 600mm by 500mm by 170mm. The rock is formed of white bladed altered feldspars up to 10mm in a fine-grained greenish matrix. Both sides have been dressed before use as a saddle quern and both subsequently had percussive use. Side one: an elongated facet along one edge with marks from dressing with two sizes of grinder survives outside the abraded saddle quern hollow; a depression 360mm by 340mm by 40mm deep has been formed by percussive action in the saddle quern surface. Side two: part of a ground preparation facet on one side of the saddle quern use area, which shows linear striations; a

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depression 370mm by 320mm by 25mm results from percussive action on the quern surface.

**S3** pit [345]. Saddle quern, granite, thickness 60mm, surviving other dimensions 150mm by 125mm. Roughly pecked to shape along edge. Some usage which has resulted in deep scratches and smoothing but hardly altered the profile of the working surface. Natural breakage along a line of fracture.

**S4** pit [345]. Rubbing stone with slight wear on one surface, surviving dimensions 80mm by 70mm by 60mm. Fine-grained quartz tourmaline stream cobble. Deliberate breakage shown by impact fracture.

**S5** pit [345]. Schorl rock beach boulder, 290mm by 240mm by 140mm. Coarse aggregate of quartz and black tourmaline of granite origin but the degree of rounding indicates a beach source. The rock is hard and tough and suitable for use for grinding but shows no trace of smoothing or abrasion.

**S6** (125) in Early Iron Age ditch [122]. Greisen fragment from localised patch in St Austell granite. One facet shows concave wear typical of saddle querns; after breakage used as muller providing worn convex surface and then again broken.

**S7** (125) in ditch [122]. Rubbing stone, exotic arkosic beach pebble 50mm by 47mm by 17mm, slight wear traces.

**S8** bank [95] in enclosure [400], possibly redeposited. Part of double sided saddle quern, fine-grained greisenised granite. One side dressed before use as saddle quern and both with subsequent percussive use. Side one: Smoothed area reaching the outer edges of the block, traces of longitudinal striations producing originally oval depression 40mm deep; the central area has then been subject to percussive use creating a pitted surface which runs into a hollow 80mm across and 50mm deep with a rough surface. There is no evidence for rotational wear which would indicate that the hollow had been used as a pivot stone; the hollow may have acted as a catch pit for crushed material or as a holding point for fragments being crushed. Side two: outer flattened facet indicates initial dressing, before use as a saddle quern; the central area (before breakage) is pitted, indicating percussive use.

**S9** bank [95] in enclosure [400]. Saddle quern fragment of fine-grained greisenised granite with lithology similar to **S8**. Surviving dimensions 540mm by 300mm by 160mm. One side dressed to produce shallow elongated hollow, dressing in places reaching to the edge of the block; use as quern with small grinder has produced hollow 30mm deep; central area is pitted by percussive use with two deepened areas, similar to but shallower than that on **S8**.

**S10** (117) in Early Iron Age [163]. Fragment of granite saddle quern, both surfaces heavily worn and concave, one scratched. Thickness curves between 40mm and 30mm. Possibly deliberately broken.

**S11** (117) in [163]. Rubbing stone, white quartz beach pebble, 65mm by 52mm by 17mm. One surface patch of wear with grooves suggests use on hard surface.

**S12** (162) in Early Iron Age ditch [121]. Fragment of weathered coarse-grained biotite muscovite granite. Surviving dimensions 300mm by 270mm by 155mm. Some pitted percussive use on one surface but no indication of abrasive wear from use as a quern.

**S13** (95) in Early Iron Age ditch [65]. Quarter of saddle quern, made from hard granite surface piece, rough trimming around edges to almost rectangular shape and on flat base, surviving dimensions 180mm by 140mm, with even thickness of about 10mm. One side worn flat but not concave, so comparatively little use before deliberate breakage.

**S14** (95) in ditch [65]. Muller using fine-grained tourmalinized granite cobble chosen for hump-backed shape, 230mm by 140mm by 80mm. Working surface much ground down with slight convex curve. Sides battered in places from contact with quern.

**S15** (181) in ditch [65]. Saddle quern fragment, medium- to coarse-grained, moderately hard, tourmalinised muscovite granite. Surviving dimensions 230mm by 220mm by 120mm. Slightly hollowed surface from quern use on one side.

**S16** posthole [206] in Middle Iron Age enclosure [401]. Muller using quartz tourmaline cobble, 200mm by 75mm thick by 110mm surviving width. Surface worn slightly convex. Deliberately broken; no impact fracture but accidental breakage unlikely

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on such hard rock. **S17** and **S18**, as well as **S16**, in the same general posthole group in enclosure [401], have been deliberately broken.

**S17** posthole [247] in enclosure [401]. Double-sided saddle quern using fine-grained granite grounder, 210mm wide, surviving length 120mm, maximum thickness 105mm. Possible shaping around edge. Deliberate breakage with impact fracture.

**S18** posthole [224] in enclosure [401]. Muller fragment using fine-grained granite beach cobble, 180mm wide, 80mm thick, surviving length 60mm; largest piece in collection brought from beach. Working surface ground very smooth and slightly convex. Deliberately broken with possible impact fracture.

**S19** (9) in RB ditch [10]. Rubbing stone, fine-grained granite stream cobble with triangular cross-section, 90mm by 75mm by 65mm. Slight wear on one surface.

**S20** unstratified. Two joining fragments of fine-grained tourmalinised granite used as saddle quern. Surviving dimensions 260mm by 120mm by 140mm thick. Rock texture is porous and friable, with general rounding of surfaces which could readily have occurred in an inland environment. The reddish coating of these surfaces developed prior to quern use, which has left an abraded hollow.

**S21** unstratified. About a quarter of a double-sided saddle quern, fine-grained tourmalinised granite similar to **S20** but harder. Surviving dimensions 260mm by 240mm by 140mm. Side one: preliminary preparation by grinding working surface flat, with traces of parallel striations; a deep smooth hollow has been worn into this surface by use as a quern with evidence of longitudinal striations. Side two: preliminary preparation of working surface by grinding; a deep smooth hollow has been ground by quern use, a facet showing change to a smaller muller during subsequent use. The quern may have been discarded when it became too deeply hollowed on both sides for further use. There is a possible impact point on side two that may indicate deliberate breakage.

## Flint

*Anna Lawson-Jones*

The excavations produced a small assemblage of nine flints from seven separate contexts, plus one unstratified piece. None of the pieces constitute diagnostically datable types, but together might well represent a broadly Neolithic horizon. The blade and blade-like dorsal removals on some of the pieces, the evidence for bulbar preparation, and the probable core rejuvenation flake (or perhaps a core tablet) are indicative of precision working rarely attributed to everyday Bronze Age flint work. The larger scale flakes within the assemblage – from contexts (2), (39) and (123) – again suggest a Neolithic character, although the very limited number of pieces within this assemblage makes the relevance of such comparisons in flake size difficult to assess.

A pebble source has been noted for at least half and quite possibly the whole of the assemblage, based on the surviving cortex. In Cornwall beaches represent the nearest source of pebble flint, and for this site those around St Austell Bay represent the most likely source. Cornish beaches do offer a surprisingly varied and abundant flint resource. Flint of significantly different quality and colour can be found but, due to a frequently limited pebble size, knapping often required the use of an anvil. The use of an anvil tends to result in limited damage or crushing to the distal tip. It may be that the battered distal end of primary waste found in an unstratified context and perhaps the ‘nick’ at the distal end of the larger flake from context (123) represent just such damage. The variation in colour of the pieces within the assemblage parallels the variety seen in beach pebble flint today.

Due to the small number of pieces it is difficult to make meaningful comments regarding the presence or absence of particular features. There is perhaps a notable lack of cores and waste which might imply that the majority of preliminary knapping took place elsewhere – perhaps on the beach itself? In addition there would appear to be an absence of fine, thin flakes and blades, the production of both of which can be traced through the dorsal scars referred to in Table 5. This might imply that the site was involved in a selective or specific function which required more substantial or bulky pieces; that subsequent Iron Age, medieval and later activity (for example,

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**Table 5** Details of flints

Context no.	Date	Comments / description
Unstratified	Prehistoric	A long blade of thickly corticated pebble flint waste produced during the primary knapping process.
(2) Subsoil	Possibly Neolithic	A broad pebble blade flake. Spall-like removal from bulbar end to produce a burin-like edge. Both lateral edges show frequent small fine removals, some of which are deliberate retouch while others are use related. Multi-functional piece.
(39) fill of pit [38]	Probably Neolithic	A large (93.4 × 4.1mm) flake with thin dorsal flake removals and some limited bulbar preparation. A series of three or four deep indentations suggest that it represents a core rejuvenation flake, or perhaps a core tablet. No cortex.
(42) fill of pit [41]	Possibly Neolithic	A thin flint flake with a series of dorsal blade removal scars. No cortex.
(92) fill of ditch [65]	Neolithic / Bronze Age	A burnt and pitted piece of probable waste flint. No cortex. Miscellaneous retouched piece.
(92) fill of ditch [65]	Neolithic / Bronze Age	A mottled green blade / flake with its distal end missing. Some lateral retouch, plus two notches on the opposing side, which were probably the result of use-related damage. No cortex. Miscellaneous retouched piece.
(123) fill of ditch [122]	Neolithic / Bronze Age	A thick, broad pebble flake with two short straight scraper edges, and a longer straight edge which is half scraper and half cutting edge. A multi-functional scraping/cutting tool.
(123) fill of ditch [122]	Possibly Neolithic	A large (4.5 × 4.0cm) 'fresh-looking' flake with a broad, thinned notch formed by deliberate ventral retouch. (Would have had the affect of providing a controlled thin, sharp, concave cutting/slicing edge). Bulbar preparation in the form of dorsal retouch is evident. Small, fine lateral and distal removals are probably the result of use wear. No cortex.
(299) fill of pit [300]	Possibly Neolithic	Pebble blade with distal end missing. Has bulbar preparation removals on the dorsal surface, plus a series of probable use-related lateral removals (as opposed to retouch).

agricultural ploughing) has destroyed more fragile flintwork; or that a degree of selective collection occurred during the excavation, which would appear unlikely in the light of other small artefacts collected.

To summarise, no specific diagnostic tool types are represented within this assemblage, although based on general characteristics a broadly Neolithic date, extending into the Bronze Age, would seem likely. No evidence was found for Mesolithic or earlier activity. The source for the majority, if not all, of the assemblage was locally available beach flint, and as such it is typical of many Cornish flint assemblages.

## Palaeoenvironmental evidence

### Plant macrofossils

*Julie Jones*

The excavation at Trenowah revealed evidence of human activity from the Early Neolithic to the post-medieval period. Samples for palaeo-

environmental assessment were taken from features associated with phases of activity in the Early Neolithic, Bronze Age and Iron Age. The samples were sieved with the residues retained on a 0.5mm mesh. The results are shown in Table 6, which includes details of sample size and the percentage of context sampled. Charcoal was present in most of the samples and an estimate is given of the numbers of fragments which were greater than 2mm in overall dimensions, a size which would allow species identification. Plant nomenclature is based on Stace (1991).

### Results

#### EARLY NEOLITHIC

Context (299), the charcoal-rich sandy clay fill of pit [300], which produced a single sherd of Early Neolithic pottery (**P1**), was 100 per cent sampled, but the float only produced about 20 identifiable fragments of charcoal. A single possible wheat (*cf. Triticum* sp) grain, plus some grass caryopses were recovered together with eight charred pips of apple/pear (*Malus/Pyrus*).

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Amongst the group of small pits from the far southern end of the site, the fill of pit [38] was 50 per cent sampled and produced approximately 40 fragments of charcoal, which produced an Early Neolithic radiocarbon determination (Wk-11935). In general, these features, which are assumed to be broadly contemporary, produced only small floats with charcoal fragments and single examples of cereal grain or weed seeds. There were, however, a few exceptions, notably the fill of pit [32], a dark brown silty loam which produced about 100 fragments of identifiable charcoal plus a few wheat, barley and oat (*Avena* sp) grains. Again, accompanying chaff was sparse with only a single wheat glume base present. The weed assemblage included species more typical of grassy places such as clover/medick (*Trifolium/Medicago* spp), dock (*Rumex* spp) and meadow-grass/cat's-tail (*Poa/Phleum* spp) with sedges (*Carex* spp) and rushes (*Juncus* spp) plus several caryopses of heath-grass suggestive of heath-type grassland.

## MIDDLE BRONZE AGE FEATURES

A spread of apparently charcoal-rich, brown silty, sandy clay containing Middle Bronze Age Trevisker pottery, contexts (177) and (178), was recognised over an area sealing hollow [392]. These deposits were 100 per cent sampled but contained mostly modern roots with only a few small charcoal fragments and a single barley (*Hordeum* sp) grain recovered

Context (332) was a thin layer of silty clay over the base of hollow [392]; it produced only a small float with fewer than ten sizeable fragments of charcoal. Context (192), the basal fill of one of two small pits associated with this hollow, was 100 per cent sampled. As well as a sherd of Middle Bronze Age pottery and quartz fragments, this contained about 40 fragments of identifiable charcoal with a single indeterminate cereal grain plus a caryopsis of meadow-grass/cat's-tail (*Poa/Phleum* spp).

Pit or posthole fills (341), (343), (335), (351) and (339) produced small assemblages consisting

**Table 6** Plant macrofossils

Sample	Context	Feature	Sample size (litres/kg)	% of context sampled	Size of float (ml)	Charcoal No. of frags >2mm	Other charred plant macrofossils Comments
15	(112)	Fill of posthole [113]	10/17	50%	8	<5	
16	(114)	Fill of posthole [115]	4/5	50%			Sample missing
33	(192)	Fill of pit/posthole [191]	12/18	100%	15	<40	Cereal indet grain (1) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (1)
41	(339)	Fill of ditch [338]	6/11.5	50%	10	<15	<i>Triticum</i> sp (Wheat) grain (3) <i>Carex</i> sp (Sedge) (1) <i>Danthonia decumbens</i> (Heath-grass) (1) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (3)
42	(341)	Fill of pit/posthole [340]	30/8	50%	2	<20	<i>Danthonia decumbens</i> (Heath-grass) (1)
43	(299)	Fill of pit [300]	15/42	100%	25	c20	cf <i>Triticum</i> sp (Wheat) grain (1) <i>Danthonia decumbens</i> (Heath-grass) (1) <i>Malus/Pyrus</i> spp (Apple/Pear) (8) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (1)
44	(177)	BA layer/float	6/23	100%	5	Small frags charcoal only	<i>Hordeum</i> sp (Barley) grain (1)
45	(178)	BA layer	18/9	100%	3		Mostly modern roots. Mostly modern roots. Few small frags charcoal only
46	(332)	BA layer	4/24	100%	7	<10	
47	(343)	Fill of pit [342]	5/6	100%	<1		Few small frags charcoal only <i>Ranunculus flammula</i> (Lesser Spearwort) (1)
48	(335)	Pit/posthole fill [334]	37/7	100%	5	Approx 10	
56	(358)	Fill of posthole [350]	7/7	100%	17	Approx 40	
37	(297)	Fill of pit [298]	3/21	50%	2	Approx 5	



## THE EXCAVATION OF A MULTI-PERIOD ARCHAEOLOGICAL LANDSCAPE AT TRENOWAH

Table 6 continued

Sample	Context	Feature	Sample size (litres/kg)	% of context sampled	Size of float (ml)	Charcoal No. of frags >2mm	Other charred plant macrofossils Comments
49	(55)	Fill of ditch [54]	37/52	2.5%	50	Approx 5	Cereal indet (1) <i>Juncus</i> sp (Rush) (1) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (3) Mostly modern roots
53	(349)	Fill of pit [345]	10/4	100%	1	<10	
54	(345)	Fill of pit [345]	14/14	100%	18	Approx 50	<i>Triticum</i> sp (Wheat) grain (1) cf <i>Triticum</i> sp (1)
1	(9)	Fill of ditch [10]	34/46	<1%	38	<20	<i>Ranunculus acris/repens/bulbosus</i> (Buttercup) (1) <i>Rumex</i> sp (Dock) (1)
5	(58)	Fill of posthole [58]	9/9	50%	10	<10	
30	(33)	Fill of pit [32]	15/21	50%	70	Approx 100	<i>Avena</i> sp (Oat) grain (4) <i>Hordeum</i> sp (Barley) grain (4) <i>Triticum</i> sp (Wheat) grain (5) <i>Triticum</i> sp glume base (1) <i>Carex</i> spp (Sedge) (6) <i>Danthonia decumbens</i> (Heath-grass) (3) <i>Juncus</i> spp (Rush) (3) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (5) Poaceae indet (Grass family) (3) <i>Rubus</i> sect <i>Glandulosus</i> (Bramble) (4) <i>Rumex</i> spp (Dock) (1) <i>Trifolium/Medicago</i> spp (Clover/Medick) (1)
31	(40)	Fill of [38]	12/17	50%	25	Approx 40	
32	(43)	Fill of [41]	8/12	50%	20	<40	
4	(63)	Fill of pit [62]	6/8	10%	15	<40	
50	(14)	Fill of ditch [15]	38/51	2%	40	Approx 40	<i>Poa/Phleum</i> sp (Meadow-grass/Cat's-tail) (1) Rosaceae indet (spine) (1) <i>Triticum</i> sp (Wheat) grain (1) <i>Carex</i> sp (Sedge) (1) <i>Danthonia decumbens</i> (Heath-grass) (2) <i>Poa/Phleum</i> spp (Meadow-grass/Cat's-tail) (3) Poaceae indet (Grass family) (2) <i>Rumex</i> spp (Dock) (1) <i>Spergula arvensis</i> (Corn Spurrey) (1)
51	(49)	Fill of ditch [48]	35/51	10%	10	<40	
52	(348)	Fill of pit [347]	2/49.5	100%	17	<5	

mostly of charcoal fragments. Context (341), fill of posthole [340], included a single heath-grass (*Danthonia decumbens*) and [343], fill of [342] a lesser spearwort (*Ranunculus flammula*) seed. Context (335), fill of posthole [334], included only about ten sizeable charcoal fragments and (339), the fill of posthole [338], three wheat grains plus a few grass caryopses.

## LATE BRONZE AGE FEATURES

The fills of six cut features associated with the Late Bronze Age rectangular structure [129] were all 50 per cent sampled. Three of these fills, (104), (106) and (108), produced richer assemblages than the Middle Bronze Age features. A suite of charred cereal grains was present, predominantly wheat, with fewer grains of barley and oats (*Avena* sp). In

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each fill a proportion of the grain was determined as unidentifiable (cereal indet) due to the poor condition of the grain, much of which was broken and abraded. Apart from a single wheat glume base fragment in (106), no accompanying chaff was recovered so it was not possible to determine whether, for example, the oats present represent a cultivated crop or occurred as a crop weed. Several of the weed seeds recovered are typical arable weeds, including redshank (*Persicaria maculosa*) and scarlet pimpernel (*Anagallis arvensis*) with grasses again present. The three posthole fills also produced about 100 charcoal fragments of a size to enable identification of species (Gale below).

**IRON AGE AND ROMAN-PERIOD FEATURES**  
Features sampled from Middle to Late Iron Age features were associated with the three enclosures [400], [401] and [402]. Contexts included postholes, ditches and a gully. Between 1 and 50 per cent of these were sampled but on the whole small floats of <20ml produced only occasional charcoal fragments and single weed seeds, mostly grasses but also other species of grassy places including buttercup (*Ranunculus acris / repens / bulbosus*) and ribwort plantain (*Plantago lanceolata*). Fill (140) of posthole [141] contained a small weed assemblage plus three wheat and barley grains from a 2ml float. The weed assemblage here is more typical of arable cultivation and includes fat-hen (*Chenopodium album*) and mustard / rape / cole (*Brassica Sinapis*), species which are often associated with cereal crops.

Pit, posthole and ditch fills associated with the more fragmentary curvilinear enclosures were also sampled. Many of these features produced only small floats with charcoal fragments and single examples of cereal grain or weed seeds. Four bramble (*Rubus sect Glandulosus*) seeds were also present with a rosaceous thorn from context (14), the fill of ditch [15]. Context (49), the fill of ditch terminal [48], contained a similar assemblage of weed seeds with the addition of a single corn spurrey (*Spergula arvensis*) seed and one charred wheat grain. The same grassy, heathland-type species are repeatedly present in other samples although often as single occurrences.

**UNDATED FEATURES**

Two samples from the fill of undated pit [89], interpreted as a truncated hearth-pit, produced floats dominated by charcoal, with more than 700

fragments of identifiable size. No other charred remains were present. Most of the remaining samples from undated features contained only small charcoal fragments with a few occurrences of weed seeds but no cereal remains.

*Discussion*

The presence of charred pips of apple or pear in the fill of pit [300] is likely to reflect the gathering of fruit to supplement the diet in the Early Neolithic period. There are an increasing number of finds of apple / pear from the prehistoric period. It is difficult to distinguish the seeds of pear (*Pyrus*) from apple (*Malus*) and fragments of endocarp or core are necessary for firm identification. However, records for pear seem to begin in the Roman period so it is likely that it is crab apple that is present here. Charred fragments of endocarp and pips of crab apple were identified from a Bronze Age burning pit associated with the Maudlin to Liskeard pipeline watching brief (Jones 1999).

Many of the features associated with Bronze Age activity produced small assemblages of charred plant remains with varying amounts of charcoal. Surprisingly the Late Bronze Age posthole fills provided the richest assemblages, although much of the cereal grain in particular, was abraded, which meant that a relatively high proportion of the grains could not be determined to species. This is presumably the result of their residual nature, as the postholes would not have been their primary context of deposition. Despite this it is possible to confirm the use of wheat and barley crops at this time, but not whether they were grown and processed locally. Oats are also present but without the presence of diagnostic chaff it is not possible to be certain whether these represent a crop in their own right or occurred as weeds amongst the wheat and barley. Other seeds present such as scarlet pimpernel and redshank would have grown as weeds in the arable plots and would have been gathered at harvesting. Other more typical heath and grassland species that repeatedly occur in these features are commonly found associated with charred cereal assemblages. Heath-grass, for example, is typical of acid soils often found on heaths and moors. It is thought that species such as these may represent field edge species or the cultivation of marginal ground.

Samples from features associated with Iron Age activity on the whole included a low density of

## THE EXCAVATION OF A MULTI-PERIOD ARCHAEOLOGICAL LANDSCAPE AT TRENOWAH

charred remains, with only a couple of pit and ditch fills producing a range of cereal grain. Wheat, barley and oats are again present, with a similar suite of weed seeds typical of arable cultivation and grassy places. Hedgerow species include bramble and elder with several rosaceous spines also present and may be the result of gathering timber for fuel or additional food resources.

### Charcoal

#### *Rowena Gale*

Charcoal was recovered from 45 of the processed bulk soil samples, although sometimes in very small quantities. This report includes the analysis of 16 samples, ten of which were submitted for radiocarbon dating. The dates obtained from these samples indicate long-term use of the site, from the Neolithic to the early medieval period. The charcoal probably originated mainly from fuel debris, possibly from domestic, agricultural and ritual sources, although some may have been structural.

#### *Methodology*

Bulk soil samples were processed by flotation and sieving using 1mm and 0.5mm meshes. The resulting flots and residues were scanned under low magnification and the charcoal separated from plant macrofossils by Julie Jones. Intact segments of narrow roundwood were rare. Charcoal fragments measuring >2mm in radial cross-section were considered for species identification. Charcoal-rich samples 1, 9 and 10 were 50 per cent sub-sampled.

The charcoal was generally rather friable and few fragments exceeded 10mm in length or width. Standard methods were used to prepare the samples for examination (Gale and Cutler 2000). The anatomical structures were examined using incident light on a Nikon Labophot-2 compound microscope at magnifications up to x400. The taxa identified were matched to prepared reference slides of modern wood. When possible, the maturity of the wood was assessed (that is, heartwood or sapwood).

#### *Results*

The taxa identified are presented in Table 7. Classification follows that of *Flora Europaea*

(Tutin, Heywood *et al* 1964–80). Group names are given when anatomical differences between related genera are too slight to allow secure identification to genus level. These include members of the Pomoideae (*Crataegus*, *Malus*, *Pyrus* and *Sorbus*), Leguminosae (*Ulex* and *Cytisus*), Salicaceae (*Salix* and *Populus*) and Ericaceae (*Calluna* and *Erica*). When a genus is represented by a single species in the British flora this is named as the most likely origin of the wood, given the provenance and period, but it should be noted that it is rarely possible to name individual species from wood features, and exotic species of trees and shrubs were introduced to Britain from an early period (Godwin 1956; Mitchell 1974). The anatomical structure of the charcoal was consistent with the following taxa or groups of taxa:

Aquifoliaceae. *Ilex aquifolium* L., holly

Betulaceae. *Betula* sp., birch

Corylaceae. *Corylus avellana* L., hazel

Ericaceae. *Erica* sp. and/ or *Calluna vulgaris*, heather and ling. Many members of the heather family are anatomically similar.

Fagaceae. *Quercus* sp., oak

Leguminosae. *Cytisus scoparius* (L.) Link, broom and/ or *Ulex* sp., gorse

Rosaceae. Subfamilies:

Pomoideae, which includes *Crataegus* sp., hawthorn; *Malus* sp., apple; *Pyrus* sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically similar.

Prunoideae. *Prunus spinosa* L., blackthorn.

Salicaceae. *Salix* sp., willow, and/or *Populus* sp., poplar. In most respects these taxa are anatomically similar.

#### EARLY NEOLITHIC

Charcoal from two pits [38] and [41] was analysed; these pits were charcoal-rich and the burnt edges of pit [41] suggested that they had probably been used as hearths. Charcoal from pit [38] was dated to 3130-2910 cal BC (65.3 per cent probability) (Wk-11935). Roughly similar species were named from each pit and demonstrated the use of firewood that included oak (*Quercus* sp.), hazel (*Corylus avellana*), willow (*Salix* sp.) and/or poplar (*Populus* sp.), and also birch (*Betula* sp.) in pit [38].

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**Table 7** Trenowah: charcoal from prehistoric, Romano-British and early medieval contexts  
 Key: h = heartwood; r = roundwood (diameter <20mm); s = sapwood (diameter unknown). The number of fragments identified is indicated.

Sample	Context	Description	Date	Betula	Corylus	Ericaceae	Ilex	Pomoideae	Prunus	Quercus	Salicaceae	Ulex/ Cytisus
<i>Early Neolithic</i>												
31	(40)	Fill of pit [38]	2429 ±41BC	1	3	-	-	-	-	37h	5s	-
32	(43)	Fill of pit [41]	-	-	4	-	-	-	-	1h	1	-
<i>Middle Bronze Age</i>												
33	(192)	Fill of pit/posthole [191]	1155 ±50 BC	-	1	-	-	-	-	10h, 6r	1	4
44	(177)	Layer/ fill	1112 ±42 BC	-	2	-	-	-	-	-	-	-
<i>Late Bronze Age</i>												
13	(108)	Fill of posthole [109], component of structure [129]	722 ±44 BC	1	25	-	-	-	-	21h, 1s	3	1
12	(106)	Fill of posthole [107], component of structure [129]	-	-	-	-	-	-	-	36h, 17s	-	-
<i>Iron Age</i>												
54	(346)	Fill of pit [345]	529 ±41 BC	-	16	-	-	3	-	5, 2s	-	1
8	(67)	Fill of ditch [69]	460 ±49 BC	-	2	-	cf.1	-	-	9h, 1r	1	-
34	(186)	Bottom fill of ditch [184]	405 ±43 BC	-	-	-	-	-	-	1h	cf. 2	-
50	(14)	Fill of ditch [15]	159 ±41 BC	-	-	3	-	-	-	2h, 9r, 2s	-	1
<i>? Iron Age</i>												
49	(55)	Fill of ditch [54]	-	-	2	-	-	-	-	7h	2	3
<i>Romano-British</i>												
1	(9)	Fill of ditch [10]	75 ±41 AD	-	2	-	-	-	1	2h	-	3
<i>?Romano-British</i>												
56	(351)	Fill of posthole [350]	-	-	-	-	-	-	-	21s	-	-
<i>Early Medieval</i>												
36	(175)	Fill of gully [176]	AD 1000 ±44	1	3	-	-	1	-	5h	-	2
<i>Undated</i>												
9	(90)	Fill of pit [89], ?hearth	-	-	2	-	-	-	1	69h, 3r	-	3
10	(91)	-	-	-	1	-	-	-	-	86h, 5r, 1s	-	-

## THE EXCAVATION OF A MULTI-PERIOD ARCHAEOLOGICAL LANDSCAPE AT TRENOWAH

## MIDDLE BRONZE AGE

A small quantity of charcoal from surface deposit (177) was identified as hazel (*Corylus avellana*) and dated to 1460-1260 cal BC (93.3 per cent probability) (Wk-11930). This layer sealed and filled oval hollow [392]. Charcoal from context (192), the basal fill of pit [191] cut into the floor of the hollow, was dated to 1530-1300 cal BC (Wk-11932) and identified as oak (*Quercus* sp.), willow (*Salix* sp.) and/or poplar (*Populus* sp.), and gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*).

## LATE BRONZE AGE

Charcoal was examined from two of the six cut features forming structure [129]. Radiocarbon dates from (108), the fill of [109] produced a date of 980-800 cal BC (Wk-11933). Since the charcoal included a fairly wide range of taxa, predominantly oak (*Quercus* sp.) and hazel (*Corylus avellana*), but also birch (*Betula* sp.), willow (*Salix* sp.) or poplar (*Populus* sp.) and gorse (*Ulex* sp.) or broom (*Cytisus scoparius*). This relatively wide range of species suggests an origin from spent fuel rather than burnt structural debris. It is of some interest, therefore, to note that charcoal from the adjacent posthole [107] consisted exclusively of a large quantity of oak (*Quercus* sp.) heartwood and sapwood. These differences may be explained by either spatial differences in the siting of hearths within the structure and/or the differential selection of wood fuel, or that the sample from [107] derived from the base of an oak post, either burnt *in situ* or charred (to protect the wood from rot) prior to its insertion in the posthole.

## IRON AGE

The earliest date for this period, 800-520 cal BC (Wk-11934), was obtained from pit [345]. The taxa identified included hazel (*Corylus avellana*), the hawthorn/*Sorbus* group (Pomoideae), oak (*Quercus* sp.) and gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*). The origin of the charcoal is unknown but it was similar in character to that recovered from other pits at the site (Table 7).

Ditch [69] was one of pair of parallel east – west boundary ditches that crossed the site. Charcoal from ditch [69] was dated to 770-400 cal BC (Wk-11940) and included hazel (*Corylus avellana*), oak (*Quercus* sp.), willow (*Salix* sp.) and/or poplar (*Populus* sp.) and probably holly (*Ilex aquifolium*). Charcoal from the bottom fill of ditch [184] was dated to 600-390 cal BC at 75.3 per cent probability

(Wk-11938); the sample was very small but included oak (*Quercus* sp.) and *cf* willow (*Salix* sp.) and/or poplar (*Populus* sp.).

The shallow curvilinear ditch [15] was dated to about 370-50 cal BC (Wk-11937); associated charcoal included small fragments of heather (Ericaceae), oak (*Quercus* sp.) and gorse (*Ulex* sp.) or broom (*Cytisus scoparius*).

Charcoal was sparse in the undated enclosure ditch [54]; the taxa identified included hazel (*Corylus avellana*), willow (*Salix* sp.) and poplar (*Populus* sp.), gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) and oak (*Quercus* sp.) heartwood.

The origin of the charcoal from the ditches is uncertain. Each deposit contained multiple species (Table 7), which could implicate either dumped fuel debris (from an unknown activity) or the localized disposal of trees and shrubs from land clearance or hedge trimming.

## ROMANO-BRITISH

Charcoal from the fill of ditch [10] was dated to 40 cal BC – cal AD 180 (93.1 per cent probability) (Wk-11936); the taxa included hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*), oak (*Quercus* sp.) and gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*), indicating a roughly similar range of species to those recorded from Iron Age features.

## EARLY MEDIEVAL

Charcoal from the fill of the small gully [176] linking stony linear boundary [173] to the terminal of ditch [145] dated the feature to cal AD 970-1160 (94.4 per cent probability) (Wk-11939), although this determination may be anomalous. The charcoal was infrequent but included birch (*Betula* sp.), hazel (*Corylus avellana*), the hawthorn/*Sorbus* group (Pomoideae), oak (*Quercus* sp.) and gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*). This is a very similar range of species to those present in the Iron Age ditches (see above) and similar origins probably apply.

## UNDATED

A substantial quantity of charcoal was recovered from possible hearth pit [89]. The charcoal was predominantly oak (*Quercus* sp.), mostly heartwood, but also included hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*) and gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*), indicating the use of firewood supplied

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predominantly from mature largewood; that is, wide cordwood or billets of oak with the other species used, perhaps sparingly, for kindling.

*Discussion*

Charcoal was recorded, albeit sometimes very sparsely, in 47 of the environmental samples collected. Ten of these were selected for radiocarbon dating and a total of 16 samples are included in the current analysis. The latter were recovered from enclosure and boundary ditches, pits and postholes, and represent periods from the Early Neolithic to the early medieval (Table 7).

The site appears to have been largely agricultural, although deposits in some of the pits, for example, pit [345], may be of ritual significance. Charred cereal grains and other food resources were very infrequent except in postholes associated with structure [129]. For the ditch and gully contexts ([69], [184], [15], [54], [10] and [176]) it is difficult to ascribe the origin of the charcoal to any specific function. Dumped fuel debris from an unknown activity seems a strong possibility, especially in view of the range and similarity of the species identified, although hedge trimming or scrub clearance may also be relevant. Scorched earth associated with pits [38], [41] and [89] indicated *in situ* burning and thus implied that these were hearth pits and the charcoal therein the remains of fuel. It is suggested that large deposits of single-species charcoal from postholes associated with structures (for example, post-built structure [129]) may represent the remains of posts, although alternative origins such as domestic or agricultural hearths within these structures should also be considered.

## ENVIRONMENTAL EVIDENCE

Throughout much of Cornwall woodland communities are based on thin impoverished soils and, in exposed areas, subjected to harsh, salt-laden winds; tree growth is often slow and stunted. Oak (*Quercus* sp.) forms the dominant component of native woodland (Marren 1992).

It is probable that much of the area was cleared of woodland, enclosed and farmed from about 1500 BC (below). Following the Late Bronze Age, woodland may have been relatively sparse or confined to areas unsuited to agriculture. Evidence from the charcoal analysis indicates a strong bias in favour of oak (*Quercus* sp.) from the Neolithic

to the early medieval, thus correlating to the regional dominance of oak in the Cornish landscape. Most contexts included oak heartwood and some fragments of charcoal clearly derived from often slow-grown largewood from semi-mature or mature stems, trunks and branches.

Hazel (*Corylus avellana*), gorse (*Ulex* sp.) and/or broom (*Cytisus scoparius*) and willow (*Salix* sp.) and/or poplar (*Populus* sp.) were also frequent in the charcoal deposits and may represent their distribution in the environment. Hazel may have grown both in association with oak woodland and in more open aspects. Gorse thrives on poor soils and its persistence at the site throughout the prehistoric and later periods indicates the open character of the environments. This type of habitat would also have suited the growth of heather. Willows are indicative of damp or waterlogged ground associated with springs or streams.

Other species less frequently recorded at the site included birch (*Betula* sp.) (typically found on poor neutral to acid soils), the hawthorn/*Sorbus* group (Pomoideae) (hawthorn seems the most likely) and blackthorn (*Prunus spinosa*). Both hawthorn and blackthorn form dense thickets of scrub and are quick to colonize cleared areas; their paucity in the charcoal record may reflect their low distribution in the locality. Holly (*Ilex aquifolium*) was provisionally named from an Iron Age context.

Although relatively few samples were examined from each phase, there were no obvious spatial or temporal differences in the selection and use of wood species, which would imply that the ratio of species named remained fairly stable in the environment during this time.

## WOODLAND RESOURCES

Much of the charcoal examined probably originated from dumped or scattered fuel debris, although some samples may represent structural components. While the species recorded would have been selected with a view to function, the fuel gathering and cutting of preferred species would have been dependent on availability.

Given the apparent widespread distribution of oak in the environment at Trenowah, it is fortuitous that oak not only makes excellent firewood but, since the timber is strong and the heartwood exceptionally durable for outdoor use, it would also have provided building material. Postholes [107] and [350] contained what may have been the remains of oak posts.

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Gorse and hazel also provide good quality firewood and although the charcoal was too fragmented to assess the use of coppiced stems, it is possible that managed woodland supplied some part of the fuel reserves, especially in the later periods when there may have been increased pressure on land use. Willow and poplar, however, being rather lightweight woods, are rapidly consumed when burnt, and willow, in particular, is better suited to other uses such as hurdle-making and basketry (Edlin 1949). Heather would also have been important in the local economy, including, perhaps, as fuel, bedding, fodder, thatch and for rope-making (*ibid.*).

## Radiocarbon dating

The principal aim of the dating strategy was to obtain a range of radiocarbon dates from key features on the site to provide a chronological span that would elucidate the stratigraphic evidence and the pottery dates.

Ten samples for radiocarbon determinations were taken from sealed contexts from various selected features. Because of the small amount of material available the samples were sent to the University of Waikato in New Zealand for dating. Accelerator mass spectrometry (AMS) dating was used, a method that can be carried out on very small amounts of material and gives a date which is more accurate than the conventional methods. Selected samples were based on examination of charcoal and recommendations by Rowena Gale.

The probability distributions shown in Table 8 and Figure 28 have been calculated using OxCal

(v3.10). The 95 per cent level of probability has been used in this report unless otherwise stated.

## Discussion

In its day, Trenowah was the largest open-area excavation to have been carried out in Cornwall; it has been exceeded subsequently by investigations at Tremough, near Penryn, Penance (otherwise known as Scarcewater), in St Stephen-in-Brannel, and at the Richard Lander School site, Threemilestone, in Kenwyn parish, near Truro. It remains the only one that has concentrated exclusively on an area perceived to be outside any obvious focus of settlement. The investigations revealed episodic activity commencing in the Early Neolithic and continuing to the post-medieval period (Fig 29).

### Early Neolithic

The phenomenon of Neolithic pits in Cornwall has been discussed recently following the discovery of a group of ten such pits at Tregarrick Farm, to the north of Roche Rock in Roche parish (Cole and Jones 2002–3), and four more at Portscatho in Gerrans parish (Jones and Reed 2006). The Tregarrick pits produced a series of radiocarbon dates ranging over the period 3790–3370 cal BC and the Portscatho pits date to 3780–3250 cal BC. These sites were in use over several centuries, with activity slightly preceding that at Trenowah where the fill of pit [40] produced a radiocarbon determination of 3130–2920 cal BC (65.3 per cent probability), 4429 ±41 BP (Wk-11935). The Tregarrick pits were interpreted as the result of ritualised activity associated with seasonal

**Table 8** Trenowah radiocarbon dating. Calibrations of results are based on OxCal v3.10

<i>Context</i>	<i>Sample</i>	<i>Lab no</i>	<i>Age BP years</i>	<i>Calendrical years BC/AD 95.4% probability</i>	<i>Calendrical years BC/AD 68.2% probability</i>
(9) fill of ditch [10]	<i>Prunus</i> charcoal	Wk-11936	1925 ±41 BP	20BC – AD 220	AD 25–130
(14) fill of ditch [15]	<i>Ulex/ cytisus</i> charcoal	Wk-11937	2159 ±44 BP	370 50 BC	360–110 BC
(40) fill of pit [38]	Saliceae charcoal	Wk-11935	4429 ±41 BP	3330–2910 BC	3270–2920 BC
(67) fill of ditch [69]	<i>Quercus</i> charcoal	Wk -11940	2460 ±49 BP	770–400 BC	760–410 BC
(108) fill of posthole [109]	Saliceae charcoal	Wk-11933	2722 ±44 BP	980–800 BC	905–825 BC
(175) fill of gully [176]	<i>Ulex / cytisus</i> charcoal	Wk-11939	999 ±44 BP	AD 900–1170	AD 980–1160
(177) layer	<i>Corylus</i> charcoal	Wk-11930	3112 ±42 BP	1500–1260 BC	1440–1310 BC
(186) fill of ditch [184]	Saliceae charcoal	Wk-11938	2405 ±43 BP	770–390 BC	740–400 BC
(192) fill of pit [191]	<i>Quercus</i> charcoal	Wk-11932	2155 ±50 BP	1530–1300 BC	1500–1320 BC
(346) fill of pit [45]	Pomoideae charcoal	WK- 11934	2529 ±41 BP	800–510 BC	800–540 BC

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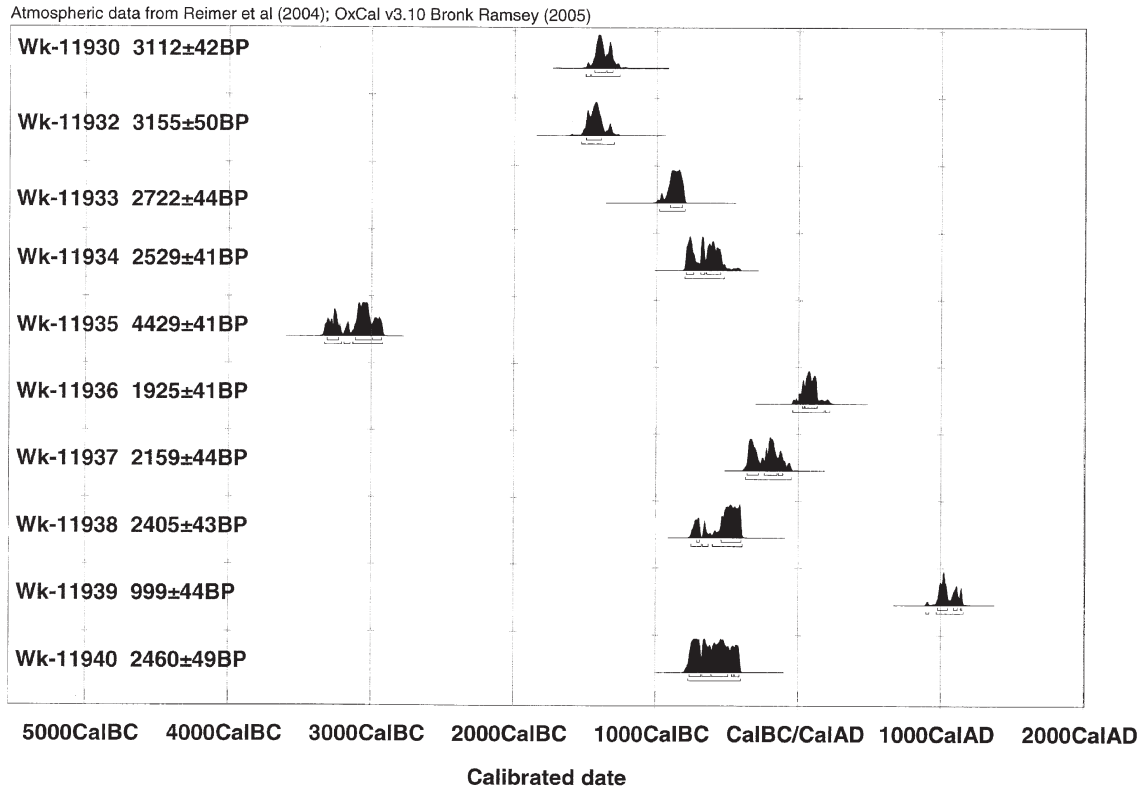


Fig 28 Radiocarbon date ranges from Trenowah.

gatherings close to the base of a prominent landscape feature (Cole and Jones 2002–3, 107) and the Portscatho pits appear to have fulfilled a similar function at a liminal place between land and sea (Jones and Reed 2006, 20–6).

The Trenowah pits, like those at Tregarrick, were arranged in spatially discrete groups; two groups of six pits at the southern end of the site, with a seventh outlier to the more northerly group, and a single pit [300] more than 100m to the north of these clusters. Not all the pits produced dating evidence so it should be noted that it is only a presumption that they are all Neolithic, based on proximity and similar form.

The range of objects and the careful deposition in pits noted at Tregarrick and Portscatho is generally absent at Trenowah. This may be because the objects at Tregarrick were specially chosen because of the location, the creation of the pits themselves being correspondingly consciously more formal or, perhaps, because the Trenowah pits are later in

date. At Trenowah only the isolated pit [300], filled by a deposit of charcoal-rich sandy clay and containing charred crab apple pips, a flint blade, three white quartz fragments and a potsherd, could confidently be interpreted as ritualistic. Wheat, barley and oat grains recovered from [32], may offer evidence of early Neolithic cultivation.

Cole and Jones (2002–3, 139–40) suggest that Early Neolithic pit sites in Cornwall ‘may have been produced as a kind of ritualised clearing up, part of an accepted way of behaving or a routine way of occupying the landscape . . . lowland pits . . . may represent activities which occurred within the clearings made by smaller groups of people as they passed through the landscape . . . part of a continuum which involved seasonal gatherings and dispersals of small communities’. The other pits at Trenowah, two of which seem to have been hearth pits, could be the results of this type of activity. In this context it may be significant that the two southern groups were at a height on the hill slope



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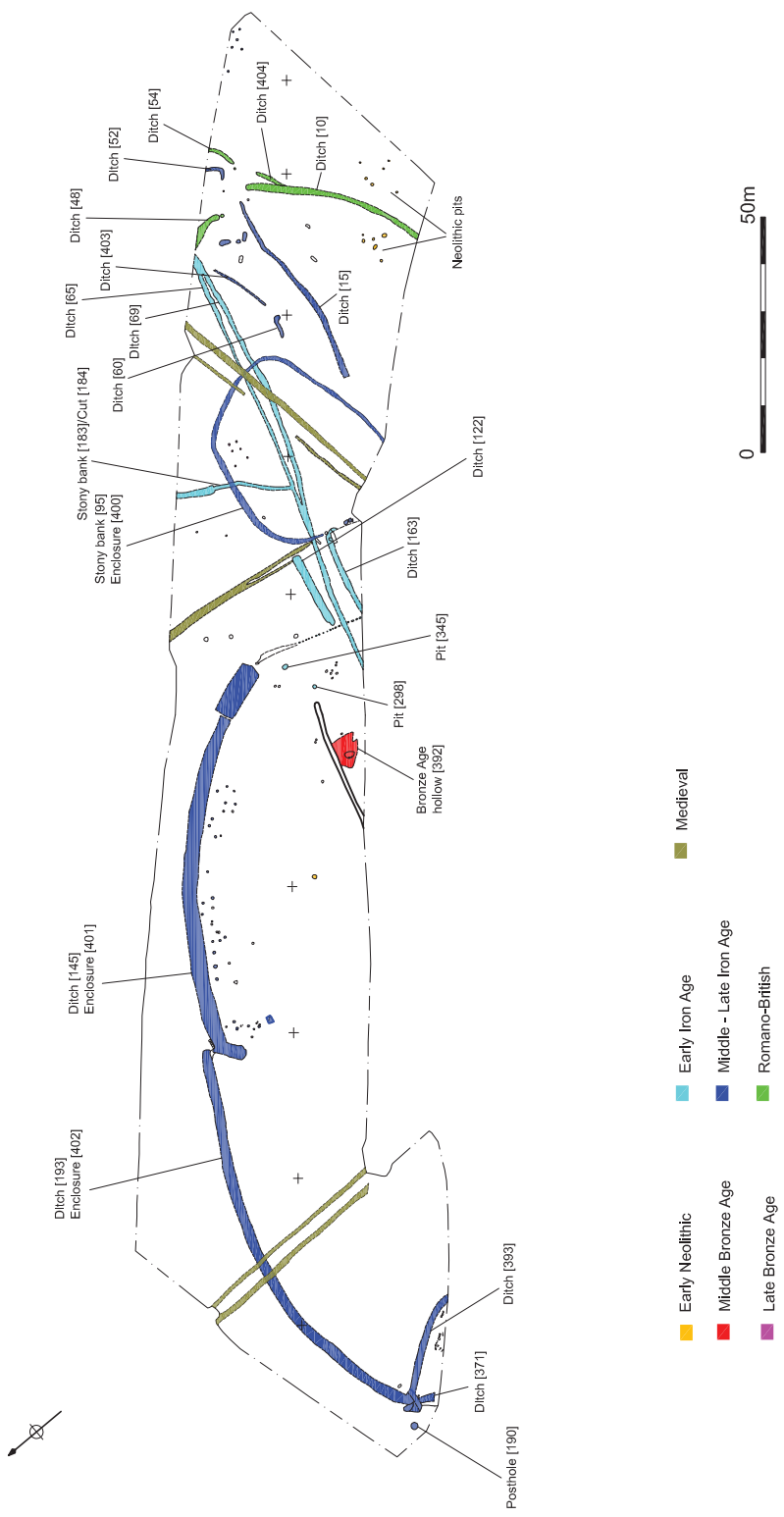


Fig 29 Site plan showing major phases of activity.

where the sea was not visible, whereas [300] was on the crest of the slope and in view of the sea. The coastal locale certainly seems to have been an important consideration in the situation of the Portscatho pits (Jones and Reed 2006, 23–6).

### Middle Bronze Age

Hollow [392] is another addition to the catalogue of Middle Bronze Age scoops uncovered by excavation in the last 20 years or so which may have contained structures with associated ritual or complex abandonment processes. A shallow scoop in the shillet, the hollow did not possess the structural attributes of a house, or indeed any kind of building, or contain the material remains of a working area. Because of its character, the quantity of decorated potsherds associated with it, the possible long-term curation of the worn style I vessel **P2**, and the 24 white quartz fragments in the basal fill of one of the two pits cut through its floor, this feature has been interpreted as a ‘ritual’ hollow, located at the point on the hill slope where the sea first becomes visible.

There was no direct evidence that the hollow was used for metalworking but the cassiterite pebbles from pits [338] and [340], situated a little to the east of the hollow, might also be interpreted tentatively as ‘ritual’ deposits, perhaps associated with metalworking.

Broadly comparable with the Trenowah example are two ritual hollows, [136] / [2021] and [2765] from Trethellan Farm, Newquay, which are of comparable date. These do not appear to have held structures, but were deeper and had a more complex stratigraphy (Nowakowski 1991, 86–96).

### Late Bronze Age

There is currently very little general understanding of the presence of Late Bronze Age communities in the landscape; settlement and enclosure are less well perceived than in the Middle Bronze Age. The small, rectangular, possible post-built structure [129] at Trenowah, dating to 980-800 cal BC, 2722 ± 44 BP (Wk-11933), is one of very few Late Bronze Age structures to have been excavated in Cornwall, the most recent example being a ‘ritual’ structure at Callestick, in Perranzabuloe parish (Jones 1998–9).

The six potsherds recovered from the posthole fills were small and abraded with no distinctive

features of form or decoration. Charcoal analysis suggests that one of the posts may have been oak. The fills contained comparatively rich assemblages of cereal grain, including wheat, barley and oats; heath grass from these contexts may represent field-edge species or indicate the cultivation of marginal ground, comparable with the wider picture from southern Britain at this time. There are no ready comparisons for structure [129] and it is difficult to see it as other than a small building erected for some rustic purpose.

### Early Iron Age

The theme of structured deposition is resumed in the Early Iron Age with the two pits [298] and [345], dating to 800-510 cal BC; these are situated at the same height above sea level as the Middle Bronze Age hollow. This setting, at the point where St Austell Bay becomes visible, may have been an important factor in the choice of location for this ritualistic activity and the pits could relate to some significant episode in the development of the landscape. The sherds in [298] belonged to a furrowed bowl, a type previously unknown in Cornwall or Devon, visibly a ceramic of very high quality and status which had possibly been curated before deposition (Quinnell, above). The contemporary pit [345] included stone artefacts, as well as pottery, and there is some evidence that they were similarly treated before deposition (*ibid.*).

Subsequent activity focuses on a significant land division orientated east – west, 92m long within the excavated area, traceable on the geophysical survey for a further 250m to the east and also continuing to the west (Figs 2, 29). The division is marked by linear ditch [65] which was re-established at least three times, latterly as ditch [69]. Both [65] and [69] contained sherds of Early Iron Age pottery.

This could be interpreted as a coaxial land division; that is, one laid out on one major axis with axial or parallel boundaries, sub-divided by transverse boundaries, depending from a terminal or end boundary (*cf* Fleming 1988). According to this model, [65]/[69] would represent an axial boundary. The geophysical survey indicates perhaps seven transverse boundaries at approximate right angles to it, including stony bank [183] /ditch [184] which has a radiocarbon determination of 600-390 cal BC (75.3 per cent probability), 2405 ±43 BP (Wk-11938), broadly

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comparable to that of 770-400 cal BC, 2460 ±49 BC (Wk-11940) from ditch [69]. Some 75m south of and parallel to [65]/[69], anomalies on the geophysical survey indicate another possible axial boundary (Fig 2). The terminal boundary may have run along the north east – south west ridge to the north at Carclaze. The requirements for the layout and construction of such a system suggest that tree clearance that may have begun in the Bronze Age had been carried out on a major scale.

Although structures and living accommodation associated with the fields were not found these must presumably have been somewhere nearby in the landscape

Less easy to interpret are ditches [122] and [155]/[163], both of which contained Early Iron Age pottery. These are substantial features running respectively to the east and west of [65]/[69] from the point at which the latter converge. These could represent localised re-definition of boundaries, the broken stone objects and pebbles in their fills relating to termination of use of these particular features.

Coaxial field systems, such as the ‘great land boundaries’ on Dartmoor and Bodmin Moor are generally attributed to the Middle to Late Bronze Age, starting around 1500 BC (Christie 1986, 87). It has been suggested that Bronze Age field systems such as those on Bodmin Moor and Dartmoor were generally abandoned by about 1000 BC, while in West Penwith so-called ‘Celtic’ fields were developed, dense grids of broadly rectangular fields, often superimposed onto the earlier coaxial fields, sometimes re-using the previous orientations (P Herring, pers comm). The evidence from the different phases of the Trenowah system strongly indicates that it is Early Iron Age in date – no residual Bronze Age material was recovered from these features – and it should be borne in mind that few coaxial field systems are securely dated; those described by Fleming, although mainly Bronze Age, do include some Iron Age examples such as those from South Yorkshire and Nottinghamshire which, like Trenowah, involve ditches rather than walls or stony banks still visible at ground level (1988, 115).

Securely dated Early Iron Age field systems are rare, and Trenowah is so far the only example in Cornwall. The fields at Maen Castle, Sennen, are more probably Bronze Age than Early Iron Age, and are in any case morphologically very different, being very small and rectilinear (Herring 1994, 42).

**Middle to Late Iron Age and Romano-British**

During the Middle Iron Age the landscape was re-organized once more and three large curvilinear enclosures [400], [401] and [402] became the dominant features (Fig 29). This very dramatic change may imply an intervening phase in which the coaxial fields went out of use and the area was either used in a different way or not at all.

The geophysical survey (Fig 2) indicates that [400], [401] and [402] are part of a wider pattern of accretive enclosures, including a possible round (enclosed settlement) to the east, outside the area of excavation. These enclosures are interpreted as having had a pastoral function, their size and form perhaps indicating that they were stock enclosures rather than fields for cultivation. Only a couple of pit and ditch fills produced cereal grain – wheat, barley and oats – together with weeds and hedgerow species. The barley and oats could have derived from animal feed rather than arable cultivation.

Nothing previously identified in Cornwall compares with these enclosures. In general Late Iron Age or Romano-British fields are small, accretive and rectilinear, as at Chysauster, in Madron parish (Smith 1996, 170), Stencoose, St Agnes (Jones 2000-1, 82–5), and Tremough (Jones 2002, 44).

The two northern enclosures, which in fact form one very large enclosure, are likely to have had earthen banks on their inner edges, formed by upcast from the ditches and, in the case of [401], revetted by posts for at least part of their length. With their wide, deep ditches these would have presented formidable obstacles, perhaps intended to keep cattle raiders out as well as stock in. The stony bank forming [400] may have supported timbers or have been surmounted by a hedge of thorn, essentially forming a corral or pound. Whereas [400] has an obvious entrance on its western side, the entrance to [401]/[402] is more puzzling. The eastern side of [402] may have been closed by the stony bank [173], a different boundary type, and the entrance may have been further to the west beyond the area of excavation.

It is difficult to infer what activity was taking place outside these enclosures; possibly winter grazing. Presumably, there was an area where arable cultivation was taking place, perhaps in the vicinity of the round; the ceramics certainly indicate settlement somewhere in the close vicinity.

The shallow ditches and terminals [15], [48], [404] and [54] at the southern end of the site were perplexing, and during excavation it was assumed that this part of the site was heavily truncated by later activity. But the Romano-British ditch [10] had a strong, deep profile, arguing against truncation in this area, and it is possible that these other features were simply bedding trenches for soft or thorny hedges and do not represent ditched and banked enclosures.

### Early medieval and medieval

The establishment of the settlement at Trenowah and its field system represents another major reorganisation of the landscape, the last before the construction of the Distributor Road in 1997. The place-name is of interest, suggesting that the settlement was newly established at some point in time, and indicating a period before this, but post-dating the phase of Romano-British activity, during which the area was less extensively used, perhaps for several centuries. The place-name element *tre-* is probably later than the fifth century AD, while the latest that place-names containing this element were formed is probably *c* 1100 (Padel 1985, 223–5). The first recorded occurrence of the place-name *Tre + nowyth* in Cornwall is 969 AD and two manors of that name appear in the Domesday Book, so in general a place-name containing these elements is likely to be earlier than 1100 (*ibid.*).

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Adam Sinclair, Emma Smith, Kate Smith, Justin Wiles and Pam Worthington.

Tanya Golding, Imogen Wood and Carl Thorpe processed the finds and Bryn Perry-Tapper processed the soil samples. Neil Craze and Nigel Thomas produced the plans and section drawings for this report, Carl Thorpe drew the pottery and iron object. The project manager was Peter Rose, who provided advice and administrative support throughout.

### Project archive

Artefacts and environmental material retrieved during the excavations, together with site documentation, specialists' reports, drawings and photographs are housed at the Royal Cornwall Museum, River Street, Truro TR1 2SJ. The HES project number is 1997042, the site code THE 97 and the museum accession number 2005.23.

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# Gear and Caervallack, St Martin-in-Meneage: excavations by Time Team, 2001

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PHIL HARDING, PETER HERRING, HENRIETTA QUINNELL and CARL THORPE

*Investigations were carried out by Time Team in 2001 at Gear hillfort and the nearby Caervallack defended enclosure and its annexe. Geophysical survey revealed a complex of enclosures, boundaries possible roundhouses and other features within the Gear hillfort enclosure. The results from Caervallack were less spectacular but indicated a higher level of activity in the annexe than in the apparently primary circular enclosure.*

*Seven trenches were opened at Gear and four at Caervallack. These provided evidence for broadly contemporary occupation of both sites in the Later Iron Age, with activity at Gear extending into the Roman period. At Gear the investigations also found evidence for earlier activity on the site, including a pit with a deposit of Neolithic pottery. Lithics also indicated Neolithic activity at Caervallack.*

In July 2001, the television programme Time Team carried out archaeological investigations on two later prehistoric enclosures in St Martin-in-Meneage parish on the south side of the Helford River (Fig 1). Gear is a large univallate hillfort up to 300m across, enclosing an area of about 6 ha (15 acres). The owner, Mr Rex Hosking, has collected numerous prehistoric artefacts from the ploughsoil in the interior over many years, including flint, pottery and worked stone. Caervallack is considerably smaller, consisting of a circular enclosure approximately 70m in diameter with an ovoid annexe on its eastern side. Both sites are Scheduled Monuments (Caervallack: Cornwall SAM 435; Gear: Cornwall SAM 436).

Objectives set out in the research framework for the Time Team investigation (Butterworth and Herring 2001) included assessment of the potential

for evidence of earlier prehistoric activity at Gear, hinted at by some of the surface finds, increased understanding of the nature, density and date of activity within the interior of each of the monuments and dating the enclosing earthworks at the two sites. In addition, the project aimed to assess the possibility of occupation at each site during the Roman period and to investigate the wider landscape setting of the two enclosures and their relationship to each other.

Geophysical survey was carried out on both sites and was important in providing an overall view of the below-ground remains which allowed for careful siting of the excavation trenches. During the three-day project a total of 11 trenches were opened on the two sites. Landscape fieldwork was carried out by Stewart Ainsworth (English Heritage) and Peter Herring (then of Historic Environment Service, Cornwall County Council).

KATE EDWARDS AND GRAEME KIRKHAM

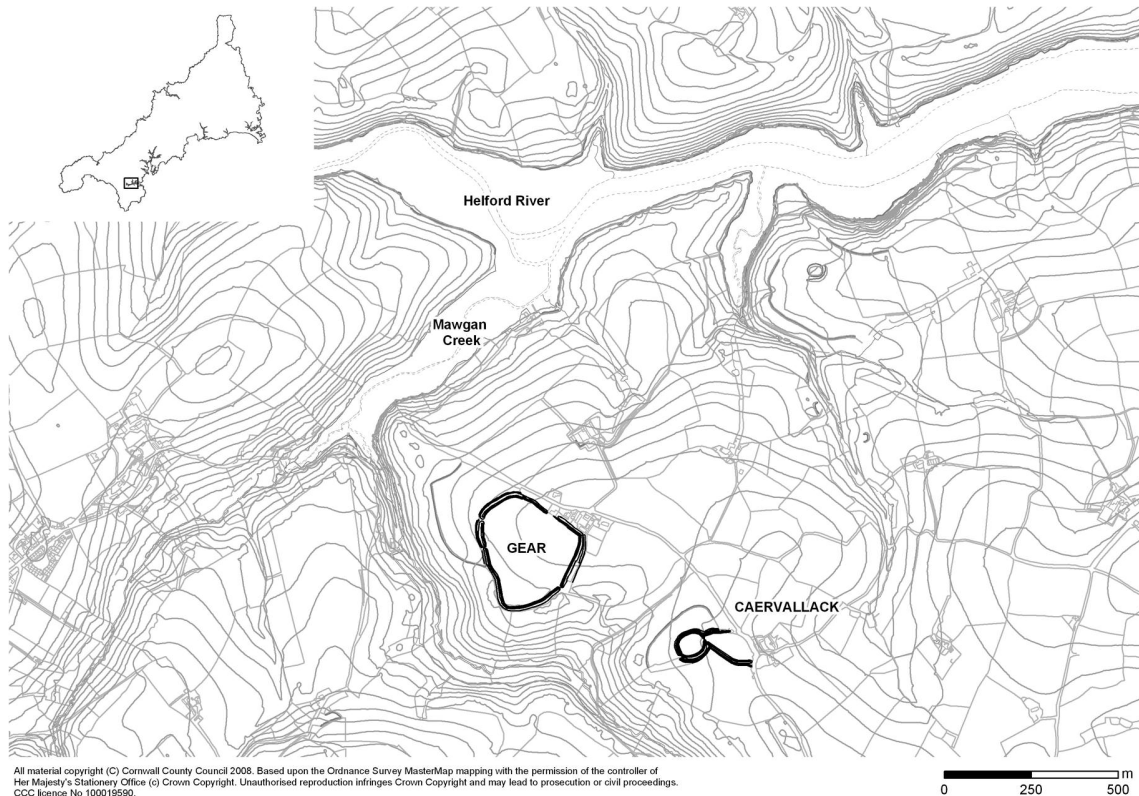


Fig 1 Gear and Caervallack: location.

In the immediate aftermath of the project, Peter Herring produced a file note on the investigations (Herring 2001). Specialist reports were subsequently produced on the pottery, flint, fieldwalking finds, charcoal and charred macrofossils (Quinnell, below; Harding, below; Gale, below; Carruthers, below); no reports appear to have been obtained on possible metalworking residues and metal items or on burnt bone or burnt clay. A draft archive report was compiled for Time Team in 2003 (Edwards 2003) and a revised report in 2005 (Edwards 2005). The latter also included illustrations of the pottery and flints produced by Carl Thorpe (Cornwall County Council Historic Environment Service), and computer-produced graphics of the trench plans and sections recorded during and after the investigation. The paper archive for the project, including context sheets and field drawings, was deposited in 2008 at the Royal Cornwall Museum, Truro (TRU 2008.13). Finds recovered during the project will be deposited at the Museum in due course.

In 2008 L-P Archaeology, on behalf of Videotext Communication, the Time Team production company, commissioned Cornwall County Council Historic Environment Service (HES) to produce a report on the investigations for publication, based on the earlier archive report. During the course of this project some limited additional desktop work was carried out to enhance presentation of the context of the sites and detailed reference was made to the site drawings and context sheets held in the paper archive. The original pottery report has been revised to take account of recent advances in understanding of prehistoric and Roman-period ceramics in Cornwall (Quinnell, below).

### Location and historic setting

Both monuments are situated on the south side of the upper reaches of the Helford estuary (Fig 1). Gear (SW 7210 2480) is located at 65m OD on the western end of a steep-sided spur lying between the



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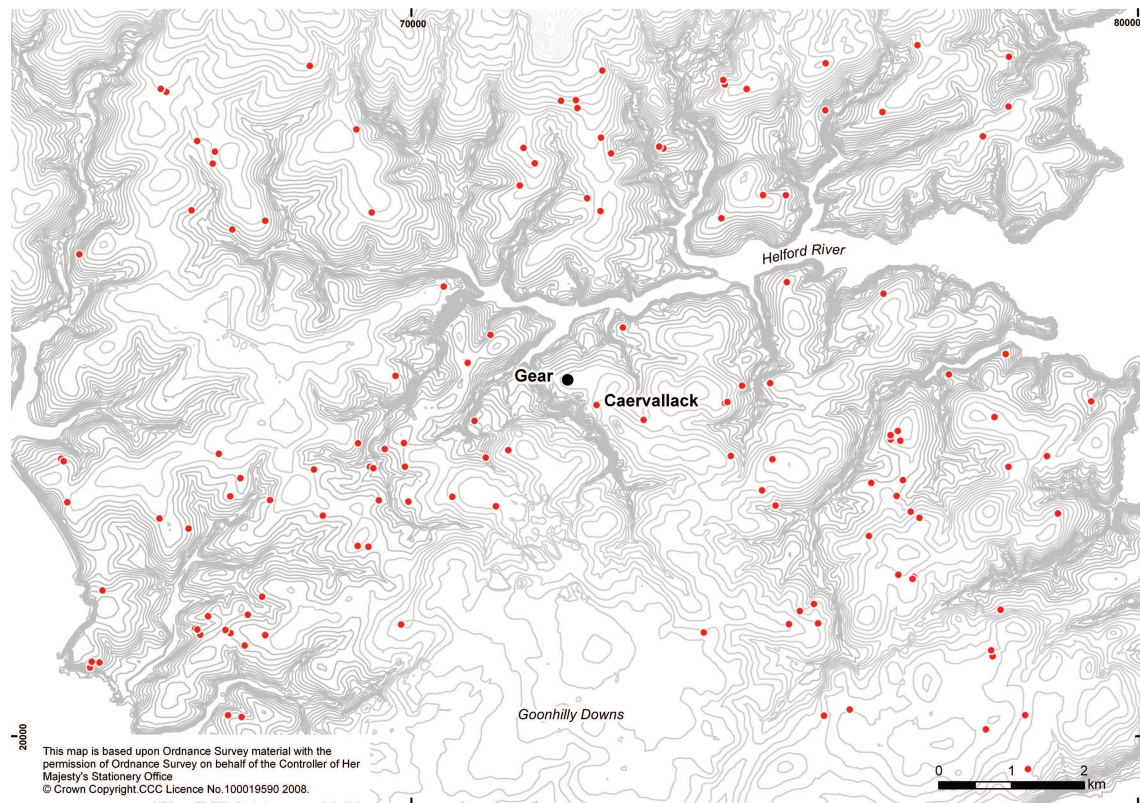
Helford River and Mawgan Creek to the north and a deep stream valley to the west and south which runs into the head of Mawgan Creek (colour plate 3). Caervallack (SW 7255 2455) lies 400m south east of Gear and is similarly located on the west side of the ridge at 75m OD. It is set above steep slopes falling into the same stream valley running north into Mawgan Creek. A dry re-entrant falling into the valley to the south lies between the two sites. Neither site occupies the highest part of the ridge; this lies about 300m north east of Caervallack. Distant views (and potential views) to the east from both sites are therefore limited, closed off by higher ground.

The underlying geology is within the Gramscatho group of Devonian rocks. Gear overlies sandstone and interbedded argillaceous rocks of the Portscatho formation while Caervallack is on the Roseland Breccia (also

Meneage Breccia) formation in which slates, shales and quartzites predominate (British Geological Survey 2005; Flett and Hill 1946, 23). The soils are good by Cornish standards, comprising well-drained fine loams (data from National Soil Resources Institute Soil Systems Group, 2004).

The interior of Gear is under cultivation; much of the enclosing rampart circuit is covered in dense vegetation and substantial trees. Caervallack is under grass with large trees on the banks of the main enclosure and the annexe. Both earthworks lie within the historic bounds of the Trelowarren estate. Gear is owned by Mr Rex Hosking of Gear Farm, Caervallack by Mr Andrew Hosking of Caervallack Farm.

The landscape of the Meneage area to the south of the Helford shows a pattern of farm settlements with origins at least as early as the early medieval period set on the ridges between the steep-sided



*Fig 2 Round-type enclosures of probable Iron Age and Romano-British date in the Helford - Meneage area (data from Cornwall and Scilly Historic Environment Record). It is notable that many of the sites occur in pairs or small clusters, but it is not clear whether these represent contemporary or successive enclosures.*

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wooded valleys of the streams running north into the Helford. Evidence for later prehistoric settlement in this area indicates a similar pattern. Within 2–3 km of Gear and Caervallack there are round-type enclosures to the south west at Halligye (with fogou), Bojorrow, Chygarkye and Carleen, to the west at Gweek and Gwarth-an-Drea, to the north east at Tremayne and to the east near Chenhall, Carnbarges and Withan (Fig 2; data from Cornwall Historic Environment Record). A band of similar enclosures extends south west towards the sea from the heads of the Helford River and Mawgan Creek, with at least 30 enclosures in an area roughly 6 km by 3 km. Further rounds are known to the north of the Helford, including two sites at Bonallack Barton and a complex of enclosures at Merthen (Harvey 1970), all less than 3 km from Gear and Caervallack as the crow flies. Even allowing for the possibilities that some of these sites may be misidentified as rounds, or that those in localised clusters may have succeeded each other rather than being contemporary, this was clearly a well-settled landscape in the later prehistoric and Roman period.

## Gear

*Graeme Kirkham and Peter Herring*

The first certain documentary reference to a settlement at Gear dates from 1262–66 (Institute of Cornish Studies (ICS) Place-name Index, St Martin-in-Meneage), when it was recorded as *Caer*; however, a Domesday Book (1084) reference to *Caer* may also be to this site (Thorn and Thorn 1979). The name derives from the Cornish *ker*, meaning a fort or round, although this place-name element is more often associated with rounds than with larger enclosures such as Gear (Padel 1985, 50–4).

The hillfort was noted by Polwhele (1803, 125), who described it as a ‘strong circumvallation’ and noted that the only known find from the site was a copper coin, ‘quite defaced’. The site was surveyed by the Ordnance Survey in 1972 and described as a univallate enclosure of about 6 ha situated on the crest of a hill (Ordnance Survey Archaeological Index Card and Antiquity Model, SW 72 SW 13). A possible entrance, partly overlain by farm outbuildings, was identified on the northern side



Fig 3 Gear (left foreground) and Caervallack (top right) from the air, looking east, July 2008 (Photograph: Historic Environment, Cornwall Council; F85–132).

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and a gap on the western side was also suggested as a possible original entrance. The enclosing bank and ditch were found to be generally intact and well preserved, although much was under thick vegetation; a dam and modern pond had been constructed within the ditch on the eastern side of the enclosure and part of the ditch had been infilled with farm refuse.

A north-facing stone-revetted scarp following the ditch of the hillfort around its southern side and continuing along the southern edges of the fields to east and west was identified by the Ordnance Survey as the boundary of Trelowarren 'park'. A deer park was created at Trelowarren in the sixteenth century but described in the 1730s as 'long since disparted' (Pett 1998, 260). The good condition of this revetment and the fact that it was clearly designed to prevent access by livestock and perhaps also rabbits and vermin to the Trelowarren woods to the south from the farmland to the north

suggests that this is a later, probably nineteenth-century feature (*cf* Pett 1998, 71, and see below, Caervallack).

The site has given its name to the 'Gear Rout', a post-English Civil War skirmish between Parliamentary forces and Royalist rebels in 1648. A force of 300 Royalist foot and 40 horse was driven from Mawgan churchtown and moved to a 'most advantageous position' at Gear, but abandoned it when the Parliamentary force advanced (Stoyle 2000; 2002, 123–4). This episode may provide the context for the find of a 4 lb cannonball in the hillfort ditch reported by Lake (1870, 274) and it is possible that there was some minor adaptation of the hillfort ramparts to create defensive positions.

Finds made over a period within the interior of Gear by the owner, Mr Rex Hosking, were inspected by Carl Thorpe (HES) in 2000 (Thorpe, below). They included a large number of flints,

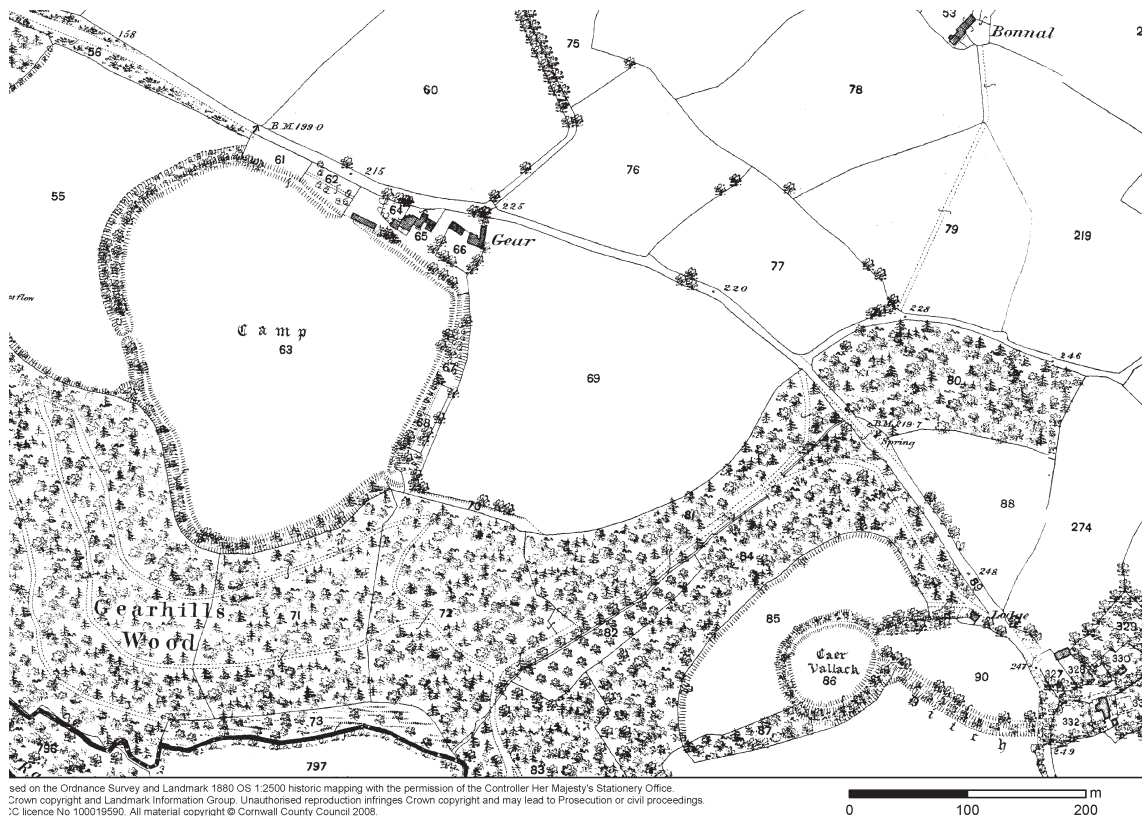


Fig 4 Gear and Caervallack in their post-medieval landscape setting on the fringes of the plantations of the Trelowarren estate (Ordnance Survey 1st edition 1:2500 map, c 1880).

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most of which are likely to be of Neolithic or Bronze Age date, and several sherds of gabbroic pottery, probably of Iron Age or Romano-British date.

### The Time Team investigations

#### *Geophysical survey*

A fluxgate gradiometer survey was carried out at Gear in advance of the excavations. This produced spectacularly good results, indicating the presence of complex archaeological features throughout much of the interior of the hillfort (Figs 5–6). An internal quarry ditch was identified running inside and parallel to the enclosing bank on the north-western and southern and south-western sides. This feature may run across an entrance on the west side of the hillfort but there is also a hint of ditches and pit-type anomalies forming a route from this entrance towards the centre of the enclosed area.

A series of curvilinear discontinuous ditch lengths appear to form an irregular enclosure within and approximately concentric to the rampart circuit to the west, south and east. The date of these ditches is unknown but it is possible that they formed an internal sub-division to the hillfort: much of the activity revealed by the geophysical survey is concentrated in the eastern portion of the enclosure and there are relatively few apparently archaeological anomalies on the west side in the zone between these ditches and the ramparts. The frequent intercutting of features, particularly in the dense area of activity on the eastern side, indicates that there were at least two phases to the occupation, marked by major differences in layout, but also numerous minor sequences.

Two approximately D-shaped enclosures, one to the north, another to the south, may have been associated with this possible internal ditched enclosure. Two further enclosures appear to have been attached to the inner face of the hillfort bank



*Fig 5 Greyscale results of a fluxgate radiometer survey (GSB Prospection) of the interior of Gear, with current Ordnance Survey mapping.*

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Fig 6 Interpretation of the geophysical survey results from Gear (GSB Prospection).

to the south east and south west, the latter occupying the end of a small south-facing spur. There are hints of other more rectilinear enclosures in the north-eastern part of the interior.

At least 16 circular or sub-circular anomalies 10–15m in diameter were identified by the survey, some with central features likely to represent hearths or pits. These are of a size which could represent the ring gullies often associated with later prehistoric roundhouses, although some might also conceivably represent the ring ditches of Bronze Age barrows. Several of these circular features appear to be located within ditched enclosures of various forms, although there is no certainty that these are contemporary. Numerous other anomalies within the interior could represent pits or hearths or portions of further enclosures.

Linear anomalies indicating double-ditched boundaries – the typical signature of removed Cornish hedges – run north-south and east-west and divide the enclosure into three parts. These divisions do not appear on the St Martin-in-Meneage tithe map of *c* 1840 or later Ordnance Survey mapping, but Polwhele (1803, 125), probably writing in the late eighteenth century, described Gear as ‘inclosing at present three fields’. It is virtually certain, therefore, that these anomalies indicate the position of Cornish hedges and their accompanying ditches removed in the early decades of the nineteenth century.

#### *Landscape observations*

##### *Peter Herring*

With an enclosed area of almost 6 ha, Gear is the second largest inland prehistoric enclosure in Cornwall, surpassed only by Castle Canyke, Bodmin, which encloses 6.4 ha. Gear is not set on a hilltop but instead extends across a gentle west- and south-facing slope on the southern side of a steep-sided spur (Fig 1); the slightly domed interior accommodates three low, rounded minor summits and views within and across the hillfort are to some extent blocked by the rising ground. Views to the south focus on the low hills of what is now the Trelowarren estate. There are prospects to the west towards the facing slope of the adjacent stream valley and more distantly to the Helston Downs and to Tregonning and Godolphin Hills. From the northern side of Gear there are views of the high ground of Carnmenellis and the series of north-south ridges between Constantine and Wendron,

and from the northernmost point on the enclosing rampart there is a limited view north over the upper part of the Helford River at its junction with Mawgan Creek and wider views over the slopes behind the northern shore of the estuary. All views are currently limited to some extent by tree cover but the potential for rather wider outward prospects from the site under less wooded conditions are confirmed by GIS-based viewshed modelling (Bryn Tapper, pers comm). Views to the east are restricted by rising ground but the viewshed modelling suggests that with a reduced level of tree cover the enclosure at Caervallack, located about 10m higher and on the far side of the head of a shallow re-entrant, would have been visible from the eastern rampart of Gear.

On the southern and western sides the enclosing earthworks were clearly carefully positioned to follow a natural break of slope, thereby enhancing their apparent height when viewed from outside. The outer face of the main rampart is generally up to 4m high (including the inner face of the ditch, where present). The inner face, however, is up to 1.5m high in places but for the most part very much less.

Close inspection of the rampart circuit suggests that the bank and ditch were probably constructed as a series of distinct, more-or-less straight sections. The rampart as it survives is notably uneven and this may reflect this apparently piecemeal construction process, perhaps carried out by small teams of people working over an extended period of time.

The most probable candidate for a principal original entrance is an opening to the west, currently used as a farm gate (trench 5). This is in an apparently unimposing position, set low on the slope, but the enclosing earthworks adjacent to this entrance are rather more impressive than elsewhere on the circuit. To north and south of the entrance the earthworks measure approximately 19m across with a ditch 7m wide and up to 1.6m deep and a counterscarp 2.5m wide and 0.5m high fronting the main bank (Fig 7).

Around much of the remainder of the hillfort perimeter the area immediately outside the main bank has been affected by later disturbance but there is little to indicate the former presence of a substantial ditch, suggesting that the earthworks close to this western entrance were given particular emphasis.

The position of this entrance would have allowed those who controlled and occupied the hillfort to

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*Fig 7 The outer rampart face, ditch and counterscarp close to the western entrance at Gear. 2m scale. (Photograph: Graeme Kirkham).*

manipulate the arrival and departure of visitors in interesting ways. A hollow-way leads up from the tidal inlet above Gear Bridge on the south side of Mawgan Creek, which lies just over 200m west of the entrance and more than 50m below it (colour plate 3). The track rises steeply through ancient oak woods and an air photograph examined during the investigation showed it as a crop mark crossing the field to the west. While in the historic period this route is likely to have been used for bringing sand and seaweed onto the fields within the hillfort, it may have earlier origins. We can envisage Iron Age travellers, perhaps traders, probably not having a clear idea of the landscape they were entering, sailing up the Helford and into the creek. They were perhaps guided up through the woods to the enclosure's entrance. Because the hillfort entrance is set down the slope, moving through it would

have revealed very little of the interior of the hillfort other than the rounded form of one of the small hillocks immediately in front of them, with the enclosure banks running away on either side. As their hosts led them up the hill towards the highest point, the rest of the huge enclosure, including the eastern area where most of the settlement remains appear to have been, would have come into view. Not only this, but because the enclosure is on a slope, the Meneage and Lizard to the south were laid out before them. From travelling low on water and then climbing through dark woods the visitor was brought into open country and rapidly acquainted with their hosts' enclosure and probably also part of the territory for which Gear was significant. On departure, visitors passing out through the entrance would have seen the imposing hill of Tregonning skylined ahead of

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them, 13 km to the west, with Castle Pencaire, the next nearest large prehistoric enclosure, at its summit.

It was suggested during the investigations that the curvilinear enclosure revealed by the geophysical survey on the west side of the southern 'corner' of the hillfort might in fact be earlier than the hillfort circuit (Fig 6). Possible slight earthwork traces of this internal enclosure were noted, apparently running under the main hillfort rampart; a low bank in the woods outside the enclosure to the south is also possibly related, although this could simply be part of a counterscarp bank altered by the construction of the stone-revetted Treloar Warren boundary at the base of the hillfort rampart.

One evening during the Time Team visit, as a group watched the sun setting over the Wendron Hills, Rex Hosking pointed out that, when viewed from the highest part of the Gear enclosure, the summer solstice sun sets directly behind the

skylined standing stone on Longstone Downs, Sithney, about 9 km to the north west. This stone, presumably Early Bronze Age in date, is not on a major summit so must only be skylined from a relatively small sector of the landscape, and the solstice sunset would only be visible from points on a line running south east from it. It is interesting that the later prehistoric Gear enclosure captures such a spot and may hint that its location had been of ceremonial or cosmological significance over a longer period.

### *Fieldwalking*

#### *Theresa Hall*

About 1 ha of the interior of the hillfort was ploughed in advance of the investigation, in order that fieldwalking could be carried out (Fig 8). The ploughed area was subdivided into a 10m grid based on the 20m geophysics grid, each grid line being given an individual identification code: A to

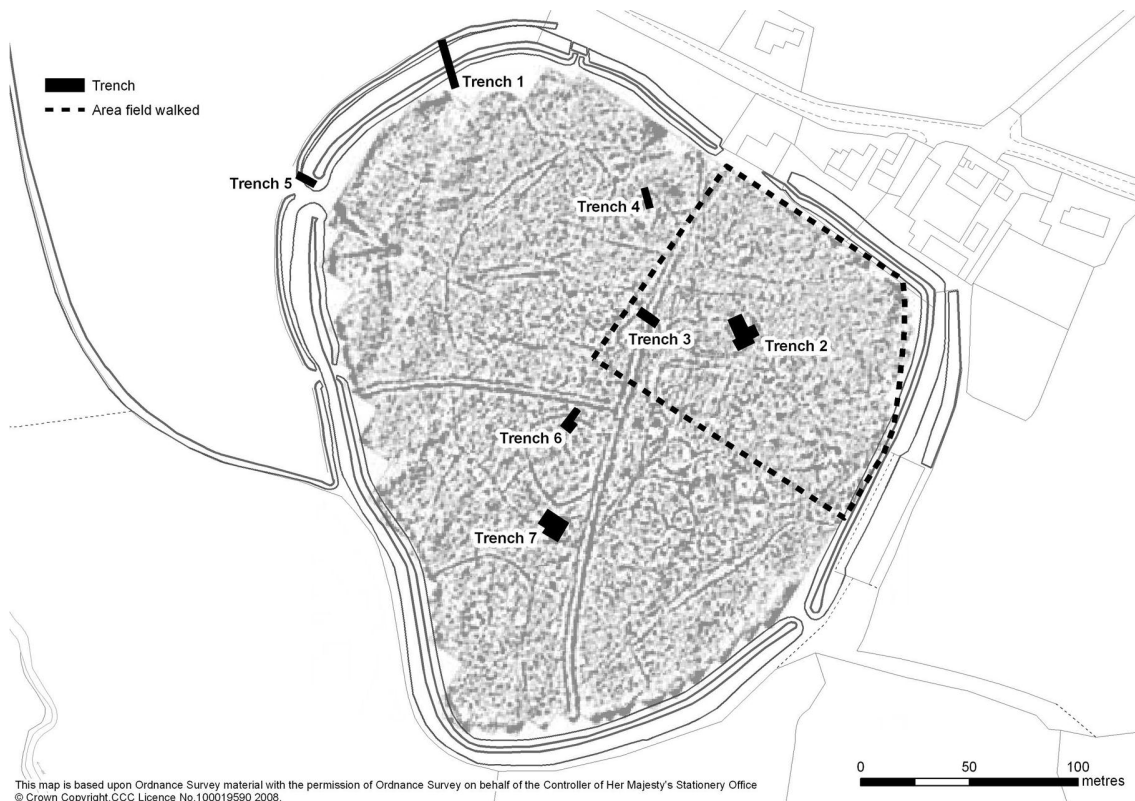


Fig 8 Gear: location of excavated trenches and of the area over which fieldwalking was carried out.



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J along the north west side and 1 to 12 along the south west, both series starting in the western corner of the area. Each 10m square was walked for 20 minutes by volunteers. The fieldwalkers were instructed to collect everything that was not natural and small water-worn pebbles which might have been used as slingshot. The material was subsequently sorted by Carl Thorpe (HES), waste material discarded, and the remaining finds catalogued (Thorpe, below). Pottery recovered through fieldwalking is noted in Table 4 and discussed later in this report (Quinnell, below). Further information on finds and their distribution is included in the archive reports (Edwards 2003; 2005). Metal detecting was also carried out over some squares of the grid but there is no record of finds resulting from this.

### *Excavation*

Seven trenches were excavated on various parts of the site, with their locations guided by the results of the geophysical survey (Fig 8). All of the trenches were excavated by machine down to the highest archaeological deposits; subsequent work was carried out by hand.

#### TRENCH 1

Trench 1 (Figs 9–10) was positioned over the bank and ditch at the northern ‘corner’ of the enclosure. It was aligned approximately north-south and measured 15m by 2m. The topsoil (100) which extended across the bank was 0.3–0.4m deep.

The upper surface of the rampart was very disturbed by rabbit holes and tree roots and the remains of a stone facing, (101) and [102], part of a Cornish hedge, were encountered on the inner slope, just below the summit. The rampart material was generally homogeneous, a creamy-brown silty clay, although the lower layer (108) was firmer than the overlying (104) which may have been partly altered by weathering and slumping.

A sondage cut through the toe of the inner face of the bank revealed an old land surface (105) made up of a hard orange-brown silty clay incorporating a few small pebbles (Fig 9); a small quantity of charcoal was recovered from this context during wet sieving but was not further examined. The west-facing section to the sondage (not illustrated) did not show (105) but revealed a layer (109) in the equivalent position, noted as firm brown-cream silty clay also incorporating charcoal. (105) and

(109) both overlay two further pre-rampart layers, (110) and (111), described as firm orange-cream clay. During the investigation it was suggested that the old land surface could also be traced on the outer face of the bank, with a narrow berm surviving between the outer edge of the bank and the inner edge of the ditch; this does not appear in the recorded section which only shows the ditch fills (Fig 10).

The outer ditch [121] was approximately 4.5m wide at the top, 2.5m at the base, and had been cut at least 1.75m into the bedrock; it had steep sides and a flat or slightly rounded bottom (Fig 10). A deposit of shillet (117) in the centre of the ditch bottom is likely to represent slumping and settling of material from the ditch sides and bank. The lower fills within the ditch, (118) and (120) were respectively a firm, brownish-cream silty clay with shillet fragments and a firm creamy-orange clay with few shillet pieces up to 0.05m in size. Fill (116), above (120), was a firm brownish-orange clay with stones up to 0.05m. Fill (115) was a loose creamy-brown silty clay, again containing some small stones. The upper fill (114) was a loose brownish-orange topsoil extending across the ditch and onto the rampart to the south with a similar although more vegetation-rich layer (113) forming the upper surface within the hollow of the ditch.

The deposits filling the ditch were noted as broadly comparable with those encountered in trench 5, approximately 100m to the south west (see below).

Trench 1 produced 19 fragments of Iron Age pottery from topsoil (100) on the bank, including a rim of the South Western Decorated Ware tradition. A prehistoric flint flake was also recovered from this context.

#### TRENCH 2

This trench lay approximately north-south and measured 10m by 5m with an extension on its east side (Fig 11). It was located to investigate one of the semi-circular enclosures with a central magnetic anomaly indicated by the geophysical survey, assumed to indicate a late prehistoric roundhouse (Fig 8). The trench lay within the area ploughed and fieldwalked prior to excavation.

The ploughsoil (200) was removed by machine and was 0.3–0.35m deep. All of the features identified were cut into the subsoil (222), a compact shillet in a clay matrix. All were apparently

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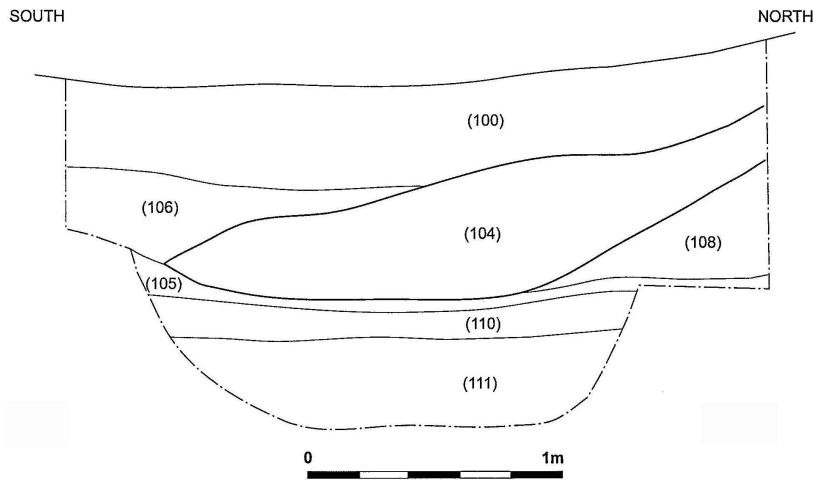


Fig 9 Gear, trench 1: section across lower part of the inner face of the bank (with sondage).

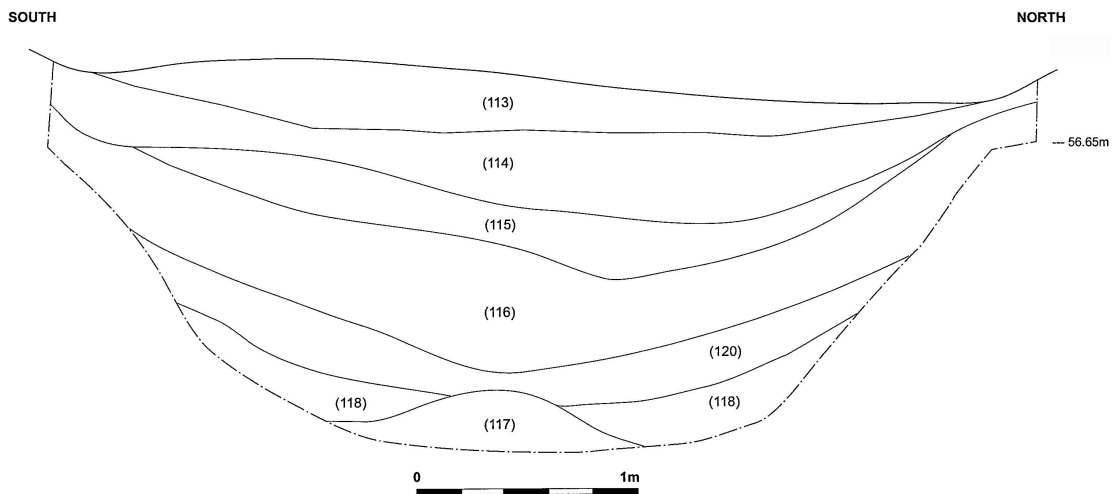


Fig 10 Gear, trench 1: section across outer ditch.

truncated, reflecting past agricultural use of the land.

At the southern end of the trench two ditch terminals, [205] and [218], were revealed lying some 3m apart, and were interpreted as an entrance. The shallow western terminal [205] was 1.5m wide and 0.25m deep. It contained a moderately compact grey silty clay upper fill (202) containing frequent stones and including fragments of pottery and burnt bone. At the terminal this overlay a primary fill (214) of compact pale orangey-grey silty clay with frequent shillet and charcoal and one sherd of

pottery. Charcoal from context (214) gave a radiocarbon date of  $2199 \pm 45$  BP, 390–160 cal BC (95.4%) (Wk-12409). A further section across the ditch approximately 2m south west of the terminal (Fig 11) showed only fill (202), suggesting that the deposits represented by (214) may have been restricted to the terminal alongside the entrance.

The eastern ditch terminal [218] was approximately 1.9m wide but only 0.17m deep. It contained a single fill (217) of firm mid-to-dark brown silty clay incorporating a few sherds of abraded pottery and a fresh sherd with a South West

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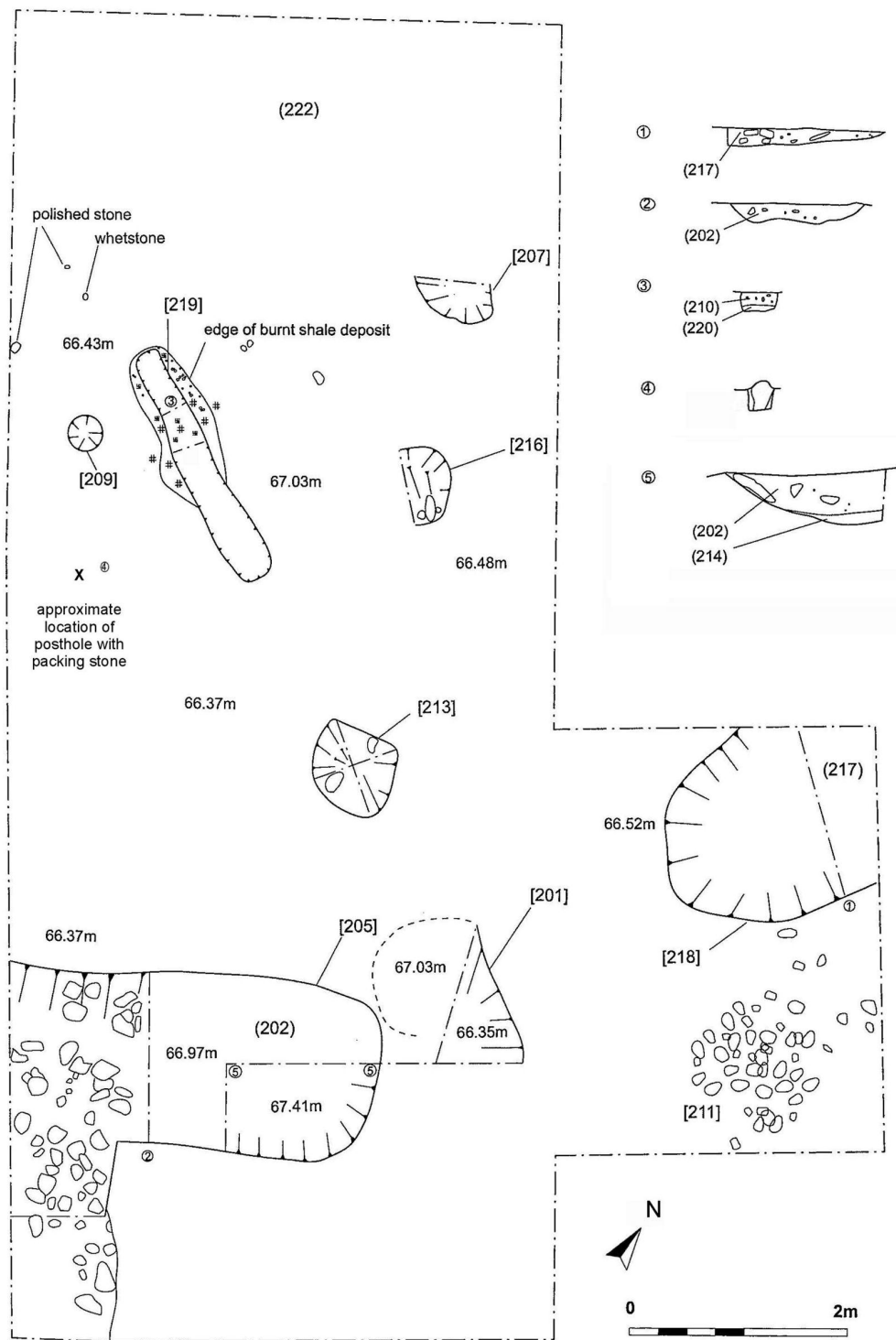


Fig 11 Gear, trench 2: plan and sections.

Decorated incised pattern. Charcoal from (217) produced a radiocarbon date of  $2180 \pm 54$  BP, 390–90 cal BC (95.4%) (Wk-12410).

To the south of this terminal, a compact mid-brown silty and stony deposit (210) infilled a shallow depression [211]; this was partially excavated and interpreted as the remains of a stone-lined drain. Pottery – a lid in a burnished fabric (P11) and sherds in South West Decorated form – and a broken whetstone (S5) were recovered from the fill (210).

Removal of the topsoil over the interior of the enclosure exposed a linear red and black burnt area (204) incorporating burnt stone and pottery and some charcoal. When excavated, this revealed a linear cut [219], vertical-sided and with a flat base, 2.3m long, up to 0.4m wide and a little under 0.2m deep (Fig 12). Within this was a black, charcoal-rich deposit (220) incorporating burnt clay. This overlay a quantity of charred wood (221) lying in the base of the cut, including roundwood (Jo Sturgess, pers comm) and some large pieces



Fig 12 Linear feature [219].

interpreted as possibly representing a burnt plank or timber (Gale, below). Charcoal from the superficial burnt deposit (204) was predominantly from oak (*Quercus*) heartwood and gave a radiocarbon date of  $2095 \pm 45$  BP, 210 cal BC – cal AD 10 (91.9% probability) (Wk-12407). Feature [219] was interpreted as the remains of a wooden structure bedded in or lining a trench, perhaps part of an internal fixture of the roundhouse, which had burnt *in situ*.

Close to the west side of the north end of the burnt feature [219], a shallow bowl-shaped pit [209], 0.3m in diameter, contained a pot without a base [208]; the upper part of the pot was missing and had presumably been removed by ploughing (Fig 13). The fill of the pot (206) was a mid-brown stony silt with frequent charcoal inclusions and contained pottery fragments, some from the same vessel but also from at least one other (Quinnell, below). A sample from the fill of the pot was submitted for scientific dating and gave a radiocarbon date of  $2091 \pm 43$  BP, 210 cal BC – cal AD 10 (92.9% probability) (Wk-12408).

A posthole approximately 0.2m in diameter with an *in situ* packing stone lay 1.6m to the west of the southern end of the burnt feature [219] (the approximate location is shown on Fig 11; section drawing 4).

A shallow, sub-circular, bowl-shaped pit [213] up to 0.9m in diameter was located between [219] and the western ditch terminal [205]. This was excavated in quadrants and contained a single fill (212) of very compact stony orangey-brown silty clay containing burnt clay. There were no finds from this feature.



Fig 13 Pot [208] set in pit [209], partly excavated. Tape extended to 0.3m.

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A further irregular bowl-shaped cut [216], 0.8m across and up to 0.3m deep, lay approximately 1.2m east of the south end of hearth [219]. Its fill (215) was a very compact pale orange-brown silty clay with frequent shillet fragments. It included one sherd of pottery.

Another shallow hollow, [207], lay to the east of the north end of [219]. This feature was only partially excavated but was at least 0.6m across. Sherds from a probable Early Iron Age vessel in an abraded gabbroic fabric (**P12**) were recovered from it.

Two use-polished slickstones and a rubbing stone (**S6-8**) were found pressed into the natural (222) adjacent to the burnt feature [219] and the pit [209] containing the pot. Stones of this kind are thought to have been used in the working of cloth or leather (Quinnell, below).

The note on soil sample processing in the Time Team archive report (Edwards 2005) records that the samples from trench 2 included 'charcoal, burnt clay (hearth) and slag' from contexts (202), (204), (210), (214) and (221). It also noted 'metal fragments, possibly blades or razors', in (202), (204) and (214), together with small amounts of charcoal and slag in (206) and five fragments of bone totalling less than 1g from (204), (206) and (214). No further information is available on the burnt clay, slag, metal items and bone referred to. Charcoal and charred plant macrofossils from trench 2 are discussed below (Gale; Carruthers).

The fieldwalking exercise over this part of the site recovered several pieces of slag and a fragment identified as furnace lining from immediately adjacent 20m grid squares. However, it is probable that this and other similar material found by surface collection had been brought onto the site as a soil improver during the relatively recent past.

The four radiocarbon dates from trench 2 are broadly contemporary at the 95% confidence level and indicate activity in the fourth to first centuries BC (Table 7; Fig 33). At lower confidence levels, however, it is possible that the ditched enclosure, or at least the deposit of the dated material in the ditch terminals, pre-dates final use of the internal features by between 40 and 100 years.

### TRENCH 3

Trench 3 lay within the ploughed area of the field and was positioned to examine a circular anomaly, again thought to represent the gully bounding an Iron Age roundhouse, and paired parallel ditches

lying north-south associated with a removed Cornish hedge (Fig 8). The trench measured approximately 8.5m by 2.5m with the long axis north west-south east. The area was fieldwalked prior to the trench being opened but no finds were recovered from the grid square in which it lay.

The ploughsoil (300) was removed by machine and a small area within the trench was cleaned down to the underlying archaeology. This revealed a short section of a ditch [302], approximately 0.6m deep and 1.5m wide; this was aligned east-west and was therefore not associated with the removed hedge and was more probably part of the circular geophysical anomaly. The ditch sides were slightly concave with a sharp angle at the base (Fig 14). The upper fill (301) consisted of a very hard light to mid-brown silty clay with frequent stones; this overlay a primary fill (303) of very hard mid-brown stony clayey-silt which included some charcoal.

About 40 sherds of pottery were recovered from the upper ditch fill (301). These included a small circular handle (probably residual) from the South West Decorated tradition (**P14**) and other sherds in a gabbroic fabric characteristic of the Roman period (Quinnell, below). Further gabbroic sherds came from the primary fill (303), including a burnished piece with a South West Decorated-type motif, again probably residual, and a small worn sherd with a slight cordon. A flint blade was found in the topsoil (300).

Charcoal from the upper ditch fill (301) derived from narrow roundwood and twigs from gorse (*Ulex* sp.) or broom (*Cytisus scoparius*), oak (*Quercus* sp.) and the hawthorn / *Sorbus* group (Pomoideae). A sample from this context gave a radiocarbon date of  $1765 \pm 46$  BP, cal AD 130-390 (95.4%) (Wk-12411). Fill (301) also contained a

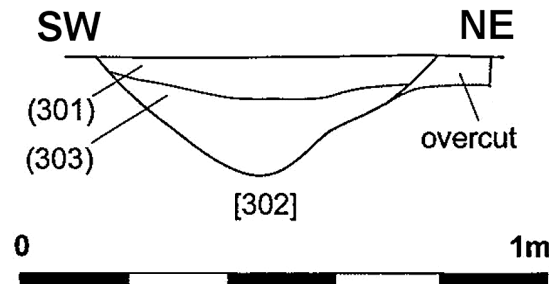


Fig 14 Gear, trench 3: section across ditch [302].

quantity of charred cereal processing waste (Carruthers, below)

No traces were found of the ditches of the removed Cornish hedge identified by the geophysical survey, although the upper edges of the east-west ditch found within the trench appeared truncated.

#### TRENCH 4

Trench 4 was opened close to the northern margin of the site in order to evaluate an apparent double ring ditch lying within a D-shaped enclosure shown by the geophysical survey (Fig 8). The trench was 7m by 1.5m and was laid out approximately north-south.

The trench revealed four gullies, [402], [404], [406] and [408], all aligned roughly east-west within the extent of the trench (Fig 15). The two gullies on the north side of the group, [402] and [404], were both 0.8m wide; the deeper of the two, [402], was 0.25m deep and [404] only about 0.15m deep; [406] was 0.6m wide and 0.12m deep. [408] was a narrow steep-sided slot 0.2m wide and less than 0.15m deep bounding an amorphous hollow to the south west. Each of the features had one fill, (401), (403), (405) and (407) respectively, which was a very compact mid-brown silty clay with a large proportion of small stones, very similar to the natural into which they were cut; the features were very ephemeral and difficult to excavate because of this similarity. At the interface between the topsoil and the natural was a thin stony layer (410).

The date and function of these features is unclear: none produced any artefacts and the only finds from trench 4 were some abraded gabbroic sherds recovered from the topsoil (400).

#### TRENCH 5

Trench 5 (Fig 16) examined the terminal of the hillfort's outer ditch on the north side of the

presumed western entrance. A machine-cut trench aligned north west-south east was opened, 10.6m long and 1.4m wide with an extension to 3.4m wide over the ditch terminal.

The terminal [503] was steep-sided and 1.8–2m deep, cut into the bedrock (502) of fractured shillet. The main fill (506) was a deposit of mid reddish-brown silty clay approximately 1m deep with frequent stones up to 0.25m long; an abraded body sherd in a gabbroic fabric was recovered from context (509), a yellow-grey loose shillet interpreted as possible re-deposited natural, recorded in the base of the terminal under (506) (not shown in Fig 16).

Overlying (506) was layer (504), a firm light-red silty clay with frequent pieces of shillet up to 0.15m long. A partial oblique section recorded during the investigations (Edwards 2005, fig 12) appears to show that both this deposit and (506) below it were truncated by a recut of the ditch, filled by (510), a dark reddish-brown silty clay deposit incorporating a few small stones. This section also suggests a levelling episode across the infilled ditch, truncating the upper portions of (506), (504) and (510), before further slumping took place from the hillfort rampart. There are no indications of when these episodes may have occurred.

Within the ditch terminal was a layer (505) made up of large stones up to 0.35m long, mostly of slate or shillet but including one piece of pink (burnt?) granite. The relationship of this to ditch fills (504) and (506) was unclear and it is not apparent whether this represents a dumped or placed deposit of stones within the terminal or material which had slumped from the ditch edge.

A layer described as cobbles (507), closely packed in places and 0.05–0.15m in size, was partially exposed at the north-western end of the trench. The limited time available meant that this feature was not explored further but it is possible

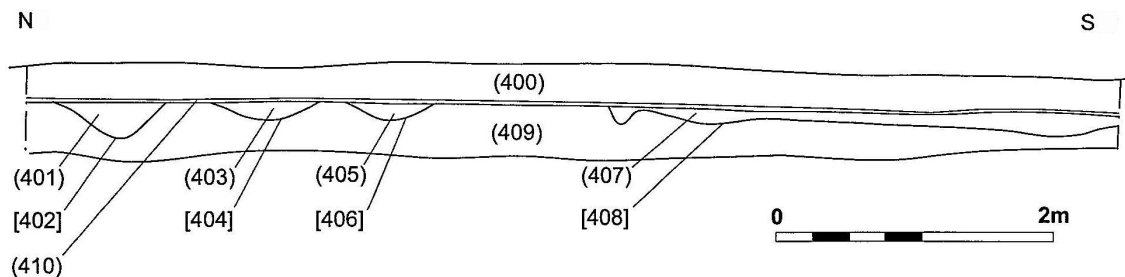


Fig 15 Gear, trench 4: section across gullies.

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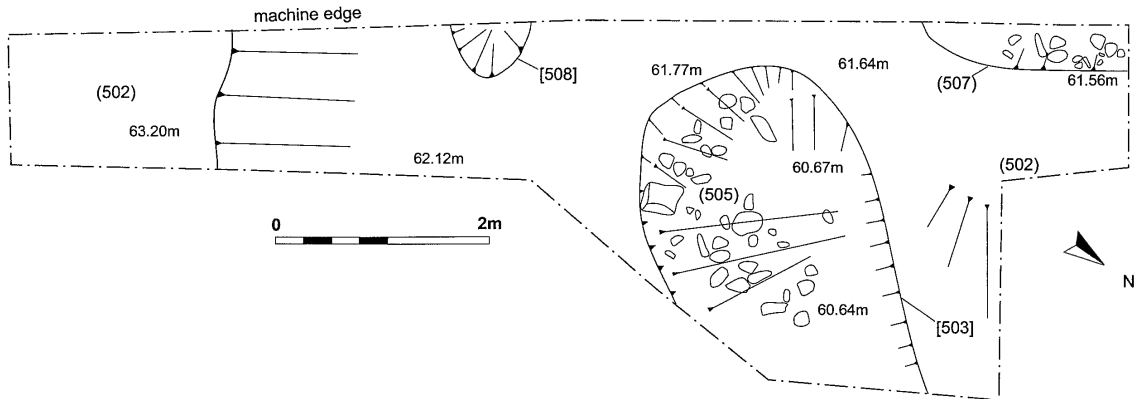


Fig 16 Gear, trench 5: plan of the partly excavated ditch terminal.

that it represents a metalled surface to a route across the causeway between the ditch terminals. The stony material (505) in the ditch terminal could represent further metalling slumped from this surface, although the stones in that deposit were considerably larger.

A sub-circular bowl-shaped feature [508] was found cut into the bedrock of the entrance causeway approximately 1.5m from the edge of the terminal. It was filled by slumped bank material (501) and its date and function are unknown.

Hazel (*Corylus avellana*) charcoal from ditch fill (506) produced a radiocarbon date of  $4748 \pm 53$  BP, 3640–3370 cal BC (95.4% probability) (Wk-12412). This date in the early Neolithic presumably derives from earlier material which had become incorporated into the fill of the Iron Age enclosure ditch.

#### TRENCH 6

Trench 6 was opened over part of a D-shaped enclosure up to 40m across identified by the geophysical survey (Fig 8). Initial interpretations of the survey results were that this might represent a different phase of occupation of the hillfort site. The trench was aligned north east-south west and was 8.5m by 1.5m with an extension to the south east (Fig 17).

Following removal of the ploughsoil (600), a short length of a steep-sided ditch [602] cut into the natural was revealed at the northern end of the trench. It was aligned east-west and was approximately 0.6m wide and 0.37m deep. It contained a single fill (603) of compact light brown

silty clay incorporating pieces of stone up to 0.2m long and some burnt stone. The ditch was overlain by a thin layer (601) at the base of the ploughsoil, a hard light-brown silty clay. Three sherds of pottery in a loessic fabric with large inclusions of feldspar and vein quartz and some finger marking, characteristic of some Early Neolithic wares in Cornwall (Quinnell, below) are recorded as having come from this context. It is probable that three unstratified loessic sherds also came from the same context. H Quinnell recalls being shown all six sherds on site and being told that they came from a ditch, presumably [602]. The matter is not now resolvable.

Approximately 2m south of the ditch, within the interior of the enclosure, was a sub-circular pit [608] up to 0.75m across. This contained a single fill (609) of hard reddish-brown silty clay incorporating angular stones up to 0.08m in size.

In the southern end of trench 6 a large amorphous hollow [604] up to 3m across was uncovered but not fully excavated. This contained a single fill (605) of light brown silty clay with stones up to 0.3m. The western edge of this feature had been cut by a shallow sub-circular bowl-shaped pit [606] up to 0.55m across. This was filled by a loose mid-dark brown silty clay (607) and contained 11 sherds of Neolithic pottery in a loessic fabric, together with charred nut shells and charcoal fragments.

#### TRENCH 7

Trench 7 was opened in order to examine another of the cluster of circular features shown by the

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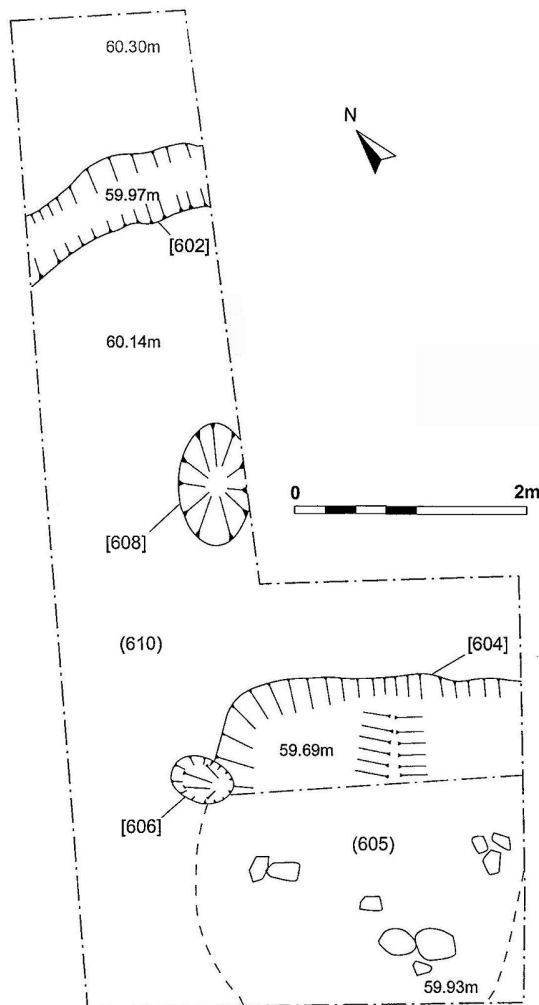


Fig 17 Gear, trench 6: plan.

geophysics in the central area of the hillfort enclosure (Fig 8). These features appear to have a similar morphology – a gapped ring ditch 10–15m in diameter with highly magnetic features within the enclosed area – and were presumed to be Iron Age roundhouses with internal hearths or pits.

The trench measured 9.5m by 9m with its longer axis lying north east-south west (Fig 18). It was opened by machine on the final day of excavation. Several features were revealed cut into the grey shillet bedrock (702) below the subsoil (701), of which two were partially excavated. Time constraints meant that it was not possible to fully investigate this trench.

Feature [703] was a curvilinear ditch 1m wide and 0.4m deep. Slots were cut across the ditch against the side baulks of the trench and a section recorded on the northern baulk. The flat-bottomed ditch had a steep inner face and a more gradual outer edge and contained three fills. The uppermost of these, (704), was a very compact dark-brown silty clay with shillet fragments; no finds were recovered from this deposit. Below this was a similar compact dark-brown silty clay (705) including large pieces of broken stone. Two large amphora sherds (**P19**) were recovered from (705); dating was limited by the lack of diagnostic forms but the fabric appears to be of Dressel 1 or Dressel 2–4 types, suggesting possible dates from the late second BC to the early Roman centuries. Two fragments of slag were also recovered from this deposit. The primary fill (711) of the ditch consisted of a friable dark-brown silty clay with a few stones.

The surface within ring gully [703] was partially cleaned, revealing a possible further ditch [710] inside and concentric to [703]; this was not confirmed by excavation.

An oval pit [708] up to 0.48m across and 0.18m deep lay close to the south-east edge of the trench, within the central area enclosed by the ring ditch. It had gradually sloping sides and a rounded base and contained a single loose dark-brown gritty fill (707). Within this were sherds from a Cordoned Ware vessel (**P16**) and a shoulder sherd from a vessel in the South Western Decorated tradition. There were also sherds in a loessic fabric (Quinnell, below). Two rounded quartzite pebbles, 40–50mm in diameter, were also recovered from the fill of pit [708], together with a worn slickstone (**S9**).

A surface spread of yellow-red burnt clay or daub and charcoal (709) adjacent to pit [708] incorporated sherds from a South West Decorated jar (**P18**) with black coating and burnish and sherds from at least two more South West Decorated jars, one of which had a rouletted pattern. A sample from this deposit gave a radiocarbon date of  $2158 \pm 43$  BP, 370–50 cal BC (95.4% probability) (Wk-12413). A small, localised concentration of slag was noted between these pits and the ring ditch.

A ditch [706] roughly 0.5m wide crossing the line of the ring ditch and aligned west-east was identified but not excavated in the north-western part of the trench. It is unclear whether this feature was cut or was cut by the ring ditch and its dating and function are uncertain.



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Sherds from a decorated vessel in a well-made gabbroic fabric (**P15**) were recovered from the subsoil (701) over the trench, together with two rims of South West Decorated type and sherds from vessels **P17** and **P18**, other parts of which came from the fill (707) of pit [708] and surface spread (709) respectively (Quinnell, below).

A fine flint end-scraper was recovered from context (701) in this trench (Harding, below).

## Caervallack

*Graeme Kirkham and Peter Herring*

A settlement at Caervallack was recorded as *Carmahalek* about 1070 (ICS Place-name Index), the name deriving, as with Gear, from Cornish *ker*, a fort or round, with a personal name, *Maeloc* (Gover 1948, 567).

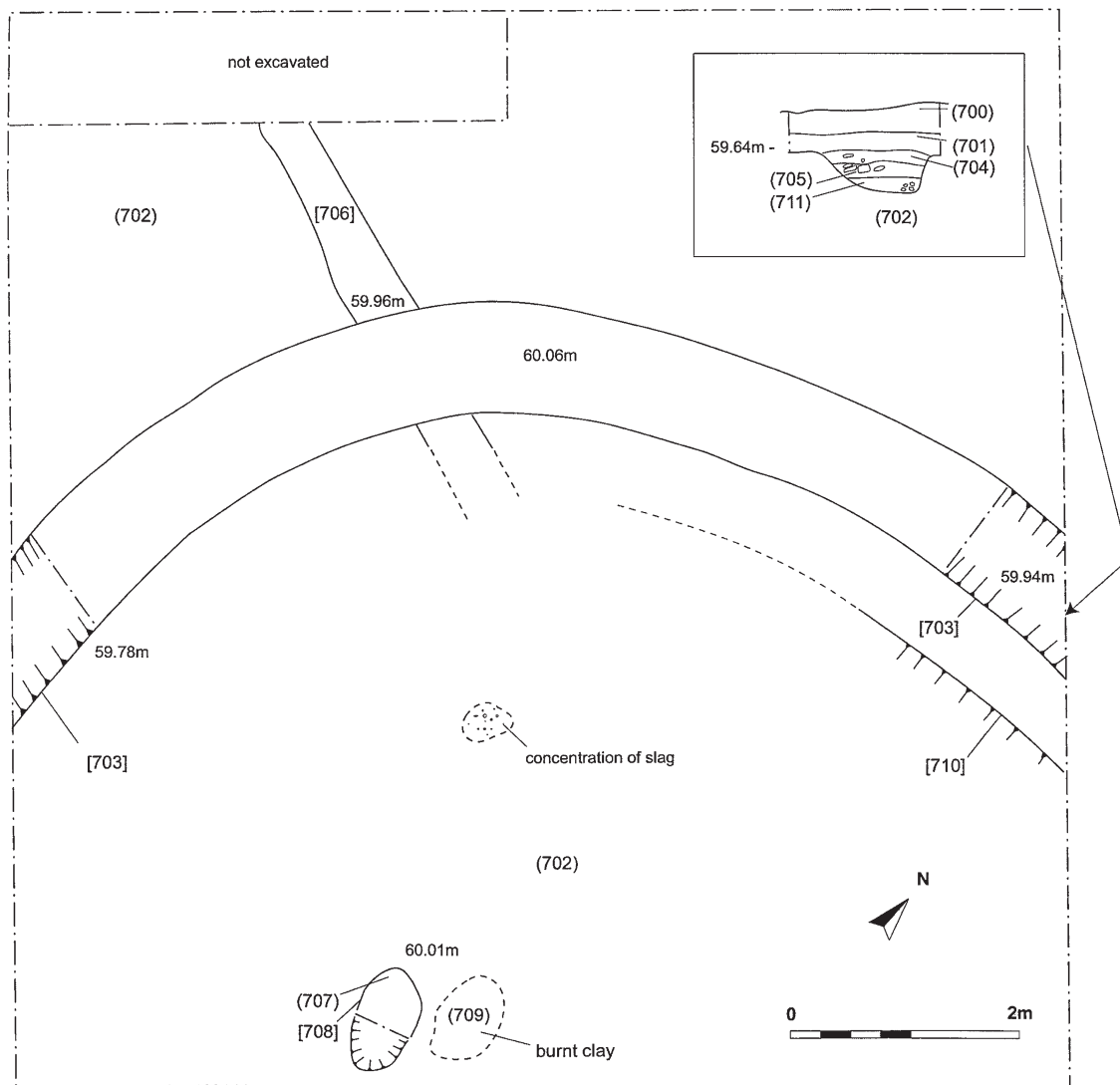


Fig 18 Gear, trench 7: plan.

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The earthworks were noted by Polwhele (1803, 126), who described the site as a 'perfect circle; the area about an acre.'

The foss is remarkably deep. Within this circle, there was formerly another; of which not a trace remains; the ground is nearly as level as a bowling-green. From the main foss runs out another, in a straight line, about N.N.W. [*recte* north north east], and crossing the present public road, leads to a well, properly stoned up, for the supply, we suppose of the camp (*ibid.*).

The 1st edition Ordnance Survey 25 in: 1 mile map (*c* 1880) shows a well at SW 7305 2463 which is presumably that referred to by Polwhele.

Charles Henderson described Caervallack in 1916, noting the sub-circular enclosure as the 'citadel' and the annexed enclosure to the east as the 'town'; they were then known as the Lower and Higher Round respectively (Henderson 1916, 171). Where largest on the southern side the enclosing earthworks were made up of a bank up to 6m

across, 2m high internally and with a ditch 3m deep and 7.5m across; Henderson noted a 9m difference in height between the base of the ditch and the top of the bank here. To the west the ditch and bank were weaker, the latter 3.5–4.5m high, but to the north the ditch again became deeper and there was a difference in height between its base and the top of the bank of about 6m. Henderson also commented on the near-level interior of the circular enclosure, concluding that 'this was effected at great labour by the constructors, who must have banked up the soil to a great extent on the west and north sides' (*ibid.*, 172).

Henderson interpreted the south side of the dependent enclosure to the east as an extension of the ramparts of the circular enclosure, the line of the earthworks turning sharply to the east on the south side of the 1.8m-wide gap between the two enclosures (Fig 19). The southern arm of the eastern enclosure was 1.5m-2.5m high internally and, 'owing to artificial raising of the inner area',

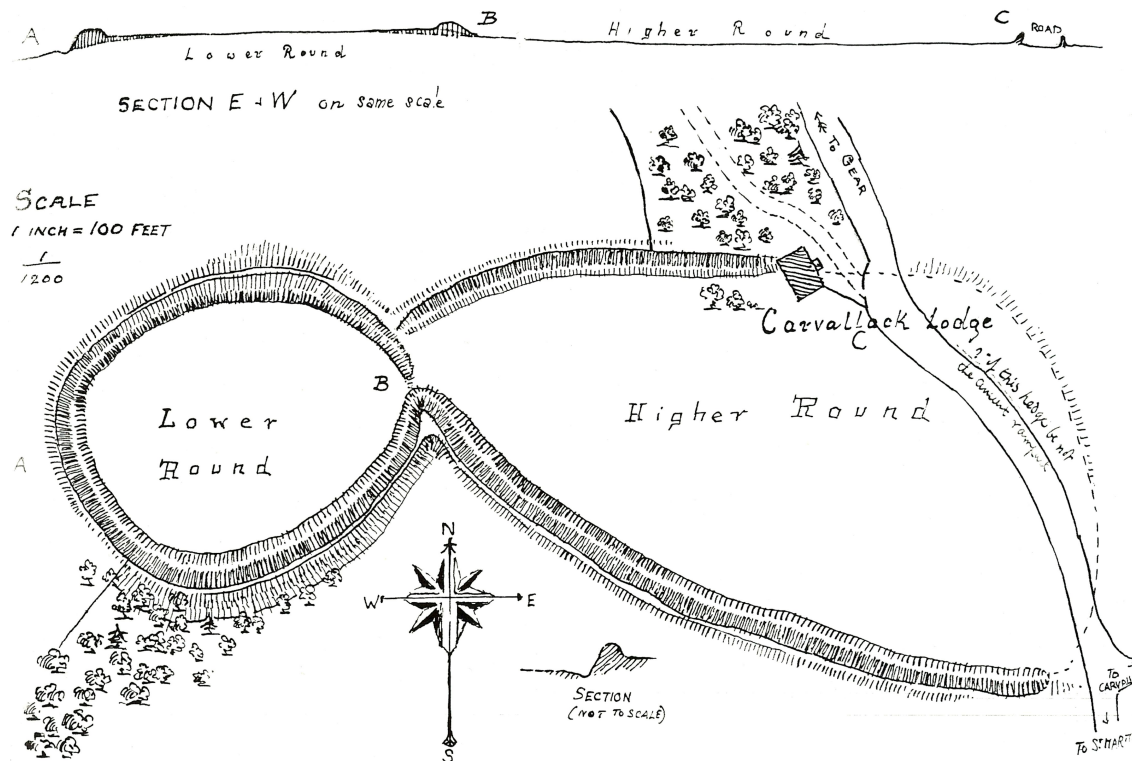


Fig 19 A sketch survey of Caervallack by Charles Henderson, 1916 (courtesy Courtney Library, Royal Institution of Cornwall).

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2.7–4.5m high externally. ‘The fosse [ditch] was dug up several years ago and much abraded [sic] in consequence but it is nevertheless still apparent.’ The interior of the eastern enclosure was ‘very flat but here and there slight tumuli suggest the sites of hut enclosures.’

The only find known from the site was ‘one link of a golden chain, weighing 8oz . . . Even the digging up of the fosse on the south side revealed nothing’ (*ibid.*, 173). The present whereabouts of the gold object are unknown.

In 1972 the Ordnance Survey noted Caervallack’s ‘edge of plateau’ position and described it as a sub-circular enclosure located on a hill slope with a bank and ditch circuit up to 100m across overall and a dependent enclosure on the east (OS Index Card and Antiquity Model SW72SW 14). There are entrances to the north east and south west, the latter probably modern: it does not appear on either the 1st or 2nd edition OS 25 in: 1 mile maps of c 1880 and 1907, or on Henderson’s sketch survey (Figs 4, 19). A profile across the better-preserved southern side of the enclosure

recorded an inner bank 1.8m above the interior, a substantial ditch up to 4.1m below the top of the inner bank and a counterscarp bank up to 1.1m high. The OS surveyor found no indication of the former inner enclosure within the ‘circle’ noted by Polwhele. The geophysical survey (Figs 22–23) carried out as part of the Time Team investigation identified an internal quarry ditch and it may be that it was surface traces of this which were the basis of Polwhele’s observation.

The annexe to the east is sub-oval in shape, 160m east-west by 75m north-south, and is formed by two curvilinear banks, each with an external ditch (Taylor 2003). The southern bank is up to 1.8m high and the ditch 2m wide and 0.8m deep. Part of the northern bank appears to have been heightened, as also the northern and western sections of the western enclosure, with a steep earth bank up to 1.6m high and 2m wide overlying a broader bank. Much of the eastern end of the dependent enclosure has been modified in the historic period, cut by the road and altered by the creation of two terraces against or over the bank and the levelling of part



*Fig 20 Caervallack from the air, looking west, July 2008 (Photograph: Historic Environment, Cornwall Council; F85–127).*

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Fig 21 Mature trees on the rampart and counterscarp on the western side of the circular enclosure at Caervallack (Taylor 2003). (Photograph: Historic Environment, Cornwall Council.)

for the building of a nineteenth-century lodge at the entrance to a woodland drive to Trelowarren (*ibid.*).

The ornamental landscape around Trelowarren was extensively remodelled by the eighth baronet, Sir Richard Rawlinson Vyvyan, probably during the 1840s (*ibid.*). The drive from the new lodge at Caervallack was planted with holm (evergreen) oaks (*Quercus ilex*), and other substantial trees, as were the banks of the circular enclosure and its eastern annexe (Figs 4, 20–21). The context for these and other changes to the landscape may have been a proposed visit by Queen Victoria in 1846, during which she was expected to land at a new quay at Tremayne on the Helford and then ride by carriage to Trelowarren, passing Caervallack and taking the new road from the lodge to the house (Taylor 2003; Lake 1870, 3, 274; Peter Herring, pers comm). In the event, stormy weather prevented the visit.

## The Time Team investigations

### *Geophysical survey*

A fluxgate gradiometer survey was carried out at Caervallack in advance of the excavations (Figs 22–23). The western enclosure was found to be generally magnetically quiet, although the survey did show evidence for an internal quarry ditch or scoop paralleling the inner edge of the enclosing bank along its southern side. This appears to be continuous across the position of the present south-western entrance, suggesting that the latter is relatively recent. Several trends and small pit-type anomalies are also apparent, the latter particularly concentrated in the northern half of the enclosure, but do not form a clear archaeological pattern.

Within the eastern enclosure a rectilinear anomaly formed a smaller enclosure butting against the northern edge. The date of this is unknown; it does not appear on historic maps but could be associated with the mid nineteenth century lodge which lies immediately to the north. There are

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Fig 22 Greyscale results of a fluxgate radiometer survey (GSB Propection Ltd) of the interior of Caervallack, overlaid on current Ordnance Survey mapping.

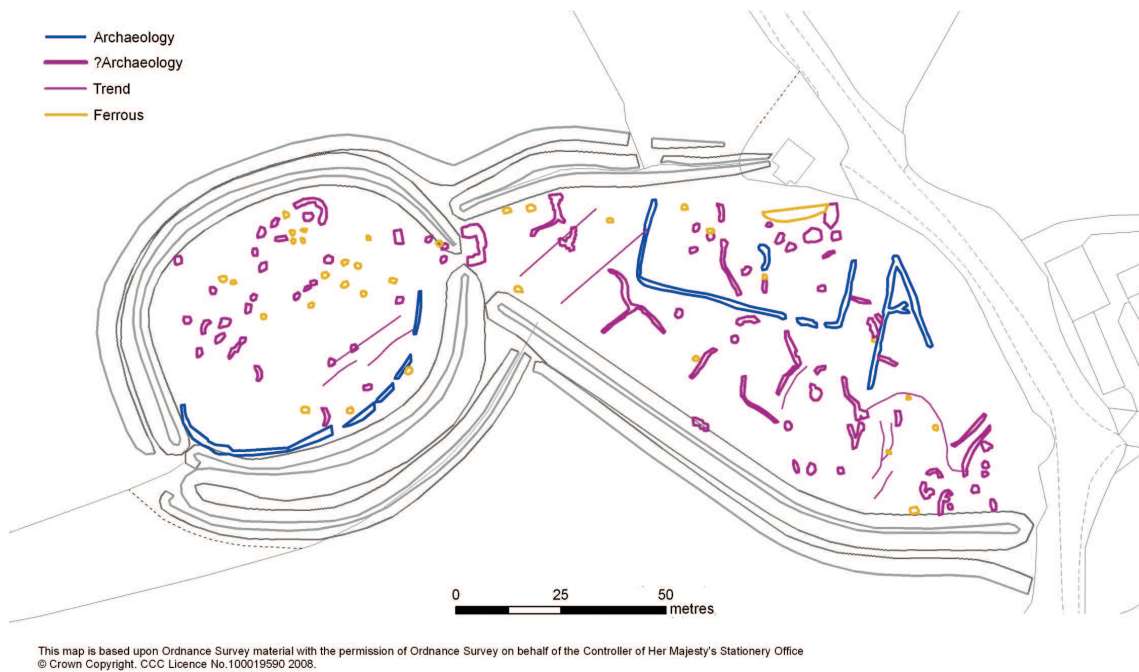


Fig 23 Interpretation of the geophysical survey results from Caervallack (GSB Propection).

several linear anomalies and trends, possibly indicating internal subdivision of the enclosure, and a number of strong anomalies which may indicate pits or areas of burning.

### *Landscape observations*

#### *Peter Herring*

Work with maps and field observation during the Time Team investigation suggested that Caervallack was partly remodelled by the Vyvyan family during the nineteenth century as part of wider changes to the Trelowarren landscape. The main bank was planted with English oaks and the surviving southern counterscarp bank with darker holm oaks and beeches. The earthworks also appear to have been modified, with the main bank heightened and the northern half of the ditch circuit infilled (the latter, however, in the light of Henderson's description of the earthworks in 1916, may be a more recent change). A woodland drive to the main house passed the lodge built against the north bank of the eastern enclosure. It is possible that there was an intention to create a mini-park, with views from the main enclosure back towards Trelowarren (through the trees) and north west towards Gear across a little lawn with a mixed plantation beyond. The plantation boundary was made up of a south east-facing stone-faced bank fronted by a ditch. This was interpreted during the investigation as an unusual ha-ha, created so that the boundary was not visible when viewed from the Caervallack enclosure. However, it is in fact very similar to the boundary which follows the south sides of both the main enclosure at Gear and the fields to east and west, and to a number of other boundaries bounding woodland on the Trelowarren estate (*cf* Ordnance Survey Index Cards and Antiquity Models SW 72 SW 8, 13, 40; Pett 1998, 71). It is likely that their unusual form was related to a particular function in excluding livestock and perhaps vermin from the plantations on the estate rather than to enhancing views from any specific point.

The landscape changes in the vicinity of the enclosure are likely to date from preparations for the 1846 visit of the young Queen Victoria, for whom Sir Richard Rawlinson Vyvyan reputedly had an unrequited love (Sir Ferrers Vyvyan, pers comm).

The rampart of the dependent enclosure to the east rides over and therefore postdates the ditch of

the main enclosure. Together, the two enclosures may have been intended to lie astride the narrow ridge between the stream valley running into Mawgan Creek to the south and west and a slighter valley immediately to the east of Caervallack, thereby controlling access along the ridge towards Gear. Caervallack may have been a key place in this controlled landscape, through which people from the wider Meneage area would have passed on their way to and from Gear.

### *Excavation*

Four trenches were excavated at Caervallack, with their locations guided by the results of the geophysical survey (Fig 24). All of the trenches were excavated by machine down to the highest archaeological deposits with subsequent work carried out by hand.

#### TRENCH 1

A north-south trench 12m long and 3m wide was opened across the outer ditch [114] and part of the outer bank face on the north side of the western enclosure at Caervallack (Fig 25). The limited time available meant that it was not possible to bottom the ditch, but this was revealed as a steep-sided rock-cut feature approximately 5m wide and more than 2m and possibly as much as 5m deep. The upper part of the outer ditch face was less steep than the lower portion but this may have been a consequence of later erosion or cattle trampling on the ditch edge.

The infilled ditch had a complex series of fills. The lowest layer (113) revealed by the excavation was a moderately compact mid greyish-brown silty clay with frequent small angular pieces of shillet and very occasional flecks of charcoal. Wet sieving of samples from this context recovered some charcoal and five sherds of abraded pottery, some with a finish indicative of the South West Decorated tradition (Quinnell, below).

Most of the higher ditch fills were also moderately compact silty clays, with colours ranging through orange and brown; some of these layers were notably root-filled. Much of this material is likely to represent silting and collapse from the bank to the south. Layers (102) and (104) were similar deposits of angular stony rubble, separated by a loose grey silty layer (103). The section (Fig 25) appears to show that these filled a shallow cut into earlier ditch fills (108) and (109).

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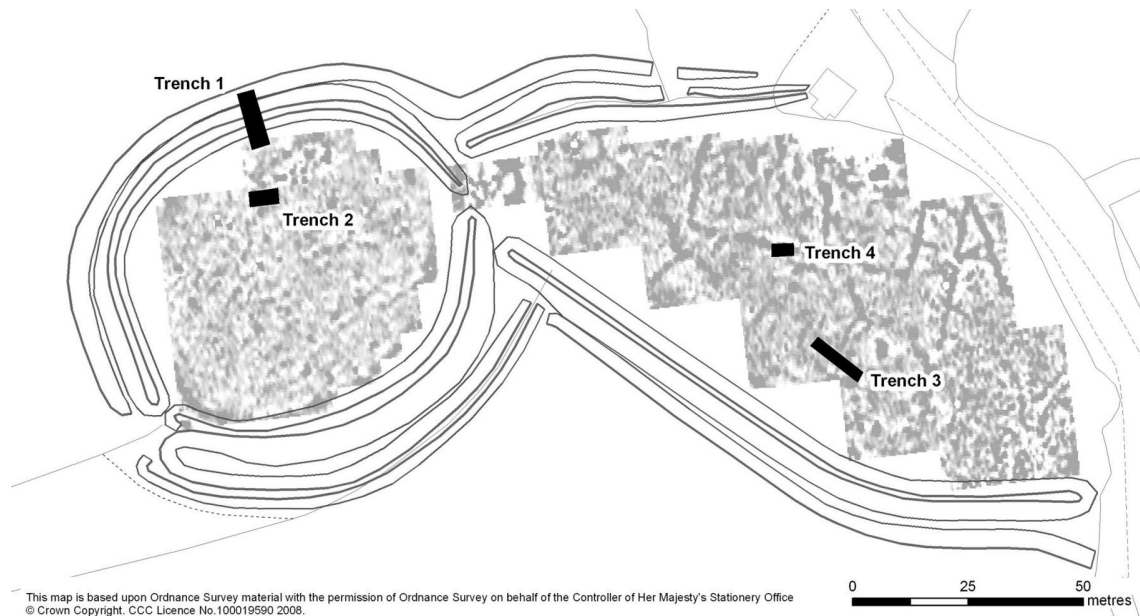


Fig 24 Caervallack: location of excavated trenches.

These layers were sealed by a loose, root-filled topsoil (101) of mid orangey-brown silty clay with frequent small stone fragments. The stony deposits (102) and (104) could represent a deliberate metalling of a path around the monument, perhaps as part of the post-medieval incorporation of Caervallack into the ornamental landscape around Trelowarren. An alternative, more prosaic, interpretation is that these deposits represent material cleared from the adjacent field which had accumulated in the base of the partly infilled ditch. The inference from Charles Henderson's observations on the significant depth of the ditch in this area is that these stony deposits towards the top of the fill represent dumping after he visited the site in 1916.

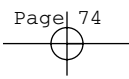
The main bank was not fully sectioned. The lowest layer recorded (115) was a moderately compact dark greyish-brown silty clay with frequent angular stone fragments; this may represent material which formed the initial core of the rampart, although this is not certain (Fig 25). This was overlain by layers (106) and (107). The lower of these, (107) was a moderately compact orangey-brown silty clay incorporating small to medium angular stone fragments. It was much disturbed by roots and animal burrowing. Layer (106) was a loose orange silty clay, again with some stone. The

uppermost layer recorded on the bank (105) was a loose orange-yellow silty clay, interpreted by the excavators as upcast natural, which again showed considerable natural disturbance.

#### TRENCH 2

Trench 2 was located over an anomaly revealed by the geophysical survey in the interior of the western enclosure (Fig 24); the trench measured 5m by 2m and was aligned approximately east-west (Fig 26). The ploughsoil (201) consisted of a compact mid grey-brown sandy clay with frequent shillet fragments and was removed by hand after machine clearance of the turf layer. Finds from this layer included Cornish Late Medieval Coarseware, some Iron Age pottery, including a sherd in the South West Decorated tradition, and a prehistoric flint flake.

Once the ploughsoil had been removed a patch of burnt stone within the upper fill of a large cut was revealed. When excavated this proved to be a sub-rectangular pit or hollow [203] more than 2m across and 0.37m deep. The primary fill (204) was a moderately compact mid to dark greyish-brown silty clay with occasional angular stones, some burnt bone and two water-rounded quartz pebbles. It also incorporated almost 20 sherds of pottery, including a burnished South West Decorated-type



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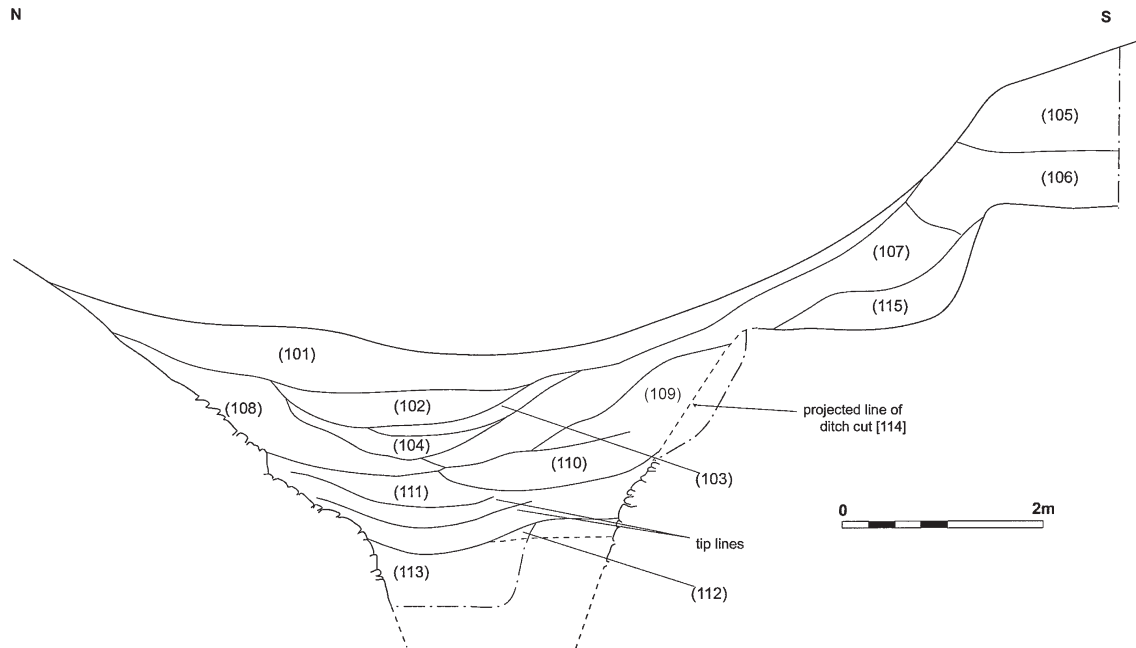


Fig 25 Caervallack, trench 1: section across ditch.

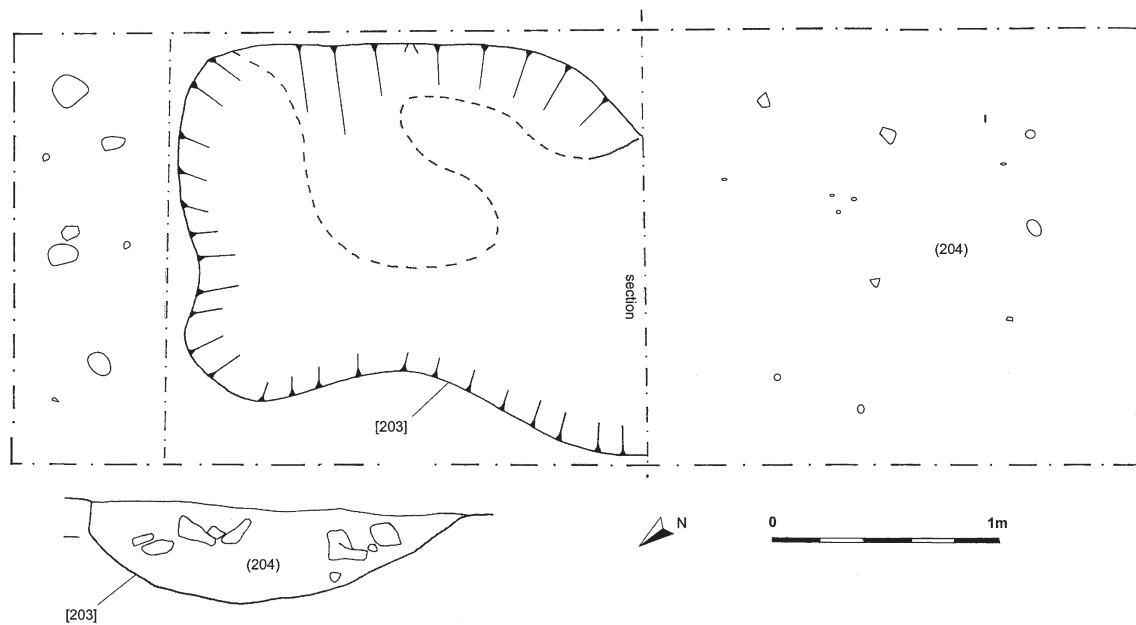
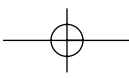


Fig 26 Caervallack, trench 2: plan and section.





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rim. Charcoal from (204) was from oak (*Quercus* sp.), hazel (*Corylus avellana*) and *cf* birch (*Betula* sp.).

An additional darker fill (202) was recorded in the west side of the hollow, possibly representing a discrete lens of material within the upper part of fill (204) or perhaps a small unrecognised cut into the top of it. Context (202) was a mid to dark greyish-brown silty clay containing burnt stone and charcoal predominantly from oak (*Quercus* sp.), but also including blackthorn (*Prunus spinosa*), the hawthorn / *Sorbus* group and *cf* hazel (*Corylus avellana*).

## TRENCH 3

Trench 3 (not illustrated) was opened in the eastern enclosure of the monument and measured approximately 12m by 1.2m, aligned north west - south east. It was located over a large magnetic anomaly and two curving linear features to the north west identified by the geophysical survey (Fig 24). At the south-east end of the trench a substantial cut feature, [305], more than 3m across and 0.65m deep was encountered, extending beyond the trench on both sides; it is not clear whether this was part of a large ditch or a pit or hollow. The upper fill (302) was a fine orange-brown silty clay containing some stones and charcoal fragments up to 20mm in diameter. The primary fill (304) contained more frequent stones and some larger charcoal pieces within an orange-brown silty clay.

Both contexts incorporated Iron Age pottery, including a South West Decorated jar with rouletted decoration (P2), joining sherds of which were found in both the upper and primary fills. The primary fill (304) also contained a fragment of a *tuyère*, the ceramic pipe used to blow air into a kiln or furnace (Harrad, below), and the upper fill (302) incorporated a large whetstone (S2) and a slickstone (S1). Unstratified finds from this trench included two more slickstones, two rounded quartzite pebbles, suggested as possible slingstones, and a burnt fragment of a ground flint axe of Neolithic type.

Further investigations were carried out towards the north-west end of the trench to locate traces of the two linear features shown on the geophysics but no results were recorded.

## TRENCH 4

This trench was positioned to target a magnetic

anomaly within the large rectilinear enclosure identified by geophysical survey within the eastern enclosure of Caervallack (Fig 24). The trench measured 2.7m by 2m and was aligned east-west (Fig 27). The topsoil (401) was removed to reveal part of a large irregular hollow or pit [405] more than 2m across and up to 0.25m deep, possibly a large hearth or the base of a furnace or kiln. The primary fill (404) was a dark brown to black silty clay with frequent charcoal, including oak (*Quercus* sp.), mainly from largewood, and narrow stems of gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) (Gale, below). Metalworking slag and a quantity of charred grain were also recovered from this feature (Carruthers, below). Context (403) was a discrete deposit containing slag on the western side of the pit but it is not clear whether this represents an individual episode of dumping making up part of fill (404) or a cut into it. Alongside hollow [405] to the south west was a small patch of *in situ* burnt material (402) consisting of red-orange silty clay with frequent charcoal.

No direct dating evidence was recovered from trench 4 but several abraded gabbroic sherds comparable with other Iron Age pottery from the site and two broken flint flakes were recovered from the topsoil (401).

## The finds

## Finds collected at Gear prior to the Time Team investigation

*Carl Thorpe*

The landowner, Mr Rex Hosking, has collected material from within the Gear enclosure over a period of years. Finds retained by Mr Hosking were catalogued by Carl Thorpe on 30 October 2000. The material included ten sherds of Roman-period gabbroic pottery (see below), smaller quantities of thirteenth-century Stuffle Ware, including parts of a flanged bowl and jug, and late medieval pottery (probably Lostwithiel Ware), with much larger quantities of post-medieval wares.

A rim fragment of a greisen mortar (Fig 32), a complete lower rotary quernstone and a fragment of a saddle quern have also been recovered from the site (Quinnell, below).

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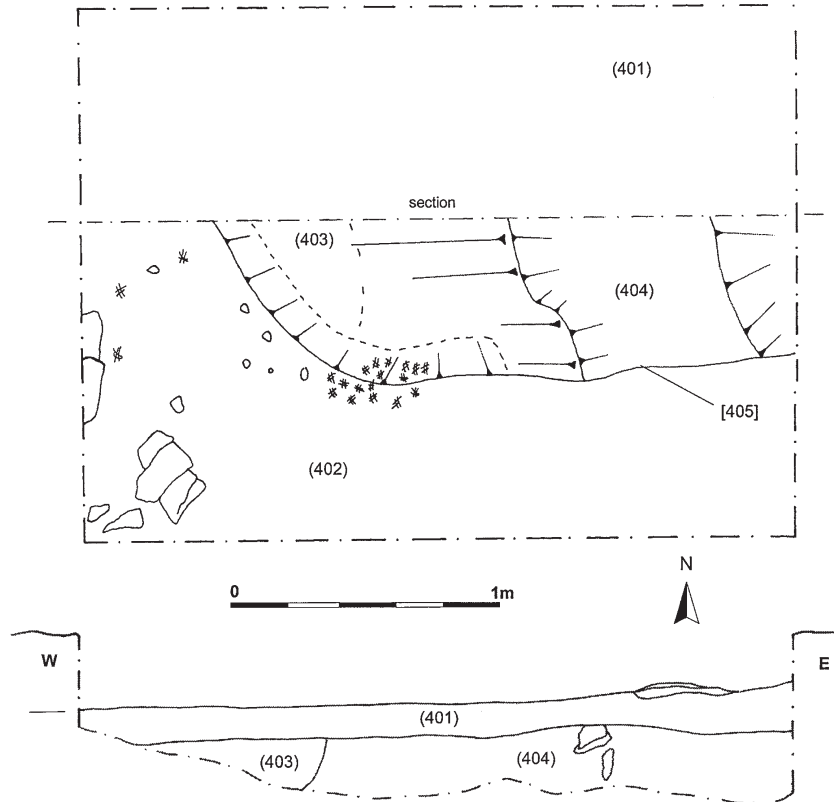


Fig 27 Trench 4: plan and section.

The collection also included a large quantity of flint, most of which was waste flakes but with some cores, scrapers and blades, and a piece identified during the making of the Time Team programme as a Late Neolithic chisel-tipped arrowhead. The majority of the flint in this assemblage probably dates to the Neolithic and Bronze Age but there may also be some Mesolithic forms. A post-medieval gun flint was also identified. Numerous water-rounded pebbles (averaging 40 × 30 × 30 mm) have been recovered and were said to have come from distinct areas within the enclosure.

A copper-alloy rowel spur may date to the seventeenth century.

#### Fieldwalking finds from Gear

*Carl Thorpe*

A total of 1277 artefacts were recovered from fieldwalking over part of the Gear enclosure (Fig

8), of which 580 pieces of pottery comprised the largest group (Table 4). Flint, clay, stone, clay pipe, slag, metalwork and glass were also found. The suite of artefacts found is typical of assemblages obtained from most Cornish fields close to lowland farm settlements and can be compared with, for example, material recovered during various pipeline projects (Lawson-Jones 2001a; 2001b), the majority of the finds being derived from domestic midden material utilised in the medieval and later periods for the manuring and improvement of the fields. A full list of the material recovered by fieldwalking is included in the project archive. Graphics showing the distribution of finds within the surface collection grid are included in the archive report (Edwards 2005).

More than 70 pieces of flint were recovered, spread fairly evenly across the field with no particular concentrations. Most of these appeared to be waste flakes but several Neolithic or Bronze

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Age thumbnail scrapers and other worked pieces were identified (Harding, below).

Some prehistoric and Roman-period pottery was recovered (Table 4; Quinnell, below).

A large number of water-rounded pebbles were recovered during fieldwalking. Most are small and were probably brought in with beach sand and seaweed spread on the field during the relatively recent past to improve fertility. A significant number, however, were of a size suitable for use as sling-stones.

No material dated to the early medieval period was recovered but more than 60 sherds of pottery datable to the thirteenth to fourteenth centuries were found. All the wares identified are of Cornish manufacture. The forms are utilitarian domestic wares such as cooking pots and jugs. Almost 80 fifteenth- and sixteenth-century sherds were found, with Cornish domestic coarsewares again dominating the assemblage and no imported material identified.

The largest proportion of material recovered was from the post-medieval period, with the greatest quantity from the eighteenth and nineteenth centuries. The bulk of the wares are again Cornish domestic coarsewares with a few imports from North Devon (especially Barnstaple). These appear to have been supplanted by the cheaper mass-produced wares of Bristol and Staffordshire in the eighteenth and nineteenth centuries. These domestic coarsewares were supplemented by rare importation of various foreign wares, including Frechen stone ware from Germany.

It was noted that the slag recovered by surface collection was concentrated in a fan shape, apparently spreading out from a farm gate on the north-east side of the enclosure. This distribution supports the suggestion that it was probably material imported onto the site as a soil improver in the post-medieval period.

### The pottery from the Time Team excavations

*Henrietta Quinnell*, with petrographic comment by *Lucy Harrad*

The excavated assemblage from Caervallack comprised 139 sherds weighing 1407g, that from Gear totalled 431 sherds weighing 4235g with an additional 116 sherds weighing 663g from fieldwalking. Details are stored in an archive database prepared by Lucy Harrad. Most of the

assemblage belongs to Middle Iron Age South Western Decorated Ware, with some Late Iron Age Cordoned ware. Some sherds may be Early Neolithic, and a scatter from fieldwalking is of the Roman period.

All pottery is of gabbroic fabrics, which have been divided petrographically by Lucy Harrad into three groups: all distinctive vessels are of Gabbroic fabric, the other fabrics, Fine Dark Gabbroic and Loessic Gabbroic, are only represented by body sherds and one tiny indeterminate rim. Previous work by the author (Quinnell 1992; 2004, 5.6.1) on the quality of gabbroic fabrics has shown that those used in the Middle and Later Iron Age may generally be described as 'well made', with a compact matrix and good quality burnish, those in the Roman period as 'standard', with a more open matrix and surfaces smoothed rather than burnished. The Middle and Late Iron Age pottery from both Caervallack and Gear belongs to the well-made gabbroic category although it is poorly made compared to other assemblages of these periods. The few Fine Dark Gabbroic sherds are very well made. The majority of loessic sherds will be argued below to be Early Neolithic. The Roman sherds are of standard gabbroic fabric.

### *The petrography*

#### *Lucy Harrad*

The fabrics were initially determined by in-hand and binocular microscope, and 11 sherds were thin-sectioned and examined petrographically to test the fabric groups. They were all made of clays deriving from the gabbro area south of the site, around St Keverne, well-established as the source of most of the prehistoric pottery in Cornwall (Peacock 1968; 1969; 1988). The fabrics were divided petrographically into three groups, fabrics 1–3. There was also one granitic-derived sherd from the Gear fieldwalking assemblage, which need not be prehistoric (fabric 4 in archive report, not described further here), and a probable *tuyère* (fabric 5 in archive report; Harrad, below).

**Table 1** Percentages of fabrics present

Fabric 1: Gabbroic	97%
Fabric 2: Fine Dark Gabbroic	2%
Fabric 3: Loessic Gabbroic	1%

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**Table 2** Results of SEM analysis

FABRIC	Gabbroic					Fine Dark Gabbroic		Loessic Gabbroic		Granitic
FABRIC GROUP	1	1	1	1	1	2	2	3	3	5
Al <sub>2</sub> O <sub>3</sub>	21.191	17.093	26.239	19.766	22.611	19.813	19.177	19.891	18.086	24.438
SiO <sub>2</sub>	45.283	55.5	49.148	54.204	51.425	51.477	55.365	61.549	62.676	66.1
Fe <sub>2</sub> O <sub>3</sub>	17.841	16.805	13.478	16.867	17.176	17.003	13.902	12.226	11.713	2.253
CaO	4.424	0.921	3.049	1.154	2.493	1.899	1.643	1.43	1.601	0.099
Na <sub>2</sub> O	1.955	1.633	2.211	2.079	2.113	2.434	2.565	0.755	1.19	1.276
K <sub>2</sub> O	0.207	1.227	0.479	1.556	0.608	1.489	1.972	1.165	0.996	5.648
MgO	8.462	6.491	5.338	3.86	2.458	5.068	4.617	2.592	3.149	0.125
TiO <sub>2</sub>	0.601	0.331	0.039	0.514	1.105	0.818	0.735	0.391	0.589	0.005
MnO <sub>2</sub>	0.038	0	0	0	0.011	0	0.024	0	0	0.057

Nine of the samples and the granitic *tuyère* sherd were further analysed using SEM (Scanning Electron Microscope) on EDA (Energy Dispersive Analysis) mode. The SEM chemical analyses were done by stoichiometry at  $\times 250$  magnification, at 10 Na and 15 K.

These analyses were made by taking ten analyses of each sample and finding the mean, in order to average out the natural variation within each clay (Table 2). The chemical analyses showed that the gabbroic fabrics (fabrics 1, 2, and 3) all had very high Fe<sub>2</sub>O<sub>3</sub> (iron oxide) content, fairly high MgO values and low K<sub>2</sub>O values, while the one granitic sherd (fabric group 5) had very low MgO values and much higher K<sub>2</sub>O values. This clearly shows that fabrics 1, 2 and 3 are derived from a ferromagnesian basic rock such as the gabbro outcrop. In contrast, the granitic sherd is made from clay weathered from the feldspars in a granite; these are potassium feldspars and sodium-rich plagioclase feldspars such as albite, which explains the high K<sub>2</sub>O levels.

**FABRIC 1 GABBROIC**

The gabbroic fabrics vary from very coarse, with some plagioclase feldspar inclusions up to 5mm across, to fairly fine with only a scatter of inclusions visible in hand specimen. They were generally buff or reddish in colour, with only a few sherds reduced to a blackish colour. The gabbroic fabrics typically contained mostly colourless and green magnesium-rich amphiboles such as anthophyllite, tremolite and hornblende. A few primary rock minerals remained, mainly plagioclase feldspar and some clinopyroxene grains. The plagioclase feldspars were variable in composition and several albite feldspars could be seen. Most of the plagioclase feldspar was

intermediate or basic (labradorite to bytownite), such as might be expected from a gabbro rock. Some of the samples contained a few quartz grains. The mineralogy points to a clay source weathered *in situ* on the gabbro outcrop on the Lizard.

**FABRIC 2 FINE DARK GABBROIC**

This fabric was visually different from the typical gabbroic fabrics. It was very fine and reduced to a black colour, with few or no visible inclusions. The fabric contained mostly aggregates of magnesium-rich brown amphiboles altered from the primary gabbroic minerals. There were also a lot of brown weathered feldspars, mostly albite and intermediate plagioclase feldspars, as well as several opaque grains of iron oxide or clay fragments. Several clinopyroxenes could still be seen, as well as tremolite amphibole and grains of vein quartz. One thin-section contained quartz-albite feldspar composites, which suggests a granite. However, the rest of the mineralogy is gabbroic, with high MgO levels in the background clay (Table 2) which show that this clay is derived from the Lizard gabbro outcrop. This clay tends to be more weathered than fabric 1 and is much finer: this may indicate a clay source slightly removed from the residual clay on the outcrop. It is described for convenience as 'FD Gabbroic' and may be related to the Fine Non-Sandy (FNS) Gabbroic recently identified at Atlantic Road, Newquay (Harrad 1994).

**FABRIC 3 LOESSIC GABBROIC**

This is a fairly fine reddish fabric with a high proportion of visible quartz grains. The thin-sections are mainly characterised by a dense background matrix of tiny rounded and sub-rounded quartz grains, indicative of wind-blown quartz or loessic deposits. The sparse larger

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inclusions are mainly calcic plagioclase feldspars and magnesium-rich colourless amphiboles and hornblende, as well as occasional clinopyroxene and some pieces of angular quartz. The background material can include potassium feldspars as well as plagioclase feldspar. This background material is identical to loessic deposits at Lowland Point, St Keverne, which also include the gabbroic inclusions. This area is therefore the probable source of this clay.

## CONCLUSION

Fabric 1, the residual clay of the gabbro outcrop, made up 97 per cent of the pottery. Some of the pottery seems to have been from different gabbroic sources: some clays came from slightly away from the residual clay and some of pottery fabrics exactly match the clays at Lowland Point. None of the pottery is made from the clays immediately around the excavated sites, in the Meneage. Harrad (2004) provides background to this research.

*The pottery from the excavations at Gear (Fig 28)*

## TRENCH 1

*(100) topsoil*

Abraded sherds include South Western Decorated type rim, well-made gabbroic.

## TRENCH 2

*(200) topsoil*

Abraded sherds include South Western Decorated-type rim, well-made gabbroic.

*(214) in SW ditch terminus [205], 390–160 cal BC 2σ (95.4% probability) (Wk-12409)*

Rounded rim with thumb impressions, very highly fired gabbroic (thin-section 2).

*(202) in ditch terminal [205] above (214)*

**P9** Base with protruding foot ring, fresh well-made gabbroic fabric with burnish.

Also abraded well-made gabbroic material including shoulder sherd with South Western Decorated incised curvilinear design.

**Table 3** Sherds from Gear by fabric group and context (omits amphora P19), prepared by Lucy Harrad

Contexts	Fabric 1 Gabbroic		Fabric 2 FD gabbroic		Fabric 3 Loessic		Totals	
	Sherds	Weight	Sherds	Weight	Sherds	Weight	Sherds	Weight
(100) topsoil	19	105					19	105
(200) topsoil	5	74					5	74
[201] stony lens	15	189					15	189
(202) in [205]	22	141					22	141
(204) in [219]	17	81					17	81
(206) pit [209]	39	605					39	605
[207] depression, subsoil	2	15					2	15
[208] pot in pit [209]	26	402					26	402
(210) drain [211]	32	252					32	252
(214) ditch [205]	1	14					1	14
(215) pit [216]	1	17					1	17
(217) ditch [218]	9	91					9	91
(300) topsoil	3	71					3	71
(301) ditch [302]	41	318					41	318
(303) ditch [302]	5	95					5	95
(400) topsoil	2	12					2	12
(509) bottom of ditch	2	51					2	51
(601) subsoil					3	35	3	35
(607) pit [606]					11	16	11	16
Trench 6 unstratified					3	77	3	77
(700) topsoil	4	20					4	20
(701) subsoil roundhouse	48	334	5	15			53	349
(708) pit [707]	44	754	3	8	5	20	52	782
(709) burnt clay, house	55	387	9	36			64	423
TOTAL	392	4028	17	59	22	148	431	4235

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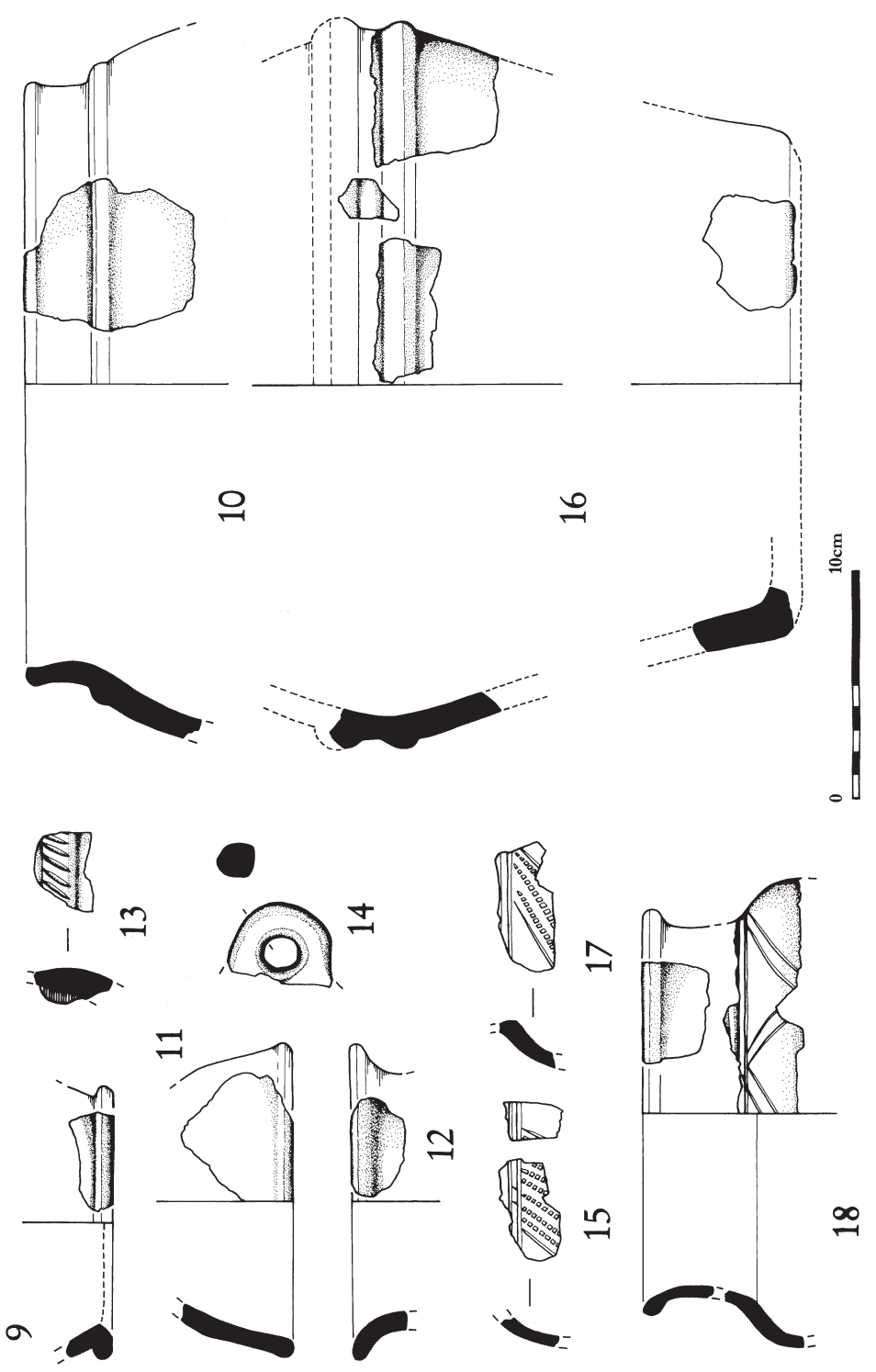


Fig 28 Pottery from Gear. (Drawing: Carl Thorpe.)

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(217) in SE ditch terminal [218], 390–90 cal BC  $2\sigma$  (95.4% probability) (Wk-12410)

Fresh sherd with South Western Decorated incised pattern among abraded material, well-made gabbroic.

[201] stony lens between ditch terminals

**P10** Jar with almost upright rim, tooled cordon below neck, plain, abraded well-made oxidised gabbroic.

Also abraded material including South Western Decorated rim with internal groove.

(210) fill of drain [211]

**P11** Lid with simple rounded edge and steep-sloping shape, fresh well-made gabbroic with burnish and residual black coating.

Also abraded well-made gabbroic sherds including thick body sherd with cordon and neck of South Western Decorated type.

[207] depression in subsoil

**P12** Simple everted rim, probably of Late Early Iron Age type, abraded gabbroic fabric with no indication of burnish.

(206), pot [208] lining pit [209], 210 cal BC – cal AD 10  $2\sigma$  (92.9% probability) (Wk-12408)

**P13** Sherds from lower part of vessel (not illus), base missing, found lining pit, well-made gabbroic fabric; maximum surviving diameter approximately 300mm; found as sherds which do not join to form complete circumference. Single sherd in identical fabric with broad slashed neck cordon from pit infill (illus) could well come from upper part of vessel; if so a very substantial amount has been lost through plough erosion. Vessels of **P13** type are assumed to represent interaction of Cordoned ware and South Western Decorated traditions (cf Miles 1977, fig 41, P17, 106–7).

Also small sherds from well-made gabbroic vessel with some burnish and incised South Western Decorated motif.

(204) fill of cut [219] with charred wood, 210 cal BC – cal AD 10  $2\sigma$  (91.9% probability) (Wk-12407)

Sherds, all noticeably oxidised, from several vessels, including fresh rim of South Western Decorated type and body sherds with abraded traces of South Western Decorated motifs.

## TRENCH 3

(303) primary silt in ditch [302]

Abraded well-made gabbroic sherds including burnished piece with South Western Decorated-type motif and small, exceptionally worn sherd with slight cordon.

(301) upper fill of ditch [302], 130–390 cal AD  $2\sigma$  (95.4% probability) (Wk-12411)

**P14** Small, circular handle with round cross-section, well-made gabbroic with no burnish; such handles are now recognised in the South Western Decorated tradition at Trevelgue (Quinnell 2007) and Halligye (Elsdon and Quinnell, forthcoming).

Also about 40 abraded gabbroic sherds. Of these, about half are well made, some with burnish, the other half again abraded but less well made and comparable to standard gabbroic fabric and quite probably of Roman date.

## TRENCH 4

Two abraded well-made gabbroic sherds from topsoil (400) are the only ceramics. It is notable that there are no finds from any of the features, when South Western Decorated ceramics are so common in other trenches.

## TRENCH 5

(509) in bottom of ditch terminal, below (506), 3640–3370 cal BC  $2\sigma$  (95.4% probability) (Wk-12412)

Thick, curved, body sherd, cracked *in situ* and now two sherds, abraded with oxidised exterior from which surface has been lost; compact gabbroic fabric with some inclusions up to 5mm. From a vessel with a diameter of at least 300mm. Not closely datable but could belong with the larger and coarser vessels of the South Western Decorated tradition.

## TRENCH 6

(601) subsoil

Three sherds in Loessic fabric with sparse but noticeable white inclusions up to 8mm of feldspar and angular vein quartz; three unstratified sherds from the trench are identical. Surface finish has finger marking on less abraded sherds. The inclusions make the fabric visually distinctive.

Vein quartz appears to be a regular inclusion during the Early Neolithic and has not been noted in fabrics of subsequent dates in Cornwall. It was recognised as a common component of the coarse

Early Neolithic gabbroic fabrics at Carn Brea (Smith 1981, 162) and as the distinctive inclusion of a locally-sourced fabric at Helman Tor (Smith 1997). A recent find of part of a distinctive Early Neolithic lugged vessel in a vein quartz fabric at Trenowah near St Austell was the focus for a brief review of quartz-tempered Early Neolithic fabrics (Quinnell 2008).

*(607) fill of pit [606] cut into large pit [604]*

Eleven small loessic sherds, of which the largest has vein quartz inclusions; fabric similar to sherds in (601).

No sherds in other than Loessic fabric from this trench.

TRENCH 7

*(701) subsoil across roundhouse*

**P15** Shoulder sherds, well-made gabbroic with slight burnish, horizontal narrow incised lines above diagonal rouletting bordered by similar incised lines.

Also rims from two vessels of South Western Decorated type, and sherds from **P17, P18**. (701) together with (708) and (709) contain the only sherds of Fine Dark Gabbroic, fabric 2 (Table 3).

*(707) fill of pit [708] central to roundhouse*

**P16** approximately 35 sherds from Cordoned ware vessel, well-made gabbroic fabric with some burnish, double cordon around girth; either Type H or J (Threipland 1956). Rim, base and girth sherds all present but these represent less than 10 per cent of the vessel.

**P17** Shoulder sherd with South Western Decorated motif outlined by incised lines and infilled with rouletting, well-made gabbroic fabric with some burnish.

Also five small sherds in Loessic fabric 3; of these, four abraded body sherds are very similar, but a tiny rim with burnish differs slightly in visual appearance from these and is of uncertain date.

*(709) burnt clay spread within roundhouse, 370–50 cal BC 2σ (95.4% probability) (Wk-12413)*

**P18** South Western Decorated jar, well-made gabbroic fabric with black coating and burnish; simple rounded everted rim above upright neck, pattern of chevrons made by paired incised lines on shoulder.

Also sherds of at least two South Western Decorated-type jars, one with roulette pattern.

*(705) lower fill of [703] ditch around roundhouse*  
**P19** (not illus) Two sherds weighing 78g from the base of an amphora above the spike. I am grateful to Andrew Fitzpatrick for confirming that the sherds are likely to come either from a vessel in the Dressel 1 or the Dressel 2–4 class; with no rim or handle present, there can be no greater precision. Amphorae of Dressel 1 types date from the late second century BC onward (Fitzpatrick 1985), those of Dressel 2–4 belong to the early Roman centuries (Peacock 1986, 106). Given its context, interpretation of **P19** as from a Dressel 1 form appears reasonable.

*The pottery from fieldwalking at Gear*

Part of the site was fieldwalked on a grid of 10m squares. A total of 116 sherds was found, weighing 663g. Of these all were gabbroic except one, granitic derived, recovered from grid square C9 (fabric 4 and thin-section 11: Edwards 2005 and project archive). All were very abraded. Most were oxidised to a reddish colour, in contrast to the mainly reduced greys of the excavated assemblage. It is obvious that this factor has influenced retrieval. The few Iron Age sherds which could be definitely identified were South Western Decorated. Some of the material was of Roman date. The types identified in Table 4 refer to those used for the Roman period gabbroic sequence at Trethurgy round (Quinnell 2004, 5.6.3); on current data Type 9 bowls appear to be third or fourth centuries, Type 13 jars date from the later second century onward, and Type 16 jars are third or fourth centuries.

*Pottery of the Roman period found before the excavation*

About a dozen sherds were found across the north-eastern side of the Gear enclosure and are referred to by the typology put forward by Quinnell (2004). These are all of standard gabbroic fabric and include a strap handle from a Type 26 jar and the rolled rim from a Type 13 storage jar. The former occur sporadically throughout the Roman period, the latter probably belongs to the third or fourth centuries AD.



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**Table 4** Prehistoric and Roman pottery recovered during fieldwalking; based on work by Carl Thorpe and Lucy Harrad.

<i>Grid square</i>	<i>Sherds</i>	<i>Weight (g)</i>	<i>Comment</i>	<i>Grid square</i>	<i>Sherds</i>	<i>Weight (g)</i>	<i>Comment</i>
A1	3	22		D12	1	14	
A7	1	1		E5	1	1	
A10	1	19	RB Type 9 bowl	E6	1	7	
A11	11	35		E8	1	2	
A12	11	37	?RB bowl	E9	2	34	
B5	1	5		E12	1	11	girth cordon
B6	2	2		F5	1	7	
B8	4	26	abraded SW Decorated Ware	F10	1	8	abraded South West Decorated Ware
B10	8	46		G1	1	9	
B11	7	30		G6	1	1	
B12	6	40		G9	1	11	
C8	6	38		H2	2	20	
C9	1	4	granitic derived	H8	1	26	
C10	10	49		H11	1	12	
C11	3	17		H12	1	5	
D2	1	18	RB Type 13 jar	I1	5	15	
D5	4	22		I2	1	7	
D6	1	6		I6	3	8	
D7	3	10		I8	1	8	
D10	2	7		J6	1	5	
D11	2	18	RB Type 16 jar				
Total	88	452 g	Total		28	211 g	

*The pottery from Caervallack (Fig 29)*

## TRENCH 1

*(113) low in excavated section of ditch*

The five sherds are abraded but include pieces with burnished surfaces appropriate for South Western Decorated Ware.

## TRENCH 2

*(201) topsoil*

Includes South Western Decorated-type rim with internal groove and body sherd with parallel incised lines, well-made gabbroic.

*(204) lower fill pit [203]*

Includes burnished South Western Decorated-type rim with internal groove, well-made gabbroic.

## TRENCH 3

*(302) top fill of ditch [305]*

Material generally abraded, with joins to sherds in (304).

**P1** Plain small necked jar, well-made gabbroic with some exterior burnish.

**P2** (with joining sherd from (304). Shoulder of South Western Decorated jar: row of rectangular

roulette impressions below neck above simple curvilinear design of similar roulette impressions bordered by incised lines, well-made gabbroic.

**P3** Shoulder sherd with curvilinear design formed by paired incised lines, well-made gabbroic.

**P4** Neck sherd with plain cordon, well-made gabbroic. Size suggests probably from Cordoned ware Type J jar (Threipland 1956).

Also sherds from at least two rims which could be from **P2** or **P3** and base sherd as **P9** from Gear.

*(304) lower fill of ditch [305]*

**P5** Shoulder sherd from South Western Decorated jar, criss-cross design formed by three parallel lines of which two narrow deep incisions border a shallower groove, well-made gabbroic with a little burnish. Generally comparable to 'Outline' style recently identified at Trevelgue (Quinnell 2007).

**P6** Shoulder sherd from South Western Decorated jar, slashed neck cordon above curvilinear design infilled by close-set diagonal incised lines, well made gabbroic.

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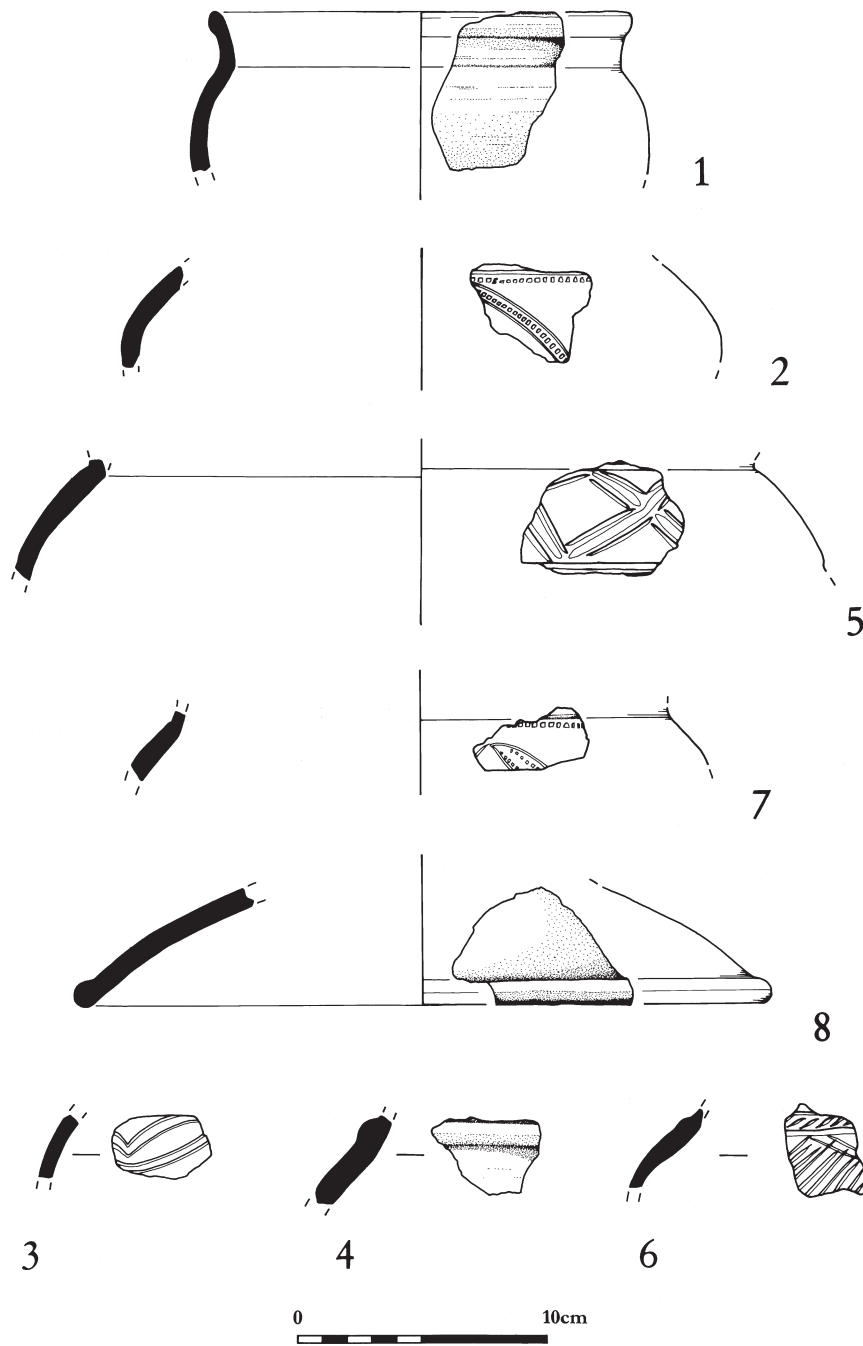


Fig 29 Pottery from Caervallack. (Drawing: Carl Thorpe.)

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**Table 5** Sherds from Caervallack by fabric group and context; prepared by Lucy Harrad

Contexts	Fabric 1 Gabbroic		Fabric 2 FD Gabbroic		Fabric 3 Loessic		Totals	
	Sherds	Weight (g)	Sherds	Weight (g)	Sherds	Weight (g)	Sherds	Weight (g)
(113) ditch fill	5	11					5	11
(201) topsoil	9	128					9	128
(204) lower fill [203]	16	181	3	17	1	1	20	199
(302) top ditch [305]	36	303	3	20			39	323
(304) lower fill [305]	52	692					52	692
Trench 3 unstratified	10	31					10	31
(401) topsoil	4	23					4	23
TOTALS	132	1369	6	37	1	1	139	1407

**P7** Shoulder sherd from South Western Decorated jar, row of rectangular roulette impressions above curvilinear design with narrow incised lines bordering similar roulette impressions, well made gabbroic with some burnish.

**P8** Lid with slightly convex profile, edge rolled and defined by external incised line above the roll, soft well made gabbroic burnished on both sides.

Also several joining groups of plain wall and base sherds.

#### TRENCH 4

##### (401) topsoil

Well-made gabbroic body sherds similar to other Iron Age material from the site.

### The pottery from Caervallack and Gear: discussion

#### *The Early Neolithic and Loessic Gabbroic fabric*

The majority of the small Loessic Gabbroic assemblage comes from, and is the only fabric present in, Gear trench 6. It is argued above that this material, which includes sherds with crushed vein quartz temper is likely to be Early Neolithic. The presence of Early Neolithic pottery on the site is not unexpected given the lithic assemblage and the radiocarbon determination of 3640–3370 cal BC (95.4% probability) (Wk-12412) deriving from presumably re-deposited material in the ditch in trench 5.

It is uncertain whether all sherds of Loessic fabric should be assigned to the Early Neolithic. The single tiny sherd from Caervallack context 204 (Table 5) is abraded and has the appearance more of burnt clay than of pottery. However, the lithics here

would be appropriate for Early Neolithic pottery activity. At Gear, five small sherds from context (708), which also contains Cordoned ware **P16** and South Western Decorated **P17**, do not contain vein quartz. These include a tiny burnished rim of indeterminate character but which is not abraded. Its presence probably indicates some use of Loessic fabric in the Later Iron Age.

#### *The Early Iron Age*

**P12** in an abraded gabbroic fabric from shallow depression (207) at Gear is suggested above as Early Iron Age. The fabric differs in its poorly worked matrix and lack of burnish from South Western Decorated material and jars in this tradition have rims with rounded and slightly rolled edges. Published comparanda from the Early Iron Age sites in Cornwall are sparse but that from Carn Euny includes several pieces comparable to **P12** (for example, Elsdon 1978, fig 55, 15); the assemblages awaiting publication from Halligye (Elsdon and Quinnell, forthcoming) and Trevelgue (Quinnell 2007) contain similar forms. For all these three sites, the comparanda appear to belong late within the Early Iron Age. While the affinities of **P12** at Gear can by no means be said to be definite, a long sequence of occupation, and therefore of ceramic styles, is suggested by the complexities revealed by the geophysical survey (Figs 5–6).

#### *The Middle and Late Iron Ages*

Although more is known about these periods than the Early Iron Age (Quinnell 1986), the last extensive published report on ceramics was that on Carn Euny by Elsdon in 1978. A considerable amount of work has been carried out but not published, significantly on the pottery from Halligye fogou (Elsdon and Quinnell, forthcoming), little

more than 1 km to the south west of both Gear and Caervallack. Most of the Halligye assemblage, with 1153 sherds of Iron Age or Roman date, was not closely stratified and there are no radiocarbon determinations. Work on finds from Trevelgue cliff castle near Newquay (Quinnell 2007) has produced indications of a sequence within Middle Iron Age South Western Decorated ware but radiocarbon determinations suggest that this is complex with different styles used in different contexts.

The data currently support the start of South Western Decorated towards the end of the fourth century BC. Three radiocarbon determinations from Gear, Wk-12409, Wk-12410 and Wk-12413, provide some support for the early part of this date range. The sequence of design on the range of forms (which appear to remain much the same throughout the currency of the ceramic style) is still uncertain. Rouletted designs have until recently been viewed as an early feature (Elsdon 1978, 403–4) but work at Trevelgue indicates, that, while the style may occasionally be early, it is much more common at a late stage in the ceramic sequence.

The forms and decoration have comparanda among previously published Cornish groups such as Killibury (Miles 1977), Castle Dore (Radford 1951), Carn Euny (Elsdon 1978) and the Rumps (Brooks 1974). Lids, **P8** from Caervallack and **P11** from Gear, previously unknown in the style, have now also been recognised at Trevelgue (Quinnell 2007).

At Gear three contexts have radiocarbon determinations with a broadly similar and early range: (202) 390–160 cal BC (Wk-12409) and (217) 390–90 cal BC (Wk-12410) in the two terminals of the gully surrounding the house site in trench 2, and (709) 370–50 cal BC (Wk-12413), the burnt clay spread within the house site in trench 7. These contexts produced vessels with incised designs, including **P18** from (709). However, both these house sites appear to have at least two phases. The trench 2 house site included a pot-lined pit with a radiocarbon determination of 210 cal BC – cal AD 10 (92.9% probability) (Wk-12408); the only surviving sherd from the upper part of this pot **P13** has a broad slashed neck cordon of a type assumed to reflect interaction between production of South Western Decorated ware and Late Iron Age Cordoned ware, a form in broad accord with this later date. Also within the trench 2 house the date 210 cal BC – cal AD 10 (91.9% probability) (Wk-12407) related to material over a possible wooden

object charred *in situ*. The trench 2 dates suggest that not all features on its house site are likely to be contemporary. However, there is no rouletted pottery from this trench.

The trench 7 house produced only the one date quoted above. However, pit [707] produced Cordoned ware jar **P16** in association with rouletted South Western Decorated jar **P17** and the ditch around the house site [703] produced the Dressel amphora sherds **P19**. Cordoned ware appears on present knowledge (Quinnell 1986; 2007) to have been introduced sometime in the first century BC and to have continued in use, overlapping with South Western Decorated Ware, into the late first and second centuries AD with some alterations in style after the arrival of Rome. Apart from **P17**, there are sherds from several rouletted vessels from trench 7 in loose association with its house site. Overall, most of the ceramics from the trench 7 house appear later than those from the trench 2 house. The association of Cordoned ware with rouletted South Western Decorated sherds demonstrates that the latter were in use in the Late Iron Age.

The presence of probable Dressel 1 amphora sherds supports a date within the first century BC or AD for most of the trench 7 house pottery. Other examples of Dressel 1 amphora imports in Cornwall have been identified with varying degrees of certainty from the hillfort of Castle Dore, the cliff castle at the Rumps, Trethurgy round and the fogou and settlement at Carn Euny but recent re-examination of the material by Fitzpatrick (in preparation) suggests that, of these, only that from Carn Euny is Iron Age Dressel 1 and the others might better be assigned to later, Roman-period forms.

There are no radiocarbon determinations from Caervallack and the assemblage from context (305) is the only one about which comment can be usefully made. Here **P2** and **P7** had rouletted designs, **P3**, **P5** and **P7** a range of incised designs in different styles. All these were in association with **P4**, a plain Cordoned ware jar sherd. If current ideas about the introduction of Cordoned ware during the first century BC are correct, the assemblage from (305) will belong either to this century or perhaps early in the first century AD. The connection with Cordoned ware suggests broad contemporaneity with the trench 7 material at Gear and demonstrates the use of rouletted South Western Decorated vessels in the Late Iron Age.

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Two linked points may be made about the Gear and Caervallack South Western Decorated assemblages, which are, of course, too small to be regarded as representative. The quality of the fabrics does not appear as good as many of those found at a distance from the Lizard, for example at Trelvegue. Much, although not all, of the larger Halligye assemblage also appears of to be of better quality. The second point is the absence of elaborate curvilinear designs incorporating dimples within areas of complex infilled patterning (for example, Castle Dore nos 3 and 7: Radford 1951, fig 14); this style has been termed 'Accomplished' in the work on Trelvegue (Quinnell 2007). Some pieces of this accomplished style occur at Halligye. The factors governing selection of fabric quality and decoration may have been related to the location, status and type of site and to the function for which the ceramics were used. As the study of South Western Decorated Ware in Cornwall progresses, the patterns of style and quality which emerge may be expected to be more complex than a simple chronological sequence.

#### *The Roman period*

The presence of some sherds in standard Roman-period gabbroic fabric in the upper levels of ditch [302] at Gear is in accordance with the radiocarbon determination of 130–390 cal AD (Wk-12411); there are no pieces with diagnostic form. Activity in the Roman period at Gear is also indicated by the material from fieldwalking, which produced forms likely to belong to the third and fourth centuries. Further evidence for Roman-period activity is provided by the ceramics and Cornish mortar (Quinnell, below) found prior to the excavation by Mr R Hosking. The majority of the pieces which are datable appear to belong to the later rather than the earlier Roman centuries, but the collection is too small to determine whether activity was continuous into the Roman period or resumed after a period without occupation.

#### **A tuyère fragment from Caervallack**

##### *Lucy Harrad*

This sherd (Fig 30), excavated from context (304) in cut [305] at Caervallack, weighed 6g and was initially thought to be a piece of a crucible. It is 7mm thick with a rounded rim. Its fabric appeared

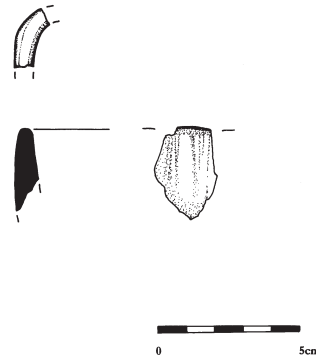


Fig 30 Fragment of a tuyère from Caervallack. (Drawing: Carl Thorpe.)

to be granitic, rich in quartz crystals. Parts of the interior, exterior and rim were covered in a colourless glassy material. There were several darker patches which initial X-Ray Fluorescence (XRF) analysis showed were iron-staining, possibly post-depositional.

Scanning Electron Microscope (SEM) analysis was undertaken across a cross-section of the rim edge to determine whether the glassy material was a manufactured glass or glaze, derived from use as a crucible in glass-making. However, the chemistry of the glassy substance was found to be very similar to that of the clay body, with no clearly defined edge which might be found with an applied substance or glaze. The glassy material was very high in aluminium oxide ( $Al_2O_3$ ) and had too many impurities to be a manufactured glass. The high  $Al_2O_3$  level is indicative of a clay body, and the similarity with the interior of the sherd suggests that the glassy substance is the melted clay body itself, fused under high temperatures.

The microscopic appearance of the sherd, with lots of bubbles and fused vitreous material, suggests that the sherd has been subjected to extremely high temperatures such as might be found during glass-making or metallurgy.

The fact that this clay is granitic and has been imported from elsewhere onto the Lizard suggests that the granitic clay was deliberately chosen for its high refractive qualities and was intended for a specific purpose. Kaolinitic clays such as this granitic fabric can withstand temperatures in excess of 1800°C (Rhodes 1973, 18), even higher with a high proportion of quartz crystals.

A number of points indicate that the sherd may have been the end of a *tuyère*, artefacts which need

to be made of a high-refractive material able to withstand extreme temperatures. The glassy material was distributed on the inside, outside and around the rim of the sherd, indicating that extreme heat was applied all around the edge of the pipe. The sherd must have reached extremely high temperatures to begin to vitrify on the surface; these temperatures are required during metallurgy.

There is substantive evidence of metalworking being undertaken in Cornwall during the Iron Age – for example, at Chun Castle, Morvah (Leeds 1927; 1931), Trevelgue, Newquay (Nowakowski and Quinnell 2007), Little Quoit Farm, St Columb Major (Lawson-Jones, forthcoming), and Killigrew, Trispen (Cole and Nowakowski forthcoming) – but little or no archaeological evidence of local glass manufacture. Most glass is considered to have been imported at this period. The shape of this sherd would be unusual for the rim of a pot-shaped vessel, such as a crucible.

The rim is crude and unshaped, and the curve of the sherd lies at right angles to the rim. This is more likely to be the end of a pipe, which might have become more flattened on the bottom during its manufacture or distorted through high temperatures.

There is no residue of glass-making (or any other industrial process) on the surface of the sherd. This could be explained if it were a *tuyère* as it may not come into contact with the metal being worked. If it had been in direct contact with glass as a crucible, however, some residue might be expected to remain.

## Flint

### *Phil Harding*

Forty-nine pieces of worked flint and 21 pieces of unworked flint were collected during fieldwalking of the cultivated area in the north-eastern corner of the Gear enclosure. They included flakes, blades, six end-scrapers and a Mesolithic proximal microburin. There were also five pieces, mostly unstratified, from excavated trenches in the hillfort. Six pieces of worked flint were found at Caervallack, including a small fragment of a Neolithic ground flint axe. Details of individual pieces and the grid square or excavation contexts from which they were recovered are included in the project archive report (Edwards 2005). Selected items are illustrated in Figure 31.

The raw material comprises small, heavily-rolled nodules of beach flint. All flakes and tools are correspondingly small. The two unbroken cores are both made on flakes, which may indicate the value of the limited flint resources available to the prehistoric knappers or suggest that nodules were split to provide core blanks. The flakes and blades display a competent standard of knapping with abraded striking platforms and evidence for the use of soft hammers.

The retouched tools include six end-scrapers made on the distal ends of flakes, of which three are well-made ‘thumbnail’ scrapers. The other tools comprise a burnt implement, a broken piece and a possible end-scraper. There was also a broken miscellaneous tool fragment.

The six pieces of worked flint from Caervallack include a burnt fragment of an early Neolithic ground flint axe, which provides evidence for earlier activity on the site. The remaining material indicates that, as at Gear, flint was obtained from beach sources. The flakes include an undiagnostic fragment of a broken blade of Mesolithic or early Neolithic date and a flake which may be a by-product of thinning a core tool.

All flint from Gear and Caervallack is residual and difficult to date precisely. However, the range of individual objects indicates almost continuous activity in the area from the Mesolithic period. The recovery of a microburin from the fieldwalking at Gear may be associated with some of the blades that were found from the field. Bands of hunter-gatherers were certainly present in this part of Cornwall during the Mesolithic (Wymer 1977; Berridge and Roberts 1986; Smith 1984a; 1984b; 1987; Smith and Harris 1982). The fragment of a Neolithic ground flint axe provides evidence of continuing occupation in the Neolithic and may be related to forest clearance in the area. The retouched scrapers are more difficult to date precisely but may also be of a Neolithic date or belong to the Early Bronze Age.

## Stone artefacts (not illustrated)

*Henrietta Quinnell, with petrological identifications by Roger Taylor*

### *Caervallack*

**S1** (302) upper fill of ditch [305] in trench 3. Flat pebble slickstone, volcanic tuff, 50mm long,

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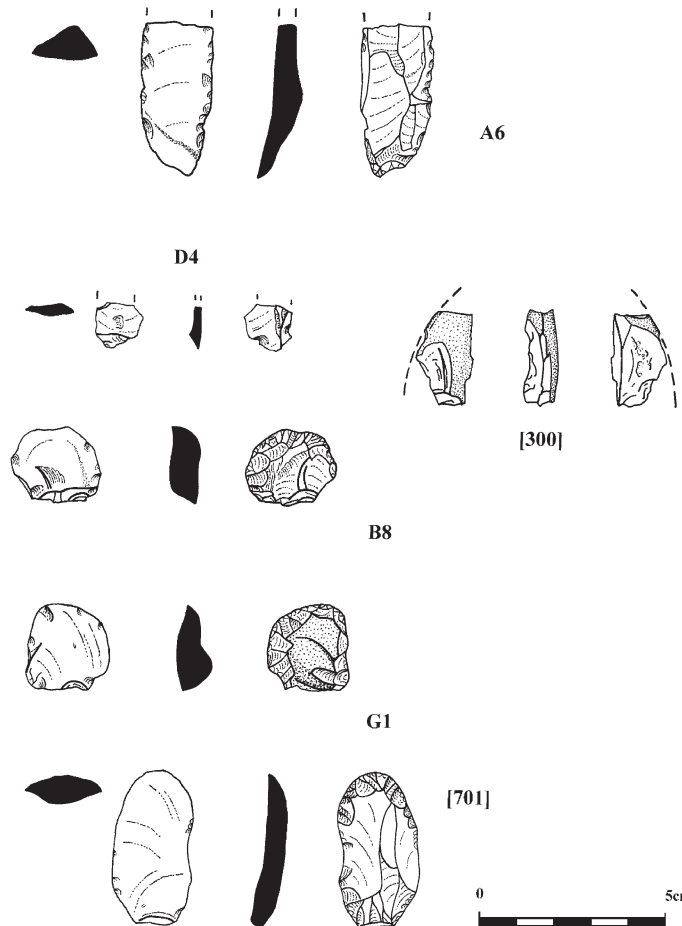


Fig 31 Selected flint from Gear and Caervallack: a broken blade from Gear fieldwalking square A6; a broken proximal microburin from square D4; two thumbnail scrapers from B8 and G1; a fragment of a ground flint axe from context (300) at Caervallack and a scraper / blade from context (701) at Gear. (Drawings: Carl Thorpe).

34m wide, 8mm thick. Both surfaces worn until almost glossy and most of the circumference worn to a distinct facet from use of the edge for rubbing.

**S2** (302) Whetstone. Narrow bar-shaped water-worn cobble, siltstone, broken at both ends; surviving length 140mm, 60mm wide, 20mm thick. One flat surface and one edge slightly worn, the second edge worn to a distinct facet. Before breakage, **S2** was a whetstone of large size.

**S3** Trench 3 unstratified. Flat pebble slickstone, quartzite, 55mm long, 43mm wide, 8mm thick.

Worn glossy all over but lacking the distinct edge facet of **S1**.

**S4** Trench 3 unstratified. Flat pebble slickstone, volcanic tuff, 58mm long, 30mm wide, 9mm thick.

Also four rounded quartzite pebbles between 30mm and 40mm in size; possibly slingstones, two from (204), two unstratified from trench 3.

*Gear*

**S5** (210) fill of drain [211]. Broken whetstone and pestle, quartzite. Bar-shaped cobble, surviving length 85mm, 65mm across, 25mm thick. Both flat

surfaces worn and a distinct facet from metal sharpening along one side. Surviving end ground through use as a pestle; broken edge slightly worn. Shape provides good hand grip; use as pestle could have occurred after breakage.

**S6** Pressed into top of natural (222). Flat cobble rubbing stone, quartzite, surviving length 85mm, width 58mm, thickness 18mm; worn almost glossy all over and definitely before breakage.

**S7** Pressed into top of natural (222). Flat pebble slickstone, volcanic tuff, 60mm by 40mm by 14mm; worn almost glossy all over with very slight facet around part of the edge.

**S8** Pressed into top of natural (222). Flat pebble slickstone, volcanic tuff, 70mm by 55mm by 14mm; worn smooth but not glossy all over surface. This type of rock would not easily wear to gloss but remain matt.

**S9** (707) fill of pit [708] central to a probable roundhouse. Flat pebble slickstone, volcanic tuff, 55mm by 50mm by 14mm. Worn glossy almost all over with distinct facet around part of edge as in **S1**.

Also four rounded quartzite pebbles between 40mm and 50mm in size, possibly slingstones, two from (701) and two from (707).

### *Discussion*

These distinctive artefacts, all using beach pebbles or cobbles of appropriate rock and shape with no modification, comprise two whetstones, one of which was also used as a pestle, one rubbing stone and six slickstones of similarly small size. Tools of unmodified stone are frequent finds on Cornish Iron Age sites; for example, at Killibury (Miles 1977, 108, fig 42). However, function is notoriously difficult to establish with precision due to the lack of detailed studies on wear patterns. It is important to publish the presence of unmodified stone tools on excavated sites if only to indicate their availability for any future research into use-wear.

The small groups of stone artefacts from both Caervallack and Gear are distinguished by the presence of slickstones. This term is used here to described pebbles or small cobbles, none over 70mm in maximum dimension, which have

developed varying degrees of gloss from wear over much of their surfaces. Such tools are sometimes identified as polishing stones (*cf* Killibury: Miles 1977, fig 42, no 38). Slickstones or polishing stones have not often been published from Iron Age sites in Cornwall or their successors in the Roman period, probably because of the difficulty of distinguishing unmodified pebbles as artefacts. Exceptions are an example from the Later Iron Age/early Roman period round at Castle Gotha (Saunders and Harris 1982, fig 10, no 12) and a group from the Roman to early post-Roman round at Trethurgy (Quinnell 2004, 6.8, fig 67).

The gloss on these stones is most likely to derive from extensive use on soft, fine-grained, material, most probably from the finishing of cloth or possibly use on leather. The presence of slickstones at both Caervallack and Gear, if the excavated sample is representative and the functional interpretation correct, suggests possible leather or cloth production. A stone spindle whorl was among the items collected by Mr Hosking prior to the Time Team investigations, although not available when this material was examined by Henrietta Quinnell, and another possible example in slate was recovered from grid square E2 during fieldwalking.

It is probable that suitable cobbles and pebbles were brought onto the sites from beach deposits 7 km or more away, although transport over longer distances is possible. The majority of whetstones found at Danebury (Roe 1991) and South Cadbury (Roe 2000, 268) were pebbles of Staddon Grit from South Devon. Quartzite pebbles used as polishers were probably brought from Chesil Beach to South Cadbury (*ibid.*, 266) and sandstone pebbles from the Severn shore to Glastonbury (Roe 1995, 162) over distances of 45 km and 24 km respectively. Movement of suitable small water worn pebbles for tool use has not been adequately investigated in south-west Britain and future studies may demonstrate complex patterns that ensured the selection and exchange of the most appropriate material over significant distances rather than use of the most accessible deposits.

### *Stone finds recovered before the investigation*

#### CORNISH MORTAR (Fig 32)

A piece of a Cornish mortar was found around 1998 in the north-west quadrant of the hillfort, at about SW 7202 2489. This had an overall diameter of 260mm and height of 80mm. Its rim has a shallow



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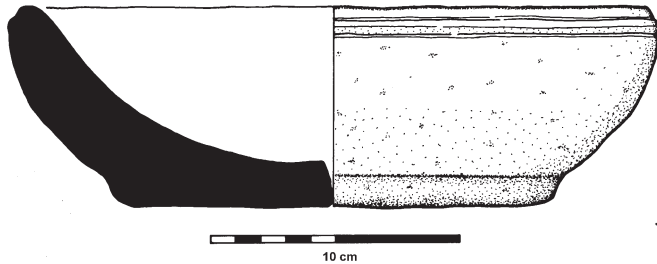


Fig 32 A greisen stone mortar found at Gear by Mr Rex Hosking. (Drawing: Carl Thorpe.)

groove around it with a slight ridge below; when complete the mortar would have had a single spout. The mortar is worn smooth inside from use and has a number of deep recent scratches from farm machinery.

Two types of stone vessels used as mortars have been identified from the Roman period in Cornwall. Trethurgy bowls have diameters between 450 and 550mm, comparatively thin walls and pairs of handles copying metal prototypes (Quinnell 1993, 34). Cornish mortars are smaller, between 200mm and 300mm in diameter, with comparatively thick walls and appear to initially copy second-century pottery mortaria. The thick wall and small size of the Gear bowl identify it clearly as a Cornish mortar. Cornish mortars with grooved rims appear to represent some alteration in form from the initial copies from pottery and, on very limited dating evidence, to belong to the second and third centuries AD (*ibid.*, 33). Dr R Taylor identifies the rock from which the mortar was made as greisen, almost certainly from Tregonning Hill, which was extensively used both for Cornish mortars and Trethurgy bowls (*ibid.*, fig 1).

The excavation of virtually every site occupied during the Roman period in Cornwall has produced at least one Cornish mortar or Trethurgy bowl and details of about 50 examples of the former have been published (*ibid.*, 41–2). Their production and use illustrate the way in which communities in Cornwall adapted Roman-style artefacts. While locally made gabbroic pottery which forms the majority of assemblages on sites of this date has styles broadly based on those current elsewhere in southern Britain (Quinnell 2004, 110–1), pottery mortaria were not made. Instead these substantial stone copies were produced, and their use throughout the period indicates some influence from the Roman world on local practices of food preparation. The presence of a much-used example

at Gear is additional evidence for settlement within the enclosure during the Roman period.

#### QUERNS

A saddle quern of fine-grained granite was found in the general area of the Cornish mortar. The lower stone of a rotary quern of a coarser granite was found at about SW 7215 2475, on the east side of the hillfort enclosure. This was 280mm in diameter with thickness increasing from 50mm at the edge to 85mm at its centre. The central hole 40mm across was 40mm deep and did not perforate the quern. Both saddle and rotary querns were in use during the Later Iron Age and the Roman periods (Quinnell 2004, 151) and there is nothing distinctive to date either piece. The rotary quern was of small size. Cornish rotary querns are between 260mm and 580mm in diameter (Watts 2003), the size tending to increase during the Roman period. A number of small-sized querns in use in the Roman period have been identified in the Lizard area, most notably in a feature related to the enclosure at Boden, St Anthony-in-Meneage (Quinnell, forthcoming).

## Charcoal

### *Rowena Gale*

This report presents the analysis of 11 samples of charcoal recovered from the enclosures at Caervallack and Gear.

Bulk soil samples were processed by flotation and sieving using 1mm and 0.5mm meshes. The resulting flots and residues were scanned under low magnification and the charcoal separated from plant macrofossils. The condition of the charcoal was mostly poor and some samples were very silty. Intact radial segments of roundwood were present in a sample from context (403) at Caervallack and

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a sample from context (301) from Gear. Charcoal fragments measuring >2mm in radial cross-section were considered for species identification.

The samples were prepared using standard methods (Gale and Cutler 2000). The anatomical structures were examined using incident light on a Nikon Labophot-z compound microscope at magnifications up to x400 and matched to prepared reference slides of modern wood. When possible, the maturity of the wood was assessed (i.e., heartwood or sapwood) and stem diameters recorded. It should be noted that charred stems may be reduced in volume by up to 40 per cent.

## Results

The taxa identified are shown in Table 6. Classification follows that of *Flora Europaea* (Tutin, Heywood, *et al*, 1964–80). Group names are given when anatomical differences between related genera are too slight to allow secure identification to genus level. These include members of the Pomoideae (*Crataegus*, *Malus*, *Pyrus* and *Sorbus*) and Leguminosae (*Ulex* and *Cytisus*). Where a

genus is represented by a single species in the British flora it is named as the most likely origin of the wood, given the provenance and period, but it should be noted that it is rarely possible to name individual species from wood features, and exotic species of trees and shrubs were introduced to Britain from an early period (Godwin 1956; Mitchell 1974). The anatomical structure of the charcoal was consistent with the following taxa or groups of taxa:

- Aquifoliaceae. *Ilex aquifolium* L., holly  
 Betulaceae. *Alnus glutinosa* (L.) Gaertner, European alder; *cf Betula* sp., birch  
 Corylaceae. *Corylus avellana* L., hazel  
 Fagaceae. *Quercus* sp., oak  
 Leguminosae. *Cytisus scoparius* (L.) Link, broom and / or *Ulex* sp., gorse  
 Rosaceae. Subfamilies:  
 Pomoideae, which includes *Crataegus* sp., hawthorn; *Malus* sp., apple; *Pyrus* sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically similar.  
 Prunoideae. *Prunus spinosa* L., blackthorn.

**Table 6** Charcoal from prehistoric contexts, Gear and Caervallack  
 Key: h = heartwood; r = roundwood (diameter <20mm); s = sapwood (diameter unknown).  
 The number of identified fragments is indicated.

Context	Description	<i>Alnus</i>	<i>Betula</i>	<i>Corylus</i>	<i>Ilex</i>	Pomoideae	<i>Prunus</i>	<i>Quercus</i>	<i>Ulex/Cytisus</i>
<b>Caervallack</b>									
<i>Trench 2</i>									
(202)	Upper fill of pit [203]	-	-	cf 1	-	1	1	35h, 21r, 11s	-
(204)	Primary fill of pit [203]	-	cf 1	4	-	-	-	5h, 2r, 8s	-
<i>Trench 4</i>									
(403)	Fill of pit [405]	-	-	-	-	-	-	21h, 4r	44r
<b>Gear</b>									
Early Neolithic									
<i>Trench 5</i>									
(506)	Primary fill of ditch [503]	-	-	34	-	-	-	1s	-
Mid to late Iron Age									
<i>Trench 2</i>									
(202)	Fill of ditch terminal [205]	cf 2	-	1	-	-	-	32h, 25s	1
(204)	Upper deposit of hollow [219], south end	-	-	-	-	-	-	42h, 11s	3
	Upper deposit of hollow [219], south end	5	-	-	-	-	-	46h, 5s	1
(206)	Fill of buried pot in pit [209]	1	-	-	-	-	-	28h, 7r, 8s	7
(214)	Primary fill of ditch terminal [205]	-	-	-	-	-	-	36h, 4r, 12s	2
(217)	Fill of ditch terminal [218]	-	-	-	1	2	-	51h, 13r, 1s	1
Roman period									
(301)	Fill of ditch [302]	-	-	-	-	1r	-	21r	63r

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*Caervallack*

Charcoal was examined from trenches 2 and 4 at Caervallack.

Charcoal from the lower fill (204) of a large pit or hollow, associated with burnt bone and stone, included oak (*Quercus* sp.), hazel (*Corylus avellana*) and *cf* birch (*Betula* sp.). A larger quantity of charcoal survived in the upper fill (202) of the pit and was identified as mainly oak (*Quercus* sp.) (heartwood, sapwood and roundwood) but also blackthorn (*Prunus spinosa*) the hawthorn/*Sorbus* group (Pomoideae) and *cf* hazel (*Corylus avellana*).

Charcoal from the fill of pit [405] in trench 4 consisted of oak (*Quercus* sp.), mainly from largewood, and narrow stems of gorse (*Ulex* sp.) or broom (*Cytisus scoparius*).

*Gear*

Charcoal was examined from trenches 2, 3 and 5 at Gear.

Charcoal from the upper (202) and primary (214) fills of the south-west ditch terminal [205] of a semi-circular enclosure identified by the geophysical survey was identified as mainly oak (*Quercus* sp.), largewood and roundwood, but also hazel (*Corylus avellana*), gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) and *cf* alder (*Alnus glutinosa* sp.). Charcoal from context (217), the fill of the south-east terminal [218], was predominantly oak (*Quercus* sp.), although holly (*Ilex aquifolium*), the hawthorn/*Sorbus* group (Pomoideae) and gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) was also present. The origin of the charcoal in these contexts is unknown.

The burnt feature [219] included the charred remains of a plank or timber which lay at the base of a narrow cut. It was not clear whether the plank represented part of a structure, subsequently burnt, or dedicated firewood composed of largewood. Charcoal from context (204), the deposit overlying the hollow (derived from the south and north ends), was identified as predominantly oak (*Quercus* sp.) largewood with small additions of gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) and alder (*Alnus glutinosa*). Charcoal from the fill (206) of the pit set into pit [209] was similar in species composition to that from (204) (Table 6).

Charcoal from the upper fill (301) of ditch [302] in trench 3 was fairly abundant and consisted entirely of narrow roundwood from gorse (*Ulex* sp.) or broom (*Cytisus scoparius*), oak (*Quercus*

sp.) and, unusually, the hawthorn / *Sorbus* group (Pomoideae). The oak stems measured up to 10mm in diameter and ranged in age from two to four years; fast growth recorded in some fragments may be indicative of coppiced origins. Some fragments were twiggy. Gorse or broom stems were particularly frequent, with some up to 7mm in diameter.

The source of the charcoal is unknown. The use of such narrow stems may relate either to the preferred use of this type of fuel for a specific function, to the source of supply or, perhaps, the disposal of scrubby growth, hedge trimmings or brushwood from the conversion of timber.

In trench 5, charcoal from the primary fill (506) of the north-eastern ditch terminal of the main enclosure ditch [503] was recorded as mainly hazel (*Corylus avellana*) with a small quantity of oak (*Quercus* sp.). A radiocarbon date of  $4748 \pm 53$  BP, 3640–3370 cal BC (Wk-12412) was obtained on a (presumably residual) sample of hazel (*Corylus avellana*) from this context.

**Discussion***Gear*

Confirmation of some Early Neolithic activity at Gear was provided by charcoal, almost exclusively hazel (*Corylus avellana*), from ditch [503]. It is interesting to compare the exploitation of hazel at this time with fuel deposits from Iron Age and Romano-British contexts, in which hazel occurs only sparsely. However, with only a single sample available from the earlier prehistoric period, it would be unsafe to place too much emphasis on these results.

Dumps of charcoal in the two ditch terminals, [205] and [218], in trench 2 were dated to the mid to late Iron Age. They consisted largely of oak (*Quercus* sp.) but also included small quantities of shrubby species (Table 6). The source of this charcoal – whether representing residues from domestic or industrial fires or material which had been deliberately produced as charcoal – is unknown.

Charcoal residues in the burnt feature [219] and the pot adjacent in pit [209] dated from the late third century to the first century BC. These consisted almost entirely of oak (*Quercus* sp.), mature enough to have developed heartwood, although it is probable that a fairly high ratio of the

charcoal examined originated from the charred plank found *in situ* in [219]. In addition, gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) and alder (*Alnus glutinosa*) occurred sparsely in these deposits.

Charcoal from the fill (301) of ditch [302] in trench 3 was dated to the Romano-British period. The origin of the material is unknown. The sample from context (301) was relatively large and differed from those of earlier periods in that it consisted entirely of narrow roundwood, predominantly gorse (*Ulex* sp.) or broom (*Cytisus scoparius*) and oak (*Quercus* sp.), although the hawthorn/ *Sorbus* group (Pomoideae) was also represented. Oak stems were less than 10mm in diameter and none appeared to include more than four growth rings. Fast growth rates noted in some fragments could be indicative of either coppiced (i.e., managed) woodland or trees growing in optimal conditions. There was no evidence of the use of oak largewood or heartwood. Since narrow roundwood burns fiercely and provides an intense but short-lived heat, as opposed to the longer-lasting heat source provided by largewood, this use of roundwood may relate to the function of the fire. Alternatively, and perhaps more probably, it may reflect the source of supply of firewood. The long-term need for fuel and timber during the occupation of the site probably initiated the early control and management of local woodland by coppicing.

#### *Caervallack*

Charcoal from pit fills in trenches 2 and 4 (contexts 202, 204 and 403) was provisionally attributed to late Iron Age activity. The fuel used here would almost certainly have been obtained from similar sources to those of Gear and, as might be anticipated, the character of fuel identified from Caervallack was similar.

#### **Environmental evidence and the procurement of fuel**

The two enclosures are sited on slopes overlooking the (now) wooded valley of Mawgan Creek. In the early days of occupation, the sheltered valley would have presented a rich source of wood and timber, perhaps a precious commodity in the generally windswept landscape of the more exposed parts of the Lizard peninsula. Marren (1992) has suggested that demand for fuel in south-west Britain in the

prehistoric period, particularly by tin-workers, reduced and modified the character of woodland, leaving many areas denuded of trees from the Bronze Age.

Although the evidence is limited, the abundance of hazel (*Corylus avellana*) in the Neolithic deposit at Gear may represent the more or less pure hazel woods thought to have colonised this part of Cornwall in early prehistoric periods (*ibid.*). If correct, the paucity of hazel and dominance of oak in the Iron Age deposits from Caervallack and Gear could be interpreted as indicating changes in the composition of woodland in this environment in later prehistory. This may have been a natural transgression, due to the leaching of soil nutrients and increased acidity. In common with other parts of the region, the valley woodland near Caervallack and Gear was probably coppiced from ancient times (*ibid.*). This suggestion is supported by evidence from the third century AD deposits at Gear, which indicate the use of young fast-grown oak stems of four years and less in age, in contrast to oak largewood and heartwood identified from later Iron Age contexts. The sources from which these samples derive are not well understood, however, and the absence of narrow roundwood in the late Iron Age contexts does not necessarily negate the existence of coppiced woodland at this time.

The frequency of gorse (*Ulex* sp.) – more probable than broom (*Cytisus scoparius*) in this environment – suggests the presence of heathy rough ground nearby or perhaps the harvesting of fuel from field boundaries. Gorse is likely to have been an important and perhaps managed resource, since in addition to providing high energy fuel the plant has many other economic uses (Lucas 1960).

## Charred seeds

#### *Wendy Carruthers*

Environmental soil samples were taken under the direction of Vanessa Straker, the English Heritage Regional Archaeology Science Advisor for the south west. The soil samples were processed using standard methods of flotation. A 250-micron mesh was used to recover the flot and a 1mm mesh to retain the residue. The flots from 16 samples were sent to the author for assessment, four from Caervallack and 12 from Gear.

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The flots were dry-sieved using a 2mm mesh sieve to remove the large charcoal. The >2mm fractions were sorted (and cleaned of modern roots) in order to remove any seeds, before being bagged and sent to Rowena Gale for analysis (Gale, above). The <2mm fractions were scanned for charred plant remains under a low-power microscope.

The charred plant assemblages were roughly characterised for this assessment, rather than being sorted, counted and fully identified. Five samples were assessed as having further potential and further taxa may have been recorded, and a higher level of identification attained, through full analysis of these. The results of the assessment, including flot sizes, are presented in tabular form in the project archive report (Edwards 2005).

## Results

### *Caervallack*

Of the four samples examined from this site, two produced enough charred plant material to justify detailed analysis. The sample from (202), the upper fill of pit [203] in trench 2, produced sparse evidence for the cultivation of emmer/spelt wheat (*Triticum dicoccum*/spelta), possible bread-type wheat (*T. cf. aestivum*-type) and hulled barley (*Hordeum* sp.). Grains were present, but there were no chaff fragments or weed seeds to indicate the presence of cereal processing waste. This is, therefore, likely to represent general domestic waste (although it should be remembered that the evidence is scant). A single barley grain was recovered from the lower fill (204) of this pit. These three cereals are commonly recovered from Iron Age deposits in southern Britain, with emmer and spelt usually the dominant taxa; barley is often common but not abundant and bread-type wheat occurs sporadically on many later Iron Age sites.

The other productive sample was from the fill of undated pit [405] in trench 4, which contained burnt material and slag. It also produced gorse or broom charcoal (Gale, above), suggesting that local heathland vegetation may have been being used for fuel. The predominant cereal in this sample was oats, with a little barley. An arable weed seed from corn marigold (*Chrysanthemum segetum*) was also recorded. Corn marigold is more characteristic of acidic soils than basic ones, and oats are well-suited to poor acid soils and damp climates. Although oats are found in small numbers from the Iron Age

onwards, they are rarely the predominant crop in an assemblage until the early medieval period. Mid fourth century deposits from Duckpool, Morwenstow (Straker 1995), did produce more oats than wheat or barley, but the assemblages were not large. It is notable however, that the Caervallack sample appeared to contain no emmer/spelt remains, and these are usually present in Iron Age and Roman cereal assemblages.

It is possible, therefore, that this feature dates at least to the early medieval period, although this cannot be confirmed without radiocarbon dating. Other medieval sites in south-west England and Wales have commonly produced large quantities of oats, demonstrating the suitability of this crop for the poorer, acidic soils and high rainfall found in parts of south-west Britain.

### *Gear*

Three of the 12 samples assessed produced charred plant remains. Potentially the most promising of these was from context (206) in trench 2, the fill of an Iron Age pot. However, the flot was too encrusted with mud to scan it effectively, although one emmer/spelt glume base was observed.

The sample from context (301), the upper fill of ditch [302] in trench 3, also produced a dirty flot, but a reasonable quantity of charred cereal processing waste was observed, including emmer/spelt glume bases, barley rachis fragments and a few weed seeds. A possible Celtic bean fragment was also noted. This feature provided a calibrated radiocarbon date of cal AD 130–390 (95.4%) (Wk-12411).

A sample from the spread of burnt clay (709) in the centre of the probable roundhouse in trench 7 contained a small amount of spelt and emmer/spelt chaff (glume bases), perhaps representing the burning of crop processing waste as tinder or for fuel.

It is interesting to note that the three samples from Gear produced primarily crop-processing waste, by contrast with those from Caervallack which produced mainly grain. The quantities of charred plant remains present in the samples were very low, however, so it is difficult to draw conclusions from these observations. Nonetheless, the results could be seen as the opposite of what might be expected from, on the one hand, a producer site and, on the other, a site notionally involved in trade or exchange. However, hulled

cereals are likely to have been traded in spikelet form, so consumer sites would have been just as likely to burn large quantities of glume bases as a result of preparing the spikelets for consumption. This is borne out by the results from Danebury (Jones 1985).

The fact that chaff was more frequent at Gear could reflect the perhaps larger scale of activities taking place there. In addition, crop-processing waste would have been useful tinder for industrial fires while on a more domestic site such as Caervallack it may have been more highly valued as fodder for livestock. All of these suggestions must be extremely tentative, however, considering the scant nature of the evidence from the two sites.

### Comparisons with other sites in Cornwall

A notable feature of archaeobotanical assemblages from Cornwall is that charred cereal remains are often very sparse, perhaps indicating that pastoral agriculture was more important than arable crops. As already noted, oats are more frequent in assemblages from south-west England and Wales than in most of the rest of the British Isles. They were, of course, also important in Scotland.

In addition, evidence for using heathland vegetation as fuel is common in Cornwall from at least the Iron Age onwards, indicating that heathland vegetation had colonised the poor, acidic soils from an early date. In some areas of Cornwall the development of heath vegetation can be traced

to at least the Bronze Age (Straker 1995). Because of the importance of the arable / pastoral balance in this region, and because other environmental indicators such as molluscs are rarely preserved in the acidic soils, it is important that pollen and charred plant remains are examined in tandem wherever possible.

## Radiocarbon dating

### *Henrietta Quinnell*

Seven charcoal samples were submitted for accelerator mass spectrometry dating (AMS), a method which gives high precision dates on small amounts of material, at the University of Waikato in New Zealand. The samples were selected following recommendations by Rowena Gale following her assessment of the charcoal and all used either rapidly growing species such as gorse / broom or recent growth such as oak sapwood. Unfortunately there were no samples from Caervallack with appropriate charcoal from securely dated contexts. The determinations in Table 7 and elsewhere in this report have been calibrated using the programme OxCal v3.10.

## Discussion

The investigations at Gear and Caervallack produced interesting and valuable results from two

**Table 7** Radiocarbon determinations from Gear

<i>Number</i>	<i>Context</i>	<i>Charcoal</i>	<i>Date BP</i>	<i>Calibrated 68.2% probability</i>	<i>Calibrated 95.4% probability</i>
Wk-12407	(204)	<i>Quercus</i> (sapwood), <i>Alnus</i> , <i>Ulex/Cytisus</i>	2095 + 45 BP	180–50 cal BC	350 BC–310 cal BC (3.5%) BC (3.5%) 210 cal BC – cal AD 10 (91.9%)
Wk-12408	(206)	<i>Alnus/Corylus</i> , <i>Ulex/Cytisus</i>	2091 + 43 BP	170–50 cal BC	350–320 cal BC (2.5%) 210 cal BC – cal AD 10 (92.9%)
Wk-12409	(214)	<i>Quercus</i> (sapwood), <i>Ulex/Cytisus</i>	2199 + 45 BP	360–270 cal BC (40.5%)	260–200 cal BC (27.7%) 390–160 cal BC
Wk-12410	(217)	<i>Quercus</i> (sapwood)	2180 + 54 BP	360–270 cal BC (35.2%)	260–170 cal BC (33.0 %) 390–90 cal BC
Wk-12411	(301)	<i>Ulex/Cytisus</i>	1765 + 46 BP	210–350 cal AD	130–390 cal AD
Wk-12412	(506)	<i>Corylus</i>	4748 + 53 BP	3640–3510 cal BC (59.5%)	3430–3380 cal BC (8.7%) 3640–3490 cal BC (68.4%) 3470–3370 cal BC (27.0%)
Wk-12413	(709)	<i>Ilex</i> , <i>Ulex/Cytisus</i>	2158 + 43 BP	360–290 cal BC (28.9%) 370–50 cal BC	240–150 cal BC (32.9%) 140–110 cal BC (6.4%)

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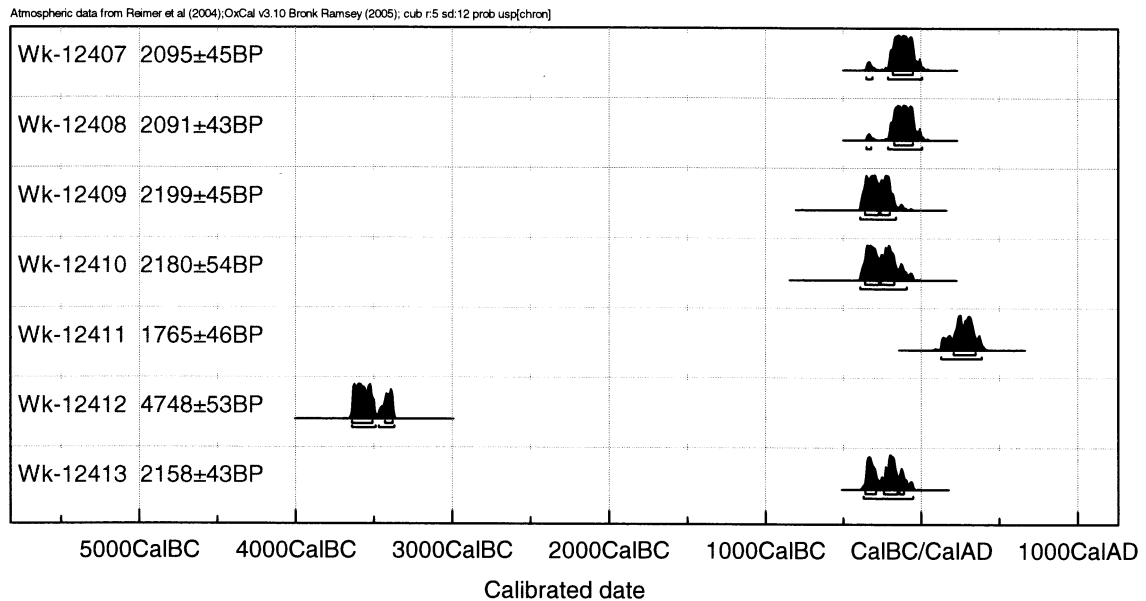


Fig 33 Radiocarbon dates from Gear.

very different forms of monument. The geophysical surveys, of Gear in particular, produced a wealth of responses that reflect the long and complex histories of these sites.

At Gear, three ring ditches were tested by excavation (trenches 2, 3, and 7). The areas enclosed by the ditches in trenches 2 and 7 each had an area of burning within their confines and are thought to represent Iron Age roundhouses, although little direct evidence was found for the form or architecture of these structures. In part this may be a consequence of truncation produced by the long history of agricultural activity on the site. The owner, Rex Hosking, noted during the Time Team investigation that this had included at least one episode of steam ploughing within the hillfort.

The excavations confirmed the major phase of Iron Age activity at Gear which is suggested by its hillfort form. Pottery and a series of radiocarbon determinations indicate significant occupation between the fourth century BC and the early first century AD. One sherd of Early Iron Age pottery from trench 2 at Gear suggests earlier activity on the site. It seems likely that the house sites excavated in Trenches 2 and 7 were long-lived, because of the occurrence of South Western Decorated Ware and comparatively early Middle

Iron Age dates and of Late Iron Age Cordoned Ware. No dates were obtained for the enclosing earthworks but it seems most probable that these are contemporary with the bulk of the occupation evidence. Pottery and a radiocarbon date from the fill of ditch [302] in trench 3 indicated occupation of the site during the mid or later Roman period, as did the range of finds from fieldwalking, but it is not clear whether this represents continuity or a re-occupation of the site.

There were indications of craft activity, in the form of polished stones perhaps used in cloth or leather production, and apparent traces of metalworking. Small quantities of charred grain and chaff from excavated contexts and the rotary quern found prior to the Time Team project suggest some food processing on site. Landscape analysis suggested that the siting of the enclosure may have been linked to trade into the Helford estuary; two amphora sherds originating from the Mediterranean found in trench 7 provide a hint of contact with wider European trading networks.

The investigations at Gear also provided evidence for much earlier phases of activity. Flint recovered from fieldwalking and during the excavations indicated a long period of human presence, beginning in the Mesolithic and continuing through the Neolithic into the Bronze

Age. A pit [606] in trench 6 contained Early Neolithic pottery. It is possible that Early Neolithic pottery also came from ditch [602] which forms the roughly D-shaped ditched enclosure in which pit [606] is located. Charcoal recovered from the hillfort ditch in trench 5 provided a date in the Early Neolithic; the sampled deposit was presumably residual within the ditch fill but provides further evidence for a Neolithic presence on the site.

The concentric ditches or gullies shown by the geophysics and confirmed by excavation in trench 4 were not dated but could conceivably have been associated with successive phases of a Bronze Age barrow; some of the other ring ditches could also represent the remains of barrows. An alternative is that these might be further instances of circular ditched enclosures of similar size and later first millennium BC date not apparently representing the locations of domestic structures; examples of these have recently been excavated at Pennance (Scarcewater) in St Stephen-in-Brannel, at Tremough, near Penryn, and at Camelford. These sites may have had ritual or ceremonial functions (Andy Jones, pers comm). Finally, there were hints from the landscape analysis that a curvilinear enclosure at the southern end of the site might pre-date construction of the hillfort rampart circuit.

The investigations at Caervallack revealed the unusually impressive form of the enclosing earthworks, with a rock-cut ditch possibly as much as 5m deep. Again, no direct dating evidence was obtained for the establishment of the two enclosures but here, as at Gear, it seems probable that this was during the currency of the South Western Decorated pottery tradition.

The excavations within both the circular enclosure and the annexe at Caervallack produced evidence for industrial activity in the form of large burnt hollows, metalworking waste and a fragment of a *tuyère*, presumably derived from a furnace or kiln. A slickstone from trench 3 also suggests cloth or leather working on the site. Domestic life was hinted at by traces of charred grain from two of the trenches. No evidence was found at Caervallack for occupation having continued into the Roman period, but the very limited nature of the investigations there means that this can not be ruled out. The recovery of a fragment of a ground flint axe dating from the Neolithic period suggests that here, as at Gear, there has been a long history of human activity on the site.

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Soils data was prepared by the National Soil Resources Institute Soil Systems Group. Copyright © Cranfield University 2004.

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# A Bronze Age roundhouse at Carnon Gate, Feock

JAMES GOSSIP and ANDY M JONES

with contributions from ANNA LAWSON-JONES, HENRIETTA QUINNELL AND ROGER TAYLOR

*Archaeological monitoring during the construction of the A39 Carnon Gate road improvements revealed a well-preserved Bronze Age roundhouse. The roundhouse was a particularly well-preserved example of its kind, comprising curvilinear stone-faced walling around a hollow cut into the hillslope, subsequently sealed by downhill movement of soil deposits. Deposits cleared from the top of the roundhouse produced finds of Trevisker-style Middle Bronze Age pottery, worked flint and a perforated stone weight. The small Trevisker pottery assemblage provided evidence for the transport of gabbroic clays from the Lizard for manufacture near the site. Residues from two sherds of pottery were submitted for radiocarbon dating, producing a date of 1500–1300 cal BC. The results of the investigation help to characterize the nature and date of Bronze Age occupation in lowland Cornwall and increase understanding generally of prehistoric settlement activity in mid Cornwall.*

*After recording of its upper levels, the roundhouse was reburied for preservation in situ.*

The Historic Environment Service (HES), Cornwall County Council, was commissioned by the Planning, Transportation and Estates department of Cornwall County Council to undertake a programme of archaeological recording along the route of the A39 Carnon Gate – Playing Place road improvement scheme.

Following an initial assessment (Thomas 2000), a geophysical survey (Mercer 2002) was undertaken which identified a number of anomalies of potential archaeological interest. This led to an archaeological watching brief carried out by HES during the summer of 2006. This involved supervision of machine topsoil-stripping over an area of approximately 1.5 ha. Few of the anomalies identified by the geophysical survey were revealed by the topsoil removal but at the lower western end of the stripped area the top of a Middle Bronze Age roundhouse was uncovered.

## Location and context

The roundhouse (SW 79138 39561) was situated on a south west-facing hillslope on the east side of the Carnon valley in the parish of Feock; it lies above the Carnon Creek at a height of around 10m OD (Fig 1). It is located less than 100m from the present creek edge but before nineteenth-century alluviation of the valley it is likely that the river ran less than 50m to the west of the roundhouse.

The local geology is Devonian Mylor Series slates. The river flood plain west of Devoran is alluvium (British Geological Survey 2004, digital data, sheet EW 352), mostly outwash from post-medieval mining activity further up the Carnon valley and on United Downs. Soils in the area are Denbigh 2 typical brown earths (National Soil Resources Institute Soil Systems Group 2004, digital data), a common soil type in lowland Cornwall.

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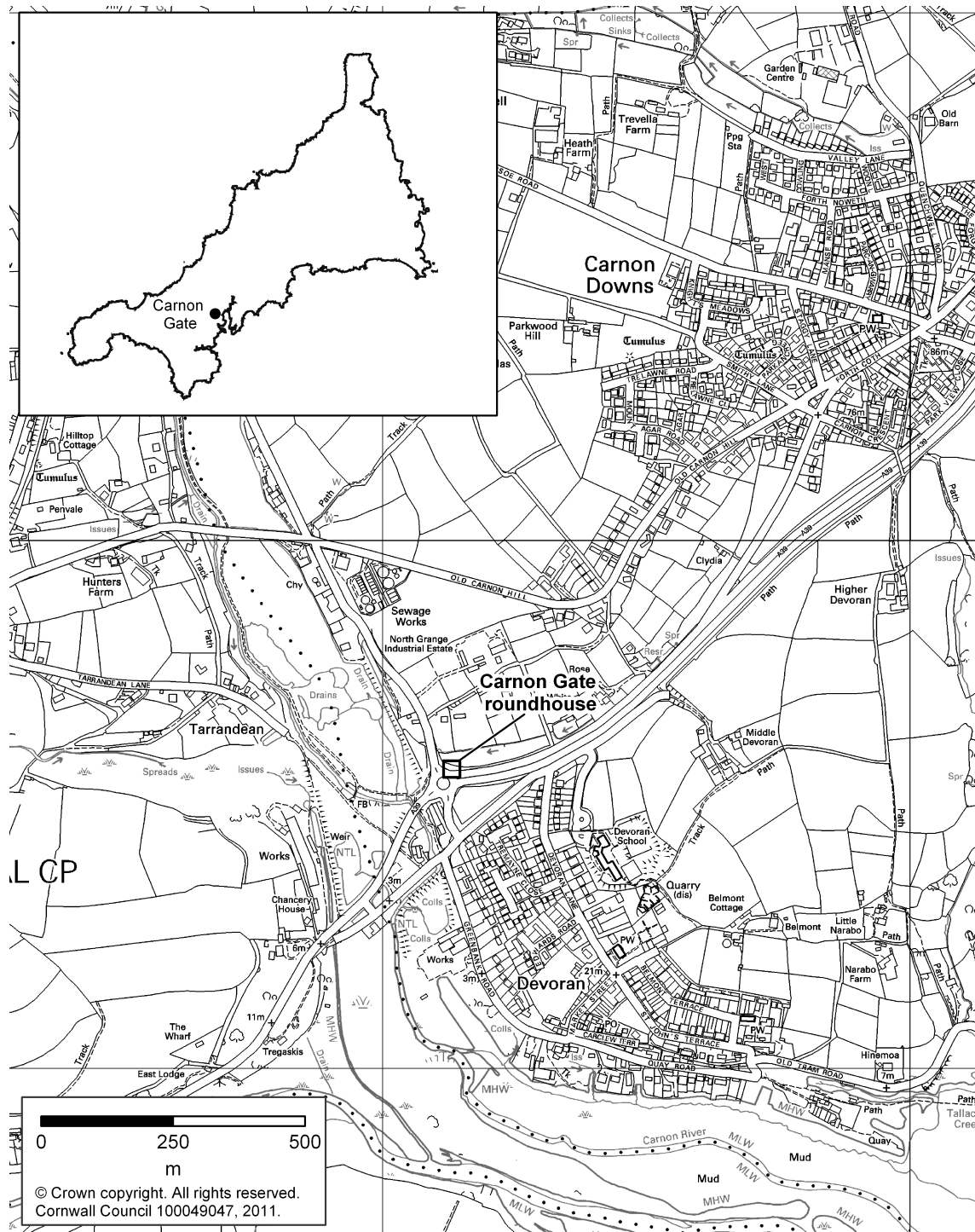


Fig 1 The location of the Carnon Gate roundhouse.

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Land-use along the route of the road corridor was traditionally arable and pasture: the stripped area ran through a large sloping field which in the nineteenth century was a group of four smaller enclosures. Although the area is characterised as 'Recently Enclosed Land' (Cornwall County Council 1996), the archaeological assessment indicated that the fields surrounding the site are associated with settlements first documented in the medieval period, including Devoran, Carnon and Perranarworthal (Thomas 2000).

At the bottom of the slope lay the river flood plain, which until recently was an expanse of sandy mining-related waste, mostly covered in low thin vegetation. At the south-western end of the road corridor was a large pond, probably of later twentieth century origin.

In the past the creek was a much more substantial tidal estuary and was navigable by large boats as late as the nineteenth century. The river creek was extensively worked for alluvial tin until the nineteenth century (Thomas 2000) but artefacts, including a stag's antler pick and a flat bronze axe of Bronze Age date recovered from later workings point to prehistoric exploitation of alluvial tin sources (Penhallurick 1986, 168). However, prior to the archaeological fieldwork, no extant prehistoric settlement sites were known to exist in the area.

## The investigation

The area of the archaeological investigation was machine stripped to a level at which archaeological features or layers were revealed at the top of the 'natural' subsoil. Initially stripping revealed little of archaeological interest. The only features recorded were shallow, parallel linear ditches representing removed hedge boundaries and a linear stone spread which was almost certainly the remains of a stone-faced Cornish hedge. Anomalies identified by the geophysical survey but not found were concluded to be of geological origin or to have been produced by material in the ploughsoil.

Further topsoil stripping revealed an area of stones close to the northern edge of the site. The exposed surface was cleaned and an arrangement of stone emerged, comprising a wall of fairly consistent width, 1.1–1.3m wide, encircling an area approximately 8m in diameter (Fig 2). A cast iron pipe crossed the site from north east to south west,

affecting some of the stonework, but otherwise the site appeared to be undisturbed.

A decision was made to continue cleaning the exposed stonework of the walling to better characterise the structure, recorded as roundhouse 107. During this process, infill material which related to its final use or abandonment was removed.

Beneath a 0.5m thick layer of topsoil, a homogenous stony silty clay deposit (100) 0.1–0.2m deep was cleared away from stones on the eastern side of the roundhouse. This deposit produced 72 sherds of Bronze Age Trevisker ware pottery and three pieces of burnt clay (Quinnell, below). Contexts (101) and (103) represented similar material on the southern and north-western sides respectively. These also produced sherds of Bronze Age pottery and layer (103) yielded three pieces of flint.

Sealed beneath (101) against the inside wall-facing of the roundhouse on its southern side, deposit (102) comprised a less stony yellow-brown silty clay. This deposit was not excavated. Within the interior of the roundhouse close to the northern edge of the excavation was layer (104) which produced seven sherds of Trevisker pottery. Adjacent was deposit (106), revealed beneath (103), which was very similar to (102).

A possible entrance on the western side of the roundhouse was suggested by two straight and parallel-sided sections of wall-facing approximately 2m apart. Once (103) was removed, it appeared that the entrance had been filled with rubble and silt clay (105). The entrance area produced a further 16 sherds of Trevisker ware and a triangular stone weight with an hour-glass perforation (Figs 3 and 4).

After cleaning it was found that, overall, the roundhouse measured 8.3m north-south and 8m east-west across its outside wall faces and 5.3m north-south and 6.2m east-west internally. The internal and external wall faces were well preserved on the eastern and southern edges, which had been cut into the gentle hillslope. In these parts of the wall, quartz nodules had been used almost exclusively. However, the core of the wall was comprised of locally-derived stones set in a silty clay, probably derived from the natural subsoil. The northern edge of the roundhouse survived to a lesser height but was traced sufficiently to complete the circular wall plan of the building. Areas of stone recorded on the northern side of the roundhouse

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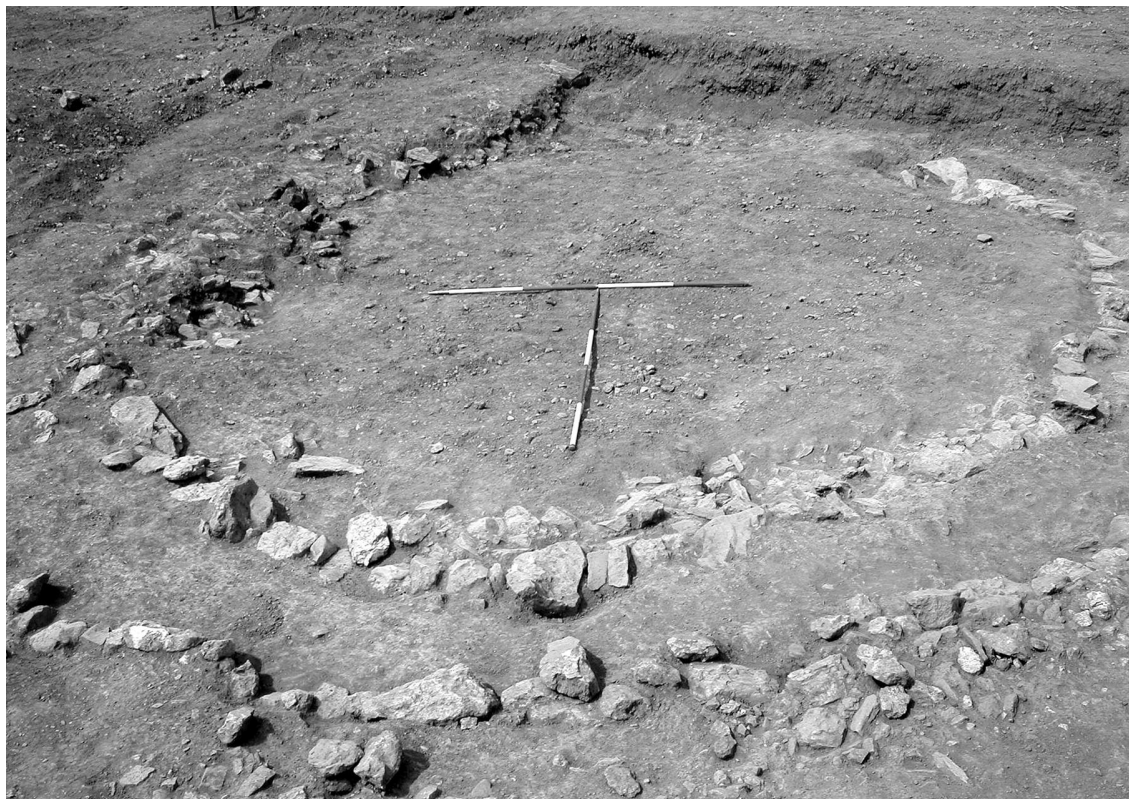


Fig 2 Roundhouse (107) from the south showing the double-faced stone walling.

against the baulk section suggest either an annexed structure on this side or more extensive areas of collapse. The western edge of the roundhouse was more disturbed, probably as a result of greater collapse on the downhill side.

Following recording, the excavated material was carefully placed back over the roundhouse and other stripped material deposited over this to a depth of 0.5m, forming a protective buffer over the stone walling. Ultimately the roundhouse was buried beneath approximately 2m of material forming the northern embankment of the new road.

Thirty metres to the west of roundhouse 107, areas of stone were observed in the stripped surface. These possibly represent two additional roundhouses but these were not investigated further and survive beneath the road make-up.

## The pottery

### *Henrietta Quinnell*

The assemblage consists of 91 sherds weighing 1303g. The sherds are soft and have fairly abraded edges and, in some cases, surfaces, which may be due to bioturbation and acid ground water. The whole assemblage was microscopically examined; examination indicated that each of the illustrated sherds was of different fabrics.

A minimum of seven vessels is represented:

Gabbroic fabric, one vessel, including a sherd with incised crossed lines;  
 Admixture 1, **P1** and the rim from another vessel;  
 Admixture 2, **P2** and a sherd with finger-nail impression;  
 Admixture 3, **P3**;  
 Admixture 4, one vessel.

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**Fabrics***Roger Taylor*

The following fabrics were identified; detailed fabric descriptions are included with the archive.

*Gabbroic*

Containing components from weathered Lizard gabbroic clays with no additional material.

*Admixture 1*

**P1** and other sherds. Gabbroic Lizard clays with moderate coarse to very coarse inclusions, including possible fragments of basic hornfels, with fine-grained, friable, black and white altered feldspar and brown to black amphibole aggregates; proportions of amphibole very variable. Possibly some biotite in the aggregates, also fragments of elvan. Other sherds have inclusions of hornfels of sedimentary origin. These rock fragments derive from sources outside the gabbro and probably outside the Lizard. Hornfels is likely to derive from metamorphic rocks, possibly from the aureole of the Carnmenellis granite which at closest is 5 km from the Carnon Gate site.

*Admixture 2*

**P2** and other sherds. Gabbroic Lizard clays with moderate coarse to very coarse inclusions. These include angular, irregular fragments of light buff to colourless fine-grained fragments of sandstone which could be from a non-Lizard locality, although the source is probably not immediately local to the site.

*Admixture 3*

**P3** and other sherds. Gabbroic Lizard clays with moderate coarse to very coarse inclusions of gabbroic components. Quartz unusually common with much fine-grained quartz in the matrix. Although rounded quartz grains do occur in gabbroic fabrics, the occurrence of polished grains – with the connotation of a marine beach sand or possible estuarine source – has not been noted before. The silty, fine sandy matrix is similar to loessic gabbroic fabrics described from the Lizard; however, it also resembles the matrix of the baked clay sample from the site and there is a possibility that a gabbroic clay has been mixed with local estuarine clay.

*Admixture 4*

Gabbroic Lizard clays with moderate coarse to very coarse inclusions of muscovite-rich granite. Granite outcrops within the area of gabbro and its inclusion need not indicate a source distant from the gabbro.

**Illustrated vessels (Fig 3)**

**P1** (100). Admixture 1. Rim, 190mm internal diameter, slight out-turn and marked interior bevel. Reduced 5YR 3/3 dark reddish brown with both surfaces smoothed. Impressed double line of parallel-twist cord decoration, zig-zags with border surviving at top. A non-joining sherd (not illus) shows more of the design.

**P2** (100). Admixture 2. Rim, 180mm internal diameter, sharp out-turn and marked interior bevel. Reduced 5YR 3/1 very dark grey. Impressed parallel-twist cord decoration forming a series of rectangular panels; in places the cord lines overlap to form three parallel rows, strongly suggesting that the decoration was made by a single twisted cord.

**P3** (105). Admixture 3. Rim, internal diameter 170mm, marked external expansion and interior rim bevel. Oxidised 5YR 5/8 yellowish red. Incised

**Table 1** Pottery from Carnon Gate by context and fabric

<i>Context</i>	<i>Gabbroic</i>	<i>Admixture 1</i>	<i>Admixture 2</i>	<i>Admixture 3</i>	<i>Admixture 4</i>
(105) below (103) in probable entrance	13s/170g	1s/50g		2s/160g <b>P3</b>	
(104) below (101) against wall (107)	6s/87g	1s/7g			
(100) over east-side wall (107)	30s/266g	35s/318g <b>P1</b>	4s/165g <b>P2</b>	2s/23g	2s/14g
(101) over south-side wall (107)		2s/4g			
(103) over north-side wall (107)	3s/39g				
<b>Totals</b>	42g/562g	39s/379g	4s/165g	4s/183g	2s/14g

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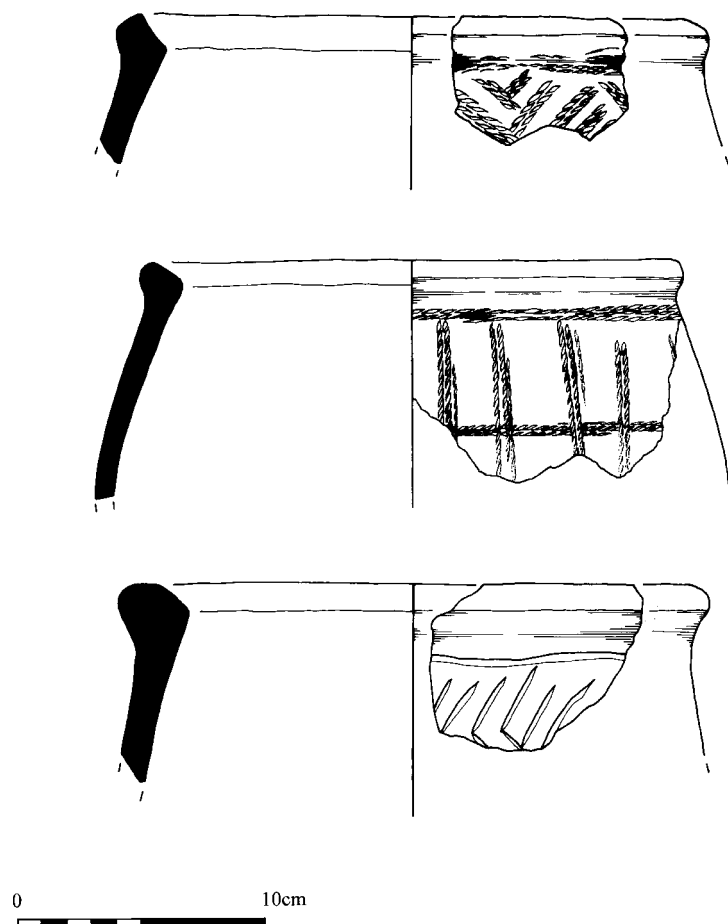


Fig 3 Bronze Age pottery from roundhouse (107), vessels P1, P2 and P3. All 1:3. (Drawings: Carl Thorpe.)

herring-bone decoration below simple horizontal border. Most, if not all, sherds from this context may come from this vessel and two have incised lines.

#### Discussion of ceramics

**P1** and **P2** conform in size and decoration to Parker Pearson's (1990, 10) Trevisker style 2, smaller storage or cooking vessels. **P3** probably had a similar function, although its incised decoration groups it with Parker Pearson's style 3. The presence of smaller vessels is indicated by thin-walled sherds in gabbroic fabric (no illustrated). The mixture of decorative styles, twisted impressed cord and incision, is usual in assemblages from Trevisker houses, especially demonstrated by the large assemblage from Trethellan, Newquay

(Woodward and Cane 1991). The cord zig-zags of **P1** and the incised herring-bone of **P3** have fairly close matches at Trethellan (for example, *ibid.*, fig 42, no 15, and fig 46, no 36); that assemblage also has a number of vessels with finger-nail impressions (for example, *ibid.*, fig 43, no 16). Both twisted cord and incised zig-zags and herring-bone, often in a zone bordered top and bottom, are common motifs in Trevisker ware and both occur at the eponymous settlement at Trevisker (ApSimon and Greenfield 1972, figs 15–19). The twisted-cord panelled decoration on **P2** is very unusual and does not occur in the Trevisker or Trethellan assemblages; its only other known occurrence is in the ditch of the Trelowthas barrow (Nowakowski, in preparation, vessel BB). The assemblage at the Trelowthas barrow has a range of radiocarbon determinations firmly placing it



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around the nineteenth to seventeenth centuries cal BC; its assemblage also includes vessels similar to **P1** and at least one with incised zig-zags. With the radiocarbon determination from Carnon Gate of 3126 ±37 BC (Wk-19926), calibrating to between 1450 and 1370 cal BC (59.9% probability), it appears that, even down to detailed decorative schemes, traditions within Trevisker ware were very long-lasting.

No clear interpretation of the significance of the use of gabbro admixture fabrics has yet developed. Initial comments, following the first identification of the fabric in the assemblage from Trevisker (ApSimon and Greenfield 1972, 355–6), suggested that local groups visited the Lizard on a regular basis and brought back clay for local manufacture. This was based on the alleged mixing of gabbroic clays with those local to the site, for which no supporting detail was published. Reviews in the 1990s (Parker Pearson 1990; Williams 1991) showed that that all non-gabbroic additions in the fabrics then identified *could* be sourced immediately around the gabbro clay and suggested that some gabbro clays might have contained non-gabbroic materials. However, there are now several sites at which tempers identified in gabbroic admixtures do not occur in the gabbro area. Fabrics from Tremough, Penryn (Quinnell 2007) clearly show that some gabbroic clay was transported to the area of the site and there mixed with crushed minerals, and possibly some clay, of local origin. At Stannon on Bodmin Moor such local mixtures formed a limited part of the assemblage (Quinnell 2006). At Gwithian the transport of gabbroic clay in an unfired state has been identified from Middle Bronze Age levels together with other indications of very local manufacture of gabbroic fabrics. (Nowakowski *et al*, 2007).

Carnon Gate is the fourth site of this kind to be identified and the only one for which all the sherds have been microscopically examined by a petrologist. Three of the four admixture variants, comprising about half the assemblage, clearly show the mixing of rock fragments and, in the case of Admixture 3, of clays reasonably local to the site, with gabbroic clays from the Lizard. All data now indicate that in the second millennium cal BC some gabbroic clays were being transported to be manufactured near the sites on which vessels were to be used, with the addition of local temper and sometimes local clay. The practise was probably widespread and some of the various added

inclusions (Parker Pearson 1990) would probably prove, on further detailed analyses, to be from sources away from the gabbro area.

Recent studies on prehistoric British ceramics (for example, Woodward 2002) have emphasized the symbolic as well as the practical function of ceramic inclusions. By the Middle Bronze Age, gabbroic clays had become trusted from a 2000-year tradition of successful potting. The addition of temper and sometimes clay from the locality of settlement sites may indicate the need for local communities to have the added reassurance that the ceramics they used for storing and cooking cereals derived additional strength by the inclusion of materials from the lands on which the cereals were grown.

## Stonework

*Henrietta Quinnell, with petrographic comment by Roger Taylor*

**S1** (Fig 4) (105). Flat triangular cobble, 80 × 70 × 18mm, 160g, with a double-bored perforation showing signs of wear. The end opposite the perforation appears also to be worn. The object is probably a small weight, although stone weights of this size, as opposed to large rough weights assumed to be used on roofing (for example, Nowakowski 1991, 151), do not appear to have occurred previously in the south west. Although of a distinctive regular shape, **S1** appears too large to be an amulet or pendant (*cf*, for example, Dudley 1955–6). The rock used is a weathered, fine-grained greisen, probably a greisenised elvan. A north-south elvan dyke occurs about 200m east of the site and others occur about 750m to the north; these may have provided river cobbles.

**S2** (Fig 4) (104). Two fragments of slate approximately 9mm thick with parts of trimmed edges; one appears to have a broken perforation. The slate is a glossy dark grey with faint traces of thermal spotting, comparable with the Mylor Slate formation on which the site is located. Both fragments may be part of perforated discs often termed ‘pot lids’. Perforated disc ‘pot lids’ are not found on Trevisker sites such as Trethellan (Nowakowski 1991, 151), although occasional imperforate examples occur (ApSimon and Greenfield 1972, fig 25, no 5). Bronze Age contexts at Gwithian (Nowakowski 2004, appendix 4)

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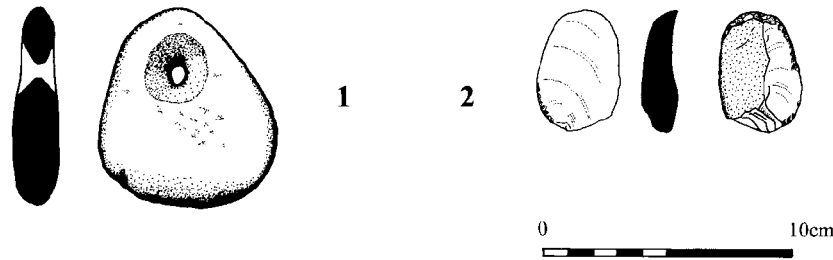


Fig 4 Stone weight S1 and flint knife from roundhouse 107. Both 1:3. (Drawings: Carl Thorpe.)

appear to contain a range of perforate and imperforate examples.

## Baked clay

*Henrietta Quinnell*

Three small sherds weighing 14g are very softly fired. Microscopic examination showed the sherds to be of silty to finely sandy micaceous clay with a scatter of larger angular white to translucent quartz grains and rare rounded weathered slate fragments which are probably alluvial clay from the Carnon River. These baked clay fragments are more likely to be daub from walls or from hearths rather than deliberately fired objects such as 'loomweights'. It may be noted that identification of the cylindrically-perforated fired-clay objects usually identified as 'loomweights' is now increasingly being questioned (for example, Poole 2006), with an alternative interpretation as oven furniture proposed.

## The flint

*Anna Lawson-Jones*

Seven pieces of flint were collected, five displaying significant amounts of cortex and showing four of the pieces to have been of beach-pebble origin. The fifth piece, a knife, has a thin, grainy probable nodular cortex, suggesting a non-local origin, probably in Devon (Healy 1985; Tingle 1998; Newberry 2002). Four unstratified pieces came from the area north east of the roundhouse and three were found within (103), a backfilled deposit in the interior of the roundhouse.

The four unstratified pieces consist of a small, complete oval pebble, two split pebbles and a single

abraded, secondary flake. The complete pebble shows no evidence of use and could represent either raw material awaiting use or a later accidental inclusion brought in with local beach sand as a soil additive. Likewise, the smaller of the two split pebbles could represent a chance break to a flint pebble that had been accidentally introduced to the site. The larger, paler split pebble is the result of flint pebble testing prior to further use or, in this case, abandonment. The small, thick secondary flake represents the next stage in the reduction process. It shows numerous tiny removals along two of its three edges, suggestive of use-wear rather than subsequent damage. It is not a diagnostic tool in itself and, like the other three unstratified pieces, could date to any period between the Mesolithic and the Bronze Age.

The three pieces of worked flint from context (103) are more diagnostic and may well relate to activity contemporary with the Middle Bronze Age roundhouse. Two of the pieces represent miscellaneous used tools, including part of a pale broken flake with probable small lateral removals near the bulb, and a complete dark, 'pear-shaped' flake with limited lateral and distal damage and some bulbar preparation. The third piece is a large, well-formed, rather fine knife made on a secondary flake, with neat, steep, distal retouch and limited lateral wear (towards the distal end) (Fig 4). This is the largest (47mm × 30mm × 12mm), darkest, best quality and most distinctive piece among the flints found. It has a number of small white adhering flakelets which are directly associated with its production and last use. The fact that these flakelets have survived is testament to the undisturbed nature of context (103) after its formation. All three of the pieces from (103) are in a reasonably fresh and unabraded state, showing little in the way of heavy use or the wear and tear associated with surface exposure.

## A BRONZE AGE ROUNDHOUSE AT CARNON GATE, FEOCK

Retouched knives made on large flakes are typical of the Late Neolithic (although they continue through to the Middle Bronze Age) and represent a tool type that is often found in association with domestic contexts (Edmonds 1995; Butler 2005, 170). Although this example is not heavily worked, it is not a casually made piece and is probably not made on a locally-provenanced beach flint. The selection of flint of this colour and quality could have been part of the design, adding to the distinctive or special qualities of the piece. It is perhaps unlikely that it would have been easily mislaid or rapidly discarded and it may have been deliberately included within deposits used to mark or seal and 'close' activities at this site.

## Radiocarbon dating

Two residue samples from sherds of pottery were submitted for accelerator mass spectrometry dating (AMS) at the University of Waikato in New Zealand (Table 2). Both sherds were associated with the latest infilling deposit (100) and therefore provide *terminus ante quem* dates which only relate to the last phase of roundhouse activity and not to the construction or use of the site.

The probability distributions (Tables 2 and 3) have been calculated using OxCal (v3.10). The 95% level of probability has been used throughout this report (unless otherwise stated), so calibrated determinations from older excavations noted in Table 3 and in the text may differ from the way they were cited in their previously published sources.

## The results

The two radiocarbon determinations, 3126  $\pm$ 37 BP, 1500–1300 cal BC (89.7%) (Wk-19926), and 2433  $\pm$ 39 BP, 730–400 cal BC (Wk-19927) are separated by several centuries and are therefore inconsistent with one another.

The later date (Wk-19927) has been discounted because it is unlikely that the roundhouse could have stood for so many centuries and because the sunken-floored character of the roundhouse is typical of the Middle Bronze Age, rather than of the Late Bronze Age-Iron Age transition period. The pottery also belongs to the Trevisker ware tradition (Quinnell, above), itself well-dated to the period between 2000 and 1000 cal BC (Parker Pearson 1990; Jones 2005, 31), with vessels associated with roundhouses between 1500 and 1000 cal BC (Nowakowski 1991; Jones and Taylor 2004). The sherd which produced the later date may have been contaminated in the Iron Age after its deposition in the roundhouse in the middle of the second millennium cal BC.

The earlier date of 3126  $\pm$ 37 BP (Wk-19926), with the weight of probability at 59.9% falling between 1450 and 1370 cal BC (Table 2), is consistent with the ceramic evidence and with radiocarbon determinations obtained from a large number of lowland roundhouses around Cornwall (Table 3).

## Discussion

The radiocarbon determination from Carnon Gate can be compared with more than 30 other dates from lowland roundhouses in Cornwall (Table 3). Sunken-floored roundhouses (discussed below) now form one of the best-dated prehistoric site-types in Cornwall (Fig 5). In the light of this, the opportunity has been taken to discuss the current chronology for this type of domestic structure.

The Carnon Gate determination falls into a tight band of dates between 1500 cal BC and 1000 cal BC (Table 3). Closely comparable dates have been obtained from roundhouses at Boden (St Anthony-in-Meneage), Trethellan (Newquay), Trevilson (St Newlyn East), and Trevisker (St Eval) (Gossip forthcoming; Nowakowski 1991; Jones and Taylor 2004; ApSimon and Greenfield 1972). Only five determinations fall entirely or partially before this

**Table 2** Carnon Gate radiocarbon determinations

Material	Context	Lab. no	Age BP	Delta 13	Calendrical years 68%	Calendrical years 95%
Pot residue	(100)	Wk-19926	3126 $\pm$ 37	-26.9 $\pm$ 0.2%	1450–1370 BC (59.9%) 1340–1320 BC (8.3%)	1500–1300 BC (95.4%)
Pot residue	(100)	Wk-19927	2433 $\pm$ 37	-28.3 $\pm$ 0.2%	730–690BC (12.6%) 550–410 BC (55.6%)	730–690BC (20.3%) 670–610 BC (9%) 600–400 BC (66.1%)

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500-year period. Three of these are from Trethellan (UB-3107, UB-3108, UB-3117 and UB-3156), all of which were discounted by the excavator as of poor precision (Nowakowski 1991, 101). Two dates (HAR-1922 and HAR-1923) from Harlyn Bay (St Merryn) (Whimster 1977; Jones, this volume) are also somewhat earlier than the majority of lowland roundhouse dates but these radiocarbon determinations are problematic in terms of their precision and association with the roundhouse. The earliest, 3550  $\pm$ 90 BP, 2140–1660 cal BC (HAR-1922) was obtained from an old ground surface cut

by the structure, and therefore only provides a *terminus post quem* for the roundhouse construction. The second, 3460  $\pm$ 140 BP, 2150–1400 cal BC (HAR-1923) was obtained from a bulk sample of charcoal on the floor of the building, and has such a large standard deviation that it only indicates roundhouse abandonment somewhere in the first half of the second millennium cal BC. Two radiocarbon determinations falling between 1530 and 1260 cal BC have also been obtained from a hollow at Trenowah (St Austell); however, this does not

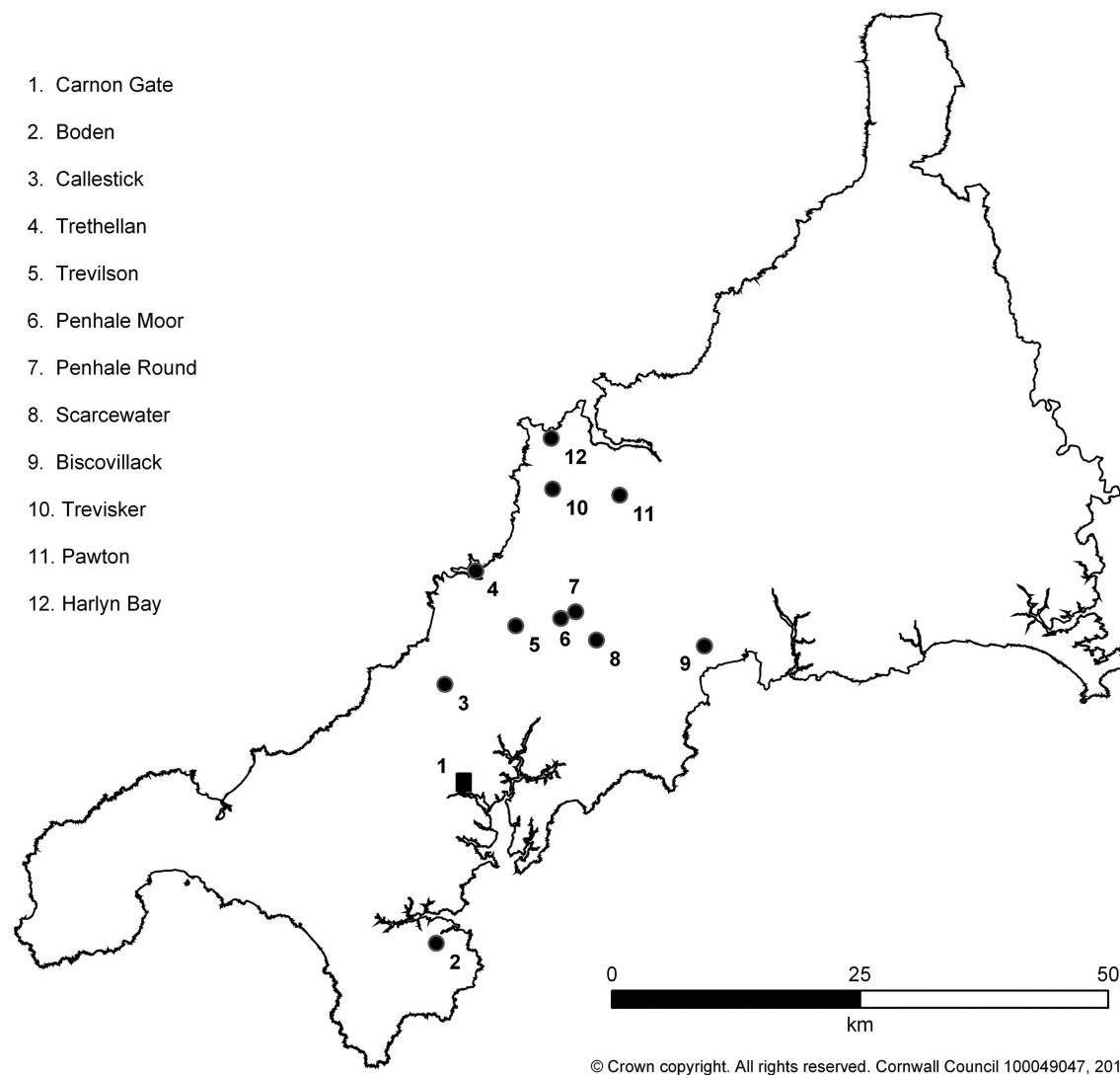
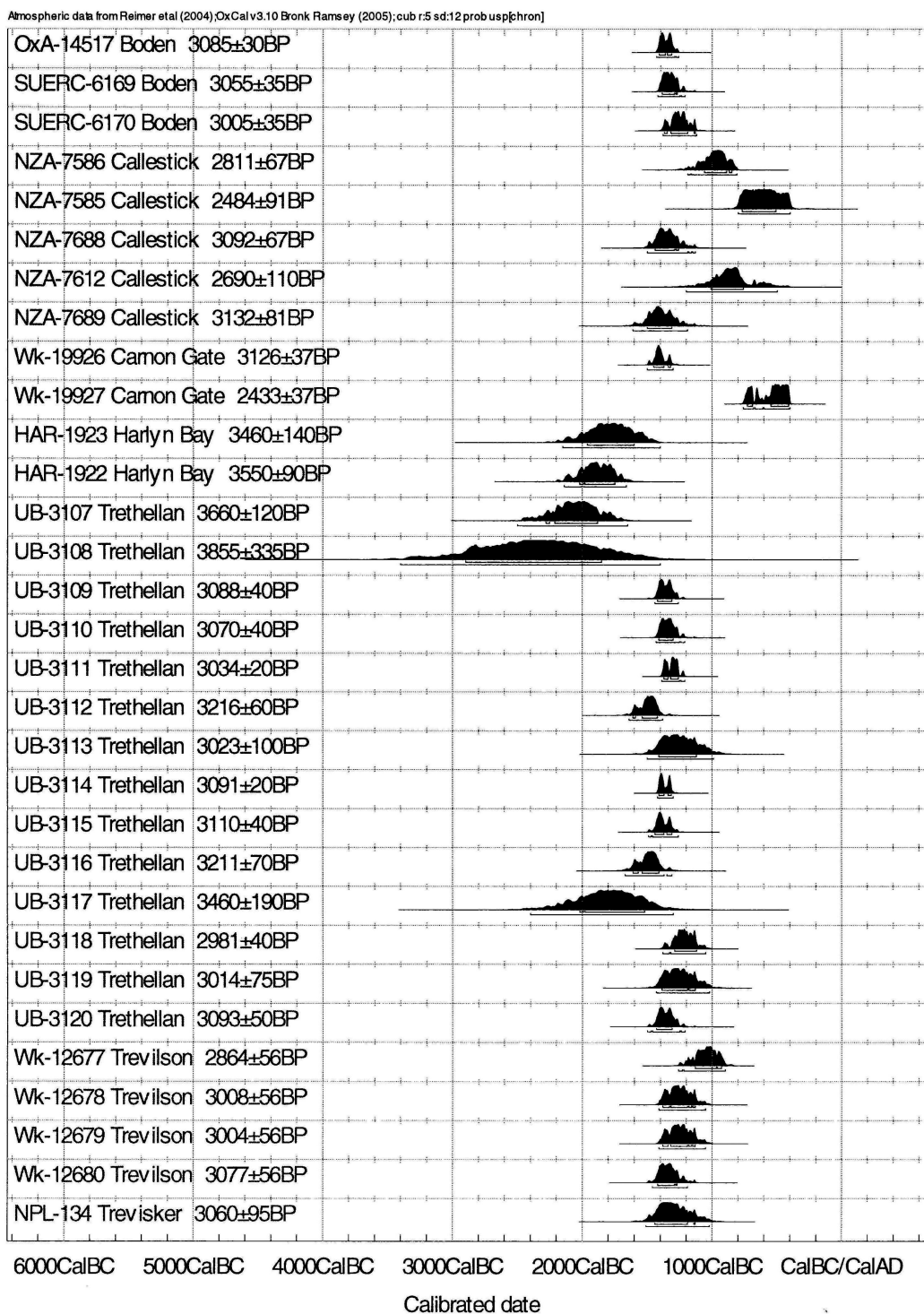


Fig 5 Excavated hollow-set roundhouses in Cornwall.

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**Table 3** Date ranges from Bronze Age lowland roundhouses in Cornwall



appear to have held a building (Johns 2008). Comparable sunken-floored structures lacking radiocarbon dates but with Bronze Age Trevisker ware ceramics have been found at Penhale (St Enoder), Penhale Moor (St Enoder) and Pawton (St Breock) (Nowakowski 1998; Wardle 2004).

At the other end of the distribution, there is very little evidence for the construction of sunken-floored roundhouses after the latter part of the second millennium cal BC. Radiocarbon determinations on a sunken-floored structure at Callestick (Perranzabuloe), not interpreted as a dwelling, fall either side of 1000 cal BC (Jones 1998–9).

In summary, the radiocarbon dates from Carnon Gate and from other sites across lowland Cornwall firmly situate the sunken-floored roundhouse tradition in the second half of the second millennium cal BC. Currently there are no known antecedents in the Early Bronze Age except possibly Harlyn Bay, and, with the exception of Callestick, there are no later Bronze Age or Early Iron Age sunken-floored buildings. Indeed, few buildings dated between 1000 cal BC and 500 cal BC are currently known in Cornwall. Recent determinations from Truro College (Kenwyn), centring on the ninth century cal BC, are on simple post-rings (Gossip 2006) which are not constructed within hollows. However, several cliff castle sites in Cornwall, such as Gurnard's Head, do contain roundhouses, which sit on levelled stances, with walls defining their upslope edges (Gordon 1940; Graeme Kirkham, pers comm.).

## Conclusions

The Carnon Gate roundhouse is a particularly well-preserved Middle Bronze Age lowland sunken-floored roundhouse, comparable with a number of others in lowland Cornwall which have been dated to the later second millennium cal BC. Its construction within a scoop in the hillslope aided its preservation, resulting in the build-up of ploughsoils over the top of the building.

Roundhouse 107 differs in one significant way from other excavated lowland examples such as Trevisker, Trevilson, Boden and those at Trethellan Farm (ApSimon and Greenfield 1972; Jones and Taylor 2004; Gossip, forthcoming; Nowakowski 1991). Those examples were predominantly timber constructions with circular hollows cut into the

ground and internal postholes for roof support. Where stone was present, as at Trethellan (Nowakowski 1991, 184), it was probably used to define and stabilize the edge of the cut in which the structure stood and probably stood proud of the ground surface, thus providing a protective outer wall but with most of the weight of the roof taken by internal posts set in postholes. The double-faced wall at Carnon Gate was substantial and could have supported some of the load of the roof structure.

The stone-walling at Carnon Gate can be compared to excavated upland roundhouse sites, such as those at Stannon Down (St Breward) and Poldowrian (St Keverne) (Mercer 1970; Jones 2006; Smith and Harris 1982). These had free-standing stone walls with stone facing and earth-and-rubble cores. Their interiors contained postholes which provided some support for the roof. However, none of the upland sites was constructed within a hollow. The Carnon Gate roundhouse may incorporate architectural elements from both traditions and consist of a load-bearing outer wall around a ring of internal postholes.

Because the site was unexcavated and preserved *in situ*, little can be said with regard to its biography of use or abandonment. However, the infill deposits within the roundhouse indicate that it had been deliberately filled with redeposited subsoil, perhaps as a result of a deliberate, ritualised act of abandonment of the kind known from Bronze Age settlements elsewhere (for example, Barnatt *et al*, 2002; Ladle and Woodward 2003). This would be consistent with other sites across Cornwall with evidence of abandonment rituals (Jones 2008), especially those in lowland Cornwall, as at Trethellan, Callestick, Boden and Trevilson (Nowakowski 1991; Jones 1998–9; Gossip, forthcoming; Jones and Taylor 2004).

The well-preserved wall faces on the eastern and southern sides of the Carnon Gate roundhouse were almost exclusively constructed from quartz blocks. Quartz walls are a feature of several Bronze Age roundhouses, including Trethellan structure 2222 (Nowakowski 1991) and Callestick (Jones 1998–9). Quartz is often included within earlier Bronze Age ceremonial monuments in Cornwall (Dudley 1964; Miles and Miles 1971; Jones 2005, 99), as well as further afield (Darvill 2002). It has been argued elsewhere that use of quartz in barrow kerbs and the walls of roundhouses was more than coincidence and it is likely that the symbolic

## A BRONZE AGE ROUNDHOUSE AT CARNON GATE, FEOCK

properties associated with quartz when used on ceremonial monuments were transferred to roundhouses in the Middle Bronze Age (Jones and Taylor 2004, 110).

Another interesting, if negative, result from the project is the lack of evidence for fields or enclosures, even though geophysical survey was undertaken and the topsoil stripping was carefully monitored. This situation is not unusual, and there is a paucity of evidence for enclosed fields in lowland Cornwall (Jones 1998–9; Jones and Taylor 2004), which contrasts with evidence for enclosure around some Middle Bronze Age roundhouses in the uplands on Bodmin Moor and the Lizard (Brisbane and Clews 1979; Johnson and Rose 1994; Johns 1996). However, given that livestock would need to be controlled and excluded from areas of arable it is likely that there were fields but that they were not ditched. This has implications in trying to understand Bronze Age landscapes using geophysical surveys and mapping from air photographs, for example.

Middle and Later Bronze Age settlements and accompanying field systems close to rivers are well documented in other parts of southern Britain (Thomas *et al* 1986; Needham and Spence 1996, ch 1; Yates 2001) and Yates has made the case for rivers as the main axis for settlements in the later Bronze Age (2001, 110–12). Sherratt (1996) has also noted the probable importance of waterways for communication in prehistory. However, there are only limited comparanda for lowland settlement near to waterways in Cornwall, this despite the fact that Middle Bronze Age settlements appear to have a wide distribution across the Cornish lowlands (ApSimon and Greenfield 1972; Nowakowski 1991; 1998; Jones 1998–9; Jones and Taylor 2004). There is more evidence for coastal settlement: the roundhouse at Harlyn Bay (St Merryn) was located approximately 150m west of the small stream known as the Harlyn River and approximately 170m south of the present Mean High Water mark (Whimster 1977; Jones, this volume) and Bronze Age structures at Gwithian site GMXV were also located in a coastal locale (Nowakowski *et al* 2007).

The paucity of settlements in the vicinity of rivers in Cornwall is likely to be more apparent than real, and it is probable that more settlements covered by alluvial deposits, wind-blown sand and subsequent agricultural activity await discovery. Given the advantages for communication it might

be expected that many Bronze Age communities would have chosen to live near to rivers and estuaries. At Carnon Gate the river was navigable and soon opened out into the Carrick Roads and the sea beyond. The river would have provided access to a variety of natural food resources including fish and wildfowl, as well as plant material such as reeds for thatching and could possibly have been exploited as a source of alluvial tin. The river was also a potential communication route for the Bronze Age community, providing access to the wider world and the resources it offered (Van De Noort 2006).

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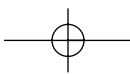
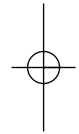
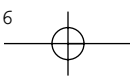
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## A note on the Harlyn Bay structure

ANDY M JONES

*A report by Rowan Whimster on the excavation of a circular structure at Harlyn Bay was published in Cornish Archaeology in 1977. It was suggested that the structure may have been a shrine and that it was contemporary with the adjacent Iron Age cemetery. This note reconsiders that interpretation in the light of the available radiocarbon dating and subsequent discovery elsewhere in Cornwall of comparable structures dating to the second millennium cal BC.*

A structure at Harlyn Bay, St Merryn, was partially excavated by Rowan Whimster in 1976, in advance of the extension of the Harlyn Bay Museum, and the results published in *Cornish Archaeology* (Whimster 1977). At that time few comparable hollow-set structures were known in Cornwall and the site produced only a small number of undiagnostic artefacts. One charcoal sample from the old land surface beneath the roundhouse was radiocarbon dated to the end of the third to the middle of the second millennium cal BC, but a determination from a second sample within the roundhouse was not available at the time of publication. Given the lack of closely datable artefacts or comparable sites, the excavator reasoned that the building could have been an Iron Age shrine, associated with an adjacent inhumation cemetery of that period which had been excavated in the period before World War I (Bullen 1912; Whimster 1977).

However, the unpublished radiocarbon determination also produced a second millennium cal BC date and in the intervening years a number of comparable hollow-set structures have been excavated that are securely dated to between 1500 and 1000 cal BC (Gossip and Jones, this volume).

The probability distributions (Tables 1 and 2) have been calculated using OxCal (v3.10). The 95% level of probability has been used throughout this note.

### The structure

The Harlyn Bay structure was located in a low-lying position, 150m from the western side of the Harlyn River, set back approximately 170m from the coast (Whimster 1977, fig 1). Substantial deposits of windblown sand covered the structure and an adjacent old land surface.

The excavation of the north-east quadrant of the site revealed part of a circular structure set within a hollow cut in the bedrock approximately 9m in diameter. The inside edge of the hollow was lined by a dry-stone wall of irregular courses of slate (*ibid.*, 65; Fig 1 and colour plate 4). With the exception of a patch of charcoal in the north-west corner of the excavation, the floor of the structure was clean bedrock. The only structural features were three postholes, which can be interpreted as having formed part of an inner post-ring supporting the roof of the building. The structure's entrance was not identified in the limited excavation area.

The excavator suggested that the building had been deliberately demolished. Evidence for this was the removal of the posts and the infill of the hollow with a deposit up to 1m thick of sand, soil and slate fragments (*ibid.*). Subsequent to the demolition of the building, there was evidence that an inhumation burial had been cut through its wall (*ibid.*, 67).

Few finds were recovered from the site. Two sherds of undiagnostic pottery and two flints were

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*Fig 1 View from the west, looking east, showing the main internal postholes of the post-ring cut into the slate bedrock and the coursed revetment wall lining the edge of the roundhouse hollow. (Photograph: Nicholas Johnson.)*

found, but neither was considered to be contemporary with the structure. Snail shells collected from the old land surface indicated that scrubby undergrowth had existed prior to the onset of dune formation.

## Discussion

The structure was originally dated to the Iron Age for three principal reasons: proximity to the Iron Age cemetery; Bullen's record of an inhumation burial beneath a section of walling, which could have belonged to the structure; similarities to Iron

Age shrines recorded elsewhere in Britain. These assumptions were reasonable given archaeological knowledge in 1977. However, in the light of the radiocarbon dating and of subsequent discoveries in Cornwall, an alternative date for the structure can be proposed.

## Dating

The site produced few artefacts and nothing which was closely associated with the use of the structure: indeed, despite the near presence of the cemetery, no Iron Age finds were found within it. One potential piece of dating evidence was suggested

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by the possibility that the structure's wall overlay an Iron Age burial that had been recorded during the early twentieth century excavations (Bullen 1912, 54). However, as these investigations were not fully written up and archaeological techniques were then in their infancy, it is possible that the stratigraphical relationships are open to question, or even that the wall described by Bullen was unrelated to Whimster's structure. The only probable Iron Age burial to be found during the 1976 excavation cut the structure's wall and was therefore later in date.

In the absence of closely datable artefacts or secure stratigraphic relationships, dating of the structure is dependent on radiocarbon determinations. Three determinations are available for the Harlyn Bay structure and an old land surface (Whimster 1977; Whitton 2004) (Tables 1 and 2). However, the interpretation of these dates is somewhat complex in terms of their precision and directness of association with the structure. Two determinations – HAR-1922 and Wk-14323 – are associated with the old land surface. The earlier, 2140–1660 cal BC, 3550 ±90 BP (HAR-1922), was obtained on mixed charcoal from the old ground surface outside the structure. This sample could include longer-lived species, and therefore only provides a broad *terminus post quem* for the dune formation. As the structure was cut through this deposit, it must have been built after *c* 2140–1660

cal BC. The second radiocarbon date of 1910–1690 cal BC, 3482 ±43 BP (Wk-14323) was obtained from a hazelnut shell in a similar buried land surface to the east of the structure (Whitton 2004). Although this determination cannot be directly associated with the structure it provides further support for activity in the immediate area in the first half of the second millennium cal BC.

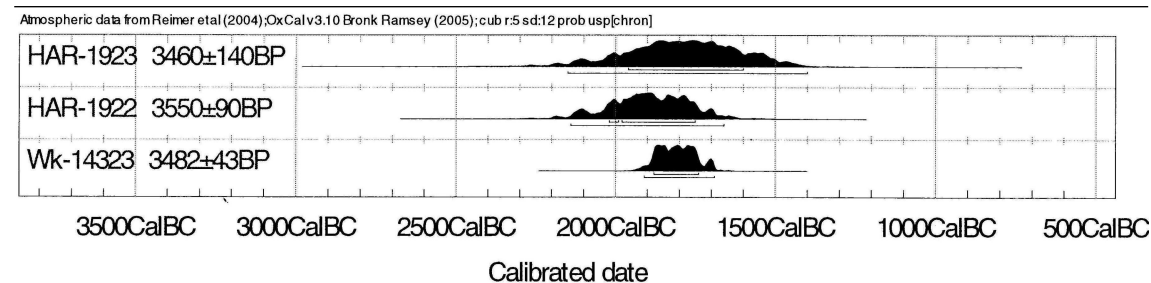
One determination was directly associated with the structure, a date of 2150–1400 cal BC, 3460 ±140 BP (HAR-1923), obtained from a sample of mixed charcoal from the structure's floor. This was interpreted as associated with the destruction phase (Whimster 1977, 68). Unfortunately, the determination has such a wide standard deviation that it can only be used to indicate that the structure was abandoned at a point during the first half of the second millennium cal BC.

The radiocarbon determinations point to human activity in the area of the structure from around *c* 2000 cal BC. A large number of round barrows and other prehistoric sites of similar date are also known in the area (Crawford 1921; Christie 1985; Rose and Preston Jones 1987; Jones 2005, 63–7). The structure itself cannot be closely dated, but a series of secure middle second millennium cal BC radiocarbon determinations from comparable hollow-set structures (Gossip and Jones, this volume) might suggest that its true age lies towards the end of the probability distribution of HAR-1923

**Table 1** Harlyn Bay radiocarbon dates

Context	Material	Lab. no	Age BP	Calendrical years 68%	Calendrical years 95%
Charcoal from floor of building	Mixed charcoal	HAR-1923	3460 ±140	1960–1600 BC	2150–1400 BC
Old land surface	Mixed charcoal	HAR-1922	3550 ±90	2020–1990 BC (4.7%) 1980–1750 BC (63.5%)	2140–1660 BC
Old land surface	Hazelnut shell	Wk-14323	3482 ±43	1880–1440 BC	1910–1690 BC

**Table 2** Radiocarbon dates from Harlyn Bay



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at around 1500 cal BC, although the possibility remains that it is an early example of a hollow-set building.

### Architecture and abandonment

When the site was excavated very few circular, hollow-set structures were known in Cornwall. Only one site at Trevisker (ApSimon and Greenfield 1972) had been identified which featured hollow-set Middle Bronze Age roundhouses. However, since 1976 numerous hollow-set roundhouses have been discovered in lowland Cornwall, including sites at Trethellan, Callestick, Boden and Trevilson (Nowakowski 1991; Jones 1998–9; Gossip, forthcoming; Gossip and Jones, this volume; Jones and Taylor 2004). These roundhouses vary in size from 8 to 15m in diameter and, as at Harlyn Bay, are characterized by hollows lined with stone walling. In common with Harlyn Bay, post-rings are typically found within the hollow and sometimes, as at Callestick (Jones 1998–9), the floor appears to have been kept clean, or cleaned thoroughly prior to abandonment. Architecturally these second millennium cal BC roundhouses closely resemble the Harlyn Bay structure.

Likewise, there are parallels between the abandonment of the Harlyn Bay structure and other excavated Bronze Age roundhouses. When the structure at Harlyn Bay was abandoned, the posts were removed, the postholes infilled, and the hollow backfilled. This sequence of events is found at numerous hollow-set roundhouses across lowland Cornwall (Nowakowski 1991; Jones and Taylor 2004). The main difference between the abandonment of the Harlyn Bay structure and the other examples lies in the fact that far fewer artefacts were recovered from the infill deposits within the Harlyn Bay site. In particular, the large assemblages of Trevisker pottery and worked stone which are a feature of other hollow-set roundhouses were absent (Nowakowski 1991; Jones 1998–9). However, the paucity of finds may have been linked with the liminal location of the building on the edge of the dune-land and/or its function.

### Function

The Harlyn Bay structure was interpreted an Iron Age shrine or mortuary house associated with the adjacent cemetery (Whimster 1977). Interpretation as a shrine may not be erroneous. It has recently been argued that, in addition to the establishment

of the first permanent roundhouse settlements and field systems, the Cornish Middle Bronze Age also saw the emergence of specialised structures and hollows associated with ritualised activity, which were often located on the margins of settlement areas (Jones 1998–9; 2008; Johns, this volume). Given the coastal location of the site and the proximity of earlier barrow cemeteries, it is possible that the Harlyn Bay structure was associated with ritualised practices in a scrub-covered liminal area close to the shore and overlooked by ancestral sites.

It is possible that the final infilling deposit could have left the Harlyn Bay structure as a mounded site. If this were so, it is possible that it continued to be thought of as a shrine, or the site of one, after its abandonment and this might have influenced the subsequent siting of the Iron Age cemetery. It is also possible that Bullen's wall belonged to another structure and that further buildings lie buried within the dunes.

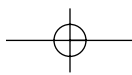
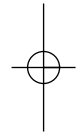
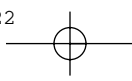
Support for some form of continuity in the significance of 'ancient sites' has been found elsewhere in Cornwall. The Iron Age cemetery at Trethellan, for example, was located near to infilled Bronze Age roundhouses and on the islet of Nornour in the Isles of Scilly abandoned Bronze Age roundhouses were the focus for votive offerings in the Romano-British period (Nowakowski 1991; Butcher 2000–1), although in the latter case there would have been visible ruins to form a focus for later activity. It is unlikely that this activity was a matter of direct continuity from earlier practices but it is possible that mythologized social memories involving the site of the Harlyn Bay structure later made it a suitable place for a cemetery.

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## Medieval pots from St Fimbarrus Church, Fowey

JANE MARLEY

with a contribution by CARL THORPE

In 2006 the wardens of the parish church of St Fimbarrus, Fowey, placed five medieval ceramic vessels on loan to the Royal Institution of Cornwall (Loan 284.1–5). They were thought to be acoustic pots removed from their original position and then stored in the church in a cupboard (Stuart Bradley, churchwarden, pers comm). This article discusses the possible context and function of the vessels in relation to other examples, together with a catalogue, drawings and a photograph of the vessels.

The vessels are largely whole, all roughly the same size, all coarsewares suitable for holding liquid and all partially covered in traces of mortar (Fig 1; colour plates 6–10). The group is contemporary and similar vessels date from the fourteenth to the fifteenth centuries (David Dawson and John Allan, pers comm). Spigot holes, as on vessels 1, 2 and 4, are first recorded in the mid fourteenth century in London (John Allan, pers comm). The St Germans kiln did not produce cisterns until the fifteenth century (Thorpe 2008).

The church of St Fimbarrus at Fowey was rebuilt around 1150 and again by 1336, the latter date being a possibility for the installation of the pots. The church was probably damaged in a French raid in 1457, as were many other buildings in the town, and by 1486 it was ruinous (Keast 1950). Rebuilding seems to have taken about 40 years between 1465 and 1506 (Spreadbury 1986). It is most likely that the vessels were placed in their original position in a wall or under the floor during this period, unless they survived in position from the fourteenth-century rebuild.

The pots were probably removed from their original position during the nineteenth century: A major restoration in 1876 included works in the area of the chancel, choir and vestries. Alternatively, they may have been removed when the heating arrangements were improved in 1934 or when the electric lighting was renewed in 1948–9. Another possibility is that they were removed when the carved oak reredos was erected and the sanctuary and choir were paved with Cornish slate slabs in 1947 (Spreadbury 1986).

The vessels were originally for storing and pouring liquid. One vessel (no 5) with a hole punched in the side could have been used as a money box. Encrusted mortar on their external surfaces indicates that they were embedded in mortar, perhaps to create structural lightness in a roof arch, as the Romans occasionally did (Merrifield 1987). Pots were also sometimes used as urns to contain bones for a relic shrine, as has been suggested at Ford church, Sussex (Johnston 1900), or to contain written charms (Merrifield 1987). More probably, the group of pots may have been placed under the floor or in a wall to improve the church's acoustic qualities. The breaks and chips around the rim and neck of all five vessels and the removal of the handle of one may show that they were trimmed to fit a certain sized space.

Pots have been built into churches and occasionally other buildings for the practical purpose of increasing the volume of singing or to make it sound better by means of an additional resonance. The poet Chaucer was aware of the need

JANE MARLEY



Fig 1 The five medieval vessels from St Fimbarrus church.

for a ringing, resonant quality in a church (Harrison 1968) and the practice became popular in Britain and on the Continent in the fifteenth century. The origin of this use is usually attributed to the practice of installing bronze vessels beneath the seats in Greek theatres. They were intended to act as resonators, as described in the writings of the Augustan architect and engineer, Vitruvius (Merrifield 1987). Copies of Vitruvius' treatise were found in many libraries (there are six surviving) in medieval England and the use of acoustic jars in England is likely to derive from this source (Harrison 1968).

Contemporary accounts record some fifteenth-century ecclesiastics trying to improve acoustics by installing pots in churches. A *Chronicle of the Célestins* of Metz records that in 1432, Brother Odo le Roy, the Prior, attempted to improve the acoustics of the church using this method

(Merrifield 1987; Penny 1987). The churchwardens' accounts of Wimborne Minster, Dorset, in 1541 recorded 'Paid for 2 potts of cley for wyndfylling of the Chyrch, 8d' (Penny 1987).

Although acoustic pots were sometimes specially made, they were more frequently of ordinary domestic types (Biddle 1962-3). If the pots worked at all, it was as simple amplifiers of volume and there was no consistency in their location. Pots could be placed high in the walls of the chancel or nave, lying on their sides with mouths facing into the church, as at Luppitt church in Devon and Tarrant Rushton church, Dorset (*in situ*) (Merrifield 1987). Pots have been found with their mouths broken off, as at Ford (Johnston 1900). Occasionally, as at Ashburton Church, Devon, the mouths of the vessels were plastered over, perhaps when their purpose was no longer understood (Yates 1897). More commonly, vessels

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were placed under the floor beneath the choir of a church. They were sometimes set in the foundation wall with their mouths open to the hollow space beneath the floorboards, as at St Peter-per-Mountergate, Norwich. At another Norwich church, St Peter Mancroft, under the part occupied by the choir stalls, two rows of red earthen jars, 26 in all, were found opening towards one another into the space between them (Penny 1897). Acoustic pots under the stalls have been excavated from the base of the choir screen at Fountains Abbey, North Yorkshire, and at St Augustine-the-Less, Bristol (David Dawson, pers comm). Two unpublished examples have been found in the parish church of St Mary, Honeychurch, mid-Devon (John Allan, pers. comm.).

Pots were not the only artefacts used to improve resonance and sound in churches. Beneath the choir stalls in the church of King Edmund King and Martyr at Southwold, Suffolk, is an acoustic chamber with small openings in the stone that were designed to enhance the sound of the choir. Various items are said to have been placed in the chamber to improve the resonance, including urns and the skulls of horses (BBC 2005).

## The vessels

The vessels from St Fimbarrus are of two main wares. The first is a granitic fabric, St German's ware (no 1). St German's ware is wheel-thrown and thin walled and decorated with simple, white slip-painted geometric motifs, slashed handles and occasional incised decoration. The pottery produced mainly cooking pots and jugs with sagging bases; bowls and cisterns were made in the 15th century. St German's granitic ware is a micaceous fabric with a sandy/gritty quartz temper and black mica plate inclusions. The vessels are hard fired with reduced buff-grey to dark grey exterior and an almost black core (Thorpe 2008).

The second ware is also a granitic fabric, Lostwithiel ware (nos. 2, 3, 4 and 5). Lostwithiel ware is wheel-thrown and thin-walled and decorated with stabbed rod handles, horizontal painted bands of white slip and lines of white slip forming simple geometric patterns. Incised lines and impressed thumb-pressed strips were less common methods of decoration. Cooking pots, cisterns, jugs, jars and bowls and pancheons were produced with bases that are rounded with gently

sloping angles. Lostwithiel fabric is similar to Bunnings Park – Stuffle ware (O' Mahoney 1989) in having large flakes of white mica. However, it has more angular white (feldspar) inclusions visible in the fractures and lacks the small black platey inclusions and soft glistening reddish-brown patches found in Stuffle-type ware. The vessels are hard fired and have a pink to grey-brown exterior with grey core (Thorpe 2008). The petrology and chemical analysis of Lostwithiel ware are discussed in detail elsewhere (Litt and Austin 1989; Allan, forthcoming).

## Catalogue (Figs 1 and 2; colour plates 6–10)

### *Jane Marley and Carl Thorpe*

**1** A St German's ware globular, asymmetrical, wheel-thrown coarseware cistern with a sagging base. The granitic fabric surface feels rough and is grey externally and internally (reduced) with quartz inclusions, tourmaline (red and black) angular inclusions. The exterior surface is pitted in appearance, possibly due to abrasion. Small areas of beige mortar remain on the outer pot surface. The mouth of the vessel is small and the rim slightly everted; it has been broken and it is not possible to tell if there was a lip. The handle is slightly twisted with a depression outlined; the top and base of the handle has been decorated with three small, light slashes. Two possible lines of decoration are incised above the shoulder, worn away on one side. It has been well-used by a right-handed person as the decoration on the top of the jug where the thumb would have rested is worn away. A small bung-hole spout or spigot hole is positioned directly beneath the handle.

**2** A Lostwithiel ware, globular, asymmetrical coarseware cistern with sagging base. Granitic fabric feels smooth to the touch and is pink with some grey and discolouration on the outside only. White mortar is evident in one place externally and one place internally. The vessel is sturdier, has thicker walls and is less worn than the others. It is wheel-made and knife-trimmed around the base. Decoration is in the form of a hand-painted white slip applied in two bands around the shoulder and a single horizontal incised line; a slight cordon has been formed at the neck by a drawing up of the clay. The rim is slanted and flat and has been chipped, as has the base. The scar on the rim shows

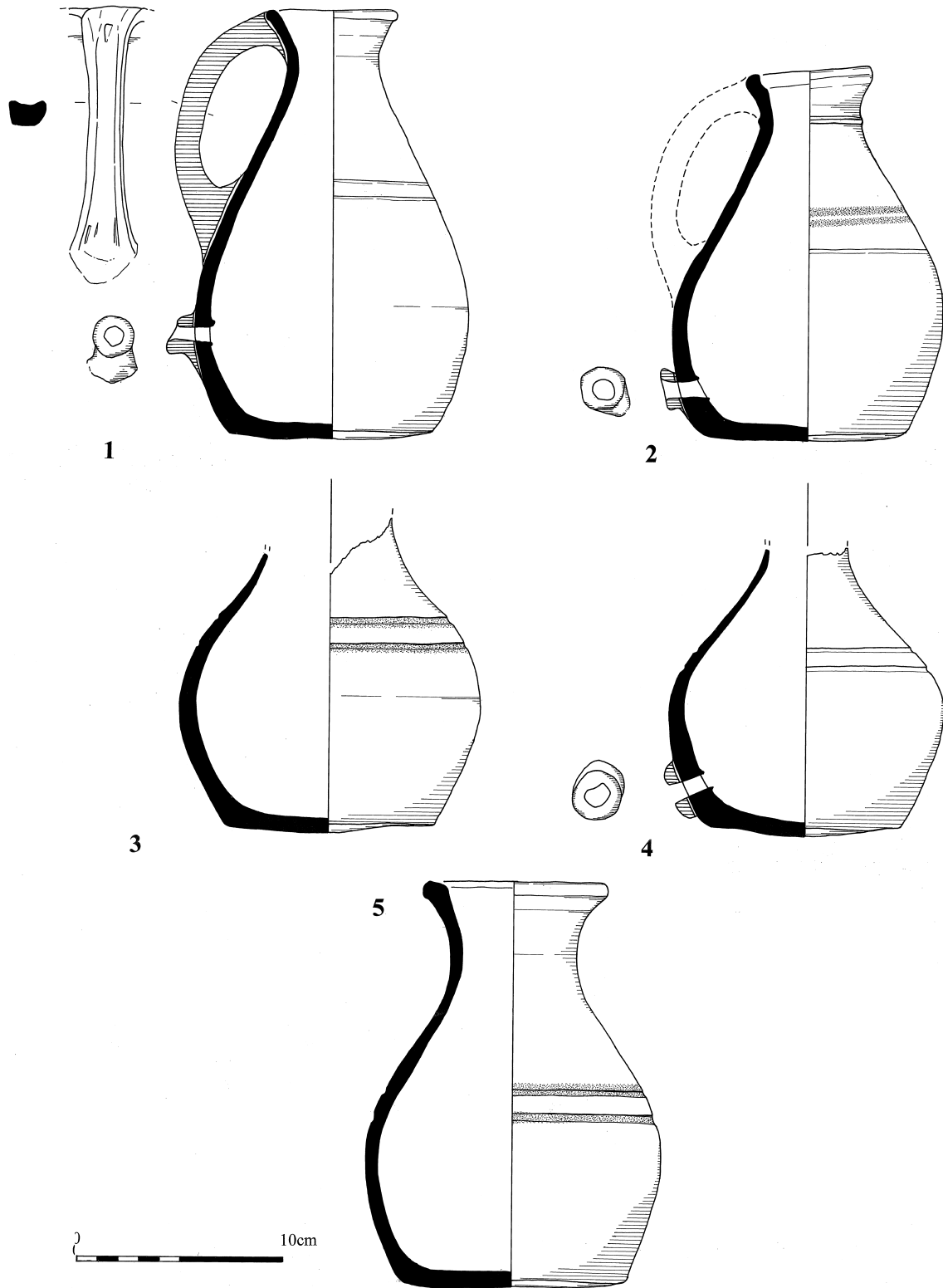


Fig 2 Medieval vessels from St Fimbarrus church, Fowey. (Drawings: Carl Thorpe.)

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that the handle has been removed deliberately; there is a corresponding handle scar on the vessel wall. There is a small bung-hole spout or spigot hole beneath the handle.

**3** A Lostwithiel ware thin-bodied, globular, asymmetrical coarseware jug with a sagging base. Wheel-made and then spatula-trimmed around the base. The granitic fabric feels rough, is pink with some grey and blackened discolouration on the outside only. Beige mortar is evident on the body. Decoration takes the form of two incised and painted lines above the shoulder. The neck and the rim have been broken off but a cream slip or mortar is evident inside the rim. Two spots of brown glaze are visible on the body and the base/body.

**4** A Lostwithiel ware, thin-bodied, globular, asymmetrical coarseware cistern with a sagging base. The shape is slightly more bulbous around the shoulder and tapered below, in comparison to the other vessels. Wheel-made and then hand-trimmed around the base. The granitic fabric is well sorted on the surface and feels less rough to the touch than the other vessels, but not smooth. Voids indicate that some organic material was accidentally mixed with the clay. The surface is pink with some grey and blackened discolouration. White mortar is evident on the body. Decoration takes the form of two incised lines above the shoulder. The neck and the rim have been broken off. A small bung-hole spout or spigot hole is positioned below the shoulder.

**5** A Lostwithiel ware, thin-bodied globular, asymmetrical coarseware vessel with a slightly sagging base. Wheel-made and then hand-trimmed around the base. The granitic fabric surface feels rough, is pink with some grey and blackened discolouration on the outside only. White mortar is evident on the outside and on the top of the everted, flat-topped rim and inside the rim of the vessel. Decoration takes the form of two incised and white painted lines above the shoulder. The profile of the vessel is flattened below the shoulder and one of these areas shows evidence of discolouration and blackening. The vessel was probably pressed up against two others in the kiln and may be a waster. A hole in the side of the vessel neck has been created and shaped on two sides, perhaps for use of

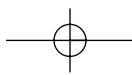
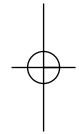
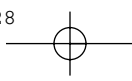
the vessel as a money box. The rim is chipped in several places.

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# Medieval gravestones and architectural fragments from the churchyard of St Michael's, Lesnewth

JOHN ALLAN and ANDREW G LANGDON

with contributions from C M THORPE and ROGER T TAYLOR

*Following the Boscastle flood of 2004, fragments of carved stone were recovered from the churchyard at Lesnewth. They included pieces of a late medieval grave slab and wheel-headed cross, fragments of fourteenth- and sixteenth-century window tracery, and a slab with numerous medieval and later graffiti.*

The parish church of St Michael, Lesnewth (SX 1305 9031), lies in a small wooded valley near the north Cornish coast, about 3.5 km from Boscastle (Fig 1). Prior to 1862 the church had a cruciform plan, consisting of nave, chancel and two transepts, and was largely or entirely a medieval structure. In that year, however, the church underwent a drastic restoration by the architect J P St Aubyn. Although the late medieval tower was retained, the remainder of the fabric was entirely rebuilt (Pevsner and Ratcliffe 1970; Dowling 1996; Salter 1999). The church lies within a small graveyard in which the most notable feature is a fine medieval churchyard cross.

## The circumstances of the discoveries

The churchyard is bounded on its southern side by a stream running westward in a gully about 3m below it. Erosion caused by the stream has been a concern for many years. Between 1995 and 2003 Jenny Kestle and Ann Preston-Jones of English Heritage, David Attwell of North Cornwall District Council and one of the writers (AL) made visits to

the site to monitor erosion of the river bank, a matter of particular concern because the medieval cross stood only 1.2m from the gully and the river bank was unstable and actively eroding.

During the Boscastle flood of 16 August 2004 a strip of the churchyard approximately 1–1.5m wide collapsed into the gully. The force of the deluge uprooted trees and washed them down the valley, destroying the footbridge that joined the churchyard to a footpath leading south to Tregrylls, but leaving the churchyard cross standing on the edge of the gully. On examining the damage to the river bank and churchyard the churchwarden, Simon McNair Scott, discovered several carved stones on the bed of the stream, including a piece of a grave slab and fragments of a wheel-headed cross. A further portion of a grave slab was discovered in February 2005 when one of the writers (AL) joined Ann Preston-Jones and Mr McNair Scott on a further visit to the stream. The fragments are recorded and discussed below.

Following these discoveries, Cornwall County Council put in hand proposals to rebuild the bridge; these entailed the construction of new abutments and the temporary diversion of the stream, since the stream bed represented the only means of access

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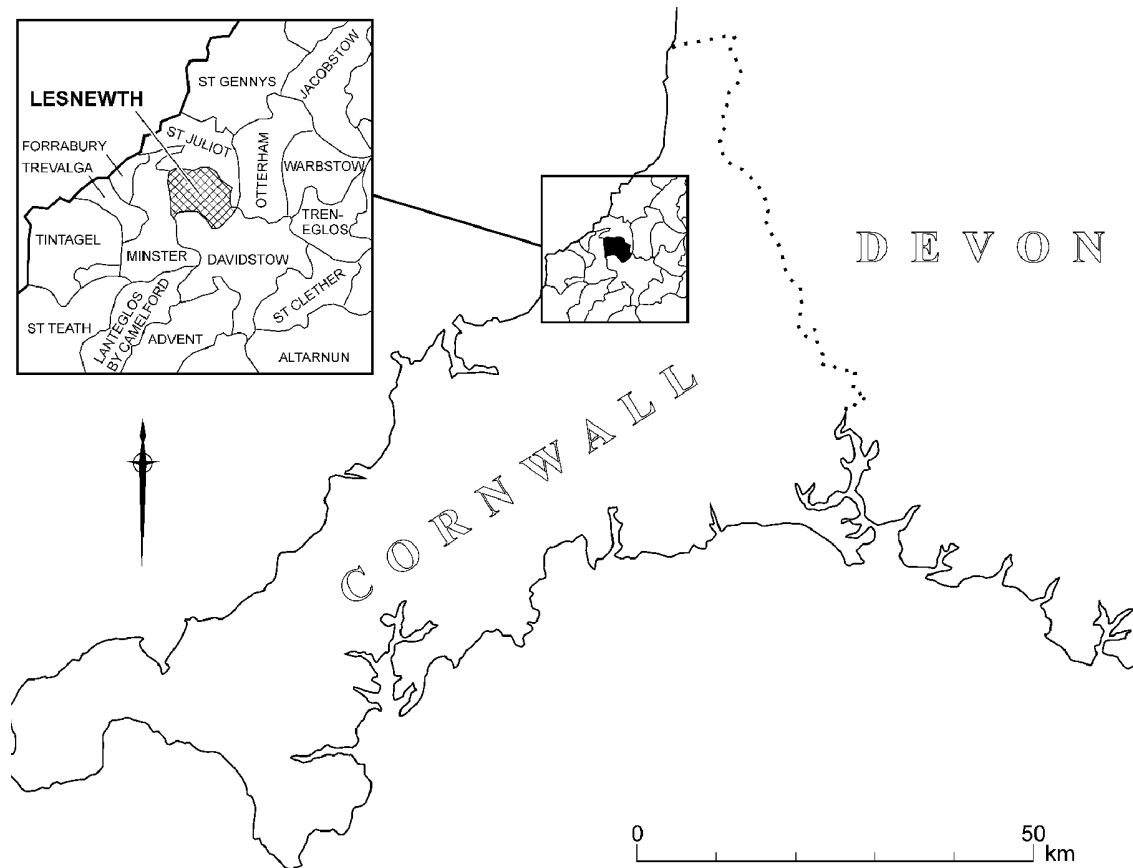


Fig 1 Lesnewth church: location. (Map by T Ives, © Exeter Archaeology.)

for machinery needed to rebuild the bridge. It was stipulated by the Historic Environment Service Planning Archaeologist that archaeological recording should take place when this work was undertaken. A brief was drawn up for archaeological work, which included a search for any further artefacts in the stream bed and banks, cleaning and recording of the section of churchyard exposed by the recent collapse and excavation of the slumped deposits remaining in the bottom of the gully. This was to be followed by study of all the recent finds from the site and preparation of a publication of the findings. Exeter Archaeology was contracted to undertake this work. Its staff examined the stream banks and made searches of its bed in October and November 2005, followed

by examination of the dry stream bed during construction work on the new bridge in February – March 2007.

The only archaeological deposit identified was a dump of broken slate and lime mortar up to 0.6m deep, observed in section in the northern bank of the gully, which no doubt represented roofing material from the church dumped on the southern edge of the churchyard. This may have been as late in date as the nineteenth century, perhaps representing deposits cleared from the church in its reconstruction in 1862. Two further small fragments of dressed stone were found in the stream bed, alongside more slates, but no other finds were made on these occasions. No burials or human bone were seen.



## MIEVEAL GRAVESTONES AND ARCHITECTURAL FRAGMENTS

## The grave slab fragments and wheel-headed cross

*Andrew G Langdon*

### The grave slab fragments

Two fragments of a grave slab, carved from stone of the local Tintagel Volcanic Formation, were discovered on the bed of the stream on separate occasions. The larger or upper portion, the head of the slab, displays a foliated cross design, carved in relief, while the second fragment, a smaller piece, triangular in form, represents part of the middle section of the grave slab (Fig 2).

### Description

Although roughly rectangular in shape, the larger fragment tapers slightly towards the top edge of the



*Fig 2 Lesnewth churchyard: fragment of a grave slab. (Photograph: G Young, © Exeter Archaeology.)*

slab with the widest part at the bottom end of the fragment. On the upper face is carved a foliated cross in low relief. This displays broad arms, the upper and horizontal arms of which terminate in *fleurs-de-lys*, while the lower arm or shaft of the cross extends centrally down the full length of the existing fragment. The upper arm of the cross is slightly longer than the two horizontal arms. The upper surface of the slab has been scarred by a wide black stain that extends from the middle of the top edge, diagonally across the upper and left-hand arms of the cross to the left-hand bottom edge of the slab. The right-hand side of the fragment has a shallow hole, 30mm in diameter, which interrupts the smooth line of this edge. The reverse face of the grave slab fragment is plain and unworked.

The only carving on the smaller fragment is a short section of the central lower arm or shaft of the cross. The fragment has three broken edges and does not extend the full width of the grave slab. A small part of the right-hand side of the slab is missing. The reverse face of the slab is not carved. Unlike the majority of grave slabs, the two fragments display no apparent additional decoration, edge moulding, bead or chamfer. Although the two fragments are clearly parts of the same monument, they do not join.

### Dimensions

The large upper fragment is 0.71m long, 0.46m wide at the top, 0.53m at the bottom, and is 60mm thick. On the larger fragment, the upper and horizontal cross arms are 60mm wide while the lower arm or shaft is 65mm. On the smaller fragment, the lower arm or shaft measures 70mm. The smaller fragment is 0.43m wide, 0.51m long on its right side and only 0.25m on the left.

### Discussion

Grave slabs are an often-neglected and disregarded religious monument of the Middle Ages. They may be referred to by a number of different terms, including coffin lids or slabs, cross slab grave covers, priest tombs or sepulchral tombs. These recumbent stone slabs in Cornwall are seldom intricately carved or considered attractive, and are often overlooked. Many are in a fragmented condition, uncared for, and usually found in the darkest corner of the parish church or lying discarded in the churchyard.

Although this type of monument is common in northern England, only a small number have survived in Cornwall and their discovery is relatively rare, with only one example (at Bodmin) being found in recent years (Cole *et al* 1998, 28–31; 1999, 13, 35). According to Peter Ryder (1991, 1), the grave slab is ‘by far the most common type of medieval monument to survive in the British Isles’; more than 1000 exist in Yorkshire alone, which he suggests represent less than 10 per cent of those which were laid down. In his most recent corpus for Cumbria, he records and catalogues 452 grave slabs (Ryder 2005). In the parish church in Bakewell, Derbyshire, alone, 300 grave slabs were discovered which had been re-used as simple building stones in the fabric of the fourteenth-century south transept (Butler 1964, 111). By contrast, the remains of only 53 have so far been recorded in Cornwall (Langdon and Preston-Jones 2000).

Of the 53 examples that survive in Cornwall, four are pre-Conquest coped stones, 19 are complete grave slabs and the remainder are fragments. With the possible exception of the coped stones, these all date from between the late twelfth to the fourteenth centuries; they vary considerably in quality. Almost all the grave slabs are wedge-shaped, wider at the head of the monument and tapering equally on both sides to the foot. They all display some form of cross motif near the top, the lower arm of which is invariably extended the full length of the slab, like the stem of a flower. Many terminate in a stepped base representing the hill of Calvary. The arms of the crosses usually terminate in trefoil-shaped lobe ends or *fleur-de-lys* and these devices are sometimes used instead of a Calvary at the foot of the grave slab. Perhaps the best example displaying an elaborate foliated cross is a broken slab in St Allen church (Preston-Jones 1994, 11), although this is exceptional; the great majority are fairly plain.

Four Cornish examples – at Bodmin, St Breock, St Buryan and Little Petherick – have an inscription in Norman French, which helps both to date the stones and to set them in context (Elliott-Binns 1955, 399). Whetter (1996), in an article in the *Western Morning News*, highlighted the importance of these stones and their link to the Norman-French elite; he has also provided the fullest list of grave slabs in Cornwall published to date (Whetter 1998, 235–6).

The geology of the slabs reflects the style and quality of the carving: some are off-the-peg,

factory-produced Purbeck marble slabs shipped around the coast from South Dorset; others are carved from Pentewan stone, while several of the more rustic examples are cut from local greenstones, elvans and even granite.

As previously noted, the most elaborate grave slabs in Cornwall were carved for an elite with strong connections to Norman-French culture, and as they were inscribed were clearly placed over a grave or coffin as a memorial. However, the majority of Cornish grave slabs are not inscribed although they would also have been commissioned for the most important persons in a community, perhaps parish priests or lords of the manor.

Although the four inscribed grave slabs in Cornwall are not dated, or the names of the commemorated identified, their style indicates that they are of thirteenth-century date. Ryder (2005, 13) suggests that grave slabs displaying the bracelet-type cross, such as two examples at Bodmin and another at Gerrans, could be slightly earlier, perhaps late twelfth century.

#### *Interpretation of the Lesnewth grave slab fragments*

The fragments of the Lesnewth grave slab are carved from local stone and display a cross with *fleur-de-lys* terminations. Although the emblem of the *fleur-de-lys* is the most popular symbol to be displayed on this type of monument elsewhere in Britain, only a few Cornish examples have been found with this symbol. The St Allen grave slab fragment exhibits an elaborate version of the *fleur-de-lys*, while plainer crosses at St Ewe and Tintagel both terminate with this device.

The most popular style of decoration for the lower termination of the grave slab is a stepped base or Calvary, as with many of the examples in Cornwall including the St Ewe grave slab. However, some of the crosses displaying *fleur-de-lys* terminations on the cross motifs, such as that at Tintagel, also display the same device for the lower termination at the foot of the slab. Unfortunately, the form of the termination on the lower end of the Lesnewth grave slab will remain unknown unless the lower portion is discovered.

The two fragments of grave slab are too damaged to show whether it was coffin-shaped or rectangular. According to Ryder (2005, 16), ‘simple straight-arm crosses are notoriously difficult to

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date, and their common *fleur-de-lys* terminals can begin as early as the 12th century'. He adds that 'simple crosses with *fleur-de-lys* terminals, however, do go on to appear on rectangular floor stones, cut to fit into a church pavement which are usually of late medieval date' (*ibid*, 16). This makes dating these fragments difficult, especially as the Lesnewth grave slab is provincial in style and utilizes local material rather than imported freestone. The grave slab could have been carved at any time between the thirteenth and fifteenth centuries.

Both fragments show clear signs of misuse and re-use. The upper surface of the larger fragment shows excessive wear, especially down its right-hand side, and this may relate to its use or re-use as flooring in the church, prior to the church restoration of 1862. The shallow hole and groove on the right-hand edge of the slab suggest a position where the stone may have been secured. The strip of black staining suggests that for some time the grave slab was partially buried in the ground with part exposed to the fast-flowing stream. This might offer an alternative explanation for the excessive wear.

### The wheel-headed cross

#### Description

The second monument discovered by Mr McNair Scott consists of the fragmentary remains of a wheel-headed cross, also carved from local stone of the Tintagel Volcanic Formation. However, instead of the usual cross symbol seen on the hundreds of wayside crosses in Cornwall, it displays a *fleur-de-lys* on both faces.

The carved stone is just under 1m in height, and consists of part of a wheel-head and shaft (Fig 3). About a third of the wheel-head is missing, although enough exists to suggest its original form. Upon discovery, the upper surface of the shaft was found to be split into an additional two fragments. One edge of the cross head and shaft is complete and has a smooth weathered appearance, while the opposite edge is ragged where areas of the monument have been broken off and lost. Although the bottom of the cross shaft also has a ragged edge, there is no indication that the monument was originally much longer.

The remains of incised *fleurs-de-lys* are visible on both faces of the wheel head. In each case the

emblem displays one complete horizontal curved leaf and part of the upper bud. The stem of the *fleur-de-lys* consists of two broad parallel incised lines running the full length of the shaft. On the principal face, evidence of an additional incised line close to the right-hand edge can be discerned, possibly forming the edge of a bead or roll-moulding, although the opposite edge on the same face does not show a similar line.

The reverse face of the monument is more worn and has been split down its centre at an angle so that only one of the horizontal curved leaves of the *fleur-de-lys* can be identified. On this face, only one incised line of the stem of the *fleur-de-lys* is visible, together with another incised line creating a bead or roll-moulding on the edge of the monument.

#### Dimensions

Length 0.915m; width of existing wheel head 0.34m (approximately 0.5m when complete); width of the shaft 0.27m, thickness 75mm; width of *fleur-de-lys* stem 90mm. One fragment of the upper surface measures 0.23 by 0.26m and is 35mm thick, the other 0.44 × 0.26m and 50mm thick.

#### Discussion

Although a *fleur-de-lys* carved on the head of a wheel-headed cross is unusual, it is not unique. Three crosses in north Cornwall display this emblem. A wayside cross at Washaway in Egloshayle parish has a *fleur-de-lys* on each of its faces, while a more stylised version on a wayside cross stands in the churchyard. The Penwine Cross at Longstone in St Mabyn parish displays an equal-limbed cross on one face and a *fleur-de-lys* on its reverse (Langdon 1996, 29–30). Maclean (1873, 407) offers some conjecture that the Egloshayle crosses, which were found on land which formed part of the lands of Bodmin Priory, might have been connected with the boundary of the priory lands. The priory was dedicated to St Petroc and the Blessed Virgin Mary. Maclean suggests that the Virgin's emblem, the *fleur-de-lys*, was adopted as a symbol of the priory, although this is unsubstantiated. Further examples of wheel-headed crosses which display the *fleur-de-lys* formerly used as grave markers or memorials can be found across Europe, including France, Spain and Germany (Riebeling 1977, 81; Anon 2005).

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Fig 3 Lesnewth churchyard: the wheel-headed cross after conservation.  
(Photograph: G Young, © Exeter Archaeology.)

#### *Interpretation of the Lesnewth wheel-headed cross*

As the wheel-headed cross bears a symbol on both faces, it was evidently free-standing and viewed from both directions. The short shaft suggests that it is unlikely to have been a wayside cross, while the stone is too large to have been a gable cross on a building. Thus, the monument is most likely to have been created as an early memorial stone, headstone or pillow stone, to stand at the head of the grave; its association with the graveyard also supports this view.

Although small wheel-headed crosses are unusual in Cornwall, this newly discovered Lesnewth cross is comparable to two in the churchyard at Budock near Falmouth and to several

small crosses found during the excavation of the church at Temple in 1883, all of which are also considered to be gravestones (Brown 1883, 24; Langdon 1999, 12–13). It is likely that further grave markers or headstones of this type may once have existed in Cornwall's churchyards. Although it is unusual to discover a wheel-headed cross in Cornwall that is not carved from moorland granite, it is not unique. Several wayside crosses have been cut from local stone: for example one on Laneast Downs is carved from Polyphant greenstone while at Tarret Bridge, St Clether, there is a cross carved from local slate (Langdon 1896, 159, 163). Most wheel-headed wayside crosses in Cornwall are considered to be twelfth century or later, while although the *fleur-de-lys* symbol was being carved in the late twelfth century, it was far more popular

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from the thirteenth century. The cross may have been carved at any time between the late twelfth and the fifteenth centuries, and could well be coeval with the grave slab.

### *Consolidation*

When the pieces of this cross were discovered, they were in a saturated condition; small pieces of stone flaked off whenever they were moved or handled. With the churchwarden's permission, they were removed to Truro, where they were allowed to dry out slowly. In September 2005, once the stones were in a more stable condition, they were examined by stonework conservators Sue and Lawrence Kelland. At this time, the Kellands kindly agreed to glue the fragments of shaft together, using a general transparent vertical polyester mastic, to prevent further flaking and loss to the monument. A small amount of additional conservation work will be required before the cross is in a condition suitable for display.

### **The fleur-de lys emblem**

There has been much debate about the origin of the *fleur-de-lys*. Its design can be traced to many parts of the world prior to its adoption as a heraldic symbol in the western world during the late twelfth century. The emblem was first used by Louis VII of France (1137–80) (Friar 1996, 200) and was later incorporated into the arms of Edward III, quartered with the lions of England. The *fleur-de-lys* remained on the arms of every English sovereign until 1801.

The symbol's origin has been interpreted by some as a spear, lance or sceptre; however the emblem is most popularly seen as a representation of a stylised flower, the lily or iris. Both the *fleur-de-lys* and the lily are seen as metaphors for whiteness, purity and the Virgin Mary. The lily is the central feature in medieval images of the Annunciation and was a popular image in both monastic houses and parish churches throughout the medieval period.

### **Conclusion**

The use of local materials and no doubt a local craftsman are highlighted in the provincial style of both of these monuments. The best and most elaborate grave slabs in Cornwall were carved from

imported freestone and probably shaped outside the county. However, the Lesnewth example clearly shows that medieval Cornwall followed the same tradition and styles of religious commemoration as other parts of the country, adopting material available to hand. The use of local stone clearly affects the style and quality of the carving, which leads to variations in design. The style of the wheel-headed cross is similar to the many hundreds set up in the county during the medieval period, though rarely found as headstones. The choice of local material rather than granite from Bodmin Moor is also unusual; the adoption of a *fleur-de-lys* emblem instead of a cross may also reflect purely local preference. It is difficult to determine the precise date at which these monuments were carved, especially as Cornwall has often lagged behind other parts of the country, continuing to produce earlier styles long after they have ceased to be fashionable elsewhere.

### **The slate slab with inscribed graffiti**

*C M Thorpe*

In 2005 the author was invited to comment on a roughly triangular fragment of slate slab measuring  $0.45 \times 0.32\text{m}$  and up to 25mm thick. The stone is a light grey, fine-grained, slightly micaceous slate with good parallel cleavage (petrological description below). One of the large flat surfaces shows evidence of having been polished by wear action (compounded by later water action) and it was on this surface that a complex series of graffiti was observed. The stone was clearly once part of a much larger slab, since incomplete graffiti, truncated by lines of breakage, were noted on all three sides (Fig 4). It was found in the stream bed by Mr S McNair Scott, alongside the fragments of a medieval grave slab and parts of a wheel-headed cross described above.

### **Method of recording**

Close examination of the stone revealed that only one of the flat surfaces of the slab bore graffiti, but these proved to be complex. A rubbing was made of the incised surface, employing very thin white paper and a hard (4H) pencil, taking care that the angles of the pencil strokes were varied to pick up

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Fig 4 Lesnewth churchyard: slate fragment with complex graffiti. (Drawing: Carl Thorpe.)

every line or groove. A working drawing was then made by drawing over the rubbing, distinguishing the details of the graffiti from the natural fracture lines and grain of the rock. The stone was then examined closely (with the rubbing immediately alongside) under strong oblique light that threw every groove or line into shadow, a hand lens being used to determine intersections (that is, which line overlay which). The stone was rotated in relation to the light source so that all lines would be revealed and the stone examined from all angles. Finally, an ink drawing was made on drawing film. Previous work by the author has shown that drawing using this technique is a more satisfactory way of portraying what is on the stone than photography, especially on greatly worn examples such as this.

### The graffiti

The observed design appeared to consist of the following four main elements:

#### *Element 1*

The first element (Fig 5a) seems to have been a pattern consisting of at least two concentric squares, with straight lines connecting their mid-points on each side. There do not appear to be any diagonal lines in the design. This appears to have been a board for one of two possible games – Five Men’s Morris or Nine Men’s Morris (The Larger Merels). Since the slab is broken and the design has been removed in places by subsequent graffiti, and the lines being heavily abraded, it is not possible to determine exactly which game is represented. It appears that the board was re-cut at least once.

Five (or Six) Men’s Morris (Fig 6b) was popular in medieval Europe, especially in Italy, France and England, but seems to have dropped out of use before 1600 (Murray 1951). The author has not previously encountered any examples of this game in Cornwall, so it is the less likely of the two games to have been portrayed.

MEDIEVAL GRAVESTONES AND ARCHITECTURAL FRAGMENTS

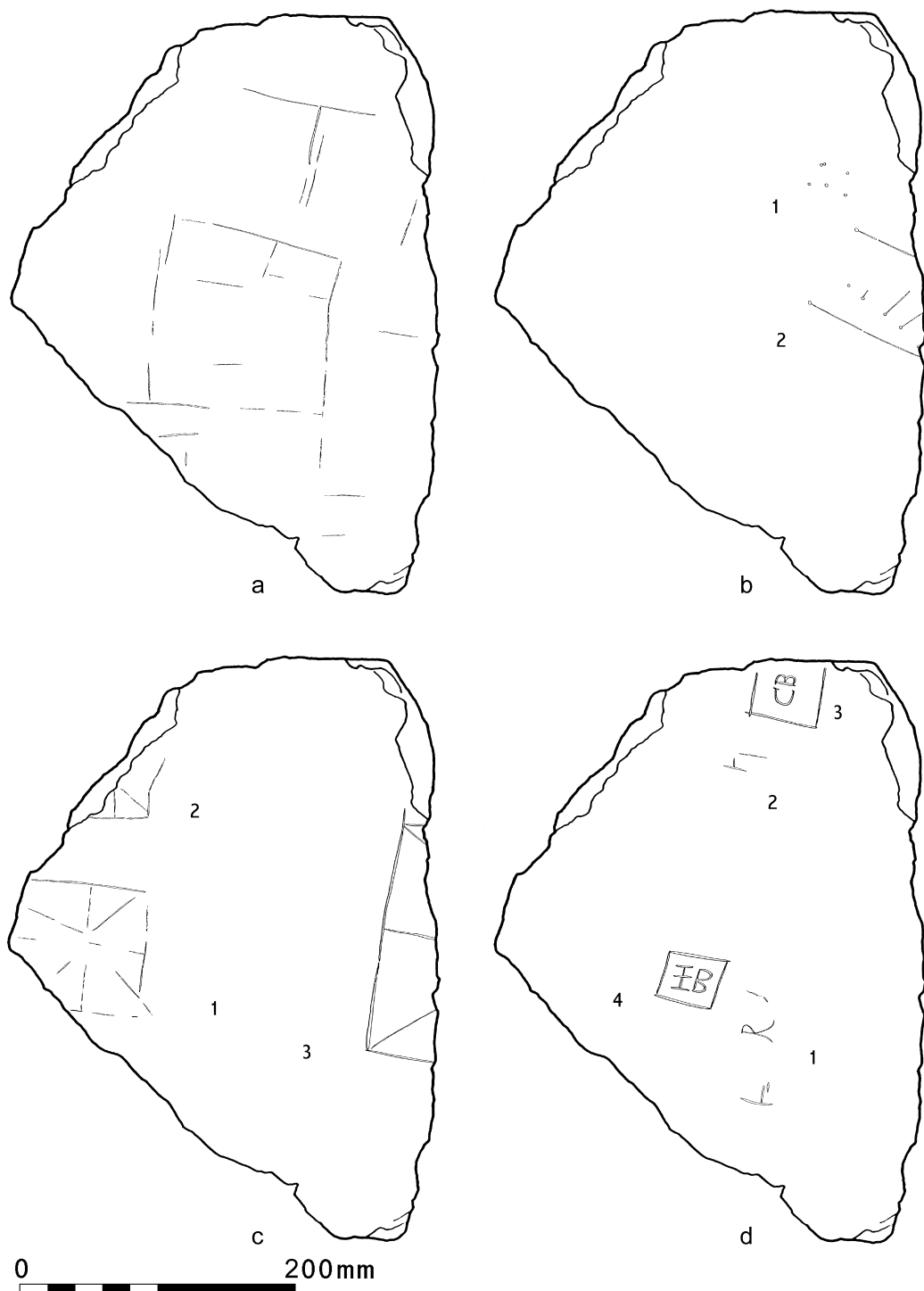


Fig 5 Lesnewth churchyard: interpretation of successive phases of graffiti on slate fragment. (Drawing: Carl Thorpe.)

Nine Men's Morris (The Larger Merels) is a long-lived games board (Fig 6c); versions found in Egypt may date from as early as *c* 1400BC. Examples have been found throughout the Roman Empire, including the British Isles, often with a type of draughts board inscribed on the reverse (Hanel 1997; Boon 1974; Graham 1984; Berger 2004). The game continued to be played in the early medieval period (Murray 1951). In Europe, its popularity increased during the Middle Ages, becoming a common pastime in Britain after the Norman Conquest. Examples are known from excavations at Castle Acre, Norfolk, dating from the late eleventh or early twelfth century (Coad and Streeten 1982). A large number, often dated to the thirteenth century, have been found in churches and monasteries (Murray 1951; Reeves 1995).

In Cornwall, a midden excavated at Sandy Lane, Gwithian, produced two boards (one complete) dating from *c* AD 1100 to 1250, associated with Grass-Marked and Sandy Lane Ware pottery (Thomas 1964). Several examples of Nine Men's Morris boards have been discovered in excavations at both Tintagel castle and church (Thorpe 1988; Barrowman *et al* 2007). Those in the churchyard came from medieval phases IV and V, contexts dating from the eleventh to fourteenth centuries (Nowakowski and Thomas 1992; Thomas 1993). Most of those from the castle were unstratified; one, however, was found on the window sill of the Great Hall, constructed *c* 1230–40 and dismantled by the fourteenth century (Thomas 1993). In the parish of Lesnewth itself, two further examples of Nine Men's Morris boards were excavated at the small hamlet of Treworld (Dudley and Minter 1966). Although ascribed to the twelfth or thirteenth century by the excavators, one of the games boards (having diagonal lines at the corners) is of a form introduced in the fifteenth century (Murray 1951).

On balance it is suggested that the example from Lesnewth churchyard probably dates from the thirteenth century. This appears to be the oldest image, being overlain by all subsequent graffiti.

#### *Element 2*

The second element is composed of rather enigmatic patterns consisting of incised depressions (with a sharp conical shaped section, perhaps created by a compass point) and inscribed lines. Two groupings can be observed (Fig 5b).

The first (Fig 5b, no 1) is a group of six depressions in a sub-rectangular pattern that is not associated with any lines. The second (Fig 5b, no 2) consists of a line of five depressions with fine incised lines emerging from them, bordered top and bottom by other lines again emerging from circular depressions (forming a pattern resembling a ladder).

Owing to their very fragmentary and abraded nature, it is uncertain what either of these groupings represents (if anything). Group 2 may be an incomplete games board (form uncertain), or just possibly an example of fragmentary musical notation.

#### *Element 3: Three Men's Morris board*

The third element (Fig 5c) is of a pattern consisting of a square with straight lines connecting the diagonal corners with the mid-points of each side, passing through the centre of the square. This design is for the 'Three Men's Morris' board game (Fig 6a).

Three Men's Morris (The Smaller Merels) is another long-lived board game (Murray 1951). Again, versions whose age is disputed have been found in Egypt. The game was certainly known in the Roman period. It became a popular pastime in

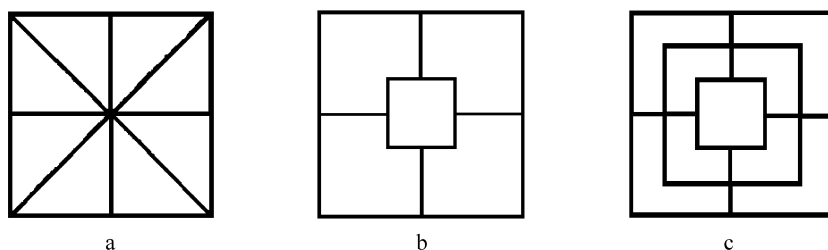


Fig 6 (a) *Three Men's Morris*; (b) *Five Men's Morris*; (c) *Nine Men's Morris*.  
(Drawing: Ann Preston-Jones.)



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Britain after the Norman Conquest and was well developed and widespread by 1300. Boards have been found incised in the cloisters of the cathedrals of Norwich, Canterbury, Gloucester and Salisbury, and at Westminster Abbey. They also occur in numerous churches (Murray 1951). A single board is known from a thirteenth-century context at Tintagel castle (unpublished).

The stone from Lesnewth displays three examples of this game board (Fig 5c). All are broken, the first being the most complete. Boards 1 and 2 are lightly inscribed (perhaps by using a brooch pin); board 3, however, is deeply incised, the lines being broader and much more clearly defined (possibly drawn using a knife point). These examples all overlie the 'Nine Men's Morris' board and therefore post-date it; they are most likely to date from the late thirteenth or early fourteenth century.

### *Element 4: groups of lettering*

There are four groups (Fig 5d). Groups 1 and 2 may form part of the same inscription but owing to their very abraded and fragmentary nature this cannot be confirmed and the inscription remains undecipherable. The recognisable letters of group 1 are a fragmentary **A** and a complete **R**. A further fragmentary **A** is recognisable in group 2. Upon comparison with scripts portrayed in Bizley (1965) and Lees (2000), the style of the letters (all of which seem to be capitals), appears to be of late seventeenth- to early eighteenth-century date.

Groups 3 and 4 are people's initials, clear and deeply incised, each enclosed within a square cartouche. Group 3 has the initials **CB**. Group 4 has the initials **EB** where **E** represents the letter **J**. This form of **J** can be dated to the late seventeenth or early eighteenth century, with several examples occurring in Cornwall, especially in the west of the county (Thomas 2001). These initials appear to be the latest graffiti, all other marks appearing to result from accidental knocks and scratches.

### **Conclusion**

In conclusion, this stone displays a palimpsest of images created over a long period of time, perhaps as much as 500 years. This suggests that the stone was originally in a location where it was readily accessible, such as a window sill, and was later removed and discarded, perhaps during the 1862

rebuilding. A good example of this can be seen at the church of St Teath, where a twelfth- or thirteenth-century slate grave slab was reused as a window sill in the fifteenth-century northern aisle, where it subsequently became covered in graffiti, including games boards and figures.

This stone is an important addition to the corpus of graffiti found in Cornwall. It is certain that many more examples await discovery, both at Lesnewth and elsewhere in the county.

## The architectural fragments

*John Allan*

Seven pieces of dressed stone were recovered from the stream bed between 2004 and 2007. The two most informative pieces are described and illustrated; the rest are listed.

### **Fragment of window tracery**

A fragment of window tracery of dark greenish-grey volcanic tuff (Fig 7). Each flat face has a central broad ogee curve with single cusps set asymmetrically to each side, one side of each cusp being ogival, the other a simple arc. The left edge is an original vertical dressed face but that to the right is probably a later break; the sides are so battered and eroded that it was not regarded as feasible to offer a drawn section. A groove for window glass is visible within each cusp.

Although abraded, this is clearly in the Decorated style; it would have butted a matching piece to its left. It could represent either one side of the head of a light with a quarter of the quatrefoil above it, as shown in Fig 7, or quarters of two quatrefoils, arranged diagonally in superimposed ranks. The use of ogee curves places this in the later or Curvilinear phase of the Decorated style, datable to the early- or mid-fourteenth century; the use of repeating quatrefoils within ogee curves, arranged diagonally, is a defining feature of reticulated tracery, to which this fragment probably belongs.

### **Fragment of tracery**

Fragment of tracery in granite: a mullion and part of the head of a plain uncusped light, both with plain diagonal chamfers and without a trench for window glass (Fig 8).

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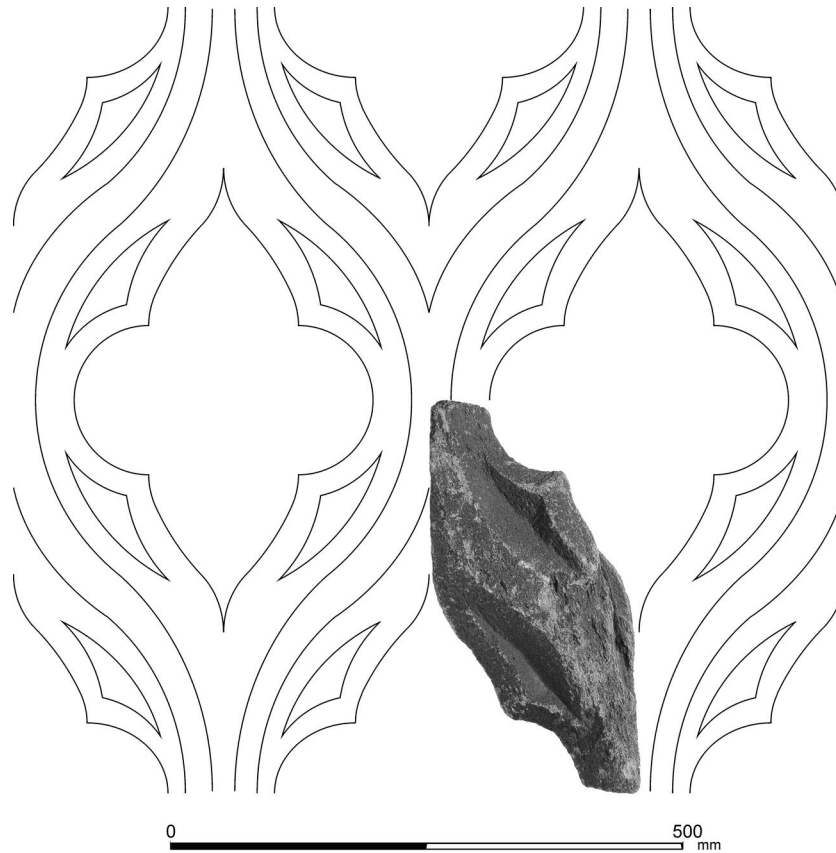


Fig 7 *Lesnewth church: fragment of fourteenth-century reticulated window tracery. (Drawing: T Ives, © Exeter Archaeology.)*

This piece belongs to the form of late medieval tracery in which plain lights with uncusped heads are grouped within an arched frame, creating a stepped arrangement in the window head, often with plain spandrels over the side lights. H M Colvin has christened the type 'South Hams' tracery because it is frequently seen in that part of Devon (Colvin 1999).

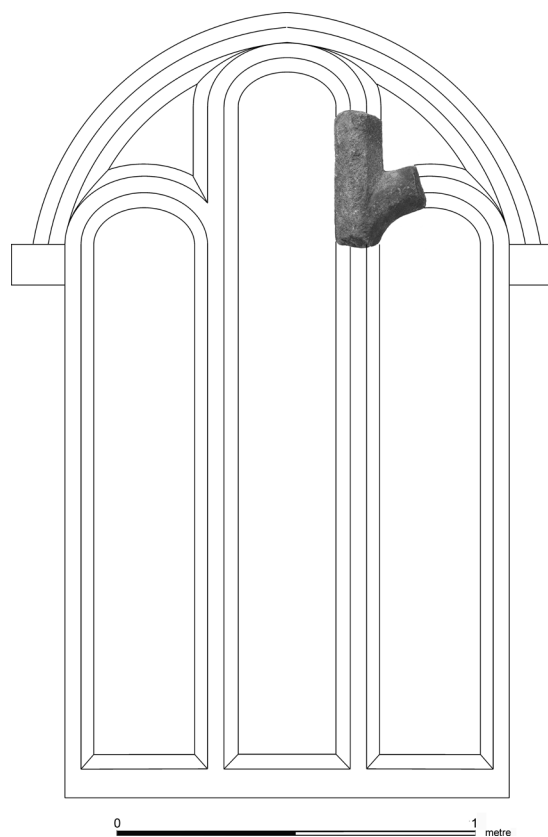
Windows of this type show many variations on the basic theme: groups of three, five or seven lights, varying in the steepness of the framing moulding, with either plain or simply cusped spandrels. It is not possible to determine the precise form here, although the two adjacent lights represented in the fragment were evidently of markedly different height, and the spandrel seems to have been plain. A simple reconstruction of the general form is offered here (Fig 8).

This type of tracery is characteristic of the sixteenth century (Colvin 1999). Numerous examples of South Hams windows are certainly of pre-Reformation date, forming parts of elevations incorporating rood stairs which would have been redundant after the abolition of rood lofts in the 1540s, although the window form may continue after that date.

None of the other fragments merit drawn illustration. They comprise:

3. a window jamb in volcanic tuff with a chamfered faces, a hole for a glazing bar and trench for window tracery (Fig 9.1);
4. a granite mullion, the diagonal faces with hollow chamfers, late medieval (Fig 9.2);
- 5-7. small pieces of volcanic tuff with dressed faces, unidentifiable.

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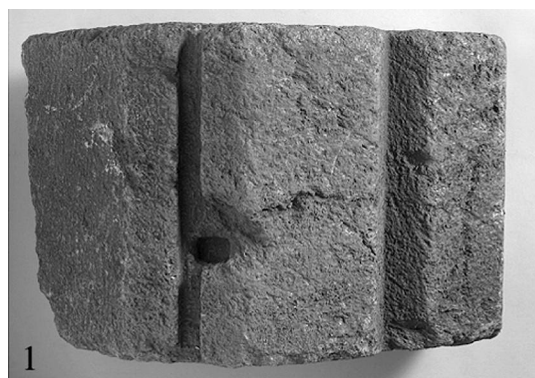


*Fig 8 Lesnewth church: fragment of 'South Hams' window. (Drawing: T Ives, © Exeter Archaeology.)*

### Comment

The fourteenth-century fragment comes from a window of a fairly uncommon form in Cornwall and west Devon, where Decorated works of any sort are not numerous. Instances of 'South Hams' windows are also appreciably less common in Cornwall than in Devon: Colvin's distribution map shows no examples in this part of the county, although the nearby church of Minster offers two phases of such windows (Colvin 1999; Allan 2004–5, 149–53).

The choice of building materials deserves comment. The fourteenth-century piece is of tuff; the two fifteenth- and sixteenth-century fragments are of granite. In those parts of Devon and Cornwall where volcanic stones were available locally, they were commonly employed for mouldings in the thirteenth and fourteenth



1



2

*Fig 9 Lesnewth church: miscellaneous architectural fragments. 1. jamb moulding; 2. mullion (Photographs: G Young, © Exeter Archaeology.)*

centuries, especially in districts remote from alternative sources of good-quality limestone. A noticeable feature of the later Middle Ages was a change to the use of granite – much tougher and more laborious to work, often brought from further away, and no doubt held in higher esteem. Thus the change evident in the geology of the dressed stone at Lesnewth may be seen as a reflection of a general improvement in the standard of masonry in the diocese in the fifteenth and sixteenth centuries.

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## The geology and provenance of the stone artefacts

*Roger T Taylor*

The salvaged collection of roofing slates, architectural fragments and portions of a grave slab was submitted to the writer for geological identification. This material is attributable to the old church, rebuilt in 1862, and its surrounding graveyard. Identification was made by visual inspection, supplemented by use of a hand lens.

### The fragments of grave slab

A coarse foliated, weakly fissile sheared lava or volcanic ash with large, dark green flakes of chlorite, similar in lithology to the window mouldings described below but split along the foliation.

#### *Comment*

Rock of this type occurs in the Lower Carboniferous Tintagel Volcanic Formation (Freshney *et al*, 1972; McKeown *et al*, 1973). The Tintagel Volcanic Formation forms a belt lying roughly east – west, about 1.25km to the south of Lesnewth, and a belt aligned approximately north – south through Tintagel (Fig 10). It seems likely that this rock was quarried from the Volcanic Formation close to Lesnewth, although it is not possible to suggest a localised source from the information available in the Geological Survey Memoir (McKeown *et al*, 1973).

### The Merels board

Slate slab approximately 20mm thick. A light grey fine-grained, slightly micaceous slate with a good parallel cleavage. Probably a local Lower Carboniferous slate.

### The architectural fragments

*Fragment of Decorated tracery, window jamb and three miscellaneous pieces* (fragments 1, 3 and 5–7)

Dark greenish, coarse foliated, weakly fissile with large dark green flakes of chlorite. A sheared lava or volcanic ash of the Tintagel Volcanic Formation.

Some of these thicker-sectioned fragments have been carved with their longer dimensions oblique to the foliation of the rock, suggesting that they have been cut from joint-bounded blocks.

### *Granite window mouldings* (fragments 2 and 4)

Coarse, uniform muscovite-biotite granite with some tourmaline. The rock is slightly friable, possibly the result of slight original weathering and an indication of relatively shallow quarrying. The Bodmin Moor granite is the likely source area.

### Roofing slate

In the eighteenth and nineteenth centuries, and no doubt earlier, slate was quarried extensively along the cliffs around and south of Tintagel, although most work had ceased by the 1940s. The principal quarries worked the Delabole Slate Formation of Upper Devonian age, which provides the finest Cornish slates and is still worked at Trevillet and Delabole. The intense folding and pressure to which these very fine-grained sediments have been subjected has produced the slaty cleavage that gives these rocks the high fissility [property of rocks to split into thin sheets along planes of weakness] to form roofing slate. There are many other minor quarries in the area, working different formations that may have yielded slate of poorer quality; the slate used at Lesnewth is very variable.

#### *Group 1*

Medium to light grey slate, poorly cleaved and very irregular in thickness and outline, 11–22mm thick. Two examples have edges with a half-round profile and one surface which does not appear to have been split, suggesting that they have been taken directly from a weathered or water-worn shoreline or inland river or stream outcrop, rather than by deep quarrying. The irregular perimeters show no evidence of trimming. Possibly from a Lower Carboniferous rock source in the vicinity of Lesnewth; possibly from a beach, or from the stream beside the church.

#### *Group 2*

Greenish-grey with some micaceous spangling, moderately well cleaved but rather irregular,

## MIEVEAL GRAVESTONES AND ARCHITECTURAL FRAGMENTS

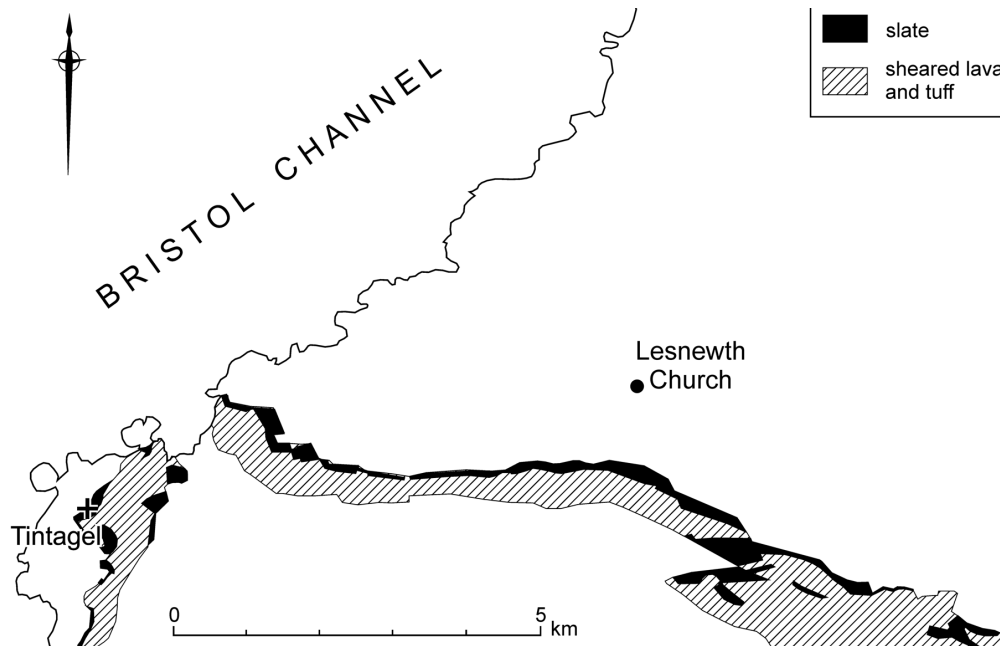


Fig 10 Lesnewth church: potential geological sources of roofing slates and moulded stones. (Drawing: T Ives, © Exeter Archaeology.)

7–10mm thick. Some perforated, irregular perimeters, little evidence of trimming.

#### Group 3

Light greenish-grey slate with a micaceous surface sheen, well cleaved, 5–6mm thick; several perforated, some showing evidence of trimming on sides and lower edge. Possibly from the Delabole Slate Formation.

#### Group 4

Three medium to light grey, smooth, well-cleaved slate fragments with slight pitting from pyrite spots, 6–7mm thick. There is some evidence of trimming. Possibly from the Delabole Slate Formation.

#### Miscellaneous

1. Medium bluish-grey slate with a clean parallel cleavage, about 9mm thick, with ferruginous spots with pale halos, the surfaces spangled with fine mica. The lower edge is straight trimmed. A characteristic slate from the Delabole Slate

Formation as currently produced at Trevillet quarry. This is the only example among the material examined and the most likely to be a relatively modern slate, although current output is commonly cleaved to about 5mm.

2. Two black or very dark grey well-cleaved slates, smaller fragments 10mm and 11mm thick, probably from the Lower Carboniferous and possibly local to Lesnewth.

3. Two thick poorly cleaved fragments, 14mm and 18mm thick, one thinned by chiselling. Coarse-textured slate with fine white spots and no perforation; probably cleaved volcanic ash from the Tintagel Volcanic Formation.

4. Large 12mm thick moderately well-cleaved perforated slate. Light greenish-grey, coarse textured. Some resemblance to no 3 above. Probably trimmed with curved sides and lower edge.

5. Other rather indeterminate slate fragments.

### Comment

The slates can be divided into groups of similar type that are from a number of different sources. The presence of several groups of slates probably reflects different periods of repair to the church roof. Generally, poorer quality slate has a shorter life and would need to be replaced at intervals.

The Group 1 slates appear to be the crudest in quality, shape and thickness, and the least likely to be the products of recent local slate quarrying. They may, therefore, be from an older phase of the church roofing. Group 2 slates are of slightly better quality but are again relatively thick and apparently untrimmed. They may also represent an early phase of roofing.

### Acknowledgements

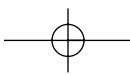
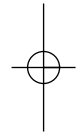
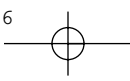
We owe a particular debt to Simon McNair Scott, who not only discovered the principal artefacts described in this paper but also took a keen interest in the entire project and offered practical help to those visiting the site. John Gould of Cornwall County Council Historic Environment Service was much involved in the project, drawing up the brief for archaeological works. Sue and Lawrence Kelland advised on the conservation of the fragments and offered other help. Ann Preston-Jones commented on a draft of the paper.

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*Cornish Archaeology* 47, 2008, 147–152

## An inscribed grave slab from St Ervan

ANDREW G LANGDON

In November 2005, while visiting stonework conservators Sue and Lawrence Kelland, who were restoring a memorial in St Ervan church, the writer noticed a fragment of a small grave slab in the north transept. The fragment lay on the floor below a naval memorial on the west side of the transept beside the wall adjoining the nave, and was being used as a support for a pot plant. St Ervan is a small parish four miles south west of Padstow; the church is at SX 8918 7031.

The fragment is a rectangular piece of freestone approximately 90mm thick with a bevelled or chamfered edge on three sides and a ragged edge on the fourth. It is 0.36m wide and survives to a length of 0.35m on one edge and 0.3m on the opposite one. The chamfer on three sides is about 100mm.

The fragment is the head, or top part of a coffin-shaped slab. On the face is a foliated cross and around two of the chamfered sides is an inscription in Norman-French. Of the foliated cross, only the upper and right-hand arms survive. Each arm has a rather circular style of fleur-de-lys termination. The carving has been incised into the slab but the left-hand side of the stone is so worn that today there is almost no evidence of the left-hand cross arm. The slab is carved from Purbeck marble, a blue-grey fossiliferous limestone which is found on the Isle of Purbeck on the south coast of Dorset.

The slab has several mutilations resulting from re-use. At the centre of the foliated cross is an iron bar held in place with wedges (Fig 1); traces of lime

mortar can be seen on the slab's reverse face, which although not carved has a smooth hollowed surface suggesting the stone has been re-used at some time, possibly as a mortar (Fig 2). The hollow on the reverse face has a diameter of about 130mm and is 55mm deep.

The inscription is carved in Norman-French capitals and minuscules with serifs, on the top and left-hand chamfered sides of the slab. On the top edge is the personal name Henry [**+hENRI**] (Fig 3). The cross symbol + often prefixes the inscription on medieval grave slabs, and indicates that this was the start of the inscription; other



*Fig 1 The upper face of the grave slab.*

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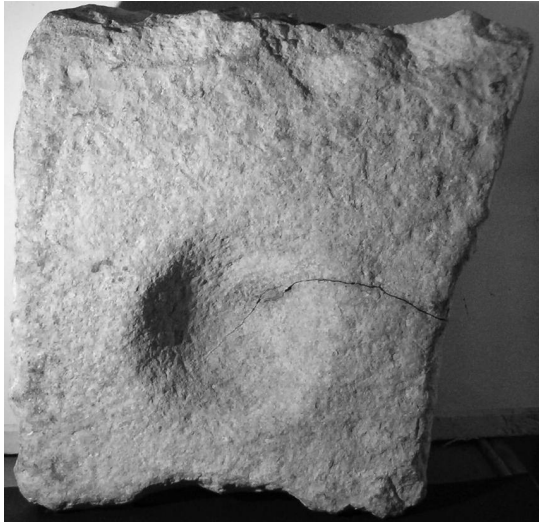


Fig 2 The reverse face of the slab, with the possible mortar hollow.

examples in Cornwall include a grave-slab at St Buryan commemorating Clarice de Bolleit, the wife of Geoffry de Bolleit, and an inscription to Thomas, an otherwise unrecorded vicar of Nansant situated in the floor at St Breock parish church. (below). The inscription continues on the left hand edge of the slab, but cannot be interpreted since only a short portion of the original grave slab exists and hence only a fragment of a much longer inscription. The surviving letters are *VNO* and these are preceded by another two characters which are now illegible, and by another on the broken edge of the slab [ *..VNO.* ] (Fig 4). All the letters on the slab are approximately 35mm high and cut with a V-shaped groove. The inscription suggests that the slab must have been carved at a time when Cornwall's ruling class still had strong connections with Norman-French culture, which dates it to about the twelfth or thirteenth centuries.

When compared with the 53 known surviving grave slabs and fragments in Cornwall, the dimensions of the St Ervan fragment suggest that originally the complete grave slab would have been much smaller than the norm: it is estimated to have been no more than 1.2m (4 ft) long. Smaller grave slabs are often attributed to children, but may also have been used when a burial was only for a heart or other viscera.

As noted above, the fragment displays a foliated cross in relief, with fleur-de-lys terminations which in all probability would originally have had a



Fig 3 The inscription: +hENRI.



Fig 4 The inscription: ..VNO.

central stem, formed by an incised double line, extending the full length of the complete grave slab. At the foot of the grave slab this central stem would have terminated in either another fleur-de-lys or a stepped Calvary base (Fig 5).

Purbeck limestone, often called Purbeck marble, was a popular material for the production of grave slabs in medieval England. Of the 53 recorded slabs in Cornwall, at least 20 are carved from Purbeck limestone. (This number is based on current research and fieldwork, but with many more churches to investigate the number is likely to rise.) The evidence from the surviving grave slabs in Cornwall and in the south west generally suggests that the medieval coastal stone quarries on the Isle of Purbeck were mass-producing grave slabs. These were competently executed and appear to have been designed to a number of standard patterns, which could then be customised to meet the needs of the parish or individual. Communication between the client and stone quarry would presumably have needed a salesman with some form of pattern book to visit and show what the quarry could produce.

The Purbeck stone quarries are on the coast and these grave slabs would no doubt have been shipped to their destination. It is therefore not surprising that the majority of Purbeck grave slabs

## AN INSCRIBED GRAVE SLAB FROM ST ERVAN

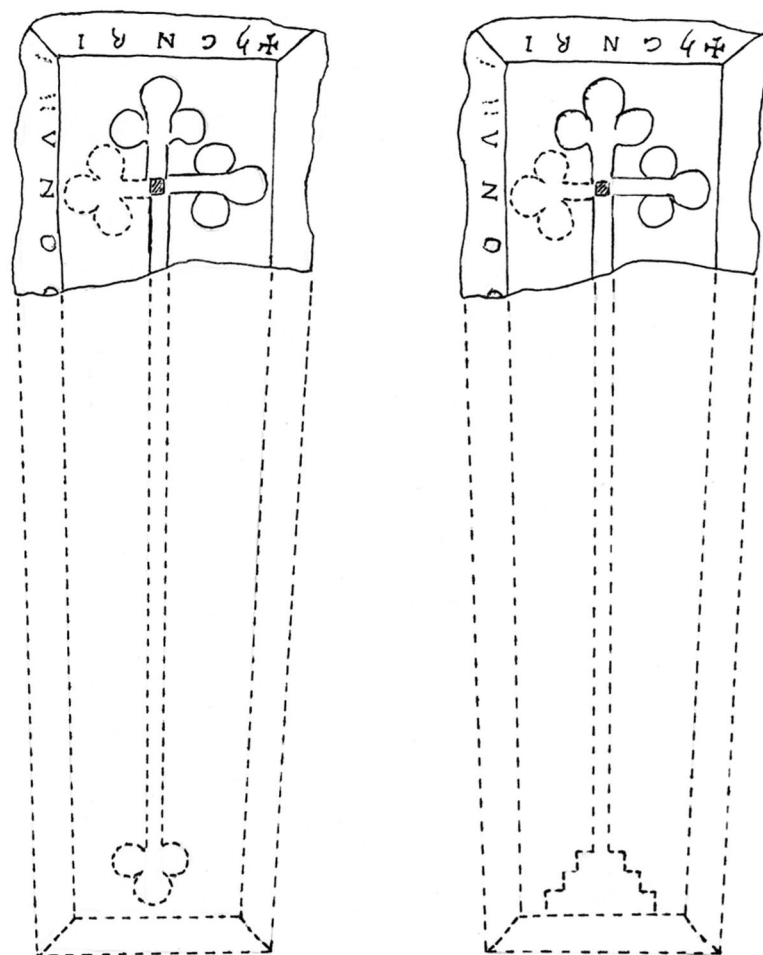


Fig 5 Alternative possible forms of decoration on the St Ervan grave slab when complete.

in Cornwall are on or close to the south coast, at Landewednack, Ruan Major, Mawnan, St Michael Penkivel, Goran, Lanteglos-by-Fowey, Lansallos and St Martin-by-Looe. The journey to St Ervan would not have been easy, as it would have involved sailing around Land's End and up to Mawgan Porth or Padstow on the Camel estuary, and then overland to St Ervan.

Where grave slabs were not imported from the Isle of Purbeck, they might be carved from local stone, often producing an inferior result. A good example is the fragment of grave slab recently discovered at Lesnewth, carved from local greenstone (Allan and Langdon 2008, this volume).

As the name suggests, these grave slabs, sometimes known as coffin lids or sepulchral cross-

slabs, were carved to be placed over a stone coffin or sarcophagus. Burials were usually inside the church, with the most important persons being buried before the altar or below an arched recess. At St Anthony-in-Roseland, Polsue (1867, 38) recorded that during the restoration of the church in 1850 two skeletons were discovered in granite coffins, one either side of the chancel, each covered by a slate slab with a cross carved on it. The skeletons were later reburied with the slate slabs above, while the two stone coffins were removed; one was built into an adjoining wall while the other remains preserved in the churchyard. Grave slabs at Gerrans, Tintagel, and St Michael Penkivel are all set below arched recesses in either the transepts or the chancel.

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Evidence in other parts of the country shows that these grave slabs were not exclusively indoor memorials, but were also used as coffin lids in churchyards, or were simply placed over graves as a marker for the burial (Ryder 2005, 8). No *in situ* grave slabs in Cornish churchyards are known to the author. Only the more important persons in an area that would have had a grave slab to mark their burial, and even fewer slabs bore inscriptions naming the deceased.

Prior to the discovery of the St Ervan fragment, only four grave slabs survived with an inscription in Cornwall. These are at St Buryan, St Breock, Bodmin and Little Petherick. A fifth is recorded at St Merryn (Cox 1912, 43; Elliott-Binns 1955, 399), set into the floor of the chancel; however, today this area is carpeted and it is not known whether the stone still exists. Maclean (1873, 242) noted a second inscribed grave-slab at Bodmin built into a house on Pool Street; it was no longer decipherable and today there is no knowledge of the stone or property.

It is difficult to analyse the St Ervan inscription with any certainty when so little of it survives and only four other inscribed grave slabs are known in Cornwall for comparison. The grave slab at St Buryan is the only complete stone with a complete and legible text: + *CLARICE: LA: FEMME: CHEFFREI: DE BOLLEIT: GIT: ICI: DEV: DE: LARME: EIT: MERCE: PUR: LEALME: PVNT: D: IOR: DE: PARDVM: AVERUND*. This was translated by Crofts (1955, 56) as 'Clarice the wife of Geoffrey de Bolleit lies here. God have mercy on her soul, who prays for her soul shall have ten days pardon' (Fig 6). On the St Breock example some of the inscription is worn, and only the following text can be read: + *TOMAS DE VICARIE DE NANSETN GIT ICI, DEU DE SA ALME EIT MCI*. This was translated by Iago (1871, 70) as 'Thomas Vicary of Nansent lies here, God have mercy on his soul'. The Little Petherick slab only reads + *SIRE ROGER LEMPRV GIST ICI*, which according to Iago (in Molesworth, 1878, 93) translates as 'Sir Roger Lempru lies here'. The Bodmin example is again only partial as there is evidence of further letters that have been damaged on another side. According to Maclean (1873, I, 242), it reads, ....*T .. ICI DEV: DE SA ALME EIT: ME...*, and translates as '....lies here, God have mercy on his soul'.

In the light of these other surviving inscribed examples in Cornwall, one would expect the full

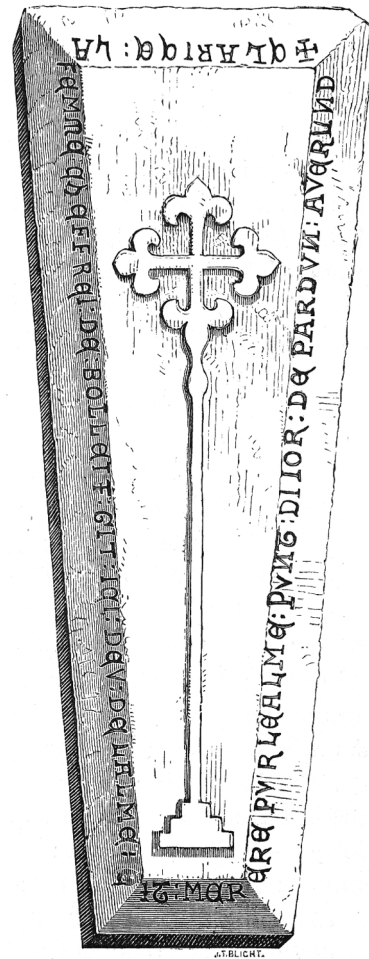


Fig 6 The St Buryan grave slab, by J T Blight (1865, 8).

inscription of the St Ervan grave slab to have read, 'Henry lies here, God have mercy on his soul' or similar; however, this is only conjecture.

Whetter (1996) has suggested that

'the lettering in French shows that these monuments were very much associated with the Norman-French elite. Cornwall's Norman-French heritage – more pronounced than in south-west England – was probably due to the land's importance in the Anglo-Norman state in the 13th century, its strategic position mid-way between England and Gascony, its mineral wealth, the important role played nationally and

## AN INSCRIBED GRAVE SLAB FROM ST ERVAN

internationally by its earls, Richard and Edmund’.

There is no indication on the stone to suggest who Henry was, although he must have been a person of notable status and wealth, and we can probably assume that this slab covered his grave. From the evidence of other inscriptions in Cornwall, he could have been either a secular or an ecclesiastic figure. Perhaps if the complete monument had survived at St Ervan, with a full inscription, it may have given further indications of who Henry was. No incumbent with the name Henry is listed for St Ervan during the twelfth or thirteenth centuries.

In northern England, additional symbolism was often carved on these slabs to indicate whether the person commemorated was male or female: swords are thought to indicate a knight, shears and keys are often attributed to females, while a chalice and book were usually associated with a priest. No such symbols appear on the Cornish examples. However, on the grave slabs at St Breock, Little Petherick and Tintagel, a raised head has been carved above the foliated cross, although today it is impossible to say whether these heads were intended to represent a likeness to the deceased or were symbolic.

Often religious memorials became vulnerable to neglect once all memory of the deceased and their families was lost. With only limited space inside a church, particularly in the chancel, it is quite probable that early memorials were removed to make way for new graves and monuments. Once discarded, grave slabs, like almost everything else, were recycled, and are often found built into the fabric of the church. The grave slab at Little Petherick was discovered in use as a step to the main entrance to the parish church, while another slab on St Michael’s Mount is in use as a lintel to an old guard room at the entrance to the castle. Today, these grave slabs have often been removed to the darkest corner of a church, or have been discarded in the churchyard where they are unfortunately liable to deteriorate.

The presence of mortar on the St Ervan fragment may indicate re-use at some stage in its history. Indeed it appears to have been re-used more than once, for the reverse side of the slab has been hollowed out and is worn smooth as if it had been used as a mortar. It has certainly been smoothed by some form of manual process. In addition, the top of the cross-slab, when first noted, had a  $\frac{3}{4}$  inch

iron bar fixed into the centre of the foliated cross. This iron bar was held in place with additional iron wedges or ties. It is impossible to be sure what this ironwork was for, but a possibility is that it may have formed part of a boot scraper. A boot scraper requires a heavy flat stone with the iron scraper fixed on to it; at St Mawgan an old cross-base has been adapted in this way.

The survival of this grave slab may be partly due to the lack of major re-building or enlarging of the parish church at St Ervan, which elsewhere often swept away these slabs, re-using them as building stones. Henderson (1956, 158) noted that St Ervan church ‘still retains its original cruciform plan having never been enlarged in the 15th century’. In several other cases around the county the surviving fragments of grave slabs are the upper parts displaying a foliated cross, while the remainder has been discarded or lost; for example, at Lanteglos-by-Fowey, Gorran and St Martin-by-Looe. The cross was clearly still seen as a powerful symbol even if the remainder of the monument was not always revered. Similarly, in West Penwith, pre-Conquest cross-heads have survived while the shafts that supported them have been lost or were perhaps re-used elsewhere.

These stones are important both historically and culturally as they represent some of the earliest monuments used in the memorialisation of individuals in Cornish churches. They also raise questions about trade and transport during the medieval period. In many cases they may pre-date much of the church fabric but, although of similar date to Cornwall’s wayside crosses, they have been sadly neglected by comparison.

## Conclusion

While Sue and Lawrence Kelland were restoring the Ralph Keate memorial, the churchwarden agreed that they could remove the iron pin from the grave slab fragment so that corrosion of the pin would not cause any further deterioration. The hole left by the iron pin was filled in with a lime-based mortar. The work was carried out on 24 November 2005 (Fig 7).

It is hoped that the grave slab will remain preserved inside the church and will not be discarded to the churchyard like those at some other parishes in Cornwall. The grave slab fragment has perhaps been overlooked due to the fine collection

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Fig 7 The St Ervan grave slab fragment with the iron pin removed.

of seventeenth-century slate memorials that St Ervan is well known for. Although this is only a small fragment of what would have been an impressive monument, its discovery has raised significant questions about its origin, the nature of memorialisation, Cornwall's elite and transport and communications during the twelfth and thirteenth centuries.

#### Acknowledgements

I am once again indebted to Ann Preston-Jones for reading and editing this paper, also for her interest

and constructive comments. Also to Sue and Lawrence Kelland, stonework conservators from Somerset for their help in removing the iron pin in the grave slab, even though they were already busy restoring the Keate memorial. Finally to the churchwardens at St Ervan for their permission to examine the grave slab.

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# Hatt House, Botus Fleming: the evolution of a Georgian country house

RICHARD W PARKER, PRU MANNING AND GARY YOUNG

*Hatt House is the historic family home of the Symons family. It is a complex structure consisting of a fine early eighteenth-century range with elements of an older dwelling alongside. Both parts of the house preserve a wealth of original fixtures and fittings, most of which date from the eighteenth and early nineteenth centuries. This report presents a survey of the house carried out for the Symons family in 2005 in advance of proposed alterations.*

Hatt House, which lies approximately 4 km north-west of Saltash in the parish of Botus Fleming (SX 3974 6234), is a fine example of a small early eighteenth-century country house adjoining the remains of its sixteenth-century predecessor and other ranges (Figs 1–2). It is a Grade II\* Listed Building. In 2004 Exeter Archaeology was commissioned by Jonathan Rhind Architects to carry out an assessment of the property on behalf of the owners, Heugh and Fiona Symons, in advance of proposed alterations. The occasion offered an opportunity to record the various interesting features of the building, to establish more clearly its structural history and to give some consideration to its context.

Hatt was described in 1968, when it was designated a Listed Building, but it has otherwise attracted little comment; for example the entry in Pevsner's *Buildings of England* amounts to little more than one line (Pevsner and Radcliffe 2002, 80). The present survey, consisting of a detailed examination and photographic record of the building, has shown that its structural history is more complicated than has been appreciated, and draws particular attention to the significance of the fine early eighteenth-century features of the house. A full report on the structure and on the likely impact of proposed changes to it has been prepared

(Exeter Archaeology 2004); this contribution presents the principal findings of the exercise but excludes some description of more recent and less significant features.

## The background

Although only limited documentary search was undertaken for this project, the following details have been gleaned from the present owners and from a history of the house compiled by one of their ancestors (Earwaker nd).

Hatt is one of the dwindling number of country houses in Cornwall in which the family who built the house remains its owner: the Symons family can trace their occupancy back to c 1700. The family appears to have experienced a sudden rise in its fortunes in the time of William Symons of Hatt, who became High Sheriff of Cornwall in 1735 (Ivall 1992, 182). This seems a likely context for the building of the new house; indeed the family history records that the present dining and drawing rooms were built by the former sheriff in 1740 (Earwaker nd, 26), a date which seems acceptable on architectural grounds. One of William Symons' daughters, Mary Anne (1758–1825), married Charles Tucker; it is recorded that

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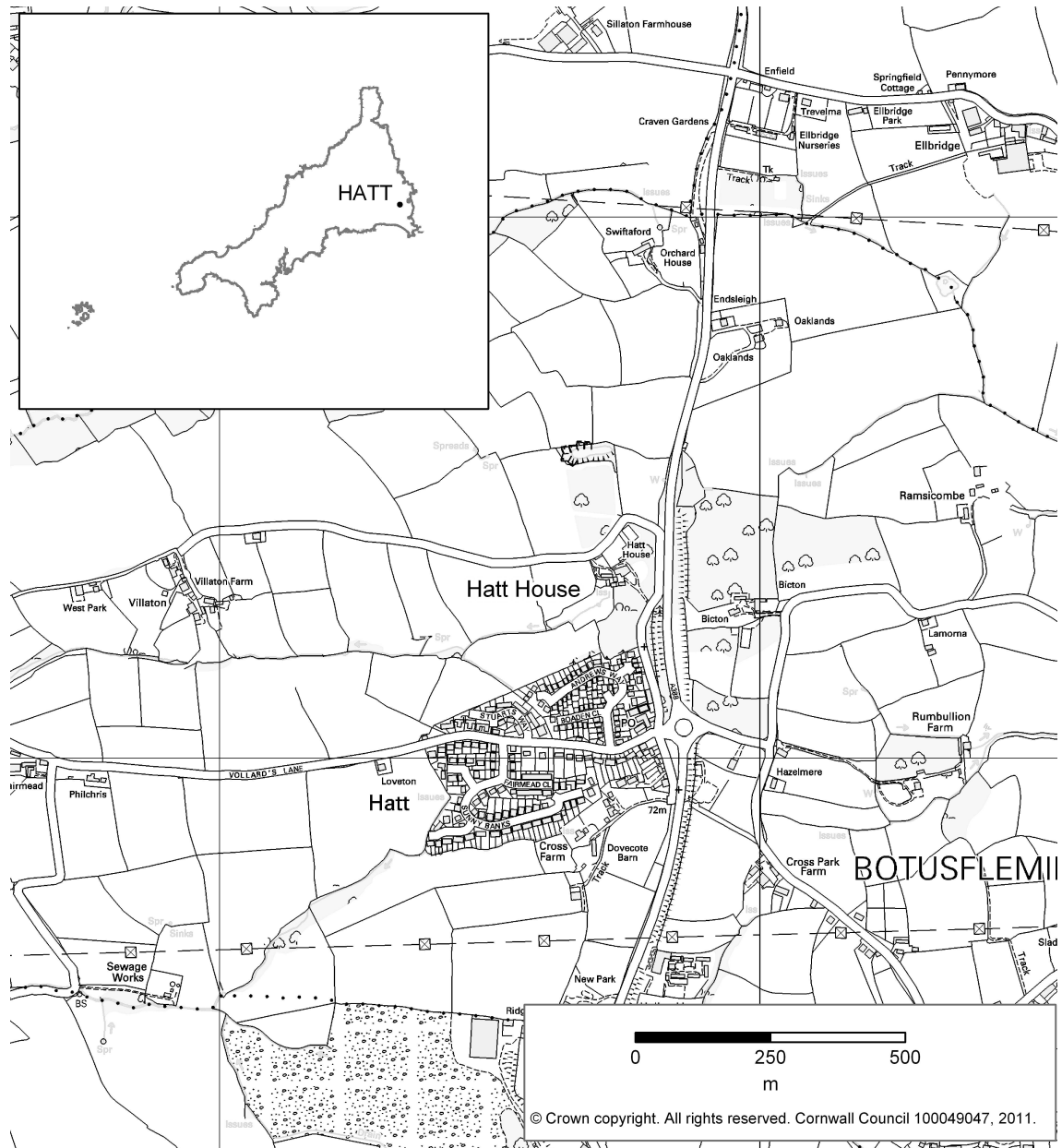


Fig 1 The location of Hatt House.

Mrs Tucker moved the front door to the side of the house and incorporated the hall passage into the drawing room (*ibid.*, 21). This must have been before 1821, when Hatt passed temporarily to the Sherwood family. Evidence of these changes is clearly visible in the fabric. In 1822 a description

of the building refers to the following: two parlours, a drawing room, two kitchens, a larder, three vaulted cellars, a dairy, nine bedrooms and five garrets (*ibid.*, quoting the *Morning Chronicle*, London, 19 June 1822). By the time of the earliest reliable plan of the building, the Botus Fleming



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*Fig 2 Hatt viewed from the south-east, with the eighteenth-century east range to the right and the gable of the older range to its left.*

tithe map of 1844, the layout of the house was as at present.

Following requisitioning by the army during the Second World War, the building was returned to the family in a poor state of repair (Heugh Symons, pers comm). This is probably the context for a number of twentieth-century alterations, including the new ceiling in the drawing room.

## The building survey

The building survey was non-invasive, involving the production of a photographic and descriptive record of the house and the annotation of existing architects' drawings, which form the basis of many of the illustrations in this report.

### The central range

#### *Exterior*

The central range represents the nucleus of the house (Fig 3); this is a low two-storey building covered by a low-pitched slate roof, hipped at the north end. Where the wall fabric is exposed, in the northern part of the range, it is built of random slate rubble with occasional granite and bands of slate, though much of the walling is concealed.

A massive projecting chimney stack dominating the north-east elevation (Fig 4) must be an early

feature; its upper section has been demolished and replaced by a small eighteenth/nineteenth-century brick stack.

In the north-west elevation is a wide ground-floor window opening of five lights, with later brick blocking both above and below (Fig 4). The blocking may be of eighteenth-century date, infilling a larger opening serving a window with a sill almost at the present ground level. The lintel has been replaced with a flat arch, and no datable architectural features of the earlier window remain. The window opening contains a five-light timber mullioned window, each casement being divided into eight small panes; it is probably of early eighteenth-century date but has frequently been repaired. The casements have a variety of early hinges including one 'HL' hinge and an 'H' hinge.

At first-floor level is a three-light mullioned window, probably of nineteenth-century date, which may occupy an earlier opening. The roof is hipped on the north-east side and turns westward to meet the gable of the west range. Its low pitch suggests that it is a replacement. A clear vertical break in the elevation of the central and west ranges and their differing roof lines show that the west range is a later addition.

More than half the south-west elevation of the central range is obscured (Fig 5). At its south end it is hung with modern slates. There is a single nineteenth-century window at ground-floor level

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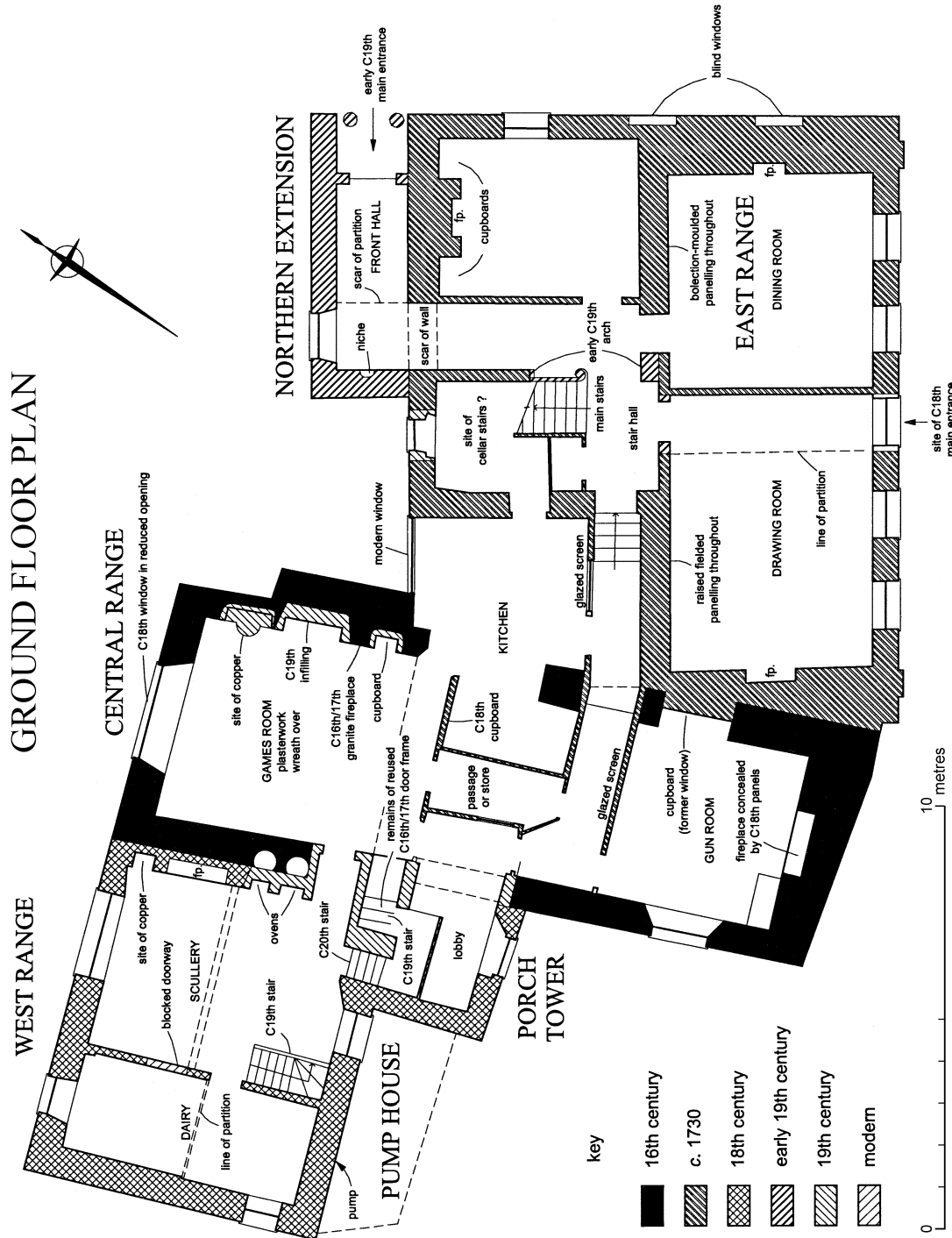


Fig 3 Ground-floor plan showing phases of development and main features (based on plan supplied by Jonathan Rhind Architects).

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and two twentieth-century windows on the first floor; they may be in earlier openings.

The south-east elevation (Fig 2) is blind and is dominated by a large chimney stack; it is rendered and shows incised lines imitating ashlar. There is a large three-stepped mounting block against the wall.

*Interior, ground floor*

The ground floor of the central range comprises a northern and southern room, with a central area containing store rooms and passageways giving access to the porch tower and the east range.

## NORTHERN ROOM (GAMES ROOM)

The northern room is the largest and most prestigious room in this part of the house. It is lit by a large window in the north-west wall, set within an earlier larger opening (described above). The lower part of the opening has been blocked and the original sill level may be represented by a window seat 0.7m below the present sill. The window has lightly-chamfered square mullions and run-out stops to the top, but there are no stops at the base of the mullions. The outer lights have vertical security bars at the centre of each light, set into drilled holes in the top rail of the frame, but divided at the lower ends and nailed to the bottom rail. These appear to be contemporary with the existing window.

In the north-eastern wall is a large granite fireplace, probably of sixteenth- or early seventeenth-century date, with roll-mouldings to the jambs and lintel (Fig 6). At the centre of the lintel the mouldings rise to a peak or spur framing a small hemispherical boss. The wide opening is partly infilled with frogged bricks dating from the late nineteenth century, when the opening was altered to accommodate a range, now removed. In the recess to its left is the projecting semi-circular base of a washing copper.

The ceiling of this room preserves part of an oval seventeenth-century central plaster floral wreath, modelled in low relief but of good quality (Fig 7). There is no cornice, nor any trace of other plasterwork. At the south-eastern end of the room a large beam with moulded fillet, apparently boxed in, crosses the ceiling. This may represent the original southern limit of the room. In the ceiling over the fireplace are five meat-hooks, showing that it was later converted to a kitchen.

The room retains a number of interesting doors. One reset in the southern corner of the room, originally with eight small square fielded panels and a single rectangular glazed panel above, is of high status, and probably dates to the early eighteenth century. A reset two-panelled door of eighteenth-century date in the south-west wall and a four-panelled door of possible early nineteenth-century date in the eastern corner of the room also survive.

## CENTRAL AREA

The central part of the range contains a number of passageways linking the northern and southern rooms, the east range and the porch tower. Central to this area is an enclosed timber-framed passageway whose walls are formed of very roughly hewn vertical studs with diagonal braces and hand-made nails (Fig 8). Some of the timber is re-used; some is certainly pit-sawn. It might be assumed that this rough timber framing was formerly concealed; however, there are no nail marks indicating former cladding. The character of the framing suggests a seventeenth- or eighteenth-century date. The function of the room is uncertain; it is possible that it originally served as a store or walk-in cupboard.

Parallel with and to the south-west of this room is a further passage which opens to the porch and forms part of the entrance lobby within the porch tower. The opening in the side of the early building is now spanned by a large beam, supported at its northern end on a timber partition forming part of the staircase. As the staircase appears to be of nineteenth-century date it is likely that the beam was introduced and the lobby created at the same time. An eighteenth-century two-panelled door opens upon the passage outside the Gun Room.

To the south-east of these rooms is a flagged passage which connects the lobby in the porch tower with the main service passage in the eastern wing of the house. This passage has a timber-framed wall containing a glazed screen providing borrowed light from the passage to the Gun Room. Although impossible to date with confidence, the character of the screen suggests an eighteenth-century date.

## SOUTHERN ROOM (GUN ROOM)

The southernmost room of the central range is now known as the Gun Room. It has a flagged floor; the fireplace in the south-eastern wall has a timber lintel concealed by a damaged eighteenth-century



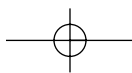
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*Fig 4 The north-west elevation of the sixteenth-century house (left), showing brick blocking of early window, and west range (right).*



*Fig 5 The south-west elevation of the central range.*



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*Fig 6 A sixteenth- or early seventeenth-century fireplace in the north room of the central range.*



*Fig 7 Late seventeenth-century floral plaster wreath in the north room of the central range.*

panelled surround. The lintel may retain mouldings which would assist with dating the fireplace, which could well be of sixteenth- or seventeenth-century date. Traces of paint are detectable on the panelling, suggesting that this was formerly a well-decorated room. To the left of the fireplace is a shallow recess (presumably partly infilled) of uncertain function. A deep recessed cupboard in the north-east wall has hinges of eighteenth-century date; the doors have been removed. The cupboard occupies a wide recess, and it is possible that there was formerly a window in this position.



*Fig 8 Timber-framed passage in the central range.*

#### *Interior: first floor*

The first floor of the central range comprises three rooms and a passage leading westward to the stair and eastward to the east range (Fig 9).

#### NORTHERN ROOM

The northern room is lit by a nineteenth-century window whose recess extends to floor level, suggesting that an earlier window here was larger. In the southern corner are two eighteenth-century two-panelled doors, both with 'HL' hinges. In the south-western wall is a small projecting chimney stack which may replace an earlier chimney in the opposite wall. To the south of the existing fireplace is a projecting post with a gently curving top, now concealed by modern cladding, which may conceivably relate to an earlier roof structure.

From within the roof space it is evident that the



## HATT HOUSE, BOTUS FLEMING: THE EVOLUTION OF A GEORGIAN COUNTRY HOUSE

south-eastern wall of this room is constructed of rough timber studding with diagonal braces, identical to that forming the partitions of the passage below.

## CENTRAL ROOM

The central room is separated from the northern room by a corridor, and is entered through an eighteenth-century two-panelled door with 'HL' hinges. At least two-thirds of the wall consists of timber panelling dividing this room from that on the first floor of the tower. Adjoining the window, the base of a principal rafter passes through the ceiling, boxed in behind modern cladding. This must relate to an earlier roof with a much lower eaves line than at present.

The south-east wall contains a four-panelled nineteenth-century door, and a further blocked doorway is visible in the north-eastern wall. Adjoining this latter doorway is a baulk of masonry (visible in the passage to the north-east) which must surely contain a fireplace; this retains an apparent fireplace opening in its north-eastern elevation also, although this is somewhat unconvincing in appearance, perhaps due to twentieth-century alterations.

## SOUTHERN ROOM

The southern room on the first floor is a large rectangular room, lit by a twentieth-century window, probably set in an earlier opening. Earwaker (nd, 26) records that this was formerly the drawing room. The north-west wall is constructed of timber studwork. In the north-east wall is an eighteenth-century two-panelled door with fielded panels and a large recessed cupboard of early nineteenth-century date, which may occupy an earlier window opening.

At the southern corner of the north-east wall is a remarkable eighteenth-century painted cupboard forming a semi-circular niche in the wall (Fig 10). This has a half-dome in the form of a fluted shell, shaped shelves and flanking pilasters. There are painted winged cherub heads in the spandrels of the arch and a further one at the centre of the shell back. A painted heraldic shield set into the head of the arch shows 'the arms of the Bonds and the Long-Trosses blended' [with those of the Symons] (Earwaker nd, 26). As it is believed that William Symons married Arabella Bond in 1717 and Elizabeth Long-Trosse in 1752, the niche presumably dates from 1752 or later, unless the

shield is a later addition. The rear of this niche is visible from a most unusual cupboard recessed in the south-east corner of the room; it is clear that the recess has been cut into the early house and also into the early eighteenth-century east range, indicating that it is not a primary feature of the room.

The adjoining cupboard has an eighteenth-century two-panelled door opening upon a short passage or corridor within the wall thickness. The function of this passage is uncertain; its position within the wall and its size suggests that it may have been a garderobe, or perhaps the remains of a larger feature such as a stair turret. It seems to have been truncated when the adjacent range was built in the 1740s, after which it was converted into a closet.

In the south-eastern wall of the room, towards the western wall, is a chimneypiece, possibly of eighteenth-century date, but with a nineteenth- or twentieth-century tile and brick insert. This may replace an earlier and more central fireplace which is currently obscured.

*The roof*

The roof over the northern part of the building appeared to be a twentieth-century replacement. The southern part, however, retains an earlier roof supported on tie-beam trusses formed from pairs of principal rafters crossed and pegged together at the apex, with a tie beam at eaves level. Each truss has two queen posts, secured to the principals with pegs; these are likely to be original. There are two levels of purlins resting on the upper surfaces of the principals, but these, together with many of the common rafters, appear to have been replaced or reset. The low pitch and the pegged construction of this roof suggest an eighteenth- or early nineteenth-century date.

Incorporated within the roof structure are the fragmentary remains of a much earlier roof. Parts of at least two trusses survive; the southern one on the line of the partition between the south and central rooms and the northern one a little to the north, represented by a diagonal beam intruding into the central room. Three of the trusses are truncated just above ceiling level, leaving only the stumps of the principal rafters protruding above the ceiling. One of the principals, on the south-west side, survives to the apex and has the remains of a pegged mortice at the top to receive the adjoining

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*Fig 10 An eighteenth-century cupboard with painted cherubs and heraldic shield in the southern first-floor room of the central range.*

rafter. The collar beams, embedded in the existing ceiling and difficult to inspect, are cambered and applied to the faces of the principal rafters with four pegs. Although the timbers appear crude and unsquared, this rough appearance may simply be the result of poor preservation of the sapwood. Close examination shows that the soffits of the timbers were lightly chamfered and had run-out stops, suggesting that the roof timbers were originally exposed to the room below. Only the areas above the collar beams project above the present ceiling; this demonstrates that the earlier roof had eaves at a much lower level than at present and that the first-floor rooms in this part of the house must have been partly within the roof.

### The porch tower

#### *Exterior*

The porch tower is a small square building of two storeys with a pyramidal slate roof, lying in the angle of the central and western ranges (Fig 11). Unfortunately the fabric of this building is entirely concealed by later cladding and its relationship to the two adjoining ranges is difficult to determine. The doorway in the south-east wall is very wide and contains a four-panelled door under a projecting porch with a slate roof. The interior face of the door has four raised fielded panels. The first-floor room is lit by a twentieth-century casement window which may be within an earlier opening. The western elevation of the porch is rendered and partly obscured by a lean-to structure which functions as a pump house.

#### *Interior*

The porch tower contains an entrance lobby extending into part of the central range. Against the south-west wall is a large cupboard with two-panelled doors which have chamfers and run-out stops. It is possible that these doors have been re-used. The north-west wall of the lobby is formed by a staircase to the first floor whose lower flight was rebuilt and realigned in c 1945 (Fiona Symons, pers comm). The upper flight of the stair is supported on re-used timbers from parts of a seventeenth-century ovolo-moulded door frame with scroll-and-flat stops. The stud and brick north-west wall of the cupboard and the timber stud south-east wall are of nineteenth-century character; these walls support the stair, which must also be of nineteenth-century date. The position of the stair in relation to the west and central ranges is awkward, and it seems unlikely that this reflects the original arrangement. The porch tower is likely to have contained an earlier staircase whose precise position is uncertain.

At first-floor level there is a recess in the south-west wall over the stair. This may represent the line of an earlier floor extending north of the present landing, and was perhaps associated with an earlier stair. The east wall of the small office contrived upon the landing is constructed of timber panelling and may be of eighteenth- or nineteenth-century date.



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**The pump house**

The pump house is a single-storey lean-to structure built against the west range and the porch tower. It was originally open-fronted and is supported on granite piers with chamfers and run-out stops. The south-east side has now been enclosed with trellis and timber panelling.

In the south-western part of the pump house is a lead pump head in a timber housing with a granite basin beneath. The pump head appears to be dated '1871'. The roof has remnants of plaster torching between the rafters. The north-east end of the pump house contains no historic features.

**The west range***Exterior*

The west range is a two-storey structure at right-angles to the central range. Where visible, the walls are of local slate rubble with some granite and slate levelling courses. The range is covered by a low-pitched slate roof, half-hipped at the south-western end and crowned by a domed cupola containing a bell and surmounted by a weathervane dated '1949', the cupola being built to celebrate the birth of a son, Heugh Symons (Fiona Symons, pers comm).

The south-east elevation (Fig 11) is partly obscured by the pump house and by a rough-cast render to the upper storey. Within the pump house the lower part of the wall is exposed and consists of random rubble interspersed with slate levelling courses. The door and window are modern.

The stone walling in the upper part of the north-west elevation (Fig 4), above the top of the first-floor window, has a different appearance from the masonry below; the rubble blocks are larger and the slate courses less frequent. This suggests that the roof (or at least the eaves line of the range) has been raised by approximately a metre. The roof is slated and half-hipped to the west.

At ground-floor level there are two twentieth-century windows in earlier openings with segmental arched heads of brick. At the first floor there is a two-light casement window of probable nineteenth-century date, above which a slate panel extends to the eaves. The significance of this panel is uncertain, but it seems possible that it covers a former opening, perhaps incorporating the window opening below to form a loading door.

*Interior, ground floor*

The ground floor of the west range is divided into two rooms, known as the scullery (east room) and dairy (west room).



*Fig 11 The west range, porch tower and pump house.*

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**EAST ROOM (SCULLERY)**

The scullery is lit by a modern window within an earlier opening in the north-west wall. In the north-east wall is a blocked fireplace, to the left of which is a tall arched recess which may have been associated with a boiler or copper. To the right of the fireplace are two small ovens recessed into the chimney breast. The openings for the ovens have slightly arched brick heads and the ovens have metal doors, now sealed shut. In the south-west wall there is a modern door, within an earlier architrave, which opens into the former dairy. A further blocked door with an identical surround immediately adjoining this indicates that the dairy was formerly divided into two rooms.

In the eastern corner of the room is the staircase to the first floor, partly within the porch tower. These stairs were probably inserted in the nineteenth century (see above) but the lower section was re-aligned to communicate with the scullery in the 1940s (Heugh Symons, pers comm).

In the southern corner of the room is a further staircase. The stair has a moulded fillet on the string and may date from the nineteenth century. The balusters have probably been replaced. There is a truncated eighteenth-century door to the cupboard under the stair.

**WEST ROOM (FORMER DAIRY)**

The room recently known as the dairy was formerly fitted with slate shelves (Listing description) but has since been converted into a modern kitchen. This area consisted of two rooms; there is a blocked doorway in the north-east wall.

*Interior, first floor***BEDROOM**

The bedroom occupies the eastern part of the range and is separated from the landing at the head of the stairs by an L-shaped timber plank-and-muntin screen. The muntins and panels are very small and it is unlikely that this structure pre-dates the eighteenth century. The room is approached via an eighteenth- or nineteenth-century four-panelled door.

In the north-west wall of the bedroom is a nineteenth-century window. There is a blocked fireplace in the north-east wall, to the north of which is a recessed cupboard with an eighteenth-century two-panelled door.

The bathroom has been greatly altered in the late twentieth century and no early features are visible.

*Roof*

The roof over the west range is of five bays, comprising four 'A'-frame trusses of eighteenth- or nineteenth-century date. The principal rafters are crossed and pegged at the top and there are halved and applied collars which are also pegged to the rafters. There are two levels of purlins. The roof is whitewashed and the walls are plastered, suggesting that the roofspace was formerly occupied, perhaps for storage, but the floor and stair to the upper floor have been removed.

**The east range**

The east range is a substantial early eighteenth-century house with two show fronts, one facing south-east (Fig 2), the other north-east (Fig 1). It is constructed of brick and is roughly square in plan, under a high-pitched slate roof with a central well. Although attached to the earlier house, the new building lies at an obtuse angle. The new building was treated as an entirely separate entity; no attempt was made to incorporate the older house into the new building as part of an architectural whole. It is uncertain to what extent the earlier building may have been truncated by the new one but, as the surviving older house is modest in scale, it seems likely that some of its elements have been lost.

*Exterior***SOUTH-EAST ELEVATION**

The south-east elevation of the east range (Fig 2) is an early eighteenth-century brick façade of five bays, flanked by projecting brick pilasters to eaves level. The brickwork is laid in Flemish bond with occasional burnt headers, overlying a low granite plinth. There is a projecting plat band at the first floor. The eaves cornice has low relief decoration and is probably a modification (see below). The rainwater goods are cast-iron and of nineteenth-century date.

The ground-floor windows have flat arches of rubbed brick, and moulded sash boxes that are slightly recessed from the plane of the wall but still exposed. The sashes have 12 panes and no horns.

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The central window is in the position of the former front door. This is evident from the flat arch above it, which extends 0.17m beyond each side of the window. The window opening is 0.31m wider than the others in the front, indicating the width of the former doorway. As there is no break in the granite plinth at this point, a section of plinth has presumably been introduced to fill the former doorway.

The first-floor windows are flush with the plane of the wall and have lead-covered timber lintels rather than brick heads. It seems probable that the heads were formerly concealed by an earlier, deep timber cornice. All the windows on this elevation have flush timber sills covered with lead rather than projecting sills.

The high-pitched slate-covered roof is hipped on all sides, with a central well and two slate-covered dormers facing south-east. The dormers have nineteenth- or early twentieth-century sash windows with horns; however the openings may be original. Two chimney stacks flank each end of the roof, which has *fleur-de-lis* terracotta ridge tiles dating from the late nineteenth century. A photograph preserved in the house shows the building in the 1860s, prior to re-slating. At that date the roof was covered with very small slates except for the hips, which consisted of very large mitred slates.

## NORTH-EAST ELEVATION

The north-east elevation (Fig 12) is also of brick and was formerly of three bays. It has been extended to the north into a fourth bay, which contains the present main entrance. There is a projecting plat band at the first floor, which continues over the extension. The eaves cornice has low relief decoration of the same type as the south-east front and is continued over the extension, showing that it is also a modification. The 12-paned sash windows on both floors have flat arches of rubbed brick. If, as suggested above, an earlier timber cornice existed on the main front, it was not continued across this side of the house. The windows have moulded sash boxes flush with the wall plane, with projecting timber sills. In the southern two bays the windows on both storeys are blind, as a chimney stack rises between them.

The northern bay (the extension) contains a recessed porch with free-standing columns and door case within. The door case has Tuscan pilasters and a very shallow entablature. The slim style of the columns and the reeding around the opening suggest that the porch is of early nineteenth-century date. The door has six raised-fielded panels. The window over the porch has brick blocking beneath its sill, which may indicate that the sill was originally some 0.4m lower. To the north of this window, about 0.4m above present sill



*Fig 12 The early eighteenth-century east range, with later extension and porch to the right.*

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level, the wall is constructed of larger and newer bricks, indicating that it has either been rebuilt or is a later alteration. It is possible that the extension was originally only a single storey high, perhaps with a panelled parapet above.

#### NORTH-WEST ELEVATION

Only the western bay of the Georgian range remains exposed; this represents the original north-west wall of the house (Fig 13). The wall is not rendered but has been painted to match the extension. The original roof line survives to the south of the extension and the line of it is evident from the chimney stack.

The staircase is lit by a tall sash window with an arched head containing intersecting 'Gothick' tracery. The masonry above this window is rebuilt, suggesting that the arched head may be a modification of an earlier opening. Above this is a sash window with a square head immediately below the eaves, lighting an upper landing. Just below the main stair window the flat arch of a partially blocked opening is visible. This appears to have been a window lighting the area beneath the staircase, or possibly a doorway. It is possible that this opening is related to the former cellars, the location of which is uncertain. The present opening to the larder is a later modification.

This elevation of the northern extension contains a single round-headed sash window to the entrance hall with a top panel of intersecting 'Gothick'

tracery. There are two sash windows, without horns, on the first floor. The wall is rendered and decorated with incised lines imitating ashlar masonry; there is a projecting plat band at first-floor level. The roof is low-pitched, covered with slate and concealed to the east by a parapet.

Adjacent to the west wall of the east range is a lean-to with a steep roof that connects the range to the older house (the central range). There is a twentieth-century window to the ground-floor kitchen and a small nineteenth- or twentieth-century window to the first-floor room.

#### *Interior, ground floor*

#### SOUTH ROOM (DRAWING ROOM)

The large rectangular drawing room is lit by three sash windows in the south-east wall. These have thick glazing bars with hollow chamfers. The eastern window is an early nineteenth-century replacement (see above). The two western windows are probably original but may have been reset when the façade was altered. All three have shutters (now sealed) and panelled window seats. The fireplace in the west wall is modern. A large rectangular panel above the fire has more delicate mouldings than those below, which may show that it once contained a painting. This may survive behind later decorative finishes.

There is raised fielded panelling to all four walls, both above and below the dado rail (Fig 14). The



*Fig 13 North-west elevation of the east range, including northern extension, added in the early nineteenth century (left).*

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*Fig 14 The east range drawing room showing the raised fielded panelling.*

panelling on the north-east wall shows signs of having been reset and has been re-assembled, resulting in additional joints in the dado rail. At the east end of the north-west wall is a six-panelled door with raised fielded panels to the interior of the room and moulded panels facing the hall. The door has a hollow, reeded architrave. The architrave, and probably the door, are of early nineteenth century-date and were probably inserted when the original entrance passage was removed and the principal entrance moved to the north-east side of the house. An anomaly in the width of the panelling to the left of the door, and the evidence of alterations to the panelling, probably also relate to the removal of the former passage.

The present ceiling was inserted in the twentieth century following the collapse of the earlier one, probably through wartime neglect (Heugh Symons, pers comm).

#### EAST ROOM (DINING ROOM)

The dining room is a smaller room of only two bays. It is lit by sash windows in the same style as those in the drawing room. There are scalloped pelmets of early nineteenth-century date over the windows. In the north-west wall is a six-panelled door with raised fielded panels both internally and externally, the more ornate detail facing the room. The fireplace has a marble lintel and jambs forming an eared surround enriched with a moulding decorated with waterleaf ornament. The opening

has been infilled with a late nineteenth- or early twentieth-century cast-iron insert.

The walls are covered with bolection-moulded panelling forming large rectangular fields above a moulded dado rail (Fig 15). The central part of the panelling on the south-west wall is broken forward slightly, which may be intended to reflect the opposing fireplace. The mouldings on the panelling vary throughout the room, suggesting that they date from more than one period. Some of the panels have bold rolls and ogee mouldings typical of the early eighteenth century; others have more slender rolls and flat planes, probably of later date. The dado rail is also of more than one type, the earliest surviving sections being on the south-west wall. The original mouldings may have been removed to accommodate furniture, or were possibly damaged during the Second World War and replaced afterwards. There is unusual boxing at the junction of the walls and ceiling which may conceal the remains of an eighteenth-century plaster cornice.

#### NORTH ROOM (STUDY)

The study, a small room north-west of the dining room, is lit by a single sash window. The window sashes are probably of nineteenth-century date, with narrow, delicately-moulded glazing bars. The shutters are sealed shut. At the south end of the south-west wall is a six-panelled door with fielded panels to the interior and mouldings facing the hall. The broad, flat architrave of the doorway is of

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*Fig 15 The east range dining room showing bolection-moulded panelling.*

eighteenth-century date. The room has no panelling; the walls are enriched by an eighteenth-century cornice and a moulded dado rail.

The fireplace in the north-west wall has a marble surround and a timber chimneypiece with applied decoration which may have been added in the twentieth century. The opening contains a good early nineteenth-century cast-iron hob grate. The chimney breast is flanked by cupboards, each of which has an oval pediment with a keystone, above which the cornice breaks forward over each cupboard.

#### HALL AND MAIN STAIR

The hall consists of a corridor lit from the north by an arched sash window in the northern extension, which probably dates from the early nineteenth century. At the north end of the hall there are two parallel scars in the ceiling and breaks in the cornice that presumably reflect removal of a section of rear wall when the northern extension was built. Beyond this the corridor turns to the north-east to connect to the early nineteenth-century front door. A further scar runs north-south across the ceiling in this section of the corridor, perhaps showing that there was formerly a screen defining a lobby within the new main entrance. Opposite the main door there is a small concave niche.

At the south end of the corridor the south-western wall of the corridor has been cut away to form a broad oval arch, through which the corridor extends to the south-west beyond the foot of the stair (Fig 16). This arch is supported by square panelled pilasters with moulded and fluted entablatures and has a moulded keystone with bead ornaments. Comparison of different sections of the handrails of the stair (below) reveals that this arch is a modification to the house, probably dating from the late eighteenth or early nineteenth century.

The main stair, of dog-leg form with broad shallow flights, dates to the early eighteenth century (Fig 17). It has a closed string, thick turned balusters and square newels with flat tops and acorn pendants. Half-balusters are placed against the sides of the newels. The original handrail is square in section with delicate mouldings; the length within the arch, extending into a scroll at the foot of the stair, is slightly cruder and is contemporary with the insertion of the arch.

To the south-west of the main stair is a built-in cupboard with a two-panelled door having raised fielded panels and 'HL' hinges and a raised fielded panel above. This appears to be an original feature.

#### KITCHEN

The kitchen is reached from the east range by a service passage passing under a high arch in the south-west wall of the stair hall. The passage descends a short flight of stairs and links with the central range of the older house. It is lit by borrowed light from the kitchen through a glazed screen with chamfered glazing bars. The kitchen lies within a lean-to structure linking the older and newer parts of the house; its west projects into the central range and a large baulk of masonry

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*Fig 16 The early nineteenth-century arch in the stair hall of the east range.*

representing part of the north-east wall of the central range projects into the room from the south-west wall. This is finished with a bold early eighteenth-century moulding.

The kitchen is approached from the service passage to the south-east by a large two-panelled door with bolection mouldings, raised fielded

panels and 'HL' hinges. The four-panel door to the northern room of the central range (Games Room) is probably of early nineteenth-century date. The north-east wall contains a modern door with an older glazed panel above, which leads to a store or larder under the stair in the east range. The kitchen is lit from the north by a large modern window. In

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*Fig 17 The eighteenth-century main stair in the east range.*

the north-west corner of the room is an eighteenth-century wall cupboard with 'HL' hinges and mesh doors. The central position of the kitchen in relation to the other parts of the house and the quality of its decoration and furnishings suggest that this room may have served as the butler's pantry.

The adjacent larder under the main stair is lit by a window in the north-west wall beneath the main stair window. The window occupies part of a larger partially blocked opening, perhaps a former doorway. Remains of a timber screen dividing the room survive at ceiling level. Plinths at work-top level against the north and east walls may conceal earlier features. This room seems to be the most likely location for the entrance to the 'three vaulted cellars' referred to in a newspaper advertisement of 1822 (Earwaker nd, 21). No evidence of these cellars has yet been discovered and no-one living remembers them; their location remains a mystery.

### *Interior, first floor*

This floor closely matches the layout of the ground floor, with two principal rooms in the south-eastern part of the house, separated by a lobby and a dressing room (Fig 9). A further bedroom lies over the study, with an adjoining room corresponding to the entrance corridor and a bathroom in the northern extension.

### LANDING

The first-floor landing at the head of the stairs has arched openings to the south-east and north-east, and a smaller door connecting with the older house. The arches are oval-headed with panelled pilasters, panelled soffits and delicate mouldings similar to those of the arch on the ground floor. The southern arch opens onto a small lobby between the doorways of the two principal rooms. Within this lobby it is evident that the southern arch has been cut through a section of raised fielded panelling below the dado rail. It seems probable that both arches on this floor were inserted during the alterations to the house in the late eighteenth or early nineteenth century. Both the lobby and the landing retain plaster cornices and it is likely that there were formerly doorways in these positions.

### SOUTH-WEST ROOM (BEDROOM AND ADJOINING DRESSING ROOM)

The southern bedroom is lit by two sash windows with early nineteenth-century panelled reveals and shutters with delicate mouldings. The room is heated by a fireplace with an early nineteenth-century reeded timber surround. The mantelshelf and applied ornaments were perhaps added in the twentieth century. The room retains a coved cornice of early eighteenth-century type; the walls have been clad in later boarding.

The entrance door from the hallway is an eighteenth-century two-panelled door with raised and fielded panels internally and an early nineteenth-century reeded architrave. The door to the dressing room has two raised and fielded panels externally (that is, to the dressing room), and retains an original brass lock box with drop handles. The reeded architrave of this door is also of early nineteenth-century date.

The dressing room is lit from the south by a sash window with shutters, which has original glazing bars with hollow chamfers. Below the window is a built-in vanity unit, possibly of early nineteenth-



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century date, and if so of great interest. The north end of the room is divided by two panelled screens forming a cupboard separating the dressing room from the lobby. The northern screen has large panels raised and fielded on one side only; the southern screen is constructed of fragments of re-used fielded panelling.

## EAST ROOM (BEDROOM)

This large rectangular room overlooks the front lawn, seen through two sash windows with large hollow chamfers and no shutters. The door to the lobby has two raised and fielded panels externally, 'HL' hinges and an early lock box and bolt arrangement. The fireplace in the east wall has a plain timber surround and an early nineteenth-century hob grate.

## NORTH ROOM (BEDROOM)

This room lies over the study and is approached by a short passage. Its door has six panels raised and fielded on both sides. In the north-east wall of the room is an early nineteenth-century sash window. There is a moulded cornice and a timber chimney piece without applied ornament which may be of eighteenth-century date. The fireplace has a late nineteenth- or early twentieth-century cast-iron insert. In the north-west wall to the right of the fireplace is a doorway to the upper part of the northern extension which now serves as a bathroom. This has four panels raised and fielded internally. In the recess to the left of the fireplace there is a nineteenth-century fitted wardrobe.

## NORTH-WEST ROOM (BEDROOM)

This bedroom corresponds with the corridor on the ground floor and was apparently unheated. It extends into the northern extension and is lit by a nineteenth-century sash window with very fine mouldings, similar to those of the adjacent bathroom window. There is a four-panelled nineteenth-century door to the bathroom. The six-panelled door to the landing and passage has raised and fielded panels externally and a broad flat architrave. The cornice, which is similar to that of the landing and stair, is probably of eighteenth- or early nineteenth-century date, perhaps relating to the major alterations to the house at this time.

## BATHROOM

The bathroom serves both the north-east and north-west bedrooms and is lit by two early nineteenth-

century sash windows with very fine mouldings. No other historic features remain.

## LINK CORRIDOR TO THE OLD HOUSE

The older parts of the house are reached through an early nineteenth-century doorway on the first-floor landing with a reeded architrave; its two-panelled door with raised fielded panels is probably earlier.

Beyond is a steep staircase which descends to the first-floor area of the lean-to structure between the east and central ranges of the house. The area has been subdivided into several awkwardly planned rooms, now serving as bathrooms, a lavatory and a passage. Many of these areas have no external windows and are lit either by borrowed light or by skylights.

## BATHROOM

This bathroom lies immediately north-west of the steep stair from the first-floor landing and is separated from it by a panelled timber partition with ovolo mouldings, similar to those on the eighteenth-century doors and partitions elsewhere in the house. The partition incorporates the string of the stair and is clearly contemporary with it. The bathroom has a two-panelled door contemporary with the partition, but no other features of historic interest. This room is also lit by a skylight and there is a glazed panel in the south-west wall providing borrowed light.

The passage from the foot of the stair turns to the north-west beyond the corner of the bathroom, under a wide archway. This arch may have been broken through an earlier partition, and it is probable that the passage originally ran directly to the central range, where a doorway with jambs of ornate fielded panelling opens into the southern first-floor room. The jambs are awkwardly splayed and it is possible that the panelling may have been re-used from elsewhere.

Adjoining this doorway is a feature resembling a chimney stack constructed of exposed rubble stone, crudely pointed in twentieth-century cement. This contains a blocked, or perhaps false, fireplace opening with a raised hearth of similarly unconvincing character. If there was a fireplace on this side it clearly relates to a different arrangement of rooms from that presently existing. This baulk of masonry may well be a chimney stack; however, it seems more likely to have served the adjoining room in the central range via an opening in its south-western face. Beyond the stack the passage

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was divided by a modern diagonal partition to form a further bathroom. The partition has now been partially removed. Apart from a further blocked doorway to the central range no other historic features remain.

### *Interior, second floor*

#### LANDING

The main staircase rises to a spacious landing on the second floor, with a canted ceiling under the roof of the stair hall. At the top of the stair is a linen cupboard, the top part of which is shaped to fit against the canted ceiling. The cupboard has two two-panelled doors with two single-panelled doors above, made to close so that their frames stand proud of the front of the cupboard. All the hinges are 'H' hinges and it seems likely that this cupboard is of eighteenth-century date.

At the south end of the second-floor landing there is a walk-in box room or drying room which is almost certainly an original feature of the house. The door to the cupboard has two panels with simple mouldings, a broad moulded architrave and 'HL' hinges. In the upper part of the door is a sliding glazed panel with thick chamfered glazing bars and run-out stops. This could formerly be raised and lowered to allow ventilation. The original timber hanging pegs survive inside the cupboard.

#### SOUTH AND EAST ROOMS

The southern and eastern rooms on the second floor have canted ceilings beneath the roof. The structure of the roof is not visible. Each room is lit from the south-east by an early twentieth-century sash window set within an original dormer. Both rooms have two-panelled doors from the second-floor landing retaining their 'HL' hinges. In the north wall of the eastern room there is a second two-panelled door with 'HL' hinges which gives access to the roof space and the box room.

#### ROOF

The roof over the southern part of the east range has a ridge aligned south west – north east, from the rear of which a roof projects at right-angles to cover the stair hall. Over the north-eastern part of the house a further roof projects parallel with the roof of the stair hall, and then turns to the south west to overlap that roof, forming an 'O'-shaped roof surrounding a central well. The well is drained by

an internal gutter venting in the roof above the centre of the north-east elevation. Although the roof appears from the exterior to be of a single phase, it is clear from a close inspection that the whole north-eastern part of the roof has been re-modelled.

The north-eastern part of the roof is now a box room. Through a hole in its south-west wall the relationship between this roof and the slightly lower roof of the stair hall is clearly visible. The roof of the stair hall is enveloped by the present roof, but is clearly earlier than it; the upper surfaces of the stair hall rafters bear the nails and marks of battens for slating, showing that this plane of the roof was formerly exposed. The timbers of the overlapping roof are also clearly newer than the timbers below them. The roof over the box room seems in fact to have been constructed in two separate phases.

The roof over the southern part of the box room is supported on two truncated trusses. One of the principals bears traces of a recessed halved joint for a collar, now removed, which was secured by both pegs and nails. This collar and one half of the truss must have been removed when the roof was re-modelled and the present vertical wall and doorway providing access to the roof well were inserted. This observation suggests that originally two parallel roofs projected over the northern parts of the east range, with a valley between them.

The later roof over the northern part of the box room has simple A-frame trusses. Many of the rafters have been renewed and the roof re-slatted. It is difficult to date but may be either of late eighteenth – early nineteenth or later nineteenth-century date.

## Discussion

### **The central range**

The earliest fabric identified at Hatt House lies in the central range of the early house. Although very few precisely datable features are now visible, this part of the building may have originated as a cross-passage house with either two or three rooms on the ground floor. The large granite fireplace in the northern room of this range closely resembles sixteenth- and early seventeenth-century examples from merchants' houses in Plymouth and the surrounding parishes, as at Truelove Farm, Shaugh Prior, Devon, where a similar spur motif

HATT HOUSE, BOTUS FLEMING: THE EVOLUTION OF A GEORGIAN COUNTRY HOUSE

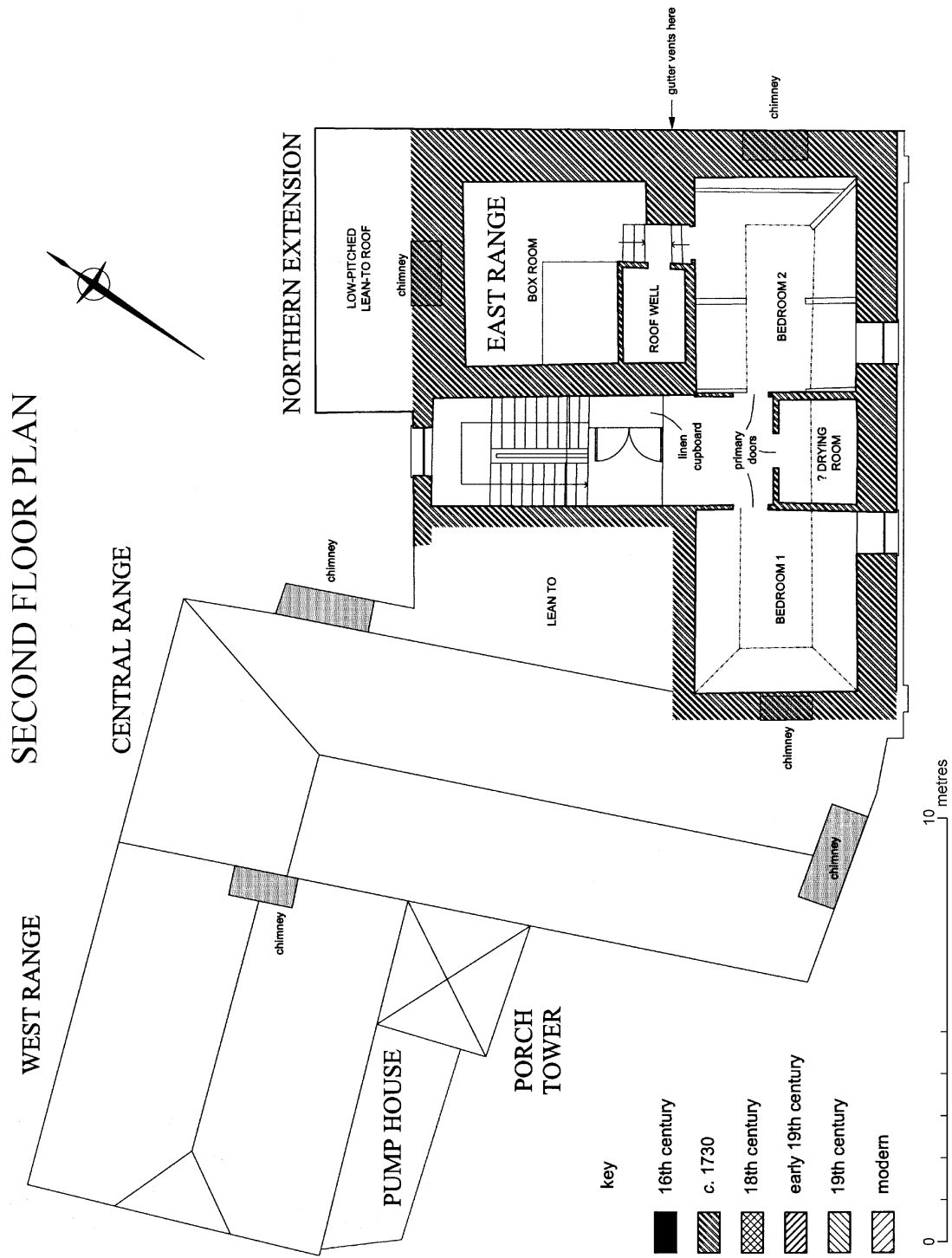


Fig 18 Second-floor plan showing phases of development and main features (based on plan supplied by Jonathan Rhind Architects).

RICHARD W PARKER, PRU MANNING AND GARY YOUNG

surrounding a central boss occurs. This fireplace is likely to have been one of the grandest in the house and may identify this room as either the hall or the parlour. The large window opening in the north-western wall also demonstrates the high status of this room, although the present window is of eighteenth-century date.

The room seems to have retained its high status into the late seventeenth or early eighteenth century, when a wreath of plasterwork was added in the centre of the ceiling. The ceiling joists may well predate this plaster and might provide additional dating evidence, as well as assisting to elucidate the plan. Soon after the addition of the plasterwork, probably following the construction of the new eastern range of the house, the room appears to have become a service room or kitchen.

The central part of the range has been much altered and no trace now remains of the presumed cross passage. A re-used sixteenth- or seventeenth-century door frame survives beneath the stairs in the porch tower. The rough, timber-framed partitions in this area seem to relate to the addition of the early eighteenth-century east range, some parts of which extend into this building. The narrow timber-framed rooms and passages may have provided stores associated with the new kitchen, in addition to new circulation routes about the building.

The Gun Room at the south end of the central range preserves a large fireplace with a timber lintel. This may well date from the sixteenth or seventeenth century, but the stops and mouldings of its lintel are obscured by later panelling. A timber lintel might suggest a lower status room than that at the north end, and this room may have been an early kitchen. It was later fitted out with good-quality furnishings including a glazed cabinet and it perhaps functioned as a servants' hall in the eighteenth and nineteenth century.

The first-floor rooms preserve little evidence of any fabric earlier than the eighteenth century. The principal survivor appears to be a section of an early roof, comprising two mutilated trusses over the central part of the building. The trusses are badly decayed but seem to have been decorated with chamfers and run-out stops, suggesting that they were visible within an open roof structure. The use of applied collars (unless these were later additions) and the apparent absence of sockets for purlins within the blades of the principals, suggests

that the roof is of sixteenth- or seventeenth-century rather than medieval date.

The trusses present a problem for the interpretation of the early house, since they clearly relate to a lower eaves level, perhaps as much as 1m below the present eaves. Any first-floor rooms must thus have been partly within the roof. The only place where the masonry of the range can currently be examined (at the north end of the range) shows no evidence of raised eaves, and it may perhaps be concluded that the building had a complex roofline with different roof-structures over different elements of its plan.

The low eaves line might also suggest that there was formerly a single-storey element to the building, such as an open hall; however the surviving roof timbers show no evidence of sooting, such as might be expected over a medieval open hall, and no other evidence is visible due to later internal and external cladding. The only other feature that may suggest an early date for the house is the curious cupboard at the south-east end of the range, which might conceivably represent either a garderobe or a stair turret. If so, this end of the house is likely to have been fully storeyed. If the house was first constructed in the sixteenth or seventeenth century it may have been fully storeyed from the first and evidence of earlier structures may remain only below ground.

The present layout of the rooms in the central range is most likely to reflect rebuilding in the eighteenth century. This is suggested by the large number of internal doors of the two-panelled type popular during this period, and by the construction of the internal partitions, where these could be examined. Another important feature is the painted shell-headed cupboard in the southern first-floor room, which may commemorate a mid eighteenth-century marriage. This cupboard is cut into the side wall of the new house and must have been added after the eaves were raised and the roof replaced. The present roof could not be closely examined but may well be of eighteenth-century date.

It is uncertain whether the refurbishment of this range preceded or was contemporary with the construction of the new house. The provision of good-quality plasterwork in the main ground-floor room may indicate that the old house had already been re-modelled in a fashionable style before being superseded by the grander rooms in the new house. The relationship of the two buildings is complex, however, and it seems certain that the

## HATT HOUSE, BOTUS FLEMING: THE EVOLUTION OF A GEORGIAN COUNTRY HOUSE

construction of the new range profoundly affected the fabric and layout of the older building.

### Porch tower

This building has been severely altered and details obscured by modern alterations, with the result that its relationship with the adjacent buildings cannot be determined. No clearly datable features remain visible and even the function of the building is uncertain. The position of the tower in relation to the presumed site of the cross passage may suggest that it served either as a porch tower on the front of the early house, or a stair tower at its rear. At present it serves as the main entrance to the service wings of the house, through a wide doorway in its south-eastern wall.

There is no clear structural division between this building and the west wing and it may therefore be assumed that the two structures are contemporary. The existing staircase lies between the two structures. This stair is clearly an addition, since it conflicts with the original floor level in the tower, evidence of which is provided by an offset in the south-west wall. The stairs were probably inserted in the nineteenth century; their previous position and configuration is unknown.

### West range

This building, like the porch tower, has been severely altered and its fabric is largely obscured by later additions and cladding. A clear structural break between this range and the central range demonstrates that this part of the building is an addition to the earlier house. The position and layout of the range initially suggest that this may be a seventeenth-century wing added to the rear of the early house to provide additional accommodation, perhaps in association with a grand new framed stair in the adjoining tower. Unfortunately no corroborative evidence has been observed which supports this interpretation.

The possibly nineteenth-century ovens which survive on the ground floor strongly suggest that this wing housed one of the two kitchens mentioned in an advertisement of 1822 (Earwaker *nd*, 21); it may thus be interpreted as a service range. Unfortunately no features earlier than the eighteenth century have been identified within the range, and these for the most part consist of two-panelled doors with 'HL' hinges such as survive

throughout the entire house. The roof structure probably dates from the late eighteenth or early nineteenth century, but appears to have been raised above an earlier eaves line to provide extra accommodation in the roof space (now abandoned and accessible only by a hatch). The lower parts of the building may thus conceivably be earlier. Whether this range pre-dates or post-dates the addition of the east range remains uncertain and in the absence of evidence to the contrary a later date has been adopted in the phased plans.

### East range

The east range of the house may have been constructed between 1730 and 1740, possibly as a result of the changing status of the family. William Symons became High Sheriff of Cornwall in 1735 (Ivall 1992), and this provides a likely context for the enlargement and improvement of the family home at Hatt.

The new house is an example of a type of gentry house popular in the late seventeenth and early eighteenth centuries. These were tall, square houses, often of brick, with a rectangular, double-pile plan and steeply pitched slate roofs broken by dormer windows. Examples of such houses from Devon have been discussed as a group by Bridget Cherry (Cherry 1988). The larger houses of this type, such as Wembury (demolished), Kitley or Puslinch (all near Plymouth), could be extremely grand; however many smaller houses or villas were constructed at the time in the suburbs and villages surrounding Exeter and Plymouth. Tothill House at Plymouth (demolished) was a small house with a five-bay frontage closely comparable with that of Hatt (Gill 1993, 181). Several houses of similar size still survive at Exeter; these include Little Duryard in St David's parish, Bellair in St Leonard's (altered), the Chancellor's House in The Close and Franklyn in the western suburbs (Cherry 1998, 123–6). Many of these smaller houses were additions to older buildings which may have been subsequently reduced to the status of service wings. This seems to have been the case at Hatt.

The new house provided prestigious new reception rooms on the ground floor and bedrooms above, with a grand formal front to the south-east. To what extent the earlier house may have been truncated by these additions is unknown; the modest scale of the surviving parts of the earlier

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house may suggest that some high-status elements of the early building have been lost.

Although the east range is a compact and well-planned block which is structurally distinct from the earlier ranges, it would clearly be incomplete without them since it has no integral kitchen or service rooms and depends on the older house for these facilities. The 'three vaulted cellars' described in an advertisement of 1822 (Earwaker nd, 21) would be typical of a house of this type and date, and must surely lie under this range. These cellars might have provided additional service rooms; unfortunately they are now lost and cannot be examined.

Nowadays the principal entrance to Hatt from the direction of Saltash and Plymouth leads to an entrance drive with a fine view of the show front of the new house, which faces south-east. It seems likely that this approach was created in the early eighteenth century; the older house seems to have been served by a lane to the north. The new approach was achieved at the expense of a very awkward junction with the older house. One might wonder whether further extensions sweeping away the older house may have been envisaged. The relationship of the old house and the new house is complex; some of the rooms in the older building, such as that containing the painted niche, clearly remained of high status after the erection of the new range but were not fully integrated with it. These rooms may well have been used for the transaction of estate business.

Later alterations have generally been sympathetic, and the east range remains an exceptionally well-preserved and very attractive example of its type. The interior retains many historic features typical of the early eighteenth century, such as bolection-moulded and raised-fielded panelling to the principal rooms, a magnificent dog-leg staircase and many two- and four-panelled doors. A wide variety of types of door remain: some have raised-fielded panels and are likely to have been associated with high-status rooms, some have ovolo mouldings and flat panels; a distinct group have chamfers with run-out stops and occur in contexts within both the old and the new house. Reeded mouldings found within the new house may date from a phase of alteration of

c 1800 when the main doorway was removed to the side of the house and the archways on the staircase were introduced. The survival of historic domestic fixtures such as these in such quantities is increasingly rare.

The architectural importance of Hatt House is mainly concentrated in the newer part of the house. The older house has been severely altered and, although more ancient, is neither as well preserved nor as architecturally distinguished as the eighteenth-century east wing. The central and western ranges contain a number of interesting and historic features, but successive changes to this part of the house have compromised the integrity of the building. By contrast, such a large proportion of the east range survives unaltered that it may be taken as a model example of its type.

### Acknowledgements

We wish to thank the house owners, Heugh and Fiona Symons, and M Sturley of Jonathan Rhind Architects, for commissioning the survey. The project was managed by John Allan for Exeter Archaeology (EA). The building study was carried out by R W Parker and P Manning, the photographs were taken by G Young and the illustrations prepared by T Ives (EA). Thanks are also due to P Herring and E Berry for comments and observations upon the text.

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# A copper ingot from east Cornwall

MALCOLM TODD

In July 1985 a copper ingot was recovered from the seabed between Looe and Looe Island by a locally-based boatman. The finder noticed a bright green object lying in shallow water on a bed of stones. No other objects were in evidence. The ingot was brought ashore at Looe and photographed. Unfortunately, it was subsequently disposed of in the local community.

The ingot was of 'ox-hide' form, measuring 42 cm by 56 cm overall, and weighed 72 kg. One face was smooth and probably lay on the seabed; the other was pitted and discoloured.

Ingot of this type are rare in Britain. Most of the recorded examples have come from the Mediterranean and Aegean. Those with datable associations belong to the late second millennium BC. Cyprus is commonly seen as a major source of copper, although fewer ingots are known on the island than on the Aegean coast of Turkey and in offshore waters. Several have been recorded in Sicily, one of which is held in the museum at Catania and another at Gela. Both are unpublished.

Other metal finds from the south west originated in the Mediterranean world. Twenty-eight Bronze Age bronzes were recently recovered from the seabed off Salcombe, Devon, presumably from a shipwreck. The objects include 11 complete or fragmentary swords, three spearheads, five axes and two gold ornaments. The date range is 1300–1150 BC. The closest analogies occur in Sicily. To date only brief accounts of the assemblage have been published (Parham 2006; Dunkley 2007) and it is at present in private hands.

Only 3 km east of the Salcombe estuary, at Moor Sand, a wreck has yielded seven late Bronze Age bronzes which originated in eastern France or

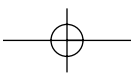
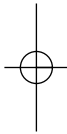
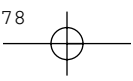
northern Italy (Muckelroy 1980; 1981). These objects fairly certainly came from a wreck of which no other trace was recovered. Hook-tang blades of Cypriot origin have been found at Torrington (Branigan 1983) and off Sidmouth, the latter in a group of five bronzes (Pearce 1983, fig 2b). A double axe of Aegean type has also been found at Topsham (Hawkes 1936–7), although axes of this type also occur in western France.

## Editor's note:

A bronze ingot recovered by a diver from the sea bed off Looe Island was reported in 1985 (Beagrie 1985). This was also of 'ox-hide' form but substantially smaller than the copper ingot reported on here.

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# Grass-marked pottery found at Trelissick, Feock

SEAN TAYLOR AND CARL THORPE

*During the spring of 2008 the Historic Environment Service undertook archaeological recording in mitigation of drainage works being carried out at Trelissick House, a Grade II\* Listed Building. During the fieldwork a ditch was recorded that contained a number of sherds of 'grass-marked' pottery of early medieval date, one of which was marked by a cross.*

Cornwall County Council Historic Environment Service was commissioned by the National Trust to undertake archaeological recording in mitigation of drainage works being carried out at Trelissick House (SW 83756 39516), Feock, a Grade II\* Listed Building. During the fieldwork, a ditch was uncovered in the grounds to the west of the house (Fig 1). This was found to contain a number of sherds of bar-lug pottery, dating to the early medieval period. The discovery of stratified pottery of this type is significant because it is the first to be directly linked to a settlement with a *tre*-place-name, generally accepted to denote settlements of early medieval origin (Padel 1985). The results of the project have been set out in an archive report (Taylor 2008) and this short note focuses on the discovery of the pottery.

## Trelissick 'grass-marked' finds

A trench 30m long by 2m wide was excavated through the parkland to the west of Trelissick House (Taylor 2008), between the courtyard wall and the garden to the south of Home Farm House. A number of features were found cut into natural clay, the most important of which was ditch [18], which measured 0.7m wide and 0.28m

deep (NGR SW 83667 39508). The ditch crossed the trench north-west to south-east with a suggestion that it may have been curving to the east, although the length exposed by the trench was too limited to be certain. The fill of the ditch contained sherds, distributed evenly throughout it, of 'Grass-marked' bar-lug pottery, a style which dates from the seventh to eleventh centuries AD (Thorpe 2008).

Fifteen sherds of 'Grass-marked' ware were recovered from the ditch. Three of the sherds contained the distinctive lug characterising this pottery type and two of these were rim-sherds. The vessels represented in the assemblage are all bar-lug vessels of medium size. There are a minimum of two vessels with a gabbroic fabric represented within the collection. One of the bar-lug vessels has an incised graffiti cross + on its exterior surface (incised prior to firing), perhaps indicating some association with a Christian community, although it may also possibly be a manufacturer's mark (Figs 2 and 3).

No actual 'grass-marking' was observed. This may be due to the fact that no basal sherds were present, or it could be that this material dates from towards the end of the life of this ware (within the eleventh century) when the use of 'grass-marking' declined.

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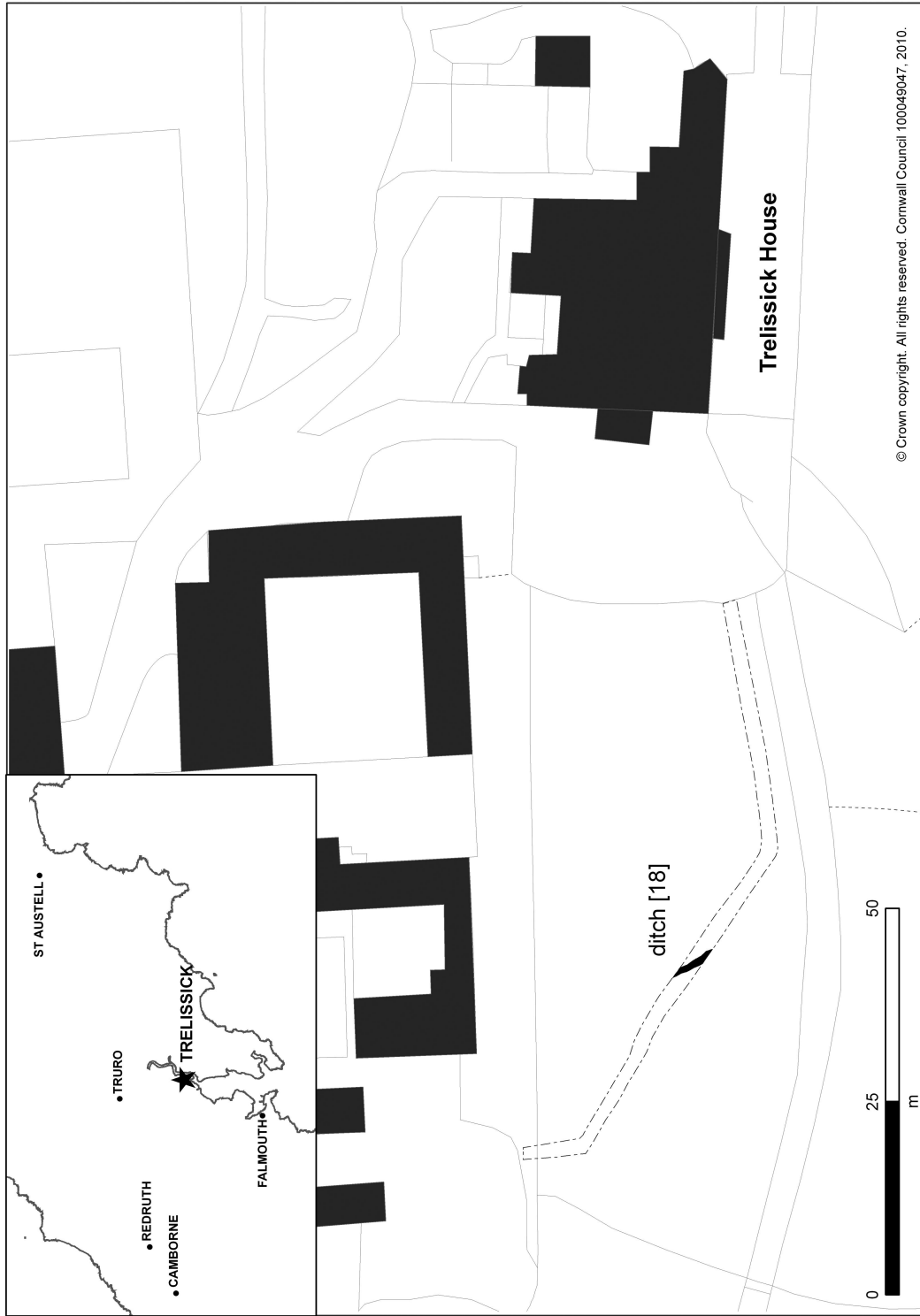


Fig 1 The location of the work at Trelissick.

## GRASS-MARKED POTTERY FOUND AT TRELISSICK, FEOCK

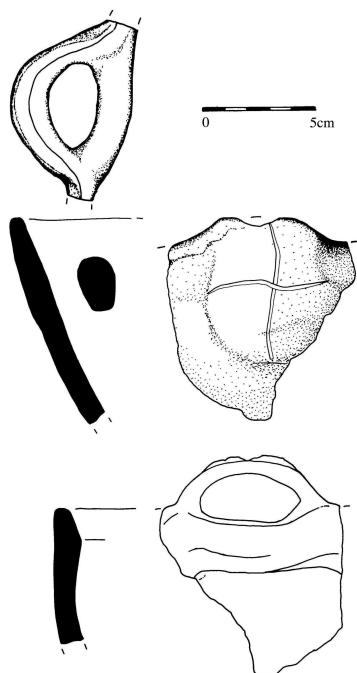


Fig 2 Bar-lug pottery from Trelissick.  
(Drawing: Carl Thorpe.)



Fig 3 The bar-lug sherd marked with a cross  
from Trelissick.

### ‘Grass-marked’ ware in Cornwall

In Cornwall ‘Grass-marked ware’ represents the introduction of a new ceramic production technique: the use of chopped grass to prevent adherence of vessels to surfaces prior to firing, leaving clear vegetation marks on the bases and sides. It is this use of vegetation which leaves the distinctive ‘grass-marking’. The vessels were hand-made, and the fabric is generally gabbroic, soft, fairly thick and poorly finished. The firing is variable, but usually well-fired. The distinctive ‘grass marking’ sometimes continues over the exterior.

There appear to have been three basic vessel forms: cooking pots, squat flat-based vessels with vertical or slightly incurving sides; platters; and bar-lug vessels with opposed internal suspension bars (or lugs) so that they may be hung over a fire to function as cauldrons.

The date at which ‘grass-marking’ was adopted as a manufacturing technique, is uncertain. Unpublished drawings from excavations of a midden on Tean, Isles of Scilly (Charles Thomas, pers comm), show at least two Gwithian-style jars with ‘grass-marking’. A radiocarbon date of cal AD 600–770 (OxA-4695)

came from the upper part of the midden (Ratcliffe and Straker 1996, 98). This determination allows a date somewhere in the seventh century for the introduction of ‘Grass-marked’ wares.

At Gwithian a bar-lug sherd obtained from within the internal rubble collapse of structure (2241) in GMI yielded a radiocarbon date of cal AD 650–780 (SUERC-6168). This determination, the latest obtained, indicated that the structures had been abandoned by the late seventh or eighth centuries AD. This suggests that adoption of the bar-lug must certainly have been prior to the end of the eighth century AD (Thorpe 2008).

‘Grass-marked’ ware appears to have had a life of over five hundred years, from the seventh to the eleventh centuries AD. Mawgan Porth saw this ware – including the distinctive bar-lug – in use into the early eleventh century (Bruce-Mitford 1997), and it continued at Launceston Castle into the second half of the eleventh century (Saunders 2006). However, it appears that towards the end of the eleventh century the use of ‘grass-marking’ as a pottery technique declined.

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**Acknowledgements**

The watching brief and archaeological recording, together with this publication, were funded by the National Trust. The Ordnance Survey mapping included within this article is provided by Cornwall County Council under licence from the Ordnance Survey in order to fulfil its public function to disseminate information to a wider audience. Persons viewing this statement should contact the Ordnance Survey if they wish to licence Ordnance Survey mapping for their own use. The Historic Environment project number is 2008014.

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## Recent work in Cornwall, 2006–7

### Cornwall County Council Historic Environment Service

#### **Ford Mill, Lanhydrock**

This is a former water-driven corn milling complex, the remains of which lie on the National Trust's Lanhydrock estate (NGR SX 0936 6290). The Historic Environment Service Projects team was commissioned by the Trust to carry out a measured survey of the site together with a desk-based assessment to assist in interpretation and to guide future management works. The study area included the millpond, wheelpit, culverts, tailraces and buildings. It is uncertain when the mill was first established, but it was clearly nearing the end of its use in the early nineteenth century, suggesting that it was probably established by the late eighteenth century or earlier. Abandonment of the site as a working corn mill probably occurred at some point after 1860. During the latter half of the nineteenth century new buildings were erected, probably for agricultural purposes; these included stores and possible pens and enclosures for livestock. It is unclear exactly when the site was completely abandoned but for decades until now it has lain largely hidden in dense vegetation.

- Project manager: Nigel Thomas. Project officer: Jo Sturgess.

#### **Mount Edgcumbe, Maker-with-Rame**

An archaeological building survey was carried out within the former service yard at **Mount Edgcumbe** in December 2006. The work involved the recording and interpretation of all the buildings in the yard; these dated from the second half of the eighteenth century through to the twentieth. Buildings included a stable block and carriage houses, a blacksmith's forge, carpenter's and wheelwright's workshops, a saw mill, kennels and many other outbuildings. The property is owned by Cornwall County Council and Plymouth City Council as part of Mount Edgcumbe Country Park, and the work was carried out to inform a programme of repairs and alterations to the buildings in order that they can be opened to the public.

- Project manager: Nigel Thomas. Project officer: Jo Sturgess. Historic buildings consultant: Eric Berry.

#### **Truro railway goods yard**

Proposals for redevelopment of the old goods yard at Truro station for housing prompted archaeological recording of the principal building on the site, a former goods shed. Desk-based assessment and a preliminary field visit determined that this building was a component of the original Cornwall Railway, designed by Isambard Kingdom Brunel. The Cornwall Railway was opened through to Plymouth in 1859 and the goods shed is likely to

## RECENT WORK IN CORNWALL, 2006-7

date from this period. It became apparent that the building was one of only two surviving goods sheds of this period in the county.

In the late nineteenth century the goods shed was expanded by the Great Western Railway, by extending it with open canopies. It survived in this form until rail freight was discontinued. The shed was subsequently occupied as a commercial vehicle depot. At this time one of the GWR canopies was removed and newer extensions were added to three sides. The roof covering was also changed, with the result that the historic building became heavily disguised and did not receive protection though Listing. Remarkably, however, most of the historic building and Brunel's Italianate design features remained.

As the historic building was unrecognised, Carrick District Council granted permission for demolition at an outline stage. A planning condition was placed on the permission for recording of the building in advance of its removal. Historic Environment Projects staff undertook a full photographic and measured survey. The recording work was undertaken in stages in co-operation with the demolition contractors, as the survey could only be satisfactorily carried out once the modern accretions had been removed. Once the archaeological recording was completed, the building was demolished. The only surviving example of a Brunel-designed Cornwall Railway goods shed in Cornwall is now one at Perranwell Station.

- Project manager: Nigel Thomas. Project officer: Neil Craze.

### Scheduled Monuments at Risk

Cornwall has more than 1,300 Scheduled Monuments: that is, archaeological sites of national importance with statutory protection under the Ancient Monuments and Archaeological areas Act of 1979. In order to protect and, where possible, enhance the condition of Scheduled Monuments, English Heritage initiated the first systematic, national, county-based assessment of these sites, their management needs, threats and potential improvements. The project aimed to encourage owners, local and national authorities and other organisations to improve the condition of Scheduled Monuments identified as being at risk. The Historic Environment Service undertook the survey for Cornwall in 2006, using existing field

records, targeted site visits and air photographs, including some new photographs commissioned for the purpose.

The results of the Scheduled Monuments at Risk survey for Cornwall were combined with those of similar studies elsewhere, in an English Heritage report.

- Project manager: Ann Preston-Jones. Project officer: Cathy Parkes.

### St Agnes Head, St Agnes

Following acquisition of from Carrick District Council, the National Trust commissioned an archaeological assessment for St Agnes Head property and the neighbouring areas of New Downs Head and Tubby's Head and the nearby Trevellas Coombe. The assessment detailed the landscape history of the properties, described the variety of archaeological sites identified and advised on future management of the historic environment, the latter including recommendations for scrub control, improved access, and conservation and presentation of archaeological sites to the public. The properties contain a range of mining remains (shafts, dressing floors, prospecting pits, openworks and building remains), a warren with several well-preserved pillow mounds (stone and earth banks constructed for rabbits to burrow within) and a possible Iron Age cliff castle on the Tubby's Head.

- Project manager: Peter Herring. Project officer: Peter Dudley.

### Goss Moor Multi-Trail

The Historic Environment Service carried out an assessment in advance of work to create a new multi-trail on Goss Moor, recording a wide variety of sites and demonstrating that the moor was used much more intensively in the past than in more recent times. The area is rich in tin-bearing gravels and these have been exploited by people from the prehistoric period onwards. They were the main source of tin ore in this area of Cornwall until deep mining began in earnest in Cornwall in the eighteenth century. Even after this the tin-bearing gravels of Goss Moor were so rich that they continued to be worked until the middle of the twentieth century, with later operations becoming larger in scale and thus leaving a greater mark upon the moor.

## RECENT WORK IN CORNWALL, 2006–7

The survey identified a total of 66 sites. These included two railway lines and associated features, a tramway, large numbers of discrete areas of streamworks, two deep mines and associated remains, and a number of medieval and post medieval settlements, many of the latter connected with streamworking.

- Project manager: Andy Jones. Project officer: Sean Taylor.

### Atlantic Coasts and Valleys Project

This project, led by North Cornwall District Council, was aimed at improving and re-creating wildlife habitats along the coastal strip from St Minver to Hartland Point. The Historic Environment Service contribution was to look at historic land use in this area as a guide to sustainable future land management. In two priority zones for the project, a northern area from Welcombe Mouth to Sandy Mouth, Kilkhampton, and a southern area from Trebarwith Strand to Delabole Point, farm-by-farm assessments were carried out, in each case summarising the historic background, identifying individual sites and making recommendations. Key sites included RAF Cleave, a well-preserved World War II anti-aircraft training camp, a newly discovered prehistoric enclosure at Cornakey near Morwenstow, and remains of the slate quarrying industry around Backways Cove, with quarries, masons' sheds, wagon-ways, boat-loading points and cottages.

- Project manager: Peter Herring. Project officers: Neil Craze, Graeme Kirkham.

### Harvey's Foundry, Hayle

An archaeological watching brief was carried out for South West Water during sewer main construction in Hayle. The scheme consisted of a 200m long trench which passed through the site of Harvey's Foundry. The features exposed in the trench demonstrated the complex nature of the below-ground remains on the site, including both the northern and southern walls of former furnaces and 'casting houses'. The discovery of a deep casting pit, used to create moulds for the cylinders of beam engines, was particularly noteworthy. The technology of casting large pieces of precision engineering during the nineteenth century and earlier is not well understood and only a few

examples of casting pits in Cornish foundries have previously been discovered.

- Project manager: Nigel Thomas. Project officer: Dick Cole.

### Carnon Gate, Feock

Archaeological monitoring for Cornwall County Council during construction of the A39 Carnon Gate road improvements revealed a well-preserved hollow-set Bronze Age roundhouse. The roundhouse was particularly well-preserved, comprising curvilinear stone-faced walling that had been cut into the hillslope and subsequently sealed by the downhill movement of soil. Artefacts recovered from the top of the roundhouse included sherds of Trevisker-style Middle Bronze Age pottery and a perforated stone weight. Residue from a sherd of pottery submitted for radiocarbon dating produced a date of 1500–1300 cal BC. It was decided to preserve the roundhouse *in situ* and the site was re-buried. [See this volume.]

- Project Manager: Andy Jones. Project officer: James Gossip. Volunteers: Fiona Fleming, Natalie Cotterell.

### Pentireglaze Haven, St Minver Highlands

The National Trust commissioned the Historic Environment Service to excavate a human burial eroding from a low cliff at Pentireglaze Haven, a steep-sided sandy cove near Polzeath. The remains were discovered after members of the public had reported the bones to the police. Excavation revealed an east-west aligned grave but erosion of the cliff had already resulted in the loss of the upper half of the skeleton. Three copper alloy buttons were recovered from the grave, suggesting burial of a corpse at least partially clothed; the style of the buttons suggested an eighteenth-century date and probably came from the waist and knee of a pair of breeches and a top coat. Bone analysis showed that the burial was that of a middle-aged man, probably not of north European descent. Pathological conditions consistent with life on board ship and particularly prevalent with rowers were identified on the ankles and legs, so it is likely that the individual may have been a shipwrecked sailor.

- Project manager: Andy Jones. Project officer: James Gossip.

### Tintagel Castle

English Heritage commissioned HES to monitor works during the replacement of fencing on the path to the Iron Gate, and during paving work at the Information Hut just outside the Inner Ward. The Iron Gate (SX 0509 8915) was the principal landing place on the island, and the path connected it with the focus of early medieval buildings and later the thirteenth-century castle.

Above the Iron Gate seven artificial terraces were identified, cut into the hillside along the line of the pathway. Two showed evidence of buildings constructed on them. The line of the original pathway, perhaps post-Roman in date, from the Iron Gate up to the Inner Ward was also identified as a linear scar on the hillside. The watching brief at the Information Hut on the Island (SX 0506 8905) showed that this too was the site of an artificial terrace, with traces of a building upon it in the form of heavily robbed walling.

All the terraces were dated to *c* AD 550 by the occurrence of post-Roman imported Mediterranean pottery consisting of amphorae of varying categories from Africa and Turkey, accompanied by fine table wares such as African Red Slipped Ware and Phocian Red Slipped Ware.

The watching briefs have emphasised the remarkable nature of the post-Roman occupation on the Island, indicating how extensive it originally was, spread over the entire headland, and representing a post-Roman citadel which played a prominent part in the economy of the western Atlantic seaboard at that time.

- Project manager: Nigel Thomas. Project officer: Carl Thorpe.

### Tremough, Penryn

A programme of archaeological evaluation in advance of landscaping works was undertaken for Midas Construction at a late Iron Age - Romano-British enclosure at Tremough, near Penryn. The enclosure, which became known as 'The Fort', was first identified in 2000 through a geophysical survey by GSB Prospection which revealed the rectangular outline of the ditch. The enclosure measures about 50m by 40m and excavation of two 20m long trenches revealed a deep ditch and internal features indicative of house structures. Pottery dating to the Romano-British period and some which may be attributable to the Late

Iron Age was recovered and two radiocarbon dates were attained giving a date range of 100 BC – AD 90. The results have helped characterise the nature and date of the enclosure and its relationship with a field system, enclosure and structure previously excavated to the east. They have also increased understanding of late prehistoric and Romano-British settlement activity in the wider area.

- Project manager: Andy Jones. Project officer: James Gossip.

[The results of archaeological work carried out at Tremough between 2000 and 2004 have been published in Gossip, J, and Jones, A M, 2007. *Archaeological investigations of a later prehistoric and a Romano-British landscape at Tremough, Penryn, Cornwall*, Brit Arch Repts, Brit Ser, **443**, Oxford. A summary of these investigations and a report on subsequent work will be published in a forthcoming volume of *Cornish Archaeology*.]

### East Porth, Samson, Isles of Scilly

HES carried out a project to assess the project archive of excavations at East Porth, Samson, originally undertaken in 1971 by David Neal with funding from the Department of the Environment. The site is particularly important because of the Neolithic pottery recovered, the largest assemblage so far recovered in Scilly where pottery of this period is generally rare. There was also a range of post-Roman pottery from a multi-phase ecclesiastical settlement. The initial stages of the assessment found that some pottery which had been illustrated soon after the excavation was no longer with the site archive; fortunately this was found to have been deposited with the Royal Cornwall Museum. Unfortunately there are no residues from which radiocarbon dates could be obtained. Further work is to be undertaken, including specialist pottery reports by Henrietta Quinnell and Carl Thorpe. It is intended that the original draft report and illustrations compiled by Neal in the early 1970s will be updated with a view to future publication in *Cornish Archaeology*.

The initial stages of the project were sponsored by donations from His Royal Highness The Prince of Wales Duke of Cornwall and the Isles of Scilly Museum.

- Project manager: Charles Johns. Project officer: Carl Thorpe.



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**Scheduled Monument Management**

The Scheduled Monument Management scheme is carried on by the Historic Environment Service to improve conservation, access and interpretation at a selection of Scheduled Monuments across Cornwall. The project is supported by a wide range of partners and in particular English Heritage, the Heritage Lottery Fund, Cornwall County Council and Cornwall Heritage Trust.

*Trippet Stones erosion repairs, 2006*

The Trippet Stones are the remains of an impressive stone circle, standing on the flat, lonely and windswept moorland of Manor Common in Blisland (located at SX 1312 7501), a Site of Special Scientific Interest. Erosion around the base of the stones has been a problem for some time, mainly as a result of ground disturbance by animals. Work in 2006 continued a programme of repair which began in 1999 and comprised repairs on three stones, including re-erection of a recumbent stone thought to have fallen at least 25 years ago. Recording of the eroded area of the stone revealed the original socket pit. In the base of this were several *in situ* packing stones. A new socket was constructed by Graham Lawrence of Trewortha Bronze Age village and the stone was re-erected with the help of Mr Adrian Mansfield, the owner of the circle. Volunteers from the Tavistock Taskforce for Environmental Conservation helped HES archaeologists and staff from North Cornwall District Council re-instate eroded areas. Educational activities involving St Breward and Blisland Schools and Truro College and public events were organised and supervised by Tony Blackman. Materials were kindly supplied by IMERYS from their Stannon Works. Thanks are due to Blisland Commoners for their support and to English Nature for consent to carry out the work.

*Microchipping of medieval stone crosses*

Medieval wayside crosses are a distinctive feature of the Cornish countryside. Unfortunately there have been a number of attempted and successful thefts of crosses in both Cornwall and in Devon in recent years. In developing a project to protect the Cornish crosses by microchipping to provide them with a secure identity, Cornwall was following the

lead already taken by the Dartmoor National Park to protect crosses and a range of other granite artefacts, including troughs, milestones, millstones and boundary stones on the moor. This work, which included the compilation of an extensive database, was undertaken by Andrew Langdon in the summer of 2006.

*Madron Well*

Madron Well, with its associated medieval chapel (SW 445 327), attracts visitors and pilgrims from all over the world, at all times of the year. Over the last few years, however, over-use, benign neglect and vandalism have led to a degradation of the site and its surroundings. Work to protect and enhance the well and the access to it took place in the summer of 2006 and involved the help and support of many organisations and individuals, most notably DEFRA's Environmentally Sensitive Area, Madron Community Forum and the Bolitho Estate. The work was carried out by Adrian Thomas and David Cutting. The work involved the provision of an improved parking area and upgrading of access to allow disabled visitors to reach the site, repairs to the chapel, holy well and the hedge enclosing the chapel.

*Samson Buildings Project, Isles of Scilly*

A pilot programme of archaeological recording and building conservation work was undertaken on the ruined post-medieval buildings of Samson, Isles of Scilly (SV 8770 1250), in July and August 2006.

The project's aim was to preserve the historic buildings for the enjoyment and appreciation of present and future generations. The work included vegetation management, lichen survey and archaeological recording prior to sensitive consolidation work by Western Maintenance, with advice from Eric Berry, historic buildings consultant, using a mixture of traditional materials and innovative techniques to preserve their character and appearance. Approximately 200 visitors were given guided tours of the site, which was also visited by children and teachers. Volunteers participated in an open day and a talk was given at the Isles of Scilly Museum.

The project was a partnership between the Historic Environment Service, the Isles of Scilly Wildlife Trust, English Heritage and Cardiff University's School of History and Archaeology (as

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part of the *Islands in a Common Sea* project), and was made possible with funding provided by the Isles of Scilly AONB Sustainable Development Fund and the Heritage Lottery Fund.

*Indian Queens Pit*

Indian Queens Pit (SW 9180 5866) is a nineteenth-century preaching pit, constructed within a disused tin mining openwork that had been part of a larger tin mining concern known by the names of Fatwork and Virtue, Wheal Cornwall and Indian Queens Consols. The Pit is still regularly used for events and concerts and a single interpretation board was erected on the site in partnership with the trustees of the Indian Queens Pit Association.

*Roche holy well*

In September and October 2006, conservation works were carried out on Roche Holy Well due to concerns that the well house structure and associated walling were in an unstable condition. Volunteers from St Austell Old Cornwall Society removed vegetation from around the monument and cleared silt in an attempt to improve access to the site. Masons from local firm Darrock and Brown then stabilised the holy well structure and rebuilt the walls which flanked its arched opening. As part of the project, historic buildings consultant Eric Berry visited the site and concluded that although the main stonework elements were of Tudor date, they had come from another building and were probably only erected as part of the well in the eighteenth century.

*St Piran's church, Perranzabuloe*

Conservation work was carried out on St Piran's Church following the excavations on the site in September and October 2005. There was concern that the historic plaster on the interior of the north wall would be lost and it was decided to preserve the remains under a modern lime plaster. The newly exposed window openings in the north wall were re-pointed and Darrock and Brown carried out local repairs in order to protect those parts of the structure that had been weakened by the loss of stonework in recent years.

The remains of a seventeenth-century grave slab found during the excavations were also conserved. The gravestone, dating to 1620–1628 and featuring the names of John and Amy Resoga, when found

comprised one large fragment, four smaller pieces and a large number of quite small fragments. The memorial was reconstructed by Sue and Lawrence Kelland and has been placed on permanent display in the modern parish church.

The project also erected three interpretation boards at the site of the church, the nearby St Piran's oratory and Perran round, a *plen-an-gwary* located to the south of St Piran's church..

In addition to the works described above, the Scheduled Monument Management scheme also undertook work at the following:

- Kynance Gate prehistoric settlement: vegetation clearance and creation of an interpretation board.
- Lanteglos-by-Fowey: conservation of two crosses in the churchyard.
- Laneast Cross: the cross was righted after being struck by a vehicle
- 'Access to Monuments': support for the development of a website with details of Scheduled sites in Cornwall.
- HES project team: Ann Preston-Jones, Dick Cole, Charles Johns, James Gossip.

**St Michael's Mount**

A programme of investigation during repair works and upgrades of services within the summit buildings over a two-year period gave a rare opportunity to gain greater understanding of the Mount. This revealed fabric and features generally not seen since the major re-modelling and extensions carried out on the Mount in the 1870s. Evidence of alterations and repair were revealed which provide a better insight into the dating, phasing and changing functions of the buildings.

The archaeological study was also informed by available historic maps, building plans, illustrations and photographs, as well as topographical descriptions of the Mount from the medieval period to relatively recent reports and guides. During the study, a collection of original drawings of the summit complex was discovered in the Mount's collection. These had been made by J P (Piers) St Aubyn, the architect of the 1870s works. These graphically show the summit complex as it existed before the present-day layout was created and also reveal the layout and room names, giving considerable information as to how the building once functioned. Collections of photographs dating

## RECENT WORK IN CORNWALL, 2006-7

to the 1860s and later also proved particularly informative, as these show various parts of the building as they appeared before major changes took place.

The principal findings of the study include survival of medieval fabric and features in the church, the south range and the west range. The present church with its distinctive bell tower dividing the nave and chancel has a predominantly fourteenth-century build and was embellished with addition of rose windows to its east and west gables in the fifteenth century. This church, built directly upon the rocky central outcrop of the Mount, evidently replaced an earlier, probably smaller building.

The early building layout strongly suggests that the south range functioned as the monastic accommodation linked to the church. This would have occupied the more private side of the island, facing the bay. The west range appears to have originally functioned as a separate building, apparently constructed as a defensive work controlling the principal access to the Mount summit area.

In the early- to mid-sixteenth century there is evidence of remodelling and rebuilding, including the reconstruction of the former monks' accommodation as the Chevy Chase Room. Improved fortifications added to the west range may be part of a general campaign in the Henrician period to improve defences in the Western Channel.

There is also vestigial evidence for what must have been a significant scheme of re-fashioning of rooms during the seventeenth century. Probably during this time, the west and south ranges became physically linked by construction of the south-west wing.

The Blue Drawing Room range is a mid eighteenth century building created on the footprint of the former Lady Chapel. In 1731 the antiquary William Borlase visited the then ruinous chapel but it had been rebuilt by the 1760s, when Borlase revisited and on this occasion drew views of the summit. The present drawing rooms resemble the exterior appearance of the former chapel and the lobby appears to incorporate the chapel's Tudor doorway.

In the mid eighteenth century re-modelling and re-fitting also affected the Library and Chintz Room in the south range and all the major room spaces in the west range.

The study identified an important 1830s Picturesque Gothic decorative scheme, including

embellishment with Roman cement detail on the exterior of the Blue Drawing Room range, additional plasterwork, new plasterwork in the Chevy Chase Room and features added to the west range. Historic photographs reveal that plasterwork and flooring once visible in the church were of similar character to that of the Blue Drawing Room range, indicating a contemporary decorative scheme. In the mid nineteenth century some Gothic features were added to the previous Gothic scheme.

The most significant changes occurred to the complex in the 1870s, to the design of J P St Aubyn. As well as a large extension on the south-east side to provide new and more up-to-date accommodation for the family, the scheme included addition of new service rooms ingeniously created beneath the North Terrace and new servants' accommodation in the north-west wing. There were also major alterations in the Garrison Room including floor level changes. In the west range floor levels were altered and rooms were refitted after schemes of dry-lining to counteract damp problems. A new upper floor of the west range provided additional servants' bedrooms. The 1870s scheme was a clever conversion and extension of the summit buildings, changing them from an occasional summer residence for the St Aubyn family to a spacious country house, while retaining the prominence and general character of the earlier buildings.

A collection of historic photographs taken at the time of the late nineteenth century alterations revealed that a temporary inclined tramway was constructed from the western breakwater of the harbour to the platform below the Blue Drawing Room range. This incline, presumably operated by a capstan or horse whim, was used to haul all the heavier materials to the construction site.

Early twentieth century changes included provision of a new permanent inclined tramway (partially hidden within a tunnel on the northern slope of the Mount) and the entire renewal of the church roof.

- Project manager: Nigel Thomas. Project officers: Kate Newell, Matt Mossop, Eric Berry. Volunteer: Fiona Fleming.

### Gwithian

Work from 2005 to 2007 focused on re-working the extensive archives of the main Bronze Age (GMIX, GM/X and GM/XV) and post-Roman sites (GMI) at Gwithian. The site holds a special place in

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Cornish archaeology as a major landscape study of a distinctive coastal setting and the Bronze Age and post-Roman excavations produced results of regional and national significance. These 1950s investigations were carried out by Professor Charles Thomas but their full results had remained unpublished.

The recent work included a full re-appraisal of the stratigraphy of the site and a programme of scientific dating, including collection of new samples for Optically Stimulated Luminescence (OSL) dating, the first time that this technique had been used on a Cornish site.

Gwithian project team: Jacqueline Nowakowski (project manager), Polydora Baker, Alex Bayliss, C Bronk Ramsey, G Cook, Neil Craze, Paul Davies, the late Glynis Edwards, Vanessa Fell, Jennifer Foster, Catherine Freeman, Raumes Gallois, Rowena Gale, James Gossip, Erika Guttman, Derek Hamilton, Andy Hammon, Gareth Hatton, Professor John Hines, Anna Lawson-Jones, Janice Light, Jackie McKinley, Peter Marshall, Matt Mossop, Stuart Needham, Henrietta Quinnell, Konstanze Rahn, Ian Riddler, Dr Helen Roberts, Dr Alison Roberts, David Earle Robinson, John Smith, Vanessa Straker, Joanna Sturgess, Sean Taylor, Roger Taylor, Carl Thorpe, Professor Charles Thomas, Nicola Trzaska-Nartowski, Sue Watts and Imogen Wood.

[A summary of the results of the Gwithian re-assessment and an appreciation of the original programme of research was published in *Cornish Archaeology*, volume 46 (2007).]

### **Conservation of industrial heritage: west Cornwall**

Inscription of the Cornish Mining World Heritage Site in July 2006 was a high point for industrial archaeology in Cornwall, and highlighted the importance of continuing to pursue the highest standards in site conservation and management. The HES projects team was commissioned to provide advice during conservation works and to record historic remains during several major projects in west Cornwall.

#### *Mineral Tramways Project*

The Mineral Tramways project is organised by Cornwall County Council's Landscape and Urban Design Unit. Having started in 2005 the project had

already seen the successful conservation of the engine houses at Marshall's Shaft, Troon and Unity Wood, Twelveheads, and in 2006 contractors moved on to tackle a further three sites.

Thomas' Shaft engine house at West Basset, near Carnkie, was apparently used for demolition practice by US Army engineers during the run-up to D-Day. As a result, only its bob wall and parts of its wing walls survived, these being surrounded by a huge mound of rubble. The massive granite masonry was re-pointed, rubble cleared from around its other walls to reveal the footprint of the building, new wall timbers installed where the originals had rotted and some rebuilding undertaken to stabilise the side walls.

Not far away, the Brea Tin Streams Works (or Betty Adit) next to the Red River was the best preserved of Cornwall's few surviving tin tailings works, but scrub growth had made its site almost completely inaccessible since it was abandoned in the 1960s. Following vegetation clearance, HES carried out a detailed survey of the site revealing a complex arrangement of tanks, channels and machine bases and allowing priorities for conservation works to be established. The site presented many challenges, not least how to conserve the poor-quality concrete used in the construction of many of its features, specialist solutions being needed to solve this problem.

As work progressed it became apparent that the waterlogged soils here had preserved a wealth of sub-surface timber channels. These were revealed, surveyed and carefully covered over to preserve them. A grant from the Cycleau Project allowed the team to reinstate one of the primary settling tanks at the southern end of the site. Water channelled into the tank from the nearby stream has restored something of its original appearance, while a nearby interpretation panel explains the importance of such wetland sites for wildlife.

#### *Wheal Peevor, Redruth*

Wheal Peevor's three engine houses are a prominent landmark to the north of the A30 at Scorrier. Although a Scheduled Monument, the site had long been neglected, and two of the engine houses had been badly damaged by the collapse of unstable rear walls during 1992. A successful application for an HLF grant enabled Kerrier District Council to set in hand a substantial conservation project for the whole of the site. This

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included the conservation of the site's three engine houses, two arsenic calciners and arsenic chimney, decontamination of the arsenic chimney and flue, safety works to 12 mine shafts, the creation of surfaced tracks around and through the site, access platforms within each of the engine houses and the provision of interpretation panels.

Building conservation work included removal of ivy and fallen rubble, replacing timbers, re-bedding wall masonry and replacing lime pointing, and installation of lightning conductors. HES advised on suitable methodologies and recorded building detail which helped to fill out the complex histories of these buildings.

*Geevor, Pendeen*

HES worked as part of the HLF and Objective One Bid Team to gather together the complex range of background information required for a major project to conserve the site and to create a brand new museum of hard rock mining. With project funding confirmed in early 2007, HES was awarded the historic buildings consultancy to provide on-site advice, undertake recording work and to liaise between the project team and English Heritage.

- Project manager: Adam Sharpe.

**Conservation of industrial heritage: east Cornwall and west Devon**

The Historic Environment Service projects team has been assisting in the development and implementation of two major conservation projects in east Cornwall and west Devon, including assessment reports to guide proposals, and consultancy during conservation works.

*East Cornwall Regeneration Project*

The East Cornwall Regeneration Project (ECRP) was funded by Objective One, South West Regional Development Agency, Cornwall County Council (CCC), Caradon District Council and others to a total of around £1.9 million and was implemented between 2006 and 2008. In the summer of 2006, an historic buildings consultancy and archaeological watching brief was undertaken during building conservation works to Hingston Downs mine site. This ensured that the works followed World Heritage Site and English Heritage standards of conservation

work, and provided an accurate record of the nature and extent of the works to the engine house (Listed Grade II\*) and mine site. The engine house was re-pointed with lime mortar where necessary and a number of large decaying structural timbers were replaced. The original roof design (parapet wall with hipped roof) was partially replicated at the north end of the building, which now shows the lead and slate covering from ground level.

Other mine sites within the ECRP include Holmbush mine (Scheduled Monument), Drakewalls mine and the Prince of Wales mine (Scheduled Monument). HES Projects provided detailed historic buildings consultancy advice and produced archaeological assessment reports for the Drakewalls and Prince of Wales mine sites.

*Tamar Valley Mines Heritage Project*

A long-term project organised by the Tamar Valley Area of Outstanding Natural Beauty aimed at improving conservation and access at a series of major industrial sites.

Following production of archaeological assessments for the southern section of the Tamar Valley Mines Heritage Project (TVMHP) in 2006 (New Quay and Bedford Consols/Gawton mine), work on the ground focussed on the creation of a new trail between Morwellham and New Quay and improvements to the old railway line and tracks between Bedford United mine and Morwellham.

- Project manager: Colin Buck.

**Exeter Archaeology****Sandhill Works, Stannridge, Gunnislake**

C S Wakeham of Exeter Archaeology recorded one of the two surviving brick kilns of the Sandhill works at Gunnislake, which operated c 1860–1900. It was an updraft beehive kiln sharing a chimney with its neighbour. (Exeter Archaeol. Rep. **07.33**)

**Context One Archaeological Services (COAS)****Trenance Garage, St Austell**

An archaeological watching brief was carried out at Trenance Garage, Trenance Road, St Austell

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(NGR SX 01030 52669). The site is within an area of local architectural and historic value, with several mills in the immediate vicinity. Nineteenth and early twentieth century maps show a weir crossing the southern area of the site, and the entire development area was thought to be criss-crossed by leats of presumed medieval origin. The archaeological work recovered evidence for a north west – south east retaining wall extending from the eastern side of the site under Trenance Road. This wall is not represented on nineteenth-century maps and the alignment is contrary to all other buildings and boundaries in the vicinity.

The sequence of deposits across the site broadly consisted of rubble and make-up layers associated with the construction and subsequent demolition of the garage and perhaps earlier structures. Surprisingly, there were no observable remains of the weir and adjacent structures or of the leats that supposedly run across the site. However, the depth of modern overburden may have placed these features beyond the range of the watching brief. No archaeological finds were recovered during development groundworks.

- Project staff: Cheryl Allum and Richard McConnell.

## John Moore Heritage Services

### St Neot parish church

A watching brief was carried out during ground reduction work at St Neot parish church (SX 18607 67856). Two burials were recorded inside the churchyard. The first was complete and left *in situ*, the second had been heavily disturbed and was in a very poor state of preservation; it was removed for reburial within the churchyard.

The area to the east of the church had been disturbed at some time in the nineteenth century. A large pit had been excavated through made-ground against the churchyard wall and had been filled with material containing building or demolition material. A slate-built drain was recorded running roughly north east - south west; this appeared to have silted-up in the late nineteenth – early twentieth century. Also recorded was a buried land surface containing sixteenth- or seventeenth-century pottery.

- Project staff: David Gilbert.

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## Launceston Priory: recent work

JOHN ALLAN

Launceston Priory was the richest of the monasteries of Cornwall; its complex of buildings must have been among very largest in the medieval county. It is, however, not well known because all its buildings were demolished after the Reformation. The site was re-discovered and largely excavated by the local architect and antiquary Otho Peter in the 1880s and 1890s, giving us the fullest record of the layout of any of the Cornish monastic houses.

In recent years the exposed monument had become very overgrown and had been closed to the public. In the summer of 2008, a programme of conservation and redisplay was carried at the priory, funded by the Heritage Lottery Fund and advised by English Heritage. The archaeological component of the works was undertaken by Cornwall County Council Historic Environment Service, led by James Gossip. John Allan was invited to provide advice about a range of matters: the likely date of the exposed monument; the interpretation of the dressed masonry, both *in situ* and the fine collection of over 300 loose architectural fragments; the other finds, and a possible reconstruction of the priory which could be presented to the public.

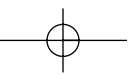
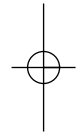
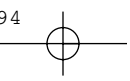
Consideration of the Diocese of Exeter's other large medieval churches shows how substantial the priory buildings were. Comparison of the plans of the eastern limbs of Launceston and Glasney with Ottery and Crediton emphasises the grander scale of the two Cornish buildings. On the other hand, although the priory was ambitious in scale, its design was probably not in the forefront of West Country fashion.

When attention turns to the main vessel of the church, a number of very unusual features become apparent. Major churches of the thirteenth and fourteenth centuries almost always had arcades supported on piers separating the main vessel of the church from the aisles. At Launceston, however, continuous stone walls, punctuated at intervals by arches and doorways, separated the choir from the aisles. This arrangement is hard to match elsewhere.

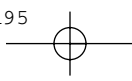
The most impressive features of the choir must have been its vaults and windows. The fragments include pieces of elaborately moulded ridge ribs from a stone vault. They also show clearly that the priory had the most inventive and complex Decorated windows in the diocese after those at Exeter Cathedral. There are so many different patterns that it seems probable that, like the cathedral, the choir of Launceston was unusual in having different tracery in each bay. The designs appear to relate most closely to the later stages of the building programme at Exeter (*c* 1310–40).

In 1976 Mr Arthur Wills rescued a number of fragments of elaborately carved fragments of canopies of superb quality from the area of the high altar. It is suggested that they come from a grand screen behind the altar similar to those known at Exeter (*c* 1313–26), Ottery St Mary (1330s) and Christchurch Priory, Dorset (1330s–40s).

In sum, the priory church reflected an interesting mix of influences from outside and within the diocese. The design of the body of the church is completely different from any other in the diocese. On the other hand, the priory's window tracery, a floor-tile pavement and the superb altar screen relate closely to Exeter Cathedral.







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## Obituaries

NORMAN VICTOR QUINNELL FSA

28 May 1925–13 April 2008

Norman Quinnell, a past president of Cornwall Archaeological Society, died peacefully at his home in Exeter on 13 April 2008 at the age of 82. For much of his career he was engaged in the survey and investigation of archaeological monuments and landscapes in southern Britain and also in Wales, mainly the south. He was a legend to his friends and colleagues in the archaeological world.

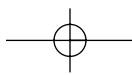
Born on 28 May 1925, Norman was brought up in Cornwall from the age of two. His father worked as a Post Office engineer at Bodmin Radio station: the family lived in a house on Innis Downs near the station with its numerous tall radio masts. Norman attended Bodmin Grammar school and after a brief period in the Post Office and the Home Guard he enlisted in the RAF.

In 1943 he was shipped out to Canada to train as an air navigator. When the war ended, he was re-trained in Air Movements and spent nearly 18 months in Changi at Singapore. He has left a graphic illustrated account of his time in the RAF which is likely to become a valued historical document. In 1947 he joined the Ordnance Survey (OS) as a cartographer. Then living at Mere in Wiltshire, he began a life-long friendship with the well-known archaeologist L V Grinsell, who encouraged his interest in archaeology. During the period when he was working as a cartographer he conducted rescue excavations on bomb-damaged parts of Bristol Castle.

In October 1951 he was recruited into the OS Archaeology Division. So began his long career as

an archaeological field investigator. His duties involved the precise survey and diagnostic interpretation of archaeological monuments for their depiction on large scale OS plans. (These plans, which are legal documents, are at 1:1,250 scale for urban areas, 1:2,500 scale for rural areas and 1:10,000 scale for upland areas). It is fair to say that if a monument was not shown on an OS plan then legally it did not exist. The challenge for Norman and his colleagues was therefore to ensure that as much archaeological detail as possible was surveyed and depicted. The result was that users of the OS large-scale plans such as planning authorities, farmers and builders were aware of their existence, especially in urban areas where rapid development was occurring at the time. Large numbers of previously unrecorded monuments were identified and surveyed by Norman and his colleagues; arguably many owe their very survival to their depiction on these plans. The archaeological symbols and descriptors such as ‘tumulus’, ‘earthwork’, ‘Roman Road’ that are so familiar to all users of the smaller scale OS maps, were the by-products of the archaeological recording and large-scale survey undertaken by the OS archaeological field investigators.

The remit for the OS Archaeological Division was to record and publish sites ranging from Mesolithic flint scatters to the monuments built in the early industrial period. (The policy then was not to record the bulk of archaeological monuments constructed after 1714). Norman’s task involved



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the recognition, identification and field survey of earthworks, structures and crop marks that ranged across this broad archaeological spectrum. Additionally his duties included enhancing the archaeological record through regional and local documentary research, study of air photographs and liaison with landowners, curators and with archaeologists, many prominent, others with valued local knowledge. He developed an encyclopaedic knowledge of the archaeology, and importantly the inter-relationship, of the monuments of southern Britain. He had an almost unrivalled ability to deal with all types of monuments in the field.

Archaeological field surveyors worked in small sections of three or four people. Between 1951 and 1966 Norman was an ordinary 'Grade 4' surveyor with a section which covered much of Southern England and Wales, on occasions being sent as far afield as Denbighshire. In those days the working week included Saturday mornings. It was up to the surveyor to then get himself home for the remainder of the weekend. Norman travelled at first by motorbike and then, to make the most of his married life and small son, bought a Land Rover and caravan which was his travelling home for several years. In 1966 Norman was appointed Grade 3, in charge of the section responsible for much of southern England. By that time Saturday working had been abolished. It was unusual however for surveyors to maintain a working pattern of five days a week away from home as Norman did. He refused the possibility of promotion to Southampton to do this, and the long years in the field added to his exceptional expertise.

The work of the Division was encapsulated in the OS National Archaeological Record, which was the primary British archaeological database. It was created by the Ordnance Survey to provide the documentary and survey evidence necessary to authenticate each archaeological feature depicted on OS plans. A record card was created for every known monument in Britain, initially up to the 1714 cut off date. Norman made a significant contribution to this database. A record card bearing the initials NVQ was, and still is, guaranteed to contain a precise and correctly interpreted ground survey accompanied by an informed description of the monument. His initials appear on literally thousands of record cards covering a staggering variety of the archaeological monuments and sites that occur across southern England and also South Wales.

Norman's earliest record cards for Cornwall are dated 1952 and feature monuments that lie on the northern part of Bodmin Moor. He subsequently undertook archaeological survey and investigation in most parts of the county. The Isles of Scilly received the attentions of NVQ and his team in 1978. This survey took those involved 12-hour days over five months, far beyond the amount of time paid, and was a thorough piece of work which has laid the groundwork for the formal record of Scilly's archaeology. It remained for Norman one of his great achievements. (A piece he wrote in 2004 describing the survey will be published in a future volume.)

Norman, together with selected staff from OS Archaeology Division, transferred to the Royal Commission on the Historical Monuments of England when this body assumed the archaeological responsibilities of the Ordnance Survey on 1 April 1983. His role changed to large-scale survey, investigation and analysis of archaeological sites and landscapes; however, the work to provide archaeological detail for OS mapping continued. The OS National Archaeological Record became the National Monument Record; it was later to become known by the acronym MONARCH. The data held within this national record eventually provided the core information for almost every Sites and Monuments Register (now Historic Environment Records) in England.

In the mid-1980s Norman and I recorded just about every visible archaeological monument on Bodmin Moor, using a specially commissioned aerial survey plot. This provided the groundwork upon which Johnson and Rose (1994) were to build to write their classic Bodmin Moor volume. Up to his retirement at the end of 1989 he worked on a broad variety of sites in Devon and Cornwall. A particularly important site was Tintagel which Norman and the author surveyed together in 1985 after a major fire which revealed the island covered with buildings: this survey greatly altered interpretations of the site.

One last major work to which Norman contributed was a survey on Exmoor of lithic monuments, to be circulated within the RCHME as *Lithic monuments in the Exmoor National Park* (Quinnell and Dunn 1992). Norman wrote few publications himself, characteristically doubtful of his academic abilities, but his enormous contribution to archaeological work in southern Britain is evident in the numerous

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*Norman Quinnell in 1975.*

acknowledgments paid to him, not least in the classic papers on barrows by his old friend Leslie Grinsell.

Norman was awarded the Imperial Service Medal on his transfer to the RCHME and elected a Fellow of the Society of Antiquaries, both in 1983. In recognition of the enormous contribution Norman made to British archaeological knowledge and as a token of their high esteem, his colleagues and friends presented him, on his retirement at the end of 1989, with a published collection of papers. Entitled *From Cornwall to Caithness*, the volume

includes essays that illustrate aspects of work that Norman undertook during almost 40 years as a field archaeologist (Bowden *et al*, 1989).

Norman enjoyed poetry and film: his interest in photography is carried on by his son Justin. He was a caring curator of things that came into his possession. His collections were greatly augmented by his distrust of the higher echelons of the organisations for which he worked, which meant that he retained copies of large quantities of field work which is now being distributed to relevant HERs. In his retirement he devoted his time to

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cataloguing his collections and to working on various archaeological projects. He supported his wife Henrietta, currently Past President of the Society, and assisted her in her work – providing maps and drawings for reports and publications. Henrietta is insistent that the quality and range of work she achieved since Norman's retirement owed much to his advice and practical help. Norman and Henrietta travelled extensively after his retirement, the high spot a visit to Ethiopia in 1997. He kept in touch with colleagues through long and interesting hand-written letters: he was effectively keeping alive the dying art of manual correspondence.

Norman joined the Cornwall Archaeological Society early in the 1960s and he was a committee member from 1980. He was President of the Society from 1991 to 1994 and thereafter Vice-president, serving with loyalty, dedication and his customary courteousness. A re-reading of the Newsletters which cover his Presidency show the Society active and expanding in interests; one enduring introduction was the Members' Evening which is still so popular. Norman was supported by Ursula Davey as Treasurer throughout his tenure, Daphne Harris and subsequently Sarnia Butcher as Editors. Anita Cooke was Secretary until replaced by Brian and Sheila Hammond in the summer of 1993: Norman's tribute to Anita in *Newsletter* no 73 encapsulates his co-operative and supportive ways of working in the Society. He continued to be involved in the work of both the Cornwall and Devon Archaeological Societies after his retirement. He occasionally led short courses on

archaeological survey and site recognition; his friendly and patient nature was much appreciated by his students.

Norman was a kind and thoughtful man, always approachable and very generous with his time and knowledge. The friendship which developed with all the staff who worked for any length of time in his section was a great source of pleasure to him, and a source of pride that six of the eight were promoted to Grade 3 or higher positions. It was always a pleasure to meet him and discuss all manner of things. The large number of friends, colleagues and associates who attended his funeral from many disciplines of archaeology demonstrated the affection and high regard with which he was held. His archaeological surveys and reports will remain a fine testimony to his commitment and dedication to the work he loved.

*Martin Fletcher*

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## OBITUARIES

## ANDREW DOWNING SAUNDERS: A MEMOIR

22 September 1931–13 March 2009

This memoir of a past-President of the Cornwall Archaeological Society is not a full obituary, nor is it a full academic commentary on its subject's published achievements, nor a full account of his engagements in the work of local, national and international bodies. Readers may refer for such detail to recent obituaries (for example, *The Times*, 26 March 2009), as well as to the entry in *Who's Who 2008*. Now that some time has elapsed, it is more appropriate here to recall aspects of Andrew Saunders's life and career which had a particular bearing on south-west England.

Born in Stafford, Andrew was brought to Cornwall at an early age (his father became Town Clerk of St Austell) but was educated at Oxford: first at Magdalen College School (as a choral scholar) and subsequently at Magdalen College, where he read History. After National Service in the RAF, his archaeological career started in 1954 with the Ancient Monuments Inspectorate of the Ministry of Works. From 1964 he was Principal Inspector of Ancient Monuments, England, and in 1973 he became Chief Inspector of Ancient Monuments and Historic Buildings in the Department of the Environment. He stayed in this role during the creation of English Heritage but retired in 1989. His career continued in substance after 1989, when he devoted himself to further academic enquiry, always his first priority but now unencumbered by weighty administrative responsibility. He was, during the 1990s, President of the Royal Archaeological Institute, Chairman of the Fortress Study Group and Chairman of the International Fortress Council, and also chaired the advisory panel on the Council for British Archaeology's Defence of Britain Project. He also represented the United Kingdom on the Scientific Council of Europa Nostra, a body with a particular remit for the preservation and interpretation of fortifications of all sorts. A perusal of John Kenyon's *Castles, town defences and*

*artillery fortifications in the United Kingdom and Ireland: a bibliography 1945–2006* (2008) shows just how wide was Andrew's published impact on this field of study throughout the British Isles, both while in full-time employment and in so-called retirement.

Despite the extensive geographical network which his career encompassed, his links with the south west always remained strong. From his younger days in Cornwall he developed an interest in local studies, visiting museums, ancient monuments and excavations and reading avidly. On the strength of an essay written about tin mining in Cornwall, he was elected a bard of the Gorsedd at the age of 17. As an undergraduate he was President of the Oxford University Archaeological Society. His pursuit of an archaeological career was thus a very logical extension of early enthusiasms. In the early years of his job with 'the Ministry', sites in Cornwall and Devon now came under his professional scrutiny and he retained an active role in south-western research and scholarship throughout his life, however distantly from the region in which he was then living. A founder member of the Cornwall Archaeological Society, he was its third President (1968–1972). He subsequently served as a Vice-President until 1992 and remained an interested and helpful presence behind the scenes throughout his life. He published in its journal, *Cornish Archaeology*: in the very first volume he wrote about Harry's Walls, St Mary's, Scilly (1962); with Daphne Harris, he published his excavation at Castle Gotha (1982). The Society's journal also carried regular interim reports on his long-term work at Launceston Castle, where from 1961 to 1983, he directed major excavations (1964; 1967; 1970; 1971; 1972; 1975; 1976; 1977; 1979; 1980; 1981; 1982). Between 1957 and 1964 he directed the equally important excavations at Lydford Castle, Devon.

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Sites on the coasts of south-west England and the Scillies figured in his acclaimed writings on post-medieval fortification, including *Fortress Britain* (1989) and *Channel defences* (1997). He also wrote about the coastal defences of Cornwall in the *Archaeological Journal* (1974) and was author of several editions of the official guidebook to Dartmouth Castle (1983). In the publication (1990) of the Royal Archaeological Institute's meeting in the Exeter area he included accounts of Lydford Castle and the defences of Dartmouth Haven. For the Castle Studies Group's conference in the south west in 1991 he guided that society at Launceston and Lydford. From 2000–2001 he was an Honorary Fellow of Exeter University. In 2004 the University's Press published his magnificent study entitled *Fortress Builder: Bernard de Gomme, Charles II's military engineer*. His wide knowledge of south-western archaeology was elegantly expressed in *Exploring England's heritage: Devon and Cornwall*. Published in 1991, this attractive and accessible volume brought the region's past cultural richness to the attention of a wide audience.

Andrew was an unashamedly 'historical' archaeologist. His education in history had a profound effect on the way he studied medieval and post-medieval archaeology. His studies of standing buildings (and their builders), as well as of their buried remains, was accompanied by meticulous historical scholarship in primary sources. He was not only a Fellow of the Society of Antiquaries but also a Fellow of the Royal Historical Society. When news began to circulate, in the late 1990s, that the Department of History and Archaeology at Exeter University was to be disbanded and its staff allocated to newly-created Schools, he contacted me in dismay: in his view, Exeter had just the right context in which students should study the past and in which scholars should research it. His breadth of interest in studying issues of historical and archaeological correlation made him the ideal co-ordinator of the Royal Archaeological Institute's research project on the origins of the castle in England, which ran in the later 1960s and was published (under his guidance) in 1987–8 (*Archaeological Journal*, vol 134).

As Andrew's major contributions to the study of south-west England, as to the rest of the British Isles, two related subject areas will always be remembered: medieval castles and post-medieval coastal fortifications. These interests were

published not only in substantive publications at home but were also drawn on in offerings made far away; for example, in the meetings of Europa Nostra's Scientific Council. In one of its *Bulletins* (49, 1993), Andrew included an article entitled 'The English medieval castle as country house' and helped create a way of thinking about the subject which later became widely accepted. On his retirement in 1989, Andrew launched a wholly new venture, the journal entitled *Fortress: the castles and fortifications quarterly*. It ran until 1994 and its demise was a sad loss to this particular world of scholarship. It was a very successful attempt to draw together the medieval and post-medieval worlds of fortification studies, which had tended to be pursued by different groups along different lines, in an international context.

In the south-western context, Andrew's research efforts have published 'monuments' of their own, but two deserve particular mention. His excavations at Lydford and Launceston Castles, both sites in state care and therefore under his direct *aegis*, not only made important contributions to regional knowledge but also to national and international understanding of major issues in the world of castle studies. His project at Lydford (complementary to Peter Addyman's exploration of the earlier ringwork castle and the Saxon *burh* in which it was built) illuminated a fascinating sequence: from a royal prison of the 1190s to a new one re-built in the thirteenth century for Richard, Earl of Cornwall, reminding us that medieval castles could have many and varied uses. The addition of a pseudo-motte to the new structure revealed also that the mind-set of castle builders was complex and included significant symbolic messages (including the apparently anachronistic) as well as functional ones. All this, revealed by Andrew many years ago, is still grist to the mill of current debates in castle studies. His full report in *Medieval Archaeology* (1980) is a model in clear exposition of data and its interpretation.

The long and complex history of Launceston was unpicked by many seasons of painstaking work. This showed how a large Norman campaign-base developed into a separate borough and timber castle (suitable here for a builder, Robert of Mortain, who was only one rank below the king) and was progressively transformed – eventually by the same earl, Richard, who transformed Lydford – into a massive stone-built site with numerous buildings in the bailey and an impressive multiple structure on

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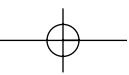
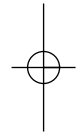
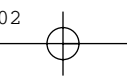
the motte top. The latter was designed to promote a traditional *donjon* image while actually providing a high viewing point for the created landscape of the castle's park. This scenario, revealed by Andrew many years ago, is still to the fore in current debates about what castles were built for by various ranks of builders at different times and in different circumstances. The monograph arising, *Excavations at Launceston Castle, Cornwall*, published by the Society for Medieval Archaeology (2006), is a classic of its kind: all types of evidence fully accounted for and sensibly interpreted, readable and well-illustrated. Its post-medieval data added a further important dimension to our understanding of social and economic issues in Cornwall and beyond. To be asked to write the preface for this important publication was both an honour and a pleasure for me.

I hope I may be forgiven for ending this tribute on another personal note. In successive annual seasons throughout the 1970s, I directed excavations at Okehampton Castle in Devon, on behalf of the (then) Department of the Environment. In 1973, Andrew became the latter's Chief Inspector. He was from the outset a most supportive mentor and ally of this project and remained so through to its final publication. My experience of Andrew was, I know very well, typical of that enjoyed by others in many places. Not only was he respected as a fine scholar and excellent colleague but also as a warm, supportive man and a true friend.

*Dr Robert Higham (President, Devon Archaeological Society)*

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## REVIEW ARTICLE

# Identity in stone: art, piety and status in late-medieval and early post-medieval Cornwall

JON CANNON

***Continuity and change: memorialisation and the Cornish funeral monument industry, 1497–1660***, by Paul Cockerham, 2006. Archaeopress: Oxford. British Archaeological Reports, British Series, 412. ISBN 9781841719455. Pb. £62.00. 616 + xv pages

From prehistoric fogous to industrial-era engine houses, Cornwall is a county with an extraordinary number of distinctive local site types. Among these – but easily overlooked – are the sixteenth- and seventeenth-century slate memorials found in many Cornish churches.

These slates are easily taken for granted, but they are remarkable. They developed during a turbulent period in Cornish history, emerging in the late medieval era and continuing through to after the Civil War; that is, in local terms, through a period marked by such dramatic political events as the *An Gof* and Prayer Book rebellions, as well as Cornwall's support for the Royalists. There are a great many of them: Cockerham has identified some 800 tombs, of which about 600 are slate. Many more may be lost: Cockerham estimates that some 57 per cent of known floor slabs have vanished (p181). They vary hugely, from the highly inventive to the highly conformist; from the laughably naïve to the complex and powerful. But more than anything else, they are unique: they appear to have been made only in Cornwall. They memorialize a whole class – the lower and middling gentry – who apparently produced few monuments at this period elsewhere in England, at

least until minor wall slabs and graveyard headstones began to emerge in the closing decades of the seventeenth century. They are also visually distinctive, with their smooth, slightly glossy surface sheen and crisply-cut letterforms and images. And, like all memorials, they are much more than simple archaeological or art-historical artefacts: they are documents – albeit ones for which interpretation is a slippery business – of the era in which they were created, and the intentions and interests of those who created them.

To get to grips with these intriguing and often attractive monuments, Cockerham uses many tools, analysing among other things their heraldry and other carved imagery, their inscriptions, and their location within the churches themselves. The core of his work is a database covering every one of the funerary monuments known or surviving in Cornish churches dating to between c 1400 and c 1700, within which he probes deeper, focusing on the period 1497 (*An Gof* Rebellion) to 1660 (Restoration) and choosing several stylistic groups of monuments for close discussion. He makes a formal analysis of the design of every monument in each of these groups, backed up by detailed biographical information about their patrons. His aim is to discover the motives that underlay their design. Throughout, he is interested in all monuments – regardless of the scale of the structure or the material used – while making it clear that it is the slate tombs that lie at the heart of his study.

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Paul Cockerham's work – as a BAR volume it appears to be basically a University of Exeter PhD thesis published 'as is' – is by far the most systematic study to date of such monuments. The only previous substantive work is Bizley's *The slate figures of Cornwall* (1965), which focuses on those slates which incorporate figure sculpture. Closer in scope and spirit is Charles Thomas's recent work on the early medieval inscribed stones in the county (Thomas 1994; 1998). Indeed, *Continuity and Change* is one of very few studies of the 'ordinary' monuments of this period – as opposed to those of the aristocracy – anywhere in the British Isles, and also one of the few that look beyond narrowly art-historical concerns of stylistic development and ascription. Methodologically key work, often referenced by Cockerham, has been pursued at a national level by Nigel Llewellyn, for example in *Funeral monuments in post-Reformation England* (2000), but Cockerham's is perhaps the first art-historical response to the ground-breaking work of some recent historians of Cornwall, such as Anne Duffin (1989), Philip Payton (1992; 1996; 2002) and Mark Stoyle (2002), who have done much to further understanding of the deep issues of cultural identity that arose in the county during the early modern era.

All this means that his research is both ground-breaking and important. It is also very ambitious. With almost exhausting scholarship he analyses the development of an entire industry and its patrons, gathering as he does so a quantity of art-historical and historical information that will be a mine for future researchers: from a virtual standing start, in terms of our understanding of these monuments, this is impressive indeed. Both in ambition and achievement, therefore, Cockerham's work is above average even by the standards of a doctoral thesis. Almost inevitably, it makes hundreds of intriguing and important points as well as raising many new questions. However, it is also flawed in two important ways.

Firstly, Cockerham's writing style is often awkward (one common 'tic' is a tendency to use expressions from logic or mathematics: 'such that', for example, is how he usually qualifies statements); although it is unfair to make too much of this in a work presumably created primarily with an audience of academic assessors in mind, this at times makes it hard to follow what he is saying just when one wants to most. For example: 'the comparisons of patronage... highlight a distinct

urgency of the varia of lesser Cornish society to commemorate themselves with monuments' (p135). I *think* this means he detects a kind of urgency in the scale of monument-making among members of the lower Cornish gentry, but cannot be completely sure. Second, Cockerham has an over-riding thesis: that the slate monuments in particular can be seen as statements of Cornish identity. Here the problem is methodological: where it matters most, the rigour he applies to his (many) other theses seems to weaken.

It has certainly been strongly argued that this was an era when 'Cornishness' was a real issue, and there is no doubt that the slate monuments at the core of this work are in themselves distinctively Cornish. Indeed, if it were to be proved, his thesis is potentially of great importance to our understanding both of the era and of its art. The problem comes in demonstrating a connection between the monuments and their creators' sense of identity. Cockerham concludes several chapters with a version of this assertion, although it rarely arises logically from the material in the chapter itself; the result is to put the otherwise sympathetic reader on guard. It would have been better to bring the point in as a major, but unproven, speculation in his final remarks, or to explore the background historical evidence in more detail early in the work. If it could be established, for example, that issues of identity were alive in identifiable ways specifically among the lesser Cornish gentry at this period, his case would be greatly strengthened; his historiography suggests, however, that historians have only begun to explore the matter, which would in any case require a major separate study of its own. On this point Cockerham's historiographical summary cites only Duffin (1989) and, much earlier and more briefly, Carew's *Survey of Cornwall* (1602); other historians seem to have concentrated more on 'the Cornish' as a whole 'as a distinctive breed', as the author puts it (p6). Indeed, Cockerham himself seems unsure how far to take his thesis, asserting in the same passage (p206) that Cornishness was vaguely 'manifested' by the monuments, but also that it was 'distinctly celebrated by' them, which implies something rather more self-conscious, indeed, a choice to be memorialised 'by a Cornish man with Cornish slate' (p57). Perhaps rather hopefully, he goes in search of unifying themes in Kilkenny and Finistère; not for the first time, one wonders how far the recent re-invention of Celtic studies as a

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study of ‘peripheries’ masks the more romantic pan-Celticism of the discipline’s earlier history. Cockerham himself appears to acknowledge that a better comparative focus might have lain closer to home, in west Devon, where there are slate tombs (and other monuments) produced in the same workshops but without the same ethnic baggage (An example is the apparent re-use of a medieval recess, Cockerham’s Whitchurch I, near Tavistock, in about 1639). Indeed on this key point – very unusually – he contradicts himself, claiming on p147 that two surveys of Devon monuments, one of 1828–1849 and one of 1908–1925, do not reveal ‘anything like the same activity as occurred in Cornwall’, but suggesting in his conclusion (p208) that ‘Devon ledger slabs remain an untapped source... one that has the potential to trigger ‘a reappraisal of the matrices of ostensibly “Cornish” memorialisation.’

He is right that west Devon could have provided a potent ‘control’ to his sample and the theories based on it. Playing devil’s advocate, a comparison with late medieval parish church architecture comes to mind. In the course of the fifteenth century, Cornish church building started to develop a powerful architectural identity of its own, resulting in a large number of near-identical churches in a very late and highly standardized granite vernacular, filled with very similar pews and screens. (The impression that Cornwall enjoyed a parish church building-boom in the 40–60 years before the Reformation, and the question of how this relates to the level of activity in other counties, awaits a study comparable with Cockerham’s.)

During the same period (for example in 1497), the Cornish themselves became a challenging source of political rebellion. It is thus tempting to see all kinds of statements of identity bound up in the Cornish late medieval vernacular, which could be highly self-conscious: the most dramatic example of this is St Mary Magdalene, Launceston. Here the masons seem to have gone out of their way to cover a church made of intractable granite with elaborate carving, when presumably a less local freestone – Beer limestone perhaps, or the stone used a few years earlier for the otherwise comparable parish church at Truro – could have been shipped up the Tamar, arguably at no greater ultimate expense. More commonly, the vernacular works with, rather than against the strengths of the stone, employing and enjoying simple, repetitive

forms, while still exhibiting a certain self-consciousness – arguably, for example in the insistence in many of these buildings that unbroken granite monoliths are used for columns.

Yet this vernacular, self-conscious or otherwise, reflects geology rather than ethnicity: the granite churches of west Devon and Dartmoor are identical to those of Cornwall, and this architecture has important relationships with the regional Tudor-era Perpendicular schools of east Devon (red sandstone) and Somerset (limestone), neither of which were areas whose populations displayed a particular sense of cultural or ethnic ‘peripherality’ (unless the possession of Dumnonian DNA does specific things to the aesthetic tastes of an area’s inhabitants).

What if the Cornish slate monuments, which as Cockerham reveals, cluster in the eastern half of the county, are merely a product of their proximity to north-east Cornish sources of good-quality slate? The Delabole area, for example, was apparently already becoming a slate source of national importance in the seventeenth century. On this model, were contemporary trends in aristocratic memorialisation merely adapted to a cheaper material, by patrons and craftsmen of lesser means, who had found (as much through geological happenstance as anything else) that they could now afford something special? Cockerham’s many footnotes are stimulating sub-essays in themselves, but he touches on the question of quarry sources only briefly, for example in n15, p13 and n169, p37, suggesting that we know almost nothing about where Cornish craftsmen of the era sourced their materials, but that geological analysis could open up new lines of research.

The question of comparisons in Devon is therefore critical to Cockerham’s case. In his favour, Cockerham does review the few comparable datasets that exist for other parts of England: in addition to the Devon surveys, reasonably complete catalogues exist for Caernarvonshire and Norfolk. Only the Norfolk hundred of Erpingham had substantial numbers of tombs to a similar class of people but, even there, the monuments were not visually distinctive.

Luckily the disproportionate (given the evidence) focus on ethnic identity does not lessen Cockerham’s achievement in other areas, and a brief summary cannot hope to do justice to the many lesser ideas and stimulating lines of enquiry he opens up.

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The book's first chapter offers historiographical overviews of both the study of monuments and of Cornish history, with special emphases on the early modern era; the chapter also contains a summary of the rest of the work. Cockerham then moves on to the four chapters that lie at the book's core, starting with the most substantial contribution of all. In this, chapter two, Cockerham identifies three groups of monuments – accounting for more than 100 of the total number of monuments in his database – and analyses each in terms both of the monuments themselves (that is, their iconography, design sources and 'sculptural perspectives') and the interests of their patrons (whose status, religious preferences and other relevant information are deduced from closely-researched biographical information).

His workshop groups begin with the monument industry that appears to have been developing at Bodmin in the decades before the Reformation. Here the remarkable early Renaissance tomb of Prior Vyvyan of Bodmin Priory (d 1533; Cockerham's catalogue number Bodmin 11), a kind of Cornish answer in Catacleuse stone to Pietro Torrigiano's famous bronze tomb of Henry VII at Westminster abbey, receives its first really substantial analysis, a discussion worthy of publication in its own right. Not for the last time, Cockerham is on very strong ground in his discussion of patronage and iconography, but slightly coy of making subjective assessments of artistic quality. In this case, the execution (if not the conception) of the work seems to me to be reminiscent of the better work of Cornish woodcarvers, rather than that of places closer to London or the Court. Yet, as he rightly identifies, this was not the last time the county would take up new visual ideas with unusual speed. In addition to this, Cockerham uncovers several little-known slate monuments which, even at this early date – intriguingly – were commissioned by the lesser gentry. Their use of Latin and uncompromisingly traditional design is redolent of a county that, in the Prayer Book Rebellion of 1549, was to lead the way in protesting its rejection of Protestant reform and the adoption of 'thys newe Englysh' in services.

Barely any funeral monuments survive from the Cornwall of the 1550s – an interesting token in itself of the traumas of Reformation – and Cockerham's next group emerges around 1570. It begins with a small but important series of works

in the 'St Breock style', focused on the Camel estuary, and developing into 'a confluence of expanding workshops' (p12), a group of works signed by Peter Crocker (based perhaps in Looe), and larger 'North Hill' and 'St Tudy' groups, which extend well into the 1600s and the heyday of the Cornish slate monument. Finally, he explores the slate-and-brass 'Poundstock'-style, which takes the story of this rich period of monument production up to the mid seventeenth century. Once again, Cockerham seems happier with facts than aesthetics, and as a result perhaps misses a few tricks. The more ambitious tombs can take a curious form, halfway between a medieval altarpiece and a Classical façade (for example, that of John and Blanche Wrey and their son (St Ive I, now in Tawstock). Figurative work is never of the highest quality, although such ambitious, hieratic, richly-patterned images in relief as that of Ann Smith (d 1592; Duloe 3), have a clear relationship to contemporary painted portraiture. At the other extreme, monuments such as that to Richard and Isabel Chiverton and family (1631; Quethiock 4) have a charming, simple and flat purity of line in the tradition of 'naïve' image-making.

More to the point, everywhere, the words (and, indeed, heraldry) that surround and help explain these images are laid out with considerable care and precision; one would like to find out more about the authorship of these all-important inscriptions, and the possible sources of the epigraphic skills displayed. Such questions might suggest wider connections between these tombs and other artefacts associated with funerary rites and mourning, a rich culture explored in Nigel Llewellyn's *The art of death* (1991).

The combination of words and images on these tombs can be mined for clues to the specific interests of their patrons: it is worth bearing in mind that the commissioning of such a tomb was itself an exceptional move, especially early in the period, and often appears to have been triggered by some development in the patron's social status or lineage. To take just one of many examples, Cockerham discusses the tomb of Jowdey, Katherine and Richard Durant and family (1608; Bodmin 21), in which the family's fecundity is celebrated in an image overflowing with children and in which slate-carved vines emerge from the loins of his two wives and curl over the heads of their praying offspring. Durant was twice mayor of Bodmin but was never armigerous, nor was he described as a

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'gentleman' or 'esquire' in the documents seen by Cockerham; instead, in making his monument he draws attention to his achievement in other areas, and perhaps his hopes for the future status of at least one of his 19 offspring.

Here there is an implicit, if reasonable, assumption that patrons would choose to encode these monuments with their personal interests when commissioning them, and that the level of information reasonably accessible to the researcher – primarily concerning their wealth and lineage – will be congruent with the things the patron and his or her audience might most want to see communicated. The matter is further muddled by the fact that those involved in commissioning a given design might vary hugely from case to case: the deceased themselves; their family; their executors; even the craftsman or a priest. Cockerham is alive to such issues, and the sheer weight of evidence and depth of research he builds up makes it clear that these products are commissioned by a clear social 'type', major figures in their parish if of lesser importance to the wider world, often with traditionalist religious sympathies and specific reasons to want to commission monuments of above-average ambition.

The tombs discussed above are carved in slate. They thus contrast significantly with the monuments covered by Cockerham's third chapter, which covers three groups of structures that, it appears, were not made in Cornwall. These groups have their workshop epicentres in south-west Devon, Barnstaple and London respectively; the first two are made primarily of non-Cornish stones (Beer limestone from Devon and Somerset alabaster), the latter are all brasses; this group is the only one of the three to be traceable before the earlier seventeenth century.

These are the tombs of a different echelon of people entirely: almost all are large-scale architectural compositions in an informed Jacobethan or pure Classical style, with carved effigies that are either free-standing or in very high relief. The ten monuments Cockerham ascribes to the south-west Devon workshop, for example, are to nine knights, esquires or their wives and one Dame; several were assessed at £20 or more in the 1626 subsidy, and only one at less than £7; this makes a considerable contrast with his earlier Poundstock group of slate monuments, all to yeomen or members of the lower gentry assessed at around £2–£6.

Some of these tombs, such as that to John and Phillippa Robartes in Truro (1616?; Truro St Mary 3, now the cathedral), are of the highest quality; others (such as those of the south-west Devon group, for example that to Mary Rashleigh (d 1621; Lezant 5) are more derivative and stiff in execution. But in great contrast to the slate monuments, all these tombs form a continuum with high-status memorials across seventeenth-century England; indeed it is clear their patrons also knew each other well and shared similar interests. For example, Cockerham identifies a group of closely interconnected people with Puritan sympathies, all of whom commissioned south-west Devon tombs. I wonder if the preference for relatively ascetic colour schemes and expanses of white or whitewashed stone, in contrast to the tombs of the Barnstaple group, is a result of their patrons' religious preferences.

In chapter four, Cockerham draws together the little information we have on the carvers themselves and the costs of the monuments: it becomes clear that, even at the height of the popularity of the slate monuments, in the first half of the seventeenth century, there may have been no craftsmen working full-time on the production; they must all have had other sources of income, whether as workers in other mediums – as Cockerham says, the plaster designs of contemporary Cornish country house interiors offer many comparisons – or as smallholders or traders.

In chapter five, Cockerham turns to his total corpus of monuments, rather than groups within it, exploring many of his previous themes in what is in effect a stand-alone overview of the Cornish funeral monument industry. The chapter includes an illuminating discussion of the evidence for Cornish pre-Reformation commemorative practices, and reveals (and explores) the marked distinction between the western and eastern parts of the county, with very few monuments indeed in the hundreds of Penwith and Kerrier, and many in the hundreds of Trigg, Powder and east Wivelshire. Other hundreds with a low count – Stratton, Lesnewth – are in the north east of the county; that is, contradictorily, where good slate was presumably most easy to come by.

This chapter has been published elsewhere, and its writing style is noticeably clearer; but it is the start of a tendency, evident in subsequent chapters, to approach the core thrust of the book with

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increasing obliqueness. It is in chapter six that Cockerham surveys monuments in Ireland and Brittany, places whose monument-making traditions are fascinating in themselves but which display little in common with Cornwall beyond a common willingness to develop strong local traditions. Also slightly obtuse, in terms of the underlying thrust of the work, but far more theoretically significant, is chapter seven, one of very few studies of the monuments of any period to make a thorough survey of the patterns of their location within churches. Here he concentrates on two contrasting parishes: 'rural' St Neots and 'urban' Liskeard. He analyses changes of position over time, by the status of the commemorated, and by the type of monument constructed; he also searches probate records for evidence of an individual's wealth or generosity to the church or to local charities. His overall findings are unsurprising: preference was for the chancel, especially the south side; landowners dominated this area at St Neot's while a more meritocratic world of local merchants and tradesman is represented at Liskeard. However, many intriguing lines of enquiry are raised *en route*. While he is right to be hesitant about his conclusions, the approach taken deserves repetition across a great many other locations and periods, and raises interesting questions about how contemporaries 'read' these monuments, living as they did in an era when many other aspects of church interiors (not least, as Cockerham says, their seating arrangements), religious practice and social assumptions were undergoing profound – and often traumatic – change.

Finally, Cockerham presents his conclusions. This is an excellent summary, starting with a vivid picture of the scene in Boconnoc church on the occasion of a visit by the King in 1644. Here we get some sense of how these tombs might have appeared at the time, a century or so after the Reformation had transformed forever the buildings in which they were erected. This plain medieval church contained several non-Cornish-made monuments to members of the aristocratic Mohun

family, as well as – less familiar to visitors from London – locally-produced slate ledger slabs to the esquires of the area. But that was not all: the church boasted a recently-installed pulpit and Communion table, a Mohun family pew and richly painted Royal arms; it had been transformed so as to embody the interests of one family. Reconstructing the settings in which such monuments were seen, and the expectations of those who were expected to gaze at them, is a crucial exercise.

In this final part of the book Cockerham is measured and intriguing, questioning some of his own conclusions while making important points about the potential significance of these memorials, both for Cornish studies and for the study of monuments in general, memorialising as they do – as Edmund Spoure wrote in 1694 – a desire to make permanent the remembrance of Cornish families 'of good worth honour, Credit reputation and esteem in this Cuntrie' (p208). The Cornish slate monuments represent an ambitious and unusual attempt by a sometimes overlooked class of people to have their lives and values remembered. Cockerham's research ensures that their investment has paid off.

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## Reviews

***The prehistoric island landscape of Scilly***, by Gary Robinson, 2007. Archaeopress: Oxford. British Archaeological Reports, British Series, 447. ISBN 9781407301457. Pb. £36.00. 231 + ix pages.

There is no doubt that the Isles of Scilly hold a certain romantic fascination for archaeologists. Since 1756 when William Borlase published an account of his visit to Scilly these islands have posed many questions for students of antiquity. Borlase raised the issue of sea-level rise and land submergence when he identified the stone field walls or ‘hedges’ on Samson flats. George Bonsor came to Scilly at the end of the nineteenth century to identify links with the Phoenicians. Such links did not materialise but Bonsor’s investigations into the entrance graves of Scilly are still the basis for much of our knowledge of these sites and the islands in prehistory. O G S Crawford put Scilly on the British archaeological map once again when he published his ‘Lyonesse’ paper in the first volume of *Antiquity* in 1927. Crawford’s paper revisited the theme of submergence and provided photographic evidence to a wider audience.

Scilly’s enigmatic prehistory continued to attract attention through the years with visits from distinguished archaeologists such as Glyn Daniel and Stuart Piggott. A focused study by H O’Neill Hencken – *The archaeology of Cornwall and the Isles of Scilly* (1932) – saw the first publication of Bonsor’s archive material. In later years the islands’ valuable collection of excavation reports and notes

resulted in Paul Ashbee’s *Ancient Scilly* (1974) and then Charles Thomas’s *Exploration of a drowned landscape* (1985), both the culmination of many years work on these islands by the authors.

Gary Robinson’s publication *The prehistoric island landscape of Scilly* (2007) is another volume that seeks to synthesise preceding work on the prehistory of these islands. Robinson set out to provide a detailed chronological framework for Scilly, in addition to looking at issues such as the prehistoric environment of Scilly and the themes of island and landscape archaeology. In producing this book Robinson has also managed to reaffirm the romantic side of the archaeology of Scilly. By using a sea kayak to travel between islands Robinson provides an almost other-worldly perspective. He undertook his fieldwork (if such it can be called – a new term may be required for such forays) kayaking around the islands, using a seafarer’s eye to identify locations that were important to the prehistoric sea traveller.

In publishing his research Robinson has a tough couple of acts to follow in Ashbee and Thomas, perhaps made all the more difficult by the fact that the volume was written within the constraints imposed by this being his doctoral thesis. Neither did he have the many years of fieldwork and excavation experience on Scilly that both Ashbee and Thomas had clocked up by the time they wrote their respective books. *The prehistoric island landscape of Scilly* is nonetheless a useful volume for Scillonian

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prehistory. Robinson provides us with a more detailed chronology based on a closer reading of the prehistoric pottery, focusing primarily on the multi-period settlement on the island of Nornour and Knackyboy entrance grave on St Martin's. As the archaeology of Scilly has lacked a comprehensive chronological framework this should put us further down the road of establishing such a framework for these islands.

Robinson sets out his stall and makes grand claims for his research: the only one to attempt a detailed chronology, the only one to put Scilly in context. In so doing he appears strangely dismissive of earlier work, suggesting that previous considerations of Scilly's archaeology have been 'largely piece-meal and uncoordinated' (p12). Robinson makes full use of the many sources available to him, both published and unpublished, and has made much use of the O'Neil material, some of which is published for the first time. However, in so doing, perhaps it should not have escaped his attention that earlier writers used what information they had to pursue their studies of Scillonian archaeology; Robinson builds on this earlier work as the earlier writers did in their time. Robinson's claim that his work 'represents a first attempt to come to grips with the prehistoric chronology of the archipelago' (p71) is questionable. There is no doubt that previous attempts to establish a chronology for Scilly have not been particularly refined. However, they form the basis for Robinson's own research and, of course, his own chronology remains untested. Such is the nature of academic endeavour that we all attempt to use what went before to enhance our own research. It is important that we acknowledge our own starting points and reference the work that has gone before to form a basis for further progress.

Robinson claims that he is the first to put Scilly into a contemporary academic context, but of course earlier writers did exactly that, following the archaeological fashions of their time. While we may now tend towards being more explicit in our theoretical approaches this is an aspect of Robinson's publication that might have benefited from further expansion. Areas of the text that reference the more theoretical contributions to prehistory and anthropology tend to be vague and little developed. The use of anthropology in archaeology has a long and generally happy history, offering the archaeologist ways of identifying the

'otherness' of material culture that is alien to our own understandings of the world.

In considering entrance graves Robinson includes a reference to Mary Douglas (1984), with her discussion of taboos, and makes the suggestion that entrance graves 'acted as resources of knowledge about the island and the islanders' (p106). The lack of discussion and explanation of such statements renders them meaningless rather than perceptive. It is frustrating because the addition of a short explanatory passage would allow the reader to engage with issues that are clearly important to his thesis.

Robinson's discussion of perceptions of nature and culture in prehistory and in the present is inconsistent and theoretically naïve. He states that in the construction of cairns and entrance graves 'boundaries between a cultural and natural world are eroded' (p128), before going on to say that such boundaries did not exist in prehistory. It seems that theoretical discussion is almost flippantly thrown out with little thought to the meaning of the words. While this may be the nature of the beast, the publication of a doctoral thesis and the need to reduce the wordage, it might have been preferable if the author had been more selective in the choice of material for inclusion rather than publishing excerpts of everything. Interpretation of Scillonian archaeology in the light of considerations of human perception and social norms alien to our own is undoubtedly worth pursuing and I sincerely hope that Robinson will publish many of his thoughts on early Scilly in more detail in the near future.

A significant aspect of Robinson's work is the inclusion of much of O'Neil's archive material from his excavations in Scilly during the 1940s and 1950s. The publication of some of this material is invaluable and arguably warrants a dedicated publication. Needless to say, Robinson also relies heavily on published material for his new study of Scilly's prehistory, which begs the question as to why he is so dismissive of this earlier work. His literature review barely mentions Ashbee and Thomas, although both receive ample critique throughout the volume. Robinson's assertion that '[D]espite the shortcomings and inadequacies of past research the islands represent one of the best-preserved prehistoric landscapes in Britain' suggests that, in his opinion, previous researchers came close to doing more harm than good to our understanding of Scilly in antiquity. Perhaps this is



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not quite what he meant. It is interesting that his critique of certain works can be quite damning yet a comparably critical stance on recent approaches to the interpretation of past landscapes (for example, Bender 1993; Tilley 1994; 1996, to mention a very few) seems non-existent. Phenomenological approaches to landscape archaeology appear to be beyond critique in this volume. It would seem that Robinson sees no reason to engage with the many problems identified with Christopher Tilley's approach to prehistory, for example (see Fleming 1999; Brück 2005). This gives an unbalanced view of the research, an unevenness that may well translate into those elements that the reader cannot check, unlike the problems with referencing that pervade Robinson's volume.

Referencing throughout the volume is inconsistent and does not wholly conform to the Harvard method, although appearing to at first glance. Neither is it always clear who or what is being referenced without having the relevant publications to hand. This becomes a little more frustrating when a number of references are clearly incorrect and a number of references in the text have no companion entry in the bibliography. There are numerous instances where the automatic spell checker has clearly taken over and given us 'peninsular' instead of the noun and 'internments' where interments belong. The random, interchangeable use of cairn and carn creates difficulties with place and site names. The typographical errors in the appendices are particularly annoying. These include much previously published information but obviously it is very handy to have it in one location. The addition of the list of museum accessions, the list of radiocarbon and magnetic dates and the pottery sequences are very useful. However, the site names and grid references for cairns and entrance graves are much less so. Such lists already exist (see Ratcliffe 1989; Russell 1980). Robinson acknowledges that there is ample confusion regarding recorded sites, particularly cairns, due to their being so numerous and close together. Another list of grid references will only offer further scope for confusion, in my opinion. Still further confusion comes with the many mistakes with site and island names in the appendices, making the data less than trustworthy overall. Any piece of work of this nature can contain inaccuracies and they are a nuisance to both the

reader and the author. However, the number of mistakes, misprints and omissions in this volume go beyond nuisance, which is a great shame.

The inconsistent nature of critique, the editorial glitches and other errors, the vague, unexplored theoretical references are all regrettable. However, Robinson's work on a chronology for Scilly's prehistory based on a detailed analysis of Scilly's pottery, will make this publication stand out among prehistories of Scilly and hopefully inform research in other areas with similar chronological difficulties. For anyone interested in the prehistory of Scilly this volume will prove an interesting read but for the serious researcher great care must be taken due to the errors and inaccuracies.

In the final analysis, I agree wholeheartedly with Gary Robinson that Scilly sorely needs a targeted campaign of research to fill in the gaps of our knowledge of its prehistory and that further field work and excavation is required before we can begin to understand the making of the landscapes of these islands.

*Eleanor Breen*

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***Bodmin Moor: an archaeological survey. Volume 2: the industrial and post-medieval landscapes***, by Peter Herring, Adam Sharpe, John R Smith, Colum Giles and Nicholas Johnson; edited by Peter Herring, 2008. English Heritage, Swindon. ISBN 9781873592625. Pb. £45.00. 208 + xiv pages (plus 4 maps, loose and on CD-ROM).

This volume represents a remarkable landmark. Firstly, it marks the fulfillment of a lengthy production process and the proper completion of the archaeological survey of Bodmin Moor which was begun in the 1980s. Secondly, in its contribution to the study of the upland landscapes of south-west England. Here it takes its place beside a series of recent or forthcoming English Heritage volumes on Dartmoor, Exmoor, the Quantock Hills and Mendip. It has been a pleasure to read and review it but I would recommend that the reader starts with the acknowledgements section which itself makes interesting reading: it is most of all a roll of honour to those who have kept the dream of volume 2 alive over the years. This is the belated sister volume to *Bodmin Moor: an archaeological survey. Volume 1: the human landscape to c 1800*. The two publications are separated by some 14 years.

The book covers its remit in 12 sections: Background, Survey methods and sources (in slightly too much detail for me), Resources, Mining, Quarrying, China clay, Turf, Other uses and activities, Agriculture, Industrial settlement and public amenities, Transport and communications, Recommendations for further work.

The structure of the book works very well, although there is a surprising and slightly bizarre relegation of 'Agriculture' to section 9 (after 'Other uses and activities') which goes against the grain in a landscape where the two themes of industry and farming should, perhaps, be more in balance. The text is altogether well written and clear. It is easy to follow and extensive rather than eclectic in its handling of the source material. This is particularly true in the treatment of the more recent past. I would recommend this volume to all who are involved with the historic environment of England's uplands.

The book is a progression from the rather narrow, inventorial style of the first volume and is more attractive, benefiting from the use of some colour and the liberal use of imaginative reconstructions. However, colour is sadly still too

sparse in this volume, and the book is rather compromised for that. The use of colour more extensively would have benefited the book in general, but would have especially helped the maps within the body text, some of the reconstruction drawings and the earthwork surveys. These latter are informative and well produced, but are much harder to decipher as a result of being in black and white (for examples Figs 18, 29, 49, 77). We have grown to expect colour in such volumes, and *Bodmin Moor vol 2* stands out for the lack of it.

There are an excellent series of four maps supplied loose in the volume and as PDF files on a CD within a wallet in the back cover (the PDF files open easily and are a great resource). The reconstructions by a number of artists are worth singling out for mention as they help the book enormously. I would like to mention the buildings drawings and reconstructions by Allan Adams, in particular. Allan works for English Heritage and is an outstanding artist. His reconstruction drawings of farm buildings and flows of processes are always brilliantly conceived and exceptionally well executed.

The use of plans, archaeological surveys and reconstructions together certainly helps to convey some of the complexity of Bodmin's historic landscape, and in particular aspects of its industrial processes. In areas of extensive streamworking and complex water management, the story is well told. Staying with the industrial theme we are introduced to and taken through the treatment of china clay working (a really good description of the extractive process with helpful reconstructions), which is not generally associated with Bodmin Moor. Granite quarrying and working is covered and illuminates the striking contrast between monumental quarrying (a wonderfully evocative photograph of De Lank quarry in 1907, on page 95) and the traces of intimate moorstone working for troughs, presses and other more local needs. The chapter on 'Turf' is very well put together and provides an exemplar of how to approach the evidence for such 'minor' industries; the discussion even encompasses 'drays' or sledges which were used to convey the turf from the bog to the drying ground. Extensive use is made of historic and recent photographs of turf cutting and the construction of turf ricks. The chapter concludes with a section entitled 'turf in the home'.

The volume has a really good glossary whose use goes well beyond the confines of this book and

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should be helpful to anyone interested in the uplands and in the West Country.

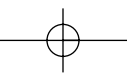
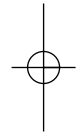
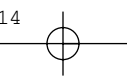
I warmly welcome the incorporation of strands of evidence from within living memory which are brought to life by some excellent collections of photographs (for example, Tony Blackman's). Together they wonderfully convey local traditions.

The production process for this volume does not always do justice to the illustrative material and this with the sparse use of colour makes the volume seem, in places, uncomfortable with itself. However, English Heritage and the authors, Peter Herring, Adam Sharpe, John R Smith and Colum Giles, as well as all the contributors to the process, are to be warmly congratulated on bringing this

volume to us. It is a major step forward for the historic environment of Bodmin Moor and I hope will play a large part in its future conservation, management and study. Beyond the Tamar it will be of wider interest to those engaged in local history, landscape archaeology and the historic environment in the uplands.

*Rob Wilson-North*

[The book can be ordered through EH Sales (01761 452966; ehsales@gillards.com), quoting product code 50100, or through any bookshop. Publication is by print on demand. A reprint of *Bodmin Moor: an archaeological survey. Volume 1: the human landscape to c 1800* is also available as print on demand.]

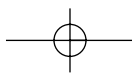




*Colour plate 1 Trenowah: the St Austell North-East Distributor Road during construction, 1997 (Photograph: Cornwall County Council.)*



*Colour plate 2  
Trenowah: the  
assemblage from pit  
[345]. The double-  
sided saddle quern S2  
is at top right.*





*Colour plate 3 Gear and Caervallack (top left), viewed from the north west, across the upper reaches of the tidal Helford estuary, 2008.  
(Photograph: Historic Environment, Cornwall Council; F85-124.)*



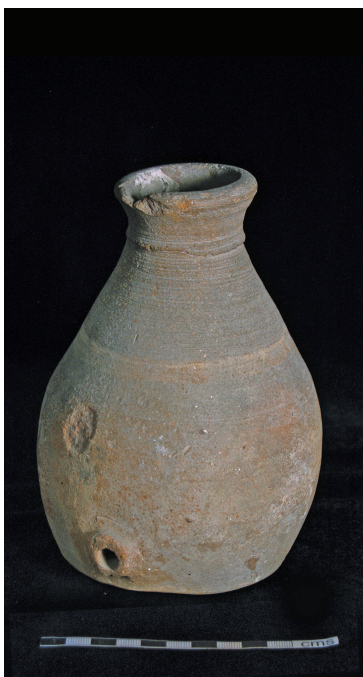
*Colour plate 4 The Harlyn Bay roundhouse from the north east, looking west, during excavations in 1976. The photograph shows the substantial depth of the infilling deposits within the roundhouse hollow and the revetment wall around its edge. Note that the exposed section of walling lining the hollow in the foreground has a rough external face, contrasting with the smooth internal face that would have been visible to the occupants of the house. (Photograph: Nicholas Johnson.)*



*Colour plate 5 Hatt House, the south-east elevation of the early eighteenth century east range. (Photograph: G Young.)*



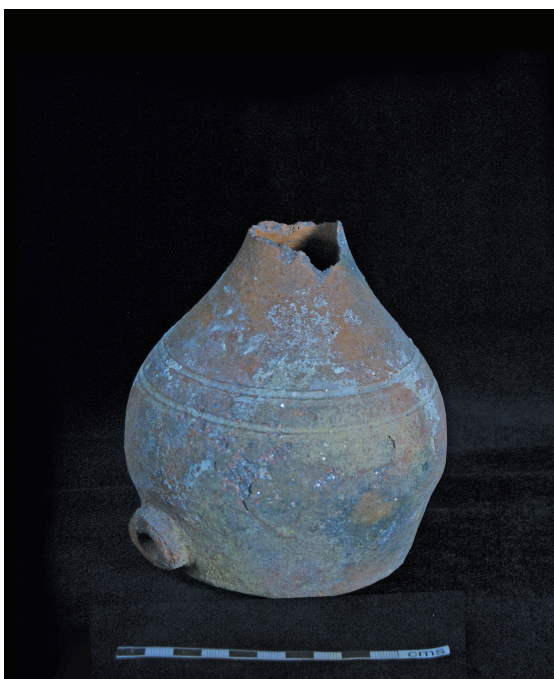
*Colour plate 6*



*Colour plate 7*



*Colour plate 8*



*Colour plate 9*



*Colour plate 10*

*Colour plates 6–10 Medieval pots from St Fimbarrus church, Fowey. Top row: nos 1, 2 and 3. Bottom row: nos 4 and 5.*

