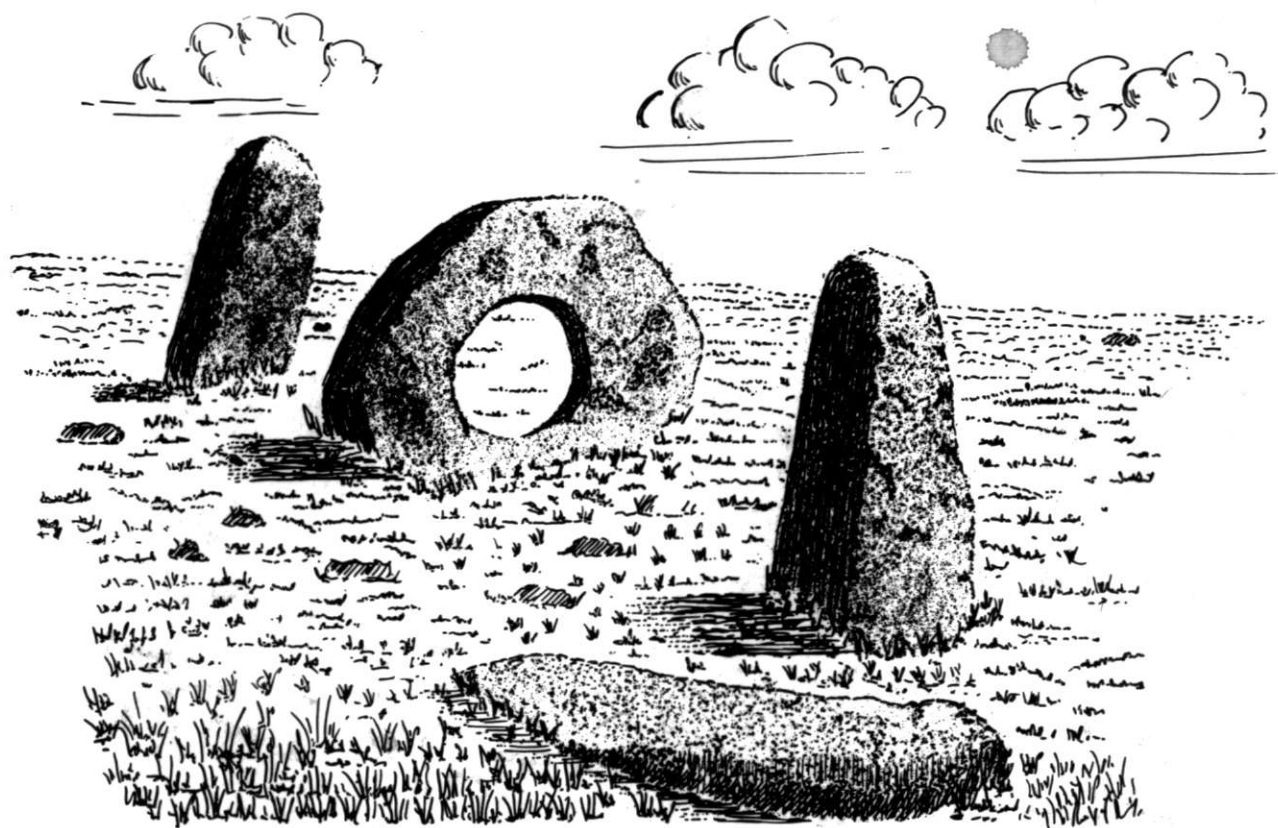


CORNISH ARCHAEOLOGY

No 32 1993



HENDHYSCANS KERNOW

COVER: *The Men an Tol*; drawing by Margaret Morgan

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EDITOR

SARNIA BUTCHER

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CONTENTS

The Men an Tol reconsidered ANN PRESTON-JONES	5
Examining a Romano-British boundary at Foage, Zennor PETER HERRING, with K. CRABTREE, V. STRAKER and S.WEST	17
A sense of identity: distinctive Cornish stone artefacts in the Roman and post-Roman periods HENRIETTA QUINNELL	29
Tintagel Castle: archaeological investigation of the Steps area 1989 and 1990 COLLEEN BATEY, ADAM SHARPE and CARL THORPE	47
Interrogating Anglo-Saxons in St Dennis PETER HERRING and DELLA HOOKE	67
Lanlivery church, its archaeology and architectural history WARWICK RODWELL	76
Stowe: the country house and garden of the Grenville family W. R. WILSON-NORTH	112
Granite towers on St Mary's, Isles of Scilly JOHN GOODWIN	128
Notes	
The Hendra adze STEVE HARTGROVES	140
Recent archaeological acquisitions at the Royal Cornwall Museum ANNA TYACKE	142
Archaeology along the hard shoulder - the Indian Queens project JACQUELINE A. NOWAKOWSKI	146
St Michael's Mount: recent and future work PETER HERRING	153
A note on the Excavation Index for Cornwall and the Isles of Scilly HELEN ASHWORTH	160
An underground passage rediscovered G.F. WALFORD	164
Recent work CORNWALL ARCHAEOLOGICAL UNIT	167
Reviews: Thomas, Charles, <i>Tintagel: Arthur and archaeology</i> , 1993, by Philip Rahtz; Twelveheads Heritage series: Johnson, N., and Rose, P., <i>Cornwall's Archaeological Heritage</i> , 1990; Smith, J.R., <i>Cornwall's China Clay Heritage</i> , 1992; Ratcliffe, J., <i>Scilly's Archaeological Heritage</i> , 1992; by Sarnia Butcher	178
Obituary: Florence Nankivell	181

The Men an Tol reconsidered

ANN PRESTON-JONES

Summary

Site survey associated with recent management work at the Men an Tol and an investigation of the plentiful antiquarian literature led to a reassessment of this monument and its associated stones. This suggests that the Men an Tol may be part of a stone circle.

Introduction

It is curious that one of the most famous of ancient monuments in Cornwall should be one of the most enigmatic. Although thousands visit the Men an Tol holed stone every year, no-one really knows what it is or why it is there. All they know is that they have to go through it.....

Because it attracts so many visitors, the Men an Tol is now suffering considerable damage. Until management work took place recently, visitor pressure was evident as a large eroded hollow around the stone and an increasing breakdown in the vegetation in the vicinity and on the path leading to the site. This erosion not only affected the appearance of the site but also threatened the stability of the central holed stone (Fig 1).

Concern for the future of the Men an Tol prompted the remedial action which is briefly described later. However, the main purpose of this paper is to present the results of the reconsideration of the site which the management work stimulated. Research was admittedly limited: it involved a quick trawl through the copious antiquarian writing on the monument and an equally rapid search for parallels. Detailed site survey gave a sound basis against which to assess the various theories attempting to explain the Men an Tol. The information thus collected is summarised below before the new survey is described along with the reasons why the site is now considered to be part of a stone circle.

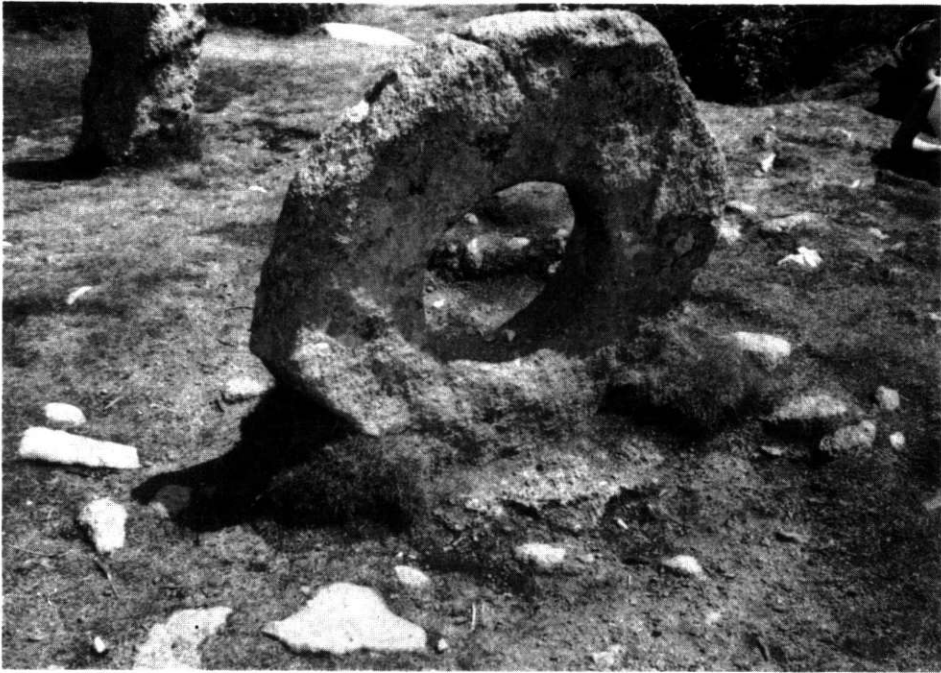
The site

National grid reference SW 426 349; in Madron parish

Antiquarian interest and traditions

Early observations on the Men an Tol are intimately entangled with descriptions of its legendary attributes. Its physical aspect cannot easily be separated from its associated traditions, and so both are described together here. Tonkin, c.1700, is the first antiquary to mention the 'Maen Tol' or 'stone with a hole', 'famous for curing pains in the back by going through the hole, three, five or nine times' (quoted in Borlase 1769, 177). In the mid 18th century, William Borlase produced the first known plan of this 'very singular monument' (Fig 2), and described in some detail its contemporary use for backache, rickets and divination: 'When I was last at this Monument, in the year 1749, a very intelligent farmer of the neighbourhood assured me that he had known many persons who had crept through this holed stone for pains in their back and limbs; and that fanciful parents, at certain times of the year, do customarily draw their young children through, in order to cure them of rickets. He showed me also two brass pins carefully laid across each other, on the top edge of the holed stone. This is the way of the Over-curious, even at this time; and by recurring to these pins, and observing their direction to be the same; or different from what they left them in, or by their being left or gone, they are informed of some material incident of Love or Fortune' (Borlase 1769, 177).

Borlase recorded that the monument consisted of three stones erect on a triangular plan, a recumbent pillow-like stone 'for the officiating priest to kneel on', and two outlying stones to the north-west (ibid, and 1740-1770, 5). His drawing shows that in his day the holed stone and its two



*Fig 1 The Men an Tol before management work. a) During the hot dry summer of 1989.
b) On a wet misty day in 1991. Note the eroded hollows beside the stone and the thin patchy grass
in the vicinity*

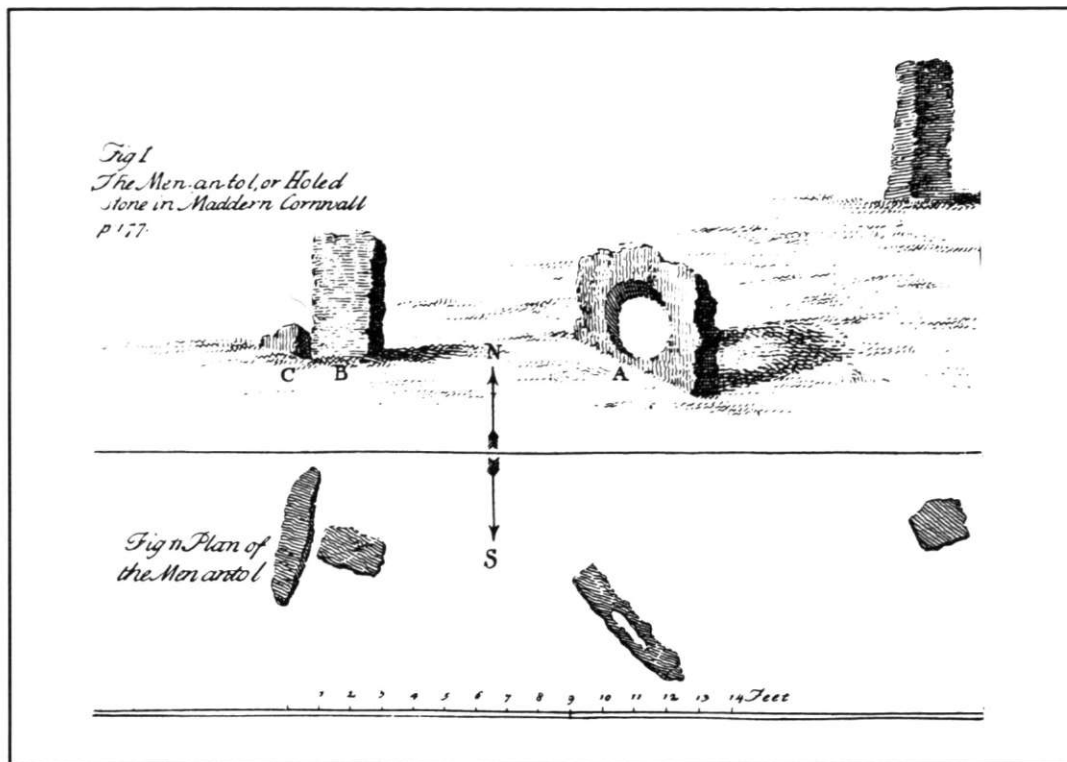


Fig 2 William Borlase' mid 18th century plan and drawing of the Men an Tol

partners were apparently not in the straight line they stand in now (Fig 2). A plan of 1778 shows the same arrangement (Hencken 1932, 50), and C S Gilbert in 1820 describes it similarly, although his information and words appear to be derived straight from Borlase (Gilbert 1820, I, 187). However, Cotton's 1827 plan and drawings show the three main stones aligned as they are now (Cotton 1827, 28, plate VI), and all subsequent plans show the same. It has been suggested that the three main stones have always been in a straight line, that Borlase' plan was inaccurate, and that the 1778 plan was merely a copy of Borlase (Barnatt 1982, 223-24; Cooke 1987, 47). Alternatively, one of the stones may have been moved to achieve the present alignment (Weatherhill 1981, 24), and that is the theory which is accepted here. Borlase' plan and descriptions quite clearly state that the three stones stood in a triangular arrangement and his plan shows a similar distance between the two flanking orthostats as exists now. Therefore it is most likely that it is the holed stone which has been moved, from a position which in the 18th century was slightly further to the south.

While most descriptions and plans of the Men an Tol focus on the holed stone and its two in-line partners, Blight (1864) pointed out that these are only part of a complex which includes further stones. His plan (reproduced as Fig 3) shows two stones, one recumbent, the other leaning, to the north-west of the main group, and a plan of 1876 by Dymond (in Cornish 1908, opp p.372) shows two possible additional stones north of these.

Blight (1864, 294) also adds the information that passing through holed stones was supposed to act as a charm against witchcraft; 'and to creep through the "Devil's Eye" as the Men an Tol was sometimes called by the people, was to counteract the effects of ill-wishing'. Hunt and Bottrell elaborate on the number of cures for back problems potentially available at the Men an Tol and Bottrell refers to it by its country name of the 'Crick Stone' (Bottrell 1880, 119-121; Hunt 1865). In Hencken's day, visitors to the Men an Tol were known as 'crickers' (1932, 47).

Various suggestions have been made about the original function of the stones. Blight, whose

numerous illustrations show an enormous fascination with the site, believed them to be the remains of a stone circle (1864, 292-93, 1885, 228 and Fig 3). Others saw them as the remnant of a cromlech or quoit (Halliwell 1847; Wise Dunkin 1873; Lukis and Borlase 1885; Worth 1893; Hencken 1932, 46). A more scientific theory was proposed by Lockyer (1909), who considered the Men an Tol to be an instrument for observing sunrises and sunsets at certain times of the year. This theme is echoed by Cooke, who considers such astronomical alignments to be part of the ritual practice

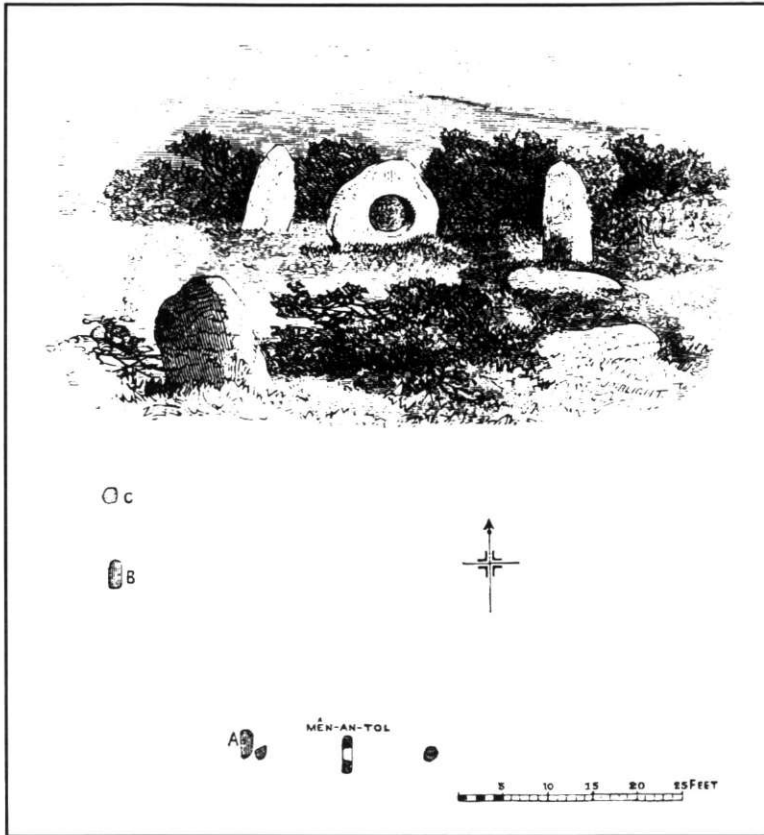


Fig 3 Plan and drawing of the Men an Tol by J.T. Blight, 1864, showing two further stones of the possible circle

associated with the site (Cooke 1987, 48-49). Of course, such interpretations depend upon a belief that the striking south-west to north-east alignment of the three main stones is an original, not a modern, arrangement. More recent archaeological opinion has quite simply viewed the Men an Tol as an enigma, possibly of Bronze Age date (Weatherhill 1981, 24; Johnson and Rose 1990, 30), but the latest survey and management work there now supports a return to Blight's opinion. The Men an Tol is now seen to lie on the southern perimeter of a probable ruined stone circle with a diameter of approximately 18m.

Parallels

Holed stones are a rare monument type. In Cornwall, less than twenty others likely to be of prehistoric origin are known, and a few examples can be found in Scotland, Wales, Ireland and Brittany. A number are, like the Men an Tol, components of a larger monument, though some are (now) freestanding. Many have traditions associated with them, some strikingly similar to those of the Men an Tol. One feature marks out the Men an Tol from all but one other of the holed stones, and this is the size of its hole: it is 51cm in diameter. The Tolvan, near Gweek in Constantine,

Cornwall, has a similarly large hole with a diameter of 44cm; but all others in Cornwall and elsewhere have holes of 15cm or less.

We have seen that the Men an Tol may be a part of a stone circle, and Blight (1864, 298) gives examples of three holed stones in Scotland (at Applecross in Rossshire; Formore, Arran and a former example at the Loch of Stennis, Orkney) apparently associated with stone circles. But holed stones are not exclusively associated with stone circles. The holed stones at Tregeseal, St Just may originally have formed a stone row: when first discovered, they lay in a line nearly east-west (Blight 1864, 295). The Tolvan may have been associated with a nearby large barrow (ibid, 293) and the capstone of Trethevy Quoit, St Cleer, is pierced in one corner by a small hole. In Brittany, the headstone of the Gavrinis chamber has three holes in a horizontal line and 'a large arm can be inserted in each of them with ease' (Blight 1864, 298). Finally, Worth (1893) considers that the presence of holes in dolmens and cromlechs is of frequent occurrence. 'They are found in the end stones of both modern and ancient cromlechs in India'.

A rich collection of folklore is attached to these holed stones. The Tolvan, like the Men an Tol, is said to have been used in healing rituals (Blight 1864, 293), and sick infants were passed through the holed stone ('Clochaphoill') at Aghade, County Carlow, Eire (Harbison 1970, 332; Evans 1966, 63). Courtship rituals took place at several holed stones (Rosemodress, St Buryan (local information); Bryher and St Mary's, Isles of Scilly (Ratcliffe 1992, 52); Doaghe, Co Antrim, Eire, and Teltown, Co Meath, Eire (Evans 1966, 46 and 177-8)) although apparently not at the Men an Tol. Tradition states that 'Fingal was wont to tie his dog Bran' to the stone at Formore in Arran (Blight 1864, 298) and ancient stories featuring holed stones are found in the Irish *Táin Bo Cuailnge* (Buckley 1991) and the *Welsh Mabinogion* (Jones, 1974, 74-5; Ward 1933-35; Jones 1992). Interestingly, though found in different areas, both tell similar tales of warriors creating the hole in the stone by piercing it with a sword or a spear.

Digs and other disturbance

Recorded archaeological investigation at the Men an Tol has been surprisingly limited, but plenty of other unscientific rootling around has taken place. The only known archaeological investigation of the monument took place before 1885. W.C. Borlase 'cut a trench between the stones, but discovered nothing but a fractured flint' (Lukis and Borlase 1885, 25). Disturbance of the site must have taken place if and when the three stones were placed in a straight line, and setting the holed stone in concrete in the mid 20th century must have caused further disruption of any below-ground remains. Hencken refers to 'some small stones near the Mên-a-tol which have lately been moved about and certainly represent no ancient structure' (1932, 46). (He was looking for large stones which might have been the remains of a quoit, but this note is particularly tantalising in view of the renewed suggestion that the Men an Tol may be part of a stone circle.) Indeed, the very nature of the stone and the attention it attracts suggests that it may have fallen over and been re-erected on many occasions in the past. In the immediate vicinity are a number of tinner's pits (these existed by at least 1876 — see Dymond's plan in Cornish 1908 opp p.372) providing a further possible context for disturbance to the monument. It is therefore hardly surprising that archaeological recording prior to the 1992 restoration work revealed little extra information about the site.

The Men an Tol now

A number of stones comprise the complex at the Men an Tol (Fig 4). Known to everybody, there is the holed stone itself — a slab resembling a large tyre, approximately 1.2m in diameter, pierced by a 0.51m diameter hole. This is flanked in a south-west to north-east alignment by two upright pillars of granite each 1.2m high. A recumbent stone 1.2m long lies at the foot of the south-west orthostat. Immediately south-south-east of the aligned stones is a low, stony, roughly semi-circular mound, up to 0.4m high, whose association with the monument is an uncertain possibility. It could

represent the remains of a cairn.

To the west of this group, walked past or over by visitors but little remarked is a further orthostat and two recumbent stones (one mostly buried in turf). The orthostat is 0.96m high, the recumbent stones 1.35 and 1.5m long. Two of these stones were noted by Borlase (1769), planned by Blight (1864), Dymond (in Cornish 1908, opp p.372) and Weatherhill (1981, 24), but dismissed by Barnatt: 'other smaller stones proposed as fallen parts of the monument are not convincing' (1982, 223).

Blight believed that taken together, these stones constituted the remains of a stone circle and this idea must have occurred to Dymond as well, for his plan shows two further stones, 'buried' and 'nearly buried', to the north of the latter group. In attempting to understand the holed stone, or at least its context, it is necessary to consider all the visible stones and not just the Men an Tol and its

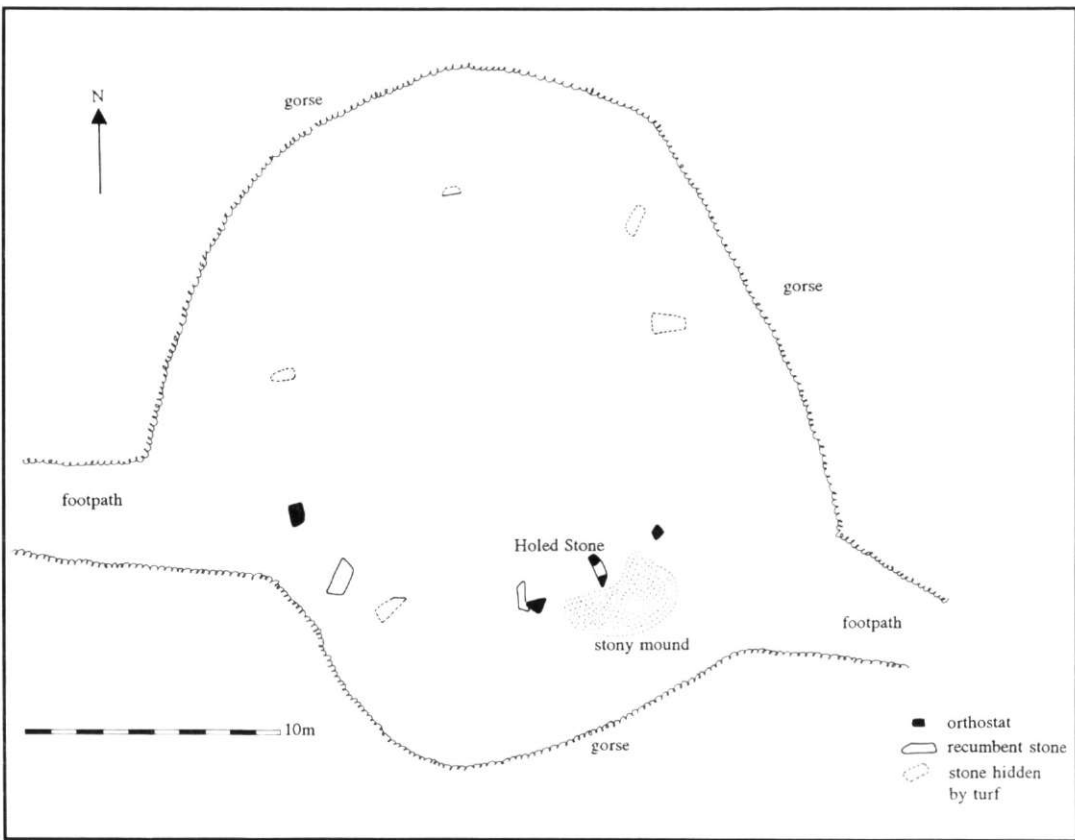


Fig 4 Plan of the Men an Tol in 1992, after gorse clearance

immediate attendants. The presence of upright and apparently fallen stones suggests that the monument belongs to the category of late Neolithic/early Bronze Age stone monuments which includes standing stones, stone rows, stone circles and stone settings. Does the Men an Tol complex bear any close resemblance to any of these classes? The answer is yes; the stones appear to form an arc, and could therefore be part of a stone circle, with three uprights in situ, two uprights fallen, one fallen upright displaced to one side, and the Men an Tol, perhaps very close to its original position as one of the stones on the circle's perimeter. Using the three uprights as fixed points the centre of a hypothetical true circle can be established (by bisecting lines drawn between the uprights); this would give a circle of 18m diameter.

a thing is possible!). One of these stones can probably be identified with one of the two buried or partly buried stones shown on Dymond's plan. Assuming that they would have moved out of line when they fell, these stones fit reasonably well onto the edge of a compass-drawn 17 to 18m diameter circle.

Altogether then, the complex at the Men an Tol can now be seen to comprise: one holed stone, three upright pillars, four recumbent stones (visible or partly so), two recumbent stones invisible beneath the turf, one possible stump of an upright, and a possible cairn. The fact that all the stones lie close to the diameter of a ring is strong evidence in favour of their being part of a stone circle: but are there any other factors in favour of this interpretation? One significant feature is that the three orthostats all present a good face to the centre of the circle. This is evident from the plan and is especially noticeable on site since all the gorse has been cut. According to Barnatt, flat inner faces are a notable factor in the design of stone circles (1982, 62). Another factor concerning the existing orthostats is that at 0.96m, 1.2m and 1.2m high, they each conform very closely to the average size of stones in the Cornish circles, which is around 1m; (Barnatt 1982, 63). The orthostats in the circles usually have a very restricted height range, too, like those at the Men an Tol. Finally, the size of the proposed Men an Tol circle, with its diameter of 17-18m, fits within the general range for circles in West Cornwall which is from 16 to 30m although the West Penwith circles are (until now) restricted in their range from 20 to 30m.

Fig 5 shows an attempt to reconstruct the Men an Tol stone circle. This uses the spacing between the existing stones to 'predict' the locations of the missing ones. The result is a circle of 20 stones with the stones set 2.5 to 3.0m apart. This again fits very closely with the characteristics of other circles in West Penwith — all remarkably similar with 20 to 22 stones originally, set from just under 3m to 3.5m apart. Boskednan stone circle, only 800m east-north-east of the Men an Tol, is the only one with stones spaced under 3m apart. One problem is that the spacing of the stones at the Men an Tol is not regular, even between existing uprights. Barnatt notes that the majority of rings have a relatively standard spacing with differences in gaps being hardly perceptible to the human eye: poor spacing is often the result of extensive restoration but may occasionally be a feature of the original layout (1982, 62). Of course, it is impossible to be certain of the original spacing of the stones at the Men an Tol, given that most of the stones have fallen over and that the diameter of the hypothetical circle is not completely certain.

If the complex at the Men an Tol was indeed a stone circle, then it would seem likely that the holed stone originally stood at right angles to its present orientation — ie in line with the circle. Even so, it would have formed a rather unusual component in the circle. Perhaps it was a 'special' stone — a focus for rituals or for observing distant features from the circle. If at a tangent to the circle, observations through the hole would have been to the north-north-west or south-south-east. At this orientation no obvious astronomical events or landscape features suggest themselves to the writer, but others may be aware of something significant.

The existence of a cairn on the edge of the circle is not an unparalleled phenomenon. In fact, the closest parallel is again at the Boskednan stone circle. Here, a cairn, which formerly had a cist in it, lies just outside the circle on the south-south-east in a similar position to that at the Men an Tol. (Unfortunately the exact relationship of cairn to circle at Boskednan is obscured by 19th century tinnerns' pits — see plan and descriptions in Barnatt 1982, 165-67). The presence of the cist in the cairn at Boskednan suggests an interesting alternative possibility for the original function of the Men an Tol itself. Perhaps the holed stone was first used as a rather unusual capstone or other component in a cist.

This possibility aside, the Men an Tol remains a unique and unexplained feature of the circle, at least in a Cornish context, though as noted above the association of holed stones with stone circles does have other parallels in the British Isles. The origin of the stone itself may, however, be susceptible of explanation. Ian Cooke suggests that the hole may once have been a rock basin on top of a granite tor, formed by natural weathering over many millions of years (1987, 48). A slab

of very similar shape and size to the Men an Tol, containing a basin, still exists on the top of Zennor Carn (Ian Cooke, pers.comm.). Indeed, utilisation of a naturally available resource may explain why two of Cornwall's holed stones — the Men an Tol and the Tolvan — are unique in having much larger holes than is usual.

The Management Problem

Visitor pressure is the basic problem at the Men an Tol. Several factors — the curious beauty of the stone, its photogenic qualities, its traditional attributes and its setting in an area of moorland rich in antiquities — have ensured the Men an Tol a mention in most guide books, so that today it is probably one of the most visited of ancient monuments in Cornwall. Nowadays, the usual ritual on visiting the site appears to be to clamber through the hole, as tradition demands, and take a photograph or two. The Men an Tol is also an important focus for Earth Mysteries groups.

The result is considerable erosion around the Men an Tol and on the path leading to it. The clearing in which the Men an Tol is set is becoming increasingly denuded of vegetation. In the vicinity of the stone the grass cover is thin and breaking up and clumps of gorse visible on photos of only 15 years ago have disappeared. The holed stone itself sat, before the management work detailed in this report, in a bare eroded hollow up to 2.5m in diameter and 15cm deep. Within the last couple of years, the concrete in which the stone is set had become exposed within this hollow. Although the hollow was frequently a muddy puddle visitors were not deterred from their ritual practice: stones were simply removed from the adjacent mound and placed in the puddle, to help provide a dry passage through the hole. Of additional concern was the fact that a slight movement could be detected when the stone was pushed. There are also hollows around the two upright stones flanking the Men an Tol, but only that to the north-east tended to puddle water and become muddy.

There is no doubt that the erosion around the Men an Tol has increased recently. Nineteenth century illustrations (see for example Blight's, Fig 3) show the Men an Tol buried in the ground to within a few centimetres of the base of the hole: if the ground around it was then hollowed, it is not shown so. Photographs in two books published in c.1912 show a slight hollow around the holed

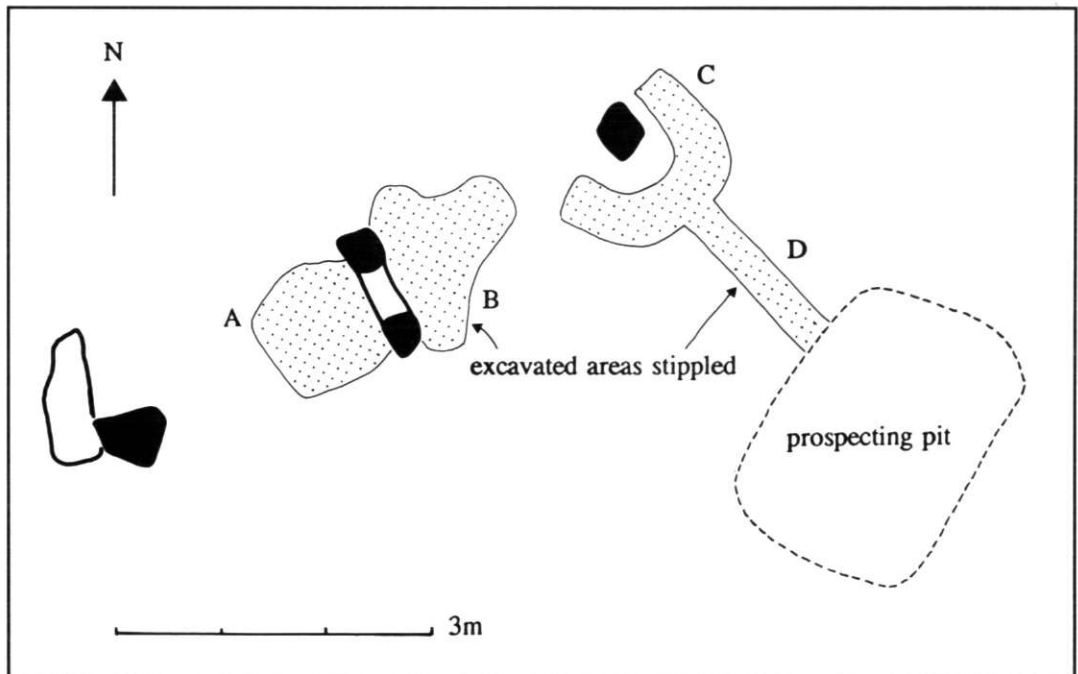


Fig 6 Areas excavated during restoration work

stone — probably the result of cattle, rather than people trampling — and most strikingly, the vegetation is much rougher and denser than it now is, with gorse encroaching on the stones (Harris Stone c.1912, opp p276; Folliot-Stokes 1912). The Cornwall survey for the CPRE (1930) has a photo taken just after a heath fire: the stones stand naked, burnt branches of gorse littering the bare ground around them. From this, it is clear that each of the stones has a shallow hollow around its base, but there is no severe erosion. This impression is confirmed by the photo in Hencken's *Archaeology of Cornwall and Scilly*, published two years later, by which time the vegetation had regenerated to give a good cover again. Even photos of 1975 (Nicholas Johnson, private slide collection) show the grass in the vicinity much longer and rougher than it is now, and more odd clumps of gorse. There is a little erosion, but no seriously bare areas.

Thus the problems to be tackled here involved hiding the concrete setting of the Men an Tol, providing an erosion resistant surface, attempting to alleviate waterlogging and to try to restore the grass cover in the vicinity. At the same time we were concerned that the work should not violate the atmosphere of the site. The wild moorland character of the spot and the rough rugged nature of the stones had not to be compromised.

The solution for the Men an Tol was to excavate the most severely eroded areas to either side of the stone to a depth of 0.3m and to fill the hole with pitched stone chosen to match that visible in the adjacent mound. This was then turfed over. Around the orthostat north-east of the holed stone the ground level was raised slightly with stones and turf. As this area was particularly prone to waterlogging, a drainage trench running south-south-east into a nearby prospecting pit was dug, filled with stone and re-turfed. Nothing was done to the ground around the orthostat south-west of the holed stone as this was not such a serious problem. In each case, any excavation involved was carried out archaeologically, but no finds of any significance were made. The areas excavated are shown on Fig 6.

Finally, a clearing of just over 20m in diameter was cut in the gorse around the Men an Tol (Fig 8). The primary purpose of this was to help relieve some of the pressure on ground in the immediate



Fig 7 Stephen Bone setting pitched stones on the SW side of the Men an Tol



Fig 8 The Men an Tol 'stone circle' in its new setting

area of the holed stone, and to provide a better view of all the stones in the complex. It was also intended to see if any more stones in the hypothetical circle could be found, and by creating a wider clearing, to give a feeling of a circle.

The work around the stones was carried out in May 1992, and the clearing was cut in October of the same year. After a year's wear the surface around the Men an Tol comprises stones and mud which do not look beautiful but blend well and are doing their job in terms of providing a stout surface and support for the holed stone. The ground around the north-eastern orthostat has been very satisfactorily cured of bogginess, but the drainage trench leading from it is a very obvious sunken line which will have to be filled and re-turfed. Once this is done, there will be little to tell that anything has happened. By contrast, it is the creation of the clearing — which involved no actual disturbance of the monument — which has had the most dramatic and controversial effect, for it completely alters the atmosphere of the place. From an enclosed huddle of stones, the site has now become a wide open area in which the Men an Tol is only one small, if important, element. But if we are right that this complex is the remains of a stone circle, then this is the right effect. Whether it will help to ease pressure on the focal stone and improve the grass cover remains to be seen.

Acknowledgements

The project was funded by English Heritage and the Penwith Peninsula Project and carried out by the Cornwall Archaeological Unit. The owner, the Bolitho Estate, kindly gave permission for the work to take place. Advice on the best way of carrying out the job was provided by Gerald Bird (English Heritage) and Robin Menneer (ESA Project Officer) and the work of consolidation was carried out, with great enthusiasm, by Colin and Stephen Bone of Lanyon Farm. Jeanette Ratcliffe (CAU) assisted with the initial archaeological excavation. Trevor Edwards of Cornwall Trust for Nature Conservation advised on wildlife aspects. Without the persistence of Peter Rose of CAU the Men an Tol project would probably never have happened, and it was he who turned the Men an Tol from an enigma into a stone circle. Finally, Jenny McLynn typed the report with amazing accuracy and speed.

Bibliography

- Barnatt, J., 1982. *Prehistoric Cornwall: the Ceremonial Monuments*.
- Blight, J.T., 1864. 'The Holed Stones of Cornwall', *Archaeologia Cambrensis* series III, vol X, 292.
- Blight, J.T., 1885. *Churches of West Cornwall*.
- Borlase, W., 1740-70. *Parochial Memoranda*, MS at British Museum, microfilm copy at RIC, Truro.
- Borlase, W., 1769. *Antiquities of Cornwall*, 2nd edition.
- Bottrell, W., 1880. *Traditions and Hearthsides Stories of West Cornwall*.
- Buckley, V., 1991. 'The Stone of Cethern's Delusion', *Archaeology Ireland* 5.1, 16.
- Cooke, I., 1987. *Mermaid to Merry Maid: a Journey to the Stones*.
- Cornish, J.B., 1908. *Victoria County History of Cornwall*, Vol I.
- Cotton, W., 1827. *Illustrations of Stone Circles...& etc.*
- Council for the Preservation of Rural England (CPRE), 1930. *Cornwall: Coast, Moors and Valleys*, Chapter IX, 'The Antiquities of Cornwall' by Charles Henderson.
- Evans, E., 1966. *Prehistoric and Early Christian Ireland: a Guide*.
- Folliot Stokes, A.G., 1912. *The Cornish Coast and Moors*.
- Gilbert, C.S., 1820. *Historical Survey of Cornwall*.
- Halliwell, J.O., 1847. *Rambles in Western Cornwall*.
- Harbison, P., 1970. *Guide to the National Monuments of Ireland*.
- Harris Stone, J., nd. *England's Riviera*.
- Hencken, H.O'N., 1932. *The Archaeology of Cornwall and Scilly*.
- Hunt, R., 1865. *Popular Romances of the West of England*.
- Johnson, N. and Rose, P.G., 1990. *Cornwall's Archaeological Heritage*.
- Jones, G.V., 1992. 'Llech Gronw', *Llên Cymru* 17, 131-33.
- Jones, G. and T., 1974. *The Mabinogion*.
- Lockyer, N., 1909. *Stonehenge and Other British Stone Monuments Astronomically Considered*.
- Lukis, W. and Borlase, W.C., 1885. *Prehistoric Stone Monuments: Cornwall*.
- Ratcliffe, J.R., 1992. *Archaeological Heritage of the Isles of Scilly*.
- Ward, F., 1933-35. 'Llech Ronw', *Bulletin of the Board of Celtic Studies* 7, 352-53.
- Weatherhill, C., 1981. *Belerion: Ancient Sites of Land's End*.
- Wise Dunkin, E.H., 1873. 'On the Original Use of the Men an Tol or Holed-Stone in the Parish of Madron, Cornwall', *J. Roy Inst Cornwall*, IV.xxi, 152-54.
- Worth, R.N., 1893. 'The Rude Stone Monuments of Cornwall', *J Roy Inst Cornwall*, XII, 200-1.

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Examining a Romano-British boundary at Foage, Zennor

PETER HERRING, with K. CRABTREE, V. STRAKER and S. WEST

The Cornwall Archaeological Unit (CAU) has, throughout the 1980s, recommended that any works that affect the important prehistoric boundaries in Zennor should be preceded by archaeological investigation and recording (eg Herring 1987, site 94043).

The National Trust (NT) planned to repair, in the summer of 1992, a collapsing and untidy revetted lynchet at SW 4663 3774, on the south-west facing slopes of Zennor Hill/Carne, part of the prehistoric field system at Foage farm, Zennor (see Fig 1 for location). The lynchet, a scarp formed by the build-up of cultivation soil at the bottom of a field, was substantial, nearly 2 m high

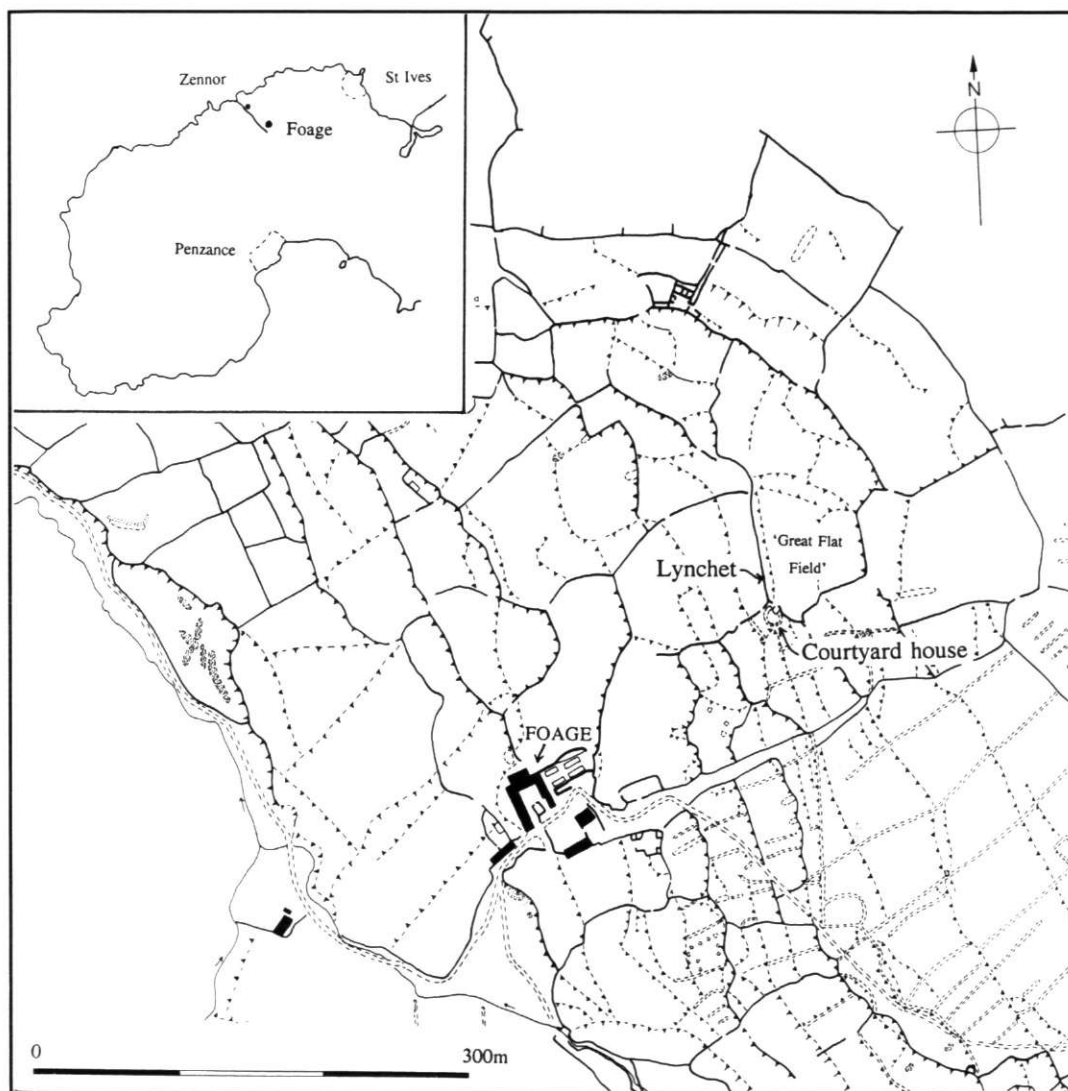


Fig 1 Foage. Location of the lynchet within the prehistoric field system.

in places, but the revetment had collapsed in several stretches, and had been spread by the movement through or over the boundary by farm livestock in others. Rusting barbed wire from an abandoned fence ran along parts of the boundary. As it stood the boundary no longer functioned as a livestock barrier and it was unsightly. The NT repairs were to involve a mechanical excavator pulling away the bank of mainly loose stones along the downhill, west side of the lynchet and, using the same machine, cutting a shallow foundation trench and a vertical rear edge onto and against which the new wall was to be built.

The lynchet was considered to be of some archaeological importance as a Romano-British courtyard house (CAU, PRN 16230) had been discovered immediately to its south in a NT management survey in 1989 (Herring 1989, 36-7). The boundary appeared to have been originally attached to the north, rear side of the courtyard house and was regarded as almost certainly contemporary and thus probably 1800-2000 years old, with the lynchet having developed as the product of presumably regular ploughing over nearly two millennia.

It was clear that a considerable length of prehistoric boundary was to be revealed and partially removed and when consulted by Jon Brookes, the NT warden, the CAU recommended that two perpendicular trenches be cut through the boundary so that it and the lynchet could be recorded and studied. The Trust then commissioned the Unit to undertake that work and also to produce an explanatory leaflet for the Acorn volunteers who would do the rebuilding.

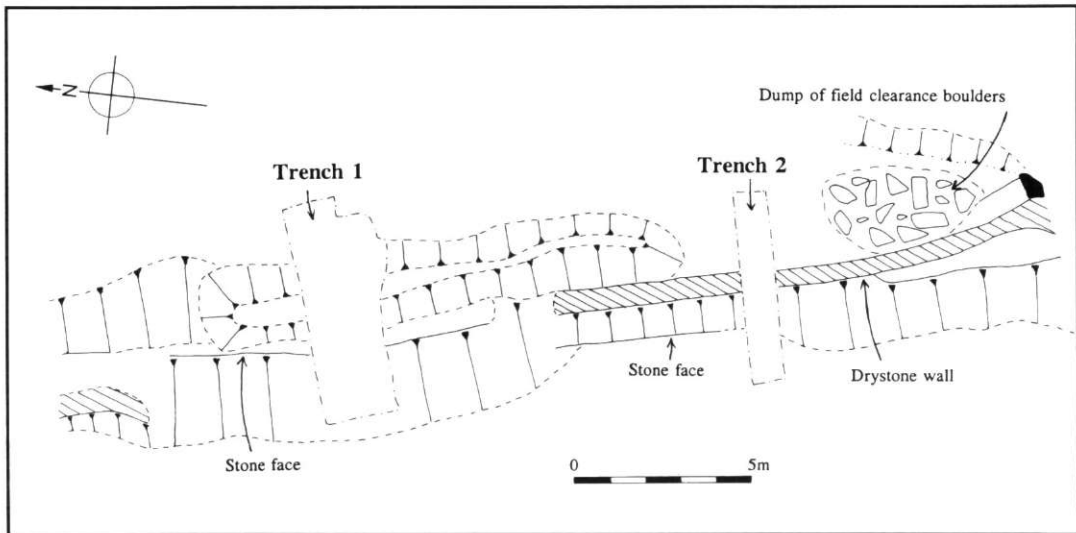


Fig 2 Foage. Plan of the southern end of the boundary and the position of the trenches.

The trenches, both c.6 m long, were cut by mechanical excavator. Trench 1, 18 metres from the boundary's southern end, ran through a stretch which included a low bank of stones (0.5 m high) on the back of the lynchet and had traces of a stone face visible along its downhill west side. Trench 2, seven metres from the southern end, sectioned a stretch of apparently pure lynchet with a recent (19th or 20th century) flimsy, single-stone-thick drystone wall running along its back.

Sections of both trenches were cleaned, photographed and drawn at 1:20 (Figs 3 and 4) and the southernmost 27 m of the boundary was planned at 1:100 (Fig 2) to show the trenches' locations and the nature of part of the boundary prior to repairs. Soil samples were taken at regularly spaced depths through the lynchet material in both trenches and through a buried loamy layer also found in both trenches. These were sent to Vanessa Straker at Bristol University for scientific palaeo-environmental analysis (see appended report, below).

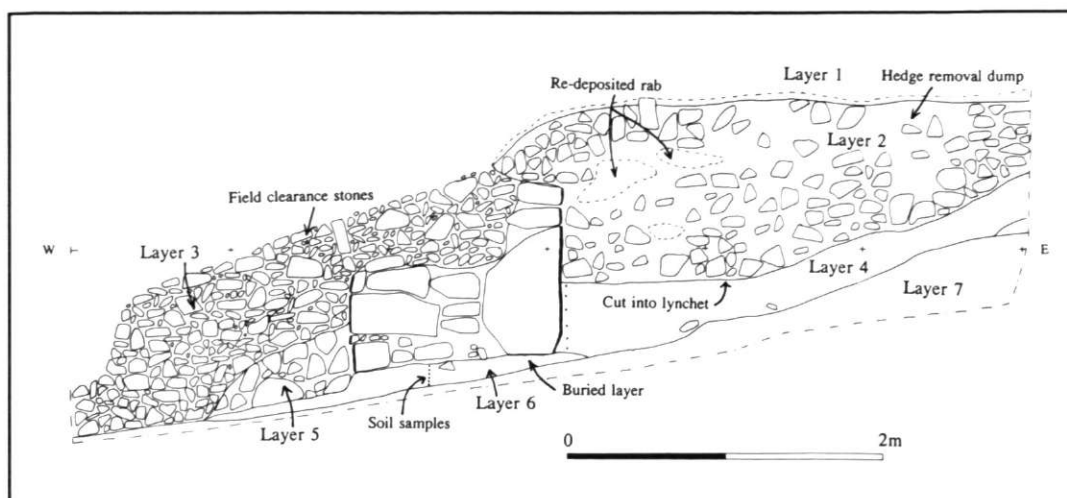


Fig 3 Foage. Section through the boundary in Trench 1. Note layer 6 buried beneath Romano-British wall

Trench 1 (Fig 3)

The stratigraphy and layers recorded will be described within a narrative account of the development of the boundary as it is visible in this trench, an account which can be broken down into 7 distinct phases:

Phase 1 Pre-boundary (buried loamy layer)

The top of the underlying rab (layer 7 — orange granite subsoil) slopes gently down from east to west at an angle of c.15° from horizontal. This was probably the original lie of the land — the builders of the wall (phase 2) appear not to have cut a foundation trench as a buried layer of loamy material survives beneath it.

The buried layer (layer 6) is the most important recorded in either trench because it contains pollen from the vegetation that existed at Foage and in its surrounding area in the period before the wall was built, ie pre-Roman if our assumed early Romano-British date for the wall is correct. The layer is a black-brown loam containing some granite sand/gravel (1-3 mm) and relatively few small stones. It is up to 0.14 m deep beneath the wall and also survives to a little distance from the wall on each side. Uphill it peters out just 0.2 m from the wall and appears to have been cut away by ploughing/digging this close to the boundary in the years before the lynchet (phase 3) developed and buried it. Downhill it survives for 0.9 m, reduced in depth by negative lynchetting and buried by a layer of small and medium sized stones, apparently collapse from the wall (phase 5). Six samples were taken from this buried layer from roughly under the centre of the wall (sample numbers 1 to 6 at respectively 1, 4, 7, 10, 13 and 14 cm from the top of the layer).

Phase 2 Wall

Built onto layer 6 is a very substantial stone-faced stone and earth wall (a Cornish hedge) 1.3 m wide with well finished vertical faces surviving to 1.0 m high on the uphill, east side and 0.6 m on the downhill, west. The section revealed a massive un-dressed granite boulder set up on edge and used as a grounder at the foot of the east face; two other boulders of similar size (0.9 m max dimension) were removed by the machine from similar positions during trench excavation. Such large grounders are common in Zennor walls and it is considered likely that most will be as old as the boundary — the smaller stones making up the upper faces and core will probably have been occasionally knocked out and replaced but the large grounders will usually stand ‘for ever’. In this case the assumption is that the grounder and perhaps also the smaller footing stones on the western

side will be Romano-British.

The core of the wall comprises small stones (generally less than 0.2 m max dimension) and a medium reddish brown loam (layer 5), darker than layer 4 (lynchet), and containing a considerable amount of granite sand/gravel (1-3 mm). This loam has also, of course, found its way into the heap of tumble (phase 5) on the downhill, west side.

The wall was until relatively recently rather higher than it appears in section; it can be assumed that the recent dump of stones on the uphill side (phase 7) came up to the original wall height (1.6 m). This would have made the boundary stock-proof on both sides, confirming a mixed agricultural economy. Its width gave the wall considerable strength and also allowed its core to be used as a dump for clearance stones.

Phase 3 Lynchet

Built up against the back (east) of the wall was a substantial layer of medium brown loam (layer 4), 0.45 m deep immediately behind the wall, 0.18 m deep 2 m uphill from it. There were very few stones in this lynchet layer which was of a light, well-sorted nature.

The section shows that this lynchet layer has been cut into (see Phase 4); it would once have been much deeper, at least 1.0 m deep immediately behind the boundary, leaving little wall height on this side.

Phase 4 Removal of part of the lynchet

A shallow cutting, c.2.0 m wide c.0.5 m deep, was made into the lynchet uphill from the boundary. Some of the well-sorted, nutrient-rich and fairly stone-free lynchet soil was taken away and presumably re-used elsewhere on the field or farm, a husbandry practice recorded elsewhere in the South-West (eg Jewell 1981, 104). In fact we also have a record of James Stevens, the farmer-diarist of Foage, doing precisely this, in this field (the 'Great Flat Field'), almost exactly one hundred years ago. Throughout January 1892 he '*heaved the leat*', '*broke up ditch*' and '*turned ditch*' before '*plowing*' the field in early February. He turned his attention back to the ditch again at the end of that month. His diary entry for March 5th reveals his method and intention: 'Pulled out ditch of great flat field in slide [ie farm sledge] over the shallow lower corner and pulled some loads of scrapings on green pile plot for pile' (Pool 1977)

James was clearing the ditch not just to maintain a drain and keep the wall stockproof but also to obtain good soil for increasing the soil depth in the '*shallow lower corner*' and to add to his manure piles in the enclosure near the farmstead he kept aside for that purpose.

No doubt James Stevens was not the first Foage farmer to take soil from this lynchet, but he may have been the last. Many labour-intensive farming practices established in the medieval or earlier periods ended in Zennor in the decades around the turn of the 20th century. The cutting into the lynchet recorded in this section is quite likely to be that made in January 1892; if so it is a neat coming together of documentary and archaeological evidence.

The implications of confirming the existence of this practice in Zennor are considerable. Firstly, we can expect many more lynchets to have been cut into, removing valuable archaeological evidence. This may be particularly the case in the more intensively worked fields close to farmsteads — the lynchet examined here is just 150 m from Foage farm. Secondly, we must be more cautious in equating depth (or height) of lynchet with intensity or duration of cultivation; many relatively shallow lynchets can now be expected to have been partially removed while other more substantial ones towards the edges of field systems may never have been cut into or robbed. It would be wrong to assume that the latter were in more intensively worked fields. Thirdly, the practice itself is another vivid reminder of the sheer hard work involved in the farming of Zennor's fields. In all, James Stevens spent 17 days in 1892 clearing material from the 'ditches' of this one field. Presumably in the following year he did the same in another field. (See Appendix for a year in the life of the 'Great Flat Field').

Phase 5 Wall collapse/breach

The downhill, west face of the stone wall collapsed into a low compact heap against its foot (see section). This must have happened regularly through the wall's long life but usually such breaches or collapses were repaired to keep the boundary stock-proof. That the last collapse was not repaired is a sign either of neglect or of a change in husbandry practice in which livestock were allowed free range through several contiguous fields at one time and breaches of walls and hedges were not attended to. This appears to be a feature of 20th century dairy and stock farming in Zennor so we may assume such a date for this collapse. (It is certainly difficult to imagine James Stevens not repairing the wall!)

Phase 6 Field clearance stones dumped from west

Overlying the partially collapsed wall to a depth of c.0.7 m is an untidy heap of small stones (layer 3), mainly fist to head size, clearly dumped on the wall from the downhill, west side, from the field called in 1840 'Higher Whit Park'. These are distinctively leazing stones, the small stones kicked up by cultivation, collected by hand and dumped on the nearest wall or natural earth-fast boulder. As they post-date the wall's collapse a 20th century date is likely.

Phase 7 Dump of material from uphill hedges

Overlying the cut lynchet (phases 3 and 4), the wall (phase 2) and the dump of leazing stones (phase 6) is a substantial dump of loose stones, earth and even scoops of rab. The layer (2) is up to 1.2 m thick and is the main element of the apparent lynchet.

The material almost certainly came from the removal of two hedges in the field uphill, i.e. the boundaries between 'Great Flat Field' and 'Flat Field' and between 'Great Flat Field' and 'Great Carn Field'. Their removal left the large irregular shaped field that exists uphill from the lynchet today and the lines of their lynchets survive in the field. A date in the second half of the 20th century for the hedge removal was confirmed by the discovery below the dump but above the cut lynchet of an oil can and a rusting 1940s pram (further north along the boundary). These had presumably been left against the wall and were smothered by the hedge debris.

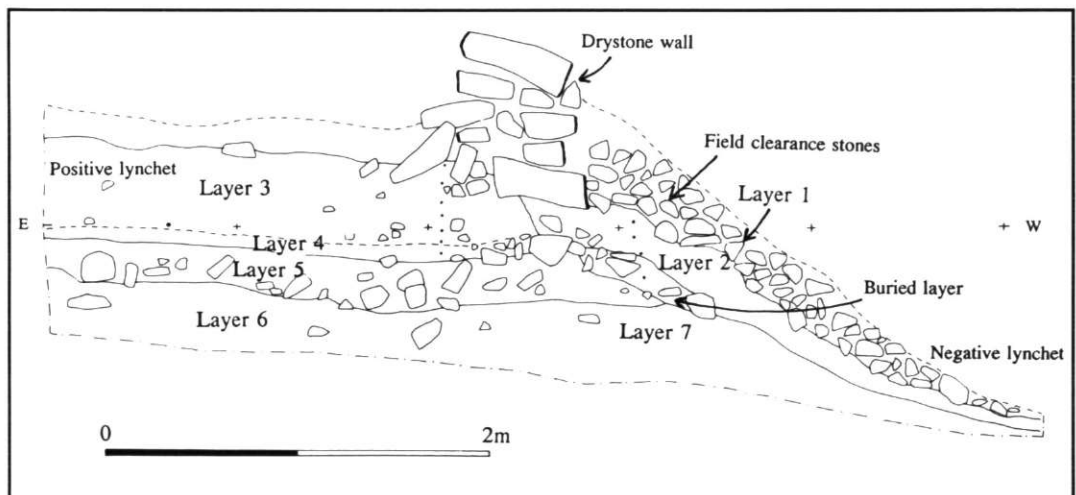


Fig 4 Foage. Section through the boundary in Trench 2.

Trench 2 (Fig 4)

Phase 1 Rab and podzol

The section revealed a characteristic podzol buried beneath the main lynchet. A 0.2 m deep white or pale grey gravelly layer (5) overlay the orange/red rab (the iron having been washed out of the grey into the red). The angle of its slope, c.5° from horizontal follows the original lie of the land. Note that this is c.10° less steep than Trench 1, just 11 m to the north, reflecting the uneven original ground surface.

Phase 2 Boundary and buried layer

At some date, probably in the Romano-British period, a boundary was erected here as a positive lynchet developed uphill from it and a negative lynchet was cut below it (phase 3). Unfortunately the original boundary has been removed but a low bank of small and medium sized stones 0.8 m wide, 0.1 m high survives. Beneath the downhill part of this is a thin buried layer (layer 7) 0.13 m thick (maximum), 0.7 m wide. This appears to have been disturbed in the construction and dismantling of the wall. One sample was taken from it (see environmental report, below). The wall was presumably similar to that substantial stone-faced stone and earth wall recorded in phase 2 of Trench 1 (above).

Phase 3 Lynchets (positive and negative)

Lynchets developed on each side of the boundary. A 0.5 m deep layer of well-sorted fine grey-brown soil with some gravel (1-3 mm) and a few small stones built up against the uphill, east side. Beneath this was a thin layer (4; 0.07 m deep) of much lighter coloured soil of similar texture, presumably the product of the first few years' ploughing into the grey-white bleached horizon of the podzol. The lynchet appears not to have been cut into by James Stevens (cf phase 4 of Trench 1).

A negative lynchet was formed on the downhill side of the boundary by farmers gradually cutting into both the bleached horizon of the podzol and the rab by centuries of ploughing. Assuming an even plane to the original lie of the land this cutting was c.0.5 m deep and therefore contributed as much as the positive lynchet to the overall lynchetting scarp.

Phase 4 Debris from wall removal

A layer of reddish brown fine earth (layer 2) spreads over the downhill slope of the lynchet, obscuring much of the negative lynchet. The most likely source of this layer, up to 0.2 m deep, is the earth core from the original wall. When dismantled the stones were removed and some were probably re-used in the later drystone wall (phase 5).

Phase 5 Single drystone wall

In the modern period (18th to 20th centuries) many Zennor boundaries were relatively flimsily built — single stone walls and single-thickness drystone walls were most common. Here we have a typical late single drystone wall high in the section, built on top of the established lynchet. It is just 0.55 m wide and stands here to 0.8 m high. Over most of its sinuous length (the southern 13 m of the boundary) it had collapsed.

Phase 6

Leazing stones have been dumped against the downhill, west side of the boundary possibly in the 20th century (see also phase 6 in Trench 1, above). A 0.3 m thick layer of small fist to head-sized stones spreads up to the higher courses of the phase 5 drystone wall.

General conclusions

The detailed recording of the sections through this lynchet has proved to be extremely valuable. The earliest wall, visible in Trench 1, probably Romano-British in origin (c.1-200 AD), was substantial with a massive grounder on the uphill side, later completely buried by the build up of lynchet material. It was built both to be stock-proof and to be a dump for stones cleared from the fields. Revetted lynchets, as suspected, could always have been free-standing walls originally. Trench 2 showed that negative lynchetting, the cutting away of soil and subsoil at the tops of fields could contribute as much to the scarping visible at Zennor lynchets as positive lynchetting.

Trench 1 demonstrated the importance of 'artificial adjustments' to lynchets, ie the deliberate removal of the fine, well-sorted and nutrient-rich soil to be spread on other parts of the field where the soil is shallow and to be put on to manure heaps to give structure to agricultural compost. The implications of such a practice for our understanding of early agriculture are outlined above (Trench 1, phase 4).

Both trenches provided good evidence for the relative neglect of at least some boundaries in Zennor in the 20th century: the non-repair of collapses, the unstructured dumping of stones cleared from fields. The archaeology of 20th century boundary removal as fields are thrown together, the process which has most radically altered the Zennor landscape in the last 2000 years, was shown to be not confined to the reduction of substantial walls to low grassed-over scarps. The dumping of hedge material (stones and earth) against the back of the boundary sectioned here transformed a wall with stock-proof height on both sides into a revetted lynchet with no height at all on its uphill side.

As is normal on archaeological sites the simple was shown to be complex as the exposure of these sections showed that a boundary that looked quite straightforward from field evidence alone (a collapsing revetted lynchet) had an altogether more complicated and interesting history. Also note how two trenches, so close to each other, revealed different stories about the same lynchet.

The opportunities lynchet-sectioning present for studying the environmental history of the area have also been shown to be great. The buried layers analysed at Bristol University have provided the first pollen record for Zennor and have indicated that open pastures dominated this part of the Foage valley in later prehistory (see report, below). Analysis and dating of a deep peat core from an undisturbed bog in the parish would provide a most valuable detailed sequence of environmental change in Cornwall's most important prehistoric and historic landscape. Snapshot views of short stretches of a sequence such as that produced here at Foage will be of even greater value once a long-term history has been established.

Appendix: A year in the life of the 'Great Flat Field'

Extracted from the diary of James Stevens (ed. Peter Pool 1977)

1892

Jan	1	Heaved the leat in great flat field
	4	Heaved leat in flat field
	5	Broke up ditch in flat field
	25	Broke up ditch in flat field
	26	Turned ditch
	27	Turned ditch
	28	Turned ditch
	29	Turned ditch
	30	Broke up ditch
Feb	1	Pulled away the stones that I digged out of ditch to the hedges
	8	Plowed part of the great flat field one way
	9	Plowed part of field

	10	Plowed
	11	Plowed
	12	Plowed
	15	Finished plowing lay field
	22	Broke up ditch in flat field
	23	Broke up ditch in flat field
Mar	5	Pulled out ditch of great flat field in slide over the shallow lower corner and pulled some loads of scrapings on green pile plot for pile.
Apr	11	Pulled harrow over the great flat field and tilled part of it with oats. Sowed 2 bags of special manure over part of it. I measured this field and find it about 1 acre and 49 lace.
	12	Till the other part of flat field, sowed in it all 3½ bus. of Prince Edward's oats and a peck of Cornish oats.
	13	Finishing tilling the flat field.
	19	Rolled great flat field.
Aug	15	Cut oats and bound 2 mows.
	16	Finished cutting the great flat field.
	19	Bound 4 mows oats in flat field.
	20	Raked the flat field and pulled in the rakings and put the geese 23 in the arish.
	22	Trimmed the hedge of the great flat field.
	24	Pulled in the trimmings of the great flat field. Pulled out 9 load of ditch from the moor side on the shallow corner and scuffled it.
	25	Scuffled the field again.
Sept	9	Scuffled great flat field.
	16	Harrowed and rolled pilf on the great flat field.
	17	Harrowed flat field.
	26	Chained harrowed pilf on the great flat field and raked part of it.
Oct	10	Pulled out ditch in flat field and made two bottoms.
	13	Plowing the flat field with the horse.
	17	Finished plowing flat field [sowed winter corn?].
	28	Broke up ditch in great flat field under the thorns.
	29	Pulled 5 load of earth from the ditch under the thorns to a pile for grass in the ferny field.

**Pollen analysis of deposits beneath a Romano-British boundary at Foage, Zennor,
by K Crabtree, V Straker and S West**

Introduction

During recording of two trenches through a Romano-British boundary at Foage, samples were taken through a deposit which was buried beneath the wall. Six 1 cm thick samples were collected from layer 6 in Trench 1, and a single 1 cm thick sample from layer 7, a thin layer sealed by a bank in Trench 2. The samples were taken by Peter Herring who describes layer 6 as a 'black-brown loam containing some granite sand/gravel (1-3mm) and relatively few small stones'. This layer had formed directly above the rab.

Samples of 1 cubic cm were prepared for pollen analysis using standard techniques as described by Moore *et al* (1991), with the addition of exotic marker grains to determine pollen and spore concentration. It is accepted that full pollen analysis from a buried soil would normally involve much more closely spaced samples, but detailed sampling for pollen or soil studies was not possible at the time of the recording, and analysis of these few samples is considered to have been worthwhile despite the fact that the interpretation is of a general nature as a consequence.

more species rich. No evidence for the growth of arable crops, in the form of cereal type pollen was found, and the fields were probably used for pasture.

The homogenisation of pollen profiles, such as that seen here, may be an indication that the deposit was biologically active and therefore not particularly acid (Dimbleby 1985). However at Foage, the buried layer probably does not represent a full soil profile and the results of the pH readings in Table 1 indicate an acid deposit in which biological activity would have been restricted. In addition, there is not an increase in unidentifiable (poorly preserved) pollen towards the base which is usually the case in more complete soil profiles. Table 1 gives the results of the loss on ignition and pH analyses.

Table 1

Sample	% loss on Ignition	pH
Trench 1		
6,1	10.20	
6,2	8.58	
6,3	10.52	4.15
6,4	10.98	4.06
6,5	12.51	4.22
6,6	10.59 & 10.88	3.90
Trench 2		
7,1	8.53	4.47

The samples exhibit a narrow range of loss on ignition values suggesting a fairly homogenous mineral layer. The pH readings show similar uniformity. The homogeneity supports the view put forward on the basis of the pollen evidence, that the loam may have been subjected to mixing, though perhaps not by natural soil processes, but some sort of physical disruption before the wall was constructed. The dating of the profile relies upon the fact that the boundary sealing the layer is assumed to be Romano-British (probably 1st to 2nd century AD), and the soil immediately pre-dates it.

There has been little pollen analysis carried out on deposits from West Penwith, but the pollen diagrams of greatest relevance to Foage are those from Chysauster, about 2.5 km to the south (Scaife 1988). Scaife analysed pollen from a soil buried beneath a Bronze Age cairn, and a localised peat-filled channel about 200 metres downslope from the Iron Age settlement. The soil pollen indicated a landscape dominated by oak and hazel woodland, which presumably pre-dated the Foage soil assemblage by several centuries. Most of the peat sequence also probably pre-dates Foage, but Scaife tentatively correlates zone 5, the upper 18cm of the sequence, with the Iron Age village and field enclosures. In this zone he notes an increase in grasses which could suggest increased areas of pasture, but comments that they could also relate to monocotyledonous plants growing in the channel. Cereal type pollen was also seen to increase in this zone, whereas in contrast at Foage, cereal type pollen was not recorded. The proportion of heathland pollen was, like Foage, small.

Dimbleby (1978) analysed pollen from the land surface pre-dating the settlement at Carn Euny, 10 km to the south west of Foage, which was established in the fifth century BC. He identified a relatively wooded environment with trees and hazel accounting for 51% of the pollen. This compares with a figure of 6.4% for the top sample at Foage, calculated on the same basis. The settlement lasted until the 3rd century AD, and pollen from levels associated with the settlement show that trees and hazel declined sharply during its life to 3% of the total pollen, with the notable expansion of grasses to 40-70% of the total pollen. Compositae Liguliflorae (Lactuceae) accounted for a maximum of 8.9% of the pollen, whereas at Foage, a surprisingly high representation of around 15% for Trench 1 and 13% for the single sample for Trench 2 was

identified. The open environment at Carn Euny compares well with Foage, apart from the fact that Dimbleby identified cereal type pollen and considered that arable and pastoral farming were both taking place in the vicinity.

In conclusion, the pollen from the buried loam at Foage indicates an essentially open landscape dominated by grassland which was probably used for pasture. The scarcity of heather pollen is of interest as heathland vegetation was also poorly represented at Carn Euny and Chysauster. One aspect of further research in the area could be directed usefully to trying to establish when the heathland, which dominates the unenclosed land in West Penwith today, became established.

Acknowledgements

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References

- Dimbleby, G.W. 1978, Appendix 1, Pollen analysis. In P.M.L. Christie, *The Excavation of an Iron Age Souterrain and Settlement at Carn Euny, Sancreed, Cornwall. Proc. Prehist. Soc.*, 44, 424-429.
- Dimbleby, G.W. 1985, *The palynology of archaeological sites*, Academic Press.
- Herring, P.C., 1987, *Trevellos, National Trust Archaeological Survey*, CAU/NT.
- Herring, P.C., 1989, *Foage, Preliminary Archaeological Report*, CAU/NT.
- Jewell, A., 1981, Some cultivation techniques in the south-west of England, in *Agricultural Improvement: Medieval and Modern* ed.W. Minchinton, Exeter
- Moore, P.D., Webb, J.A. and Collinson M.E. 1991, *Pollen Analysis* Oxford: Blackwell Scientific Publications.
- Pool, P.A.S. (ed), 1977, *A Cornish Farmer's Diary, by James Stevens*, Pool, Penzance
- Scaife, R.G. 1988, Pollen analysis of the Bronze Age Cairn and an adjacent peat profile at Chysauster, Cornwall. Ancient Monuments Laboratory Report 193/88.

Table 2 Pollen from Trench 2, Layer 7

	%	KEY	English name
Trees and shrubs		Taxon	
<i>Pinus</i>	0.2	<i>Pinus</i>	Pine
<i>Alnus</i>	0.6	<i>Alnus</i>	Alder
<i>Betula</i>	0.3	<i>Betula</i>	Birch
<i>Quercus</i>	1.6	<i>Quercus</i>	Oak
<i>Salix</i>	3.6	<i>Ulmus</i>	Elm
<i>Coryloid</i>	2.1	<i>Salix</i>	Willow
<i>Ilex aquifolium</i>	1.3	Coryloid	Hazel / Sweet Gale
		<i>Ilex aquifolium</i>	Holly
<i>Ericales</i>	9.5	<i>Ericales</i>	Heather / ling
		Cyperaceae	Sedge family
Sedges and grasses		Gramineae	Grass family
Cyperaceae	5.1	Caryophyllaceae	Campion family
Gramineae	22.8	Chenopodiaceae	Goosefoot family
		<i>Valerianella</i>	Cornsalad
Herbs		<i>Anthemis</i> type	Mayweed, yarrow etc. type
Caryophyllaceae	8.2	Lactucaceae	Dandelion, Hawkbit etc. group
Chenopodiaceae	0.3	Compositae Tubul	Daisy family
<i>Anthemis</i> type	2.7	<i>Scabiosa</i>	Scabious
Lactucaceae	13.3	<i>Succisa</i> type	Devil's-bit Scabious
Compositae Tubul.	0.3	<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Succisa</i> type	0.2	<i>Plantago major</i>	Greater Plantain
<i>Plantago lanceolata</i>	0.6	<i>Potentilla</i> type	
<i>Potentilla</i> type	2.2		Rose family, Cinquefoil
<i>Primula</i>	0.3		wild strawberry type
<i>Ranunculacea</i>	0.8	Rosaceae	Rose family
<i>Galium</i> type	0.5	<i>Primula</i>	Primrose
Umbelliferae	4.0	Ranunculaceae	Buttercup family
		<i>Galium</i> type	Bedstraw / field madder type
Spores		Umbelliferae	Carrot family
<i>Filicales</i>	7.1	<i>Rumex acetosella</i> type	Sorrel type
<i>Pteridium</i>	1.6	Urticaceae	Nettle family
<i>Polypodium</i>	10.8	<i>Potamogeton</i>	Pondweed
		<i>Filicales</i>	Ferns
	%	<i>Pteridium</i>	Bracken
Trees and Shrubs	9.7	<i>Polypodium</i>	Polypody
<i>Ericales</i>	9.5		
Grasses and Sedges	27.9		
Herbs	33.4		
Spores	19.5		
Total land pollen	508.0		
T.L.P. + Spores	631.0		
Unidentified	95.0		
Pollen and spore concentration per ml	251592		

A sense of identity: distinctive Cornish stone artefacts in the Roman and post-Roman periods

HENRIETTA QUINNELL

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Introduction

The Cornish peninsula was unusually situated within the Roman provinces of *Britannia*. After a short period of military occupation in the first century AD, it was incorporated in the canton of the *Dumnonii*, although the capital Isca lay forty miles from the River Tamar, now the eastern border of Cornwall, and one hundred twenty miles from its western tip. It has been customary, following Thomas (1966) to view *Dumnonia* as a whole, taking both Devon and Cornwall as rural areas overtly little influenced by Roman fashions in building or in market/monetary economy. Yet Thomas (1966, 86) suggests a tribal group of *Cornovii* incorporated in the canton of *Dumnonia*, a suggestion supported by Rivet and Smith (1979, 325) and by Todd (1987, 217) who intimates that *Dumnonia* may have comprised a number of 'smaller septs or groupings'. Work over the last two decades has revealed many distinctive features concerning settlement in Cornwall, as opposed to Devon, during the Roman and indeed the post-Roman period. Research in Devon (Griffith 1984) indicates a much greater density of rural settlement than had previously been supposed, with potential for identification of local characteristics. Given the varied nature of *Dumnonia*'s geography, many regional subgroups, septs or *pagi* may eventually be established. Distinctive Cornish traits, from sites investigated almost exclusively west of Bodmin Moor to date, have recently been summarised (Quinnell 1986). Yet there has so far been little attempt to present *Dumnonia* within Roman Britain as a complex of differing, and archaeologically distinguishable, rural communities rather than as a single entity. There is also continued emphasis, following Thomas (1966), on the poverty of the *Dumnonii*, with the negative implication that the area lacked the resources to benefit much from the Roman occupation. The converse has never been addressed, that the *Dumnonii* themselves may have considered their geographical position an advantage which allowed them to continue and develop their own social organisations and ways of living.

The provenance of Cornish stone artefacts

This paper focuses upon stone artefact groups distinctive of western Cornwall. Its purpose is threefold, to bring to wider knowledge objects which may be found outside Cornwall and not recognised for what they are, to present data which will contribute to the eventual understanding of subgroups within *Dumnonia*, and to examine positively ways in which the population of an isolated area of *Britannia* adapted Roman artefacts to their own requirements within a social framework which was sufficiently stable to provide a continuum into the fifth and sixth centuries. At present these distinctive Cornish stone artefacts (excluding more ubiquitous articles such as querns and spindle whorls) can be grouped into three classes, mortars here termed Cornish mortars, larger bowls here termed Trethurgy bowls, and weights. A miscellaneous group, mainly moulds, is included to demonstrate the extensive use of greisen. Other artefacts in collections, such

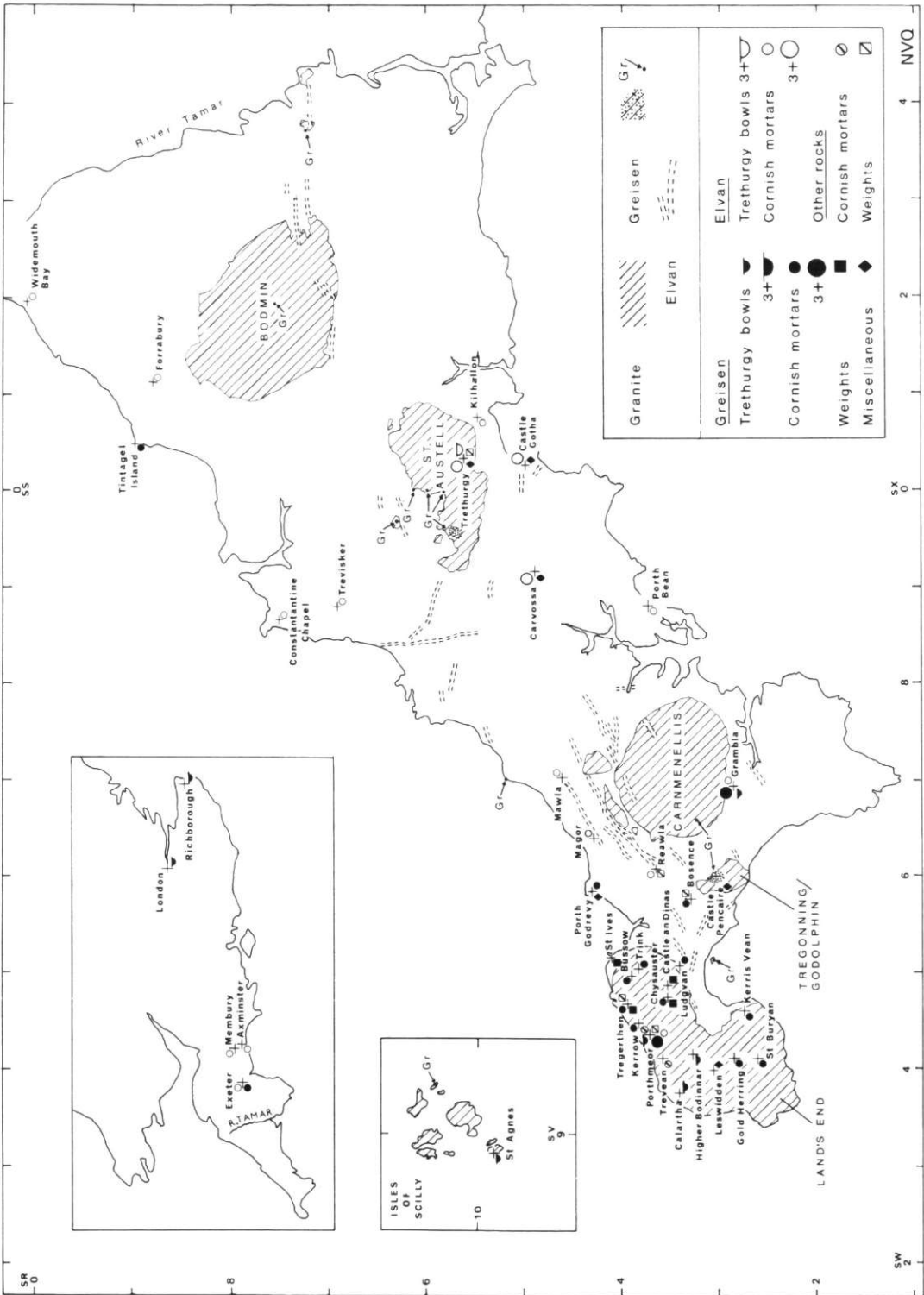


Fig 1 The occurrence of granite, gneiss and elvan in Cornwall and the distribution of artefacts made from these rocks. Geological information from 1:250,000 maps by permission of British Geological Survey.

as the 'toggle' from Grambla (C Saunders pers. comm.), suggest that further classes could be identified, particularly as future excavations are likely to widen the range.

Distinctive examples of both stone mortars and weights were published by Borlase (1769, Pls XXV, XXVIII) and F C Hirst (1936) compiled a list of ten mortars, all but one from locations in the Land's End area, the focus of most early archaeological research in Cornwall. Since the 1950s excavation and fieldwork of a much wider area of Cornwall, still largely west of Bodmin Moor, has produced these artefacts from a further twenty-one locations. In addition they have been recognised from five findspots outside the county (Fig 1). The comprehensive investigation in 1973 of the enclosure or 'round' at Trethurgy, St Austell, the first time the interior of one of these distinctive local earthworks has been completely excavated, provided a great deal of new data (Miles & Miles 1973); the preparation of the final excavation report (Quinnell forthcoming) has involved reappraisal of many groups of artefacts and sites. Trethurgy provided stratified contexts for stone mortars, including a previously unrecognised large variant with skeuomorphic handles (Trethurgy bowls), a weight, and stone artefacts connected with metalworking. It also contributed evidence for the continued use of structures and objects in distinctive local styles through the fifth and possibly into the sixth century AD. Study of the stone artefacts both from Trethurgy and from the other sites showed that almost all were made from two distinctive rock types, elvan and greisen.

Both elvan and greisen are even textured rocks which can be worked to a fairly smooth finish. Elvan is a local term for quartz-porphyry which occurs in dykes (Fig 1) from late phases of the volcanic activity which produced the main granite intrusions. It is usually cream coloured, sometimes with a pink or grey tinge. Its occurrence is effectively restricted to Cornwall, the outcrops becoming increasingly frequent in the west, with only a few dykes on the south west of Dartmoor. Elvan differs in hardness according to the degree of alteration since its intrusion and softer types were selected for the production of artefacts. While a few outcrops have distinctive mineral components (Edmonds, McKeown & Williams 1975, 47), the majority are similar and so far no artefact has been definitely assigned to a specific source. Elvans in the St Austell area are often referred to as Pentewan stone. (Fig 1 shows the major dykes based on 1:250,000 Geological Maps; 1:50,000 maps should be referred to for details of complexity of dykes in areas of major mineralisation).

Greisen results from the alteration of granite by emissions given off during the final stages of cooling, during which feldspar was replaced by quartz and mica (Edmonds et al 1975, 49); the resulting rock is softer, finer in grain, and usually a silver or yellowish grey compared with granite. Again the process barely affected Dartmoor but increases in intensity down the length of the Cornish peninsula. Its locations are less easy to define than those of the elvan dykes and there may well be areas of granite where greisen has not yet been detected. In two small areas, within the Tregonning/Godolphin and St Austell granites, greisen was intense, resulting in a soft, easily worked rock with large quantities of mica and comparatively little quartz. Artefacts from Trethurgy, Porthmeor and London have been examined by Dr R T Taylor (British Geological Survey) who considers they match most closely with the Tregonning/Godolphin greisen. Subsequently all accessible artefacts have been compared by the author macroscopically with those identified by Dr Taylor and, with two exceptions, seem to be identical. It is considered unlikely that other areas of this intense greisen remain to be discovered, given the amount of data available from workings in the granite areas of west Cornwall. The other areas of greisen shown on Fig 1, marked Gr, are all very small in extent and are comparatively hard and quartz-rich. The Trethurgy bowl from St Agnes is the exception, mentioned above, which matches this description well; it is appropriate that the only artefact so far distinguished in this harder version is thick and poorly finished.

The location of precise sources should be considered in connection with changes in sea level which have inundated Mount's Bay and much of the Scillonian cupola since the Roman period and which may have covered sources of both greisen and elvan. Unfinished elvan artefacts from

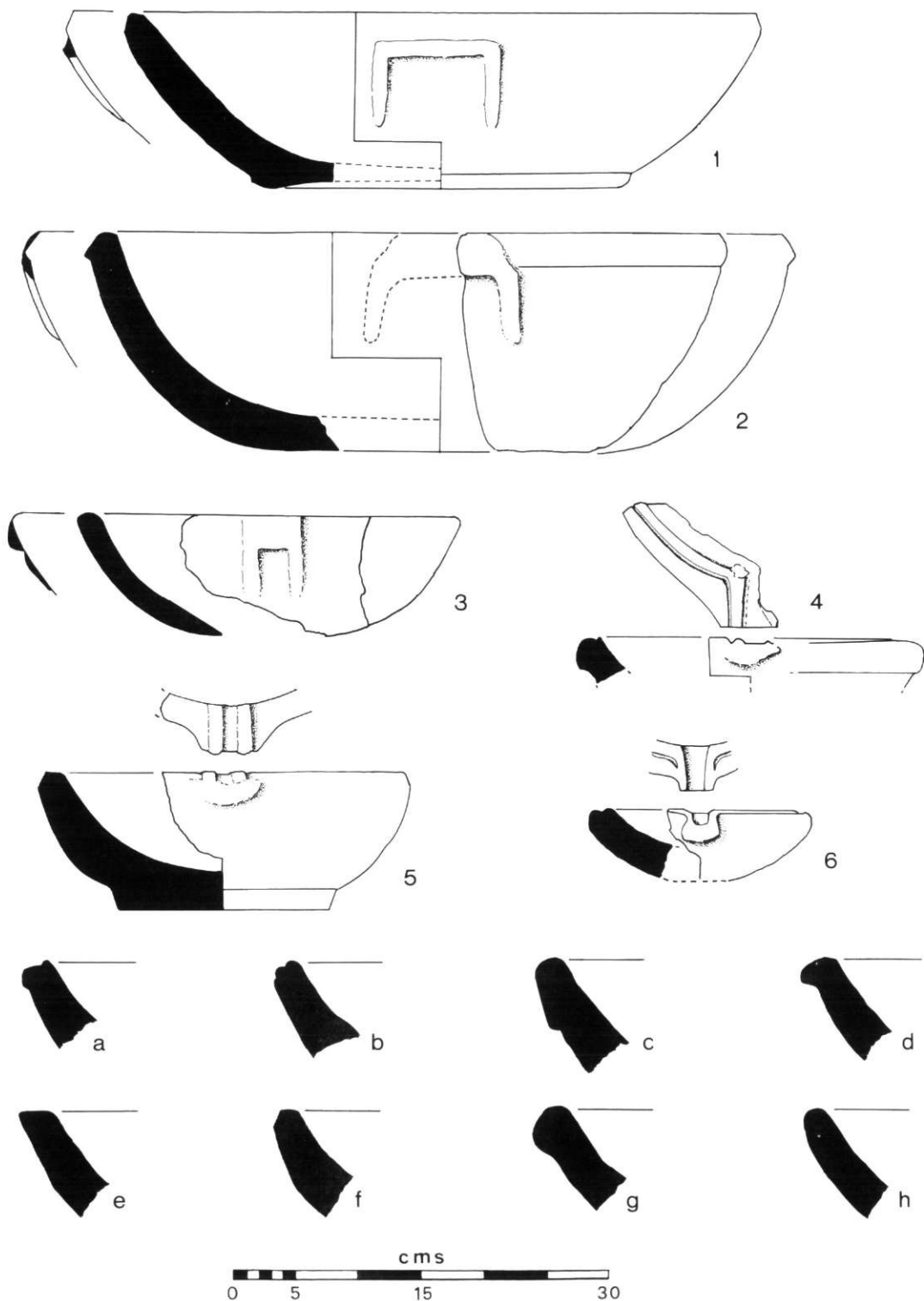


Fig 2 Nos 1 and 2 Elvan Trethurgy Bowl, Trethurgy; No 3 Greisen Trethurgy Bowl Calartha, St Just; No 4 Elvan Cornish Mortar, Exeter; No 5 Elvan Cornish Mortar, Trethurgy; No 6 Elvan Cornish Mortar, Trevisker. Cornish Mortar rim forms: a) bead-rim; b) grooved; c) collared; d) out-turned; e) flat-topped; f) chamfered; g) bulbous; h) rounded

Trethurgy (Quinnell forthcoming) and Castle Gotha (Saunders and Harris 1982, 130) suggest on-site manufacture; one of the Trethurgy pieces was started on a boulder. Given the widespread occurrence of elvan it seems reasonable to suggest localised manufacture. The greisen artefacts may indicate more centralised production either of raw material or of the finished products, because the sources are limited and no unfinished greisen artefact has yet been identified from a settlement site apart from the Chysauster weight. Both the likely greisen sources are in areas much disturbed by recent mineral workings and preliminary field work has produced no data to support centralised manufacture. Greisen was occasionally used in the Bronze Age (mould from Ham Hill, Somerset (Needham et al 1988)) and in the Iron Age (a spindle whorl from Bodrifty (Dudley 1956, 29); a saddle quern from Castle Dore (Radford 1951, 75)), but stone objects do not begin to occur with any frequency until the second century AD. With this expansion suitable areas of rock long known would have been more intensively used, and small quarry pits may have been dug.

Mortars

Cornish mortars usually have a maximum diameter of 0.20—0.30 m, and their most distinctive shapes relate to the low bead-rim and flanged pottery forms of the second century; a variant may derive from the collared samian mortarium Dr 45. Footrings are common. The mortars are usually well finished, and are all of elvan or greisen except a single granite example from Porthmeor. Interiors show evidence of intensive use. Sufficiently complete examples all have a single spout on the rim top. A comprehensive range of rim forms is shown in Fig 2.

Virtually every excavated Cornish site occupied from the second to the fourth/fifth centuries has produced Cornish mortars. There are numerous problems with dating. Older excavations tend to have very poor records, and stone-built sites such as courtyard houses were often extensively altered with re-use of early deposits. The overall dating of the Roman period in Cornwall is far from secure. There are few coins, and imported (ie non-Cornish) pottery may have a very long life, with Antonine samian in use in the fourth century (Quinnell forthcoming). No mortars were found at St Mawgan-in-Pydar (Threipland 1956), a site unusually rich in finds, with a terminal date somewhere in the early second century AD. The earliest stratified Cornish mortar is the elvan example (Fig 2, No 6) from a (?) later second century context at Trevisker (Apsimon and Greenfield 1972, 347, no 4). This has a bead-rim and spout and appears to be a fairly close copy of a second century pottery mortarium (full rendering of the flange in stone would have been impractical and was never attempted). An even closer copy comes from Exeter (Fig 2, No 4); burnt and battered, this came from a late third century context (information J Allan; Bidwell and Holbrook 1991, no 7, 279).

An example with an elaborate grooved rim was found with Antonine samian at Widemouth Bay (Carlyon 1981); four examples from Carvossa, probably abandoned in the later third century, had elaborate grooved rims (Carlyon 1987). A simple grooved rim in greisen (Bidwell 1979, Fig 75 No 83) related to Period 2C (c. AD 250-270) in the Exeter basilica. No collared examples have as yet been found in datable contexts. A chamfered example with a spout came from a probable mid-fourth century context at Trethurgy (Quinnell forthcoming, S7), and another from Reawla dating to the later third century (Quinnell in Appleton 1992, S1, 106). The example from Porth Godrevy, probably third to fourth centuries (Fowler 1962), has a simple rounded rim as does that from Tintagel, where occupation may start in the fourth century but continues into the sixth. It seems reasonable that the bead-rim and grooved rim forms should be mainly second and third centuries and that the simpler variants should be third century or later. This typological sequence can only be tentatively advanced on present evidence.

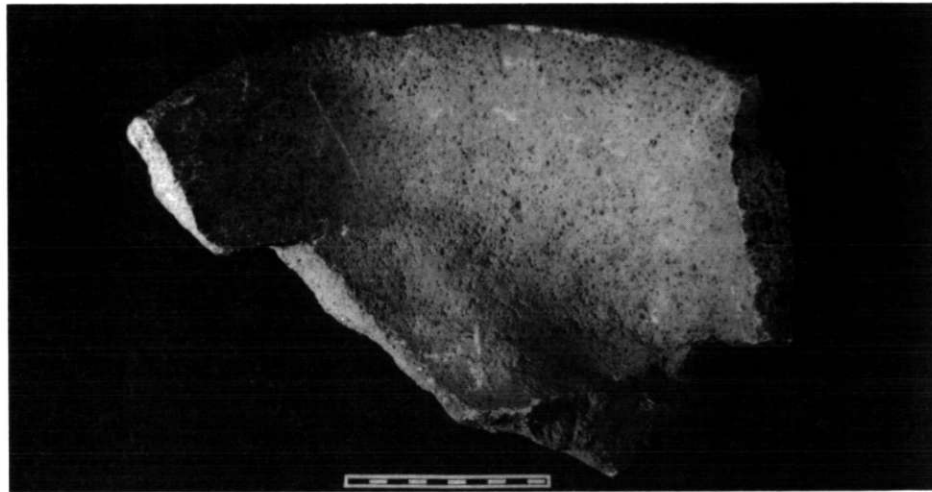
The development of Cornish mortars, with possible centralisation in the Tregonning/Godolphin area, is interlinked with local pottery industries. These continued, from the Lizard area, to supply hand-made products throughout the Roman period and, as far as is known, were the only potteries operating in the county, their products found on every excavated site shown

on Fig 1. Styles gradually accommodated Roman fashions in jars, flanged bowls and dishes; there were periods of innovation during the second and third centuries, but thereafter styles changed little, possibly remaining in production until the arrival of post-Roman Mediterranean imports in the late fifth or sixth centuries. There was no attempt to produce mortaria. The situation seems, superficially, similar to that in Dorset. There major pottery centres continued to produce hand-made and clamp-fired wares without mortaria throughout the Roman period, but Purbeck marble was used to produce mortars for province-wide trade (Eldridge 1978). The adoption of mortars in Cornwall suggests some change in domestic habits acquired by contact with the Roman world; they do not appear to replace any earlier artefact. Despite occasional occurrences outside Cornwall, neither the pottery or the mortars appear to have been made for trade but for local use. The apparent similarities between Dorset and Cornwall may be explained by similarities in the raw materials available for exploitation. Neither the Dorset or the Cornish clays were suitable for the fine-textured fabrics used in pottery mortaria fired in high temperature kilns, but both areas have suitable rock to supply alternatives. The differences between the products of these areas were caused by their very different locations, the peripheral position of Cornwall unsuitable for trade in fragile commodities but allowing, over time, certain Roman artefacts to be adapted to a local pattern.

Bowls

Trethurgy bowls are a mortar variant first recognised during the excavation of Trethurgy round in 1973 (Miles & Miles 1973). The six fragmentary elvan examples had maximum diameters of between 45 and 55 mm, simple rounded, chamfered, or slightly bulbous rims, and wall thicknesses thin for the size of vessel when compared to regular Cornish mortars. Four of the six had distinctive low relief handles (Fig 2), the design of which suggested skeuomorphs from metal prototypes; one example was sufficiently complete to demonstrate the presence of two symmetrically opposed handles. There is no evidence for spouts. It is debatable whether the handles project sufficiently to have been functional or were mainly decorative. They are well-finished, with all interiors used as mortars. Their contexts date to the fourth, fifth or sixth centuries. A greisen fragment from Grambla enclosure, Wendron, is about 0.50 m in diameter and has the stub end of a handle and a simple rounded rim; this site ranges in date from the second century until the sixth (Saunders 1972). Two fragments of greisen from Porthmeor have simple rims and large diameters and have therefore been included in this category. Mortars or bowls with diameters between c. 0.30 and 0.45 are not found, with the exception of that from Kerris Vean, Paul, where the surviving rim adjacent to the spout suggests a diameter of c. 0.40 m; the size difference may have some real significance. Outside Cornwall a greisen bowl was found close to Richborough in the nineteenth century (Roach Smith 1850, 104); 0.53 m in diameter, it has two opposed handles similar to the Trethurgy examples but again no spout.

The group described comprise all the true Trethurgy bowls so far recognised. With their distinctive handles, they appear to have been copied from metal prototypes, with two possible origins. The handles suggest those on bronze bowls, projecting distinctively upwards and outwards. Such bowls occur widely in the Roman Empire; a good series from the Rhineland is illustrated by Mutz (1972, 90-104). Large bronze vessels tend not to survive from Britain; in Egger's survey (1966) only one, in the British Museum with no proper location, has a remotely comparable handle (No 99). The other origin for the Trethurgy bowls is more local, the unique Treloy tin bowl found in 1830 in a tin working in St Columb Minor (Fig 3) (Henwood 1874, 221; Penhallurick 1986, 200-3). The bowl is 0.36 m in diameter, its rim has been strengthened by rolling outwards with two symmetrically disposed rectilinear handles, soldered on to the rim top and projecting sufficiently to have been functional. The illustrations show the similarity between the Treloy and Trethurgy bowls. It is as yet not clear whether the Treloy bowl is the only survivor of a group which developed functionally, the form and position of the handles being appropriate for the



*Fig 3a and 3b Elvan Trethurgy bowl, Trethurgy; 3c Treloy tin bowl. Scale in cms.
Photos: P Brierley*

material in which they were made, or whether it was an attempt to render in a local material the widespread handled bronze vessels. The Treloy find includes a brooch which should date to the third or fourth centuries.

The Trethurgy bowls, whatever the exact processes which lead to their final form, indicate some acquaintance with Roman prototypes and suggest adaptation of a Roman style to local usage. They are called bowls, not mortars, despite their use as such, because their elegance and size suggests an initial adaptation for the table rather than for the kitchen, an admittedly subjective interpretation. The dates available suggest that the style started no earlier than around AD 300 (perhaps supported by their absence from the rich collection of finds from Carvossa (Carlyon 1987)) and that it continued in use, if not in production, until the sixth century. The simple rim forms are similar to those on the later examples of Cornish mortars.

In the gazetteer three further items are listed as Trethurgy bowls. Two, those from Calartha, St Just, and from St Agnes, Isles of Scilly, are of Cornish mortar size but have the distinctive skeuomorphic handles. That from Pudding Lane, London, of greisen, with originally four projecting lugs, copies the classic Roman stone mortar form. The first two have no context, the last is probably fourth century (Richardson 1982). These three are more elaborate than the regular Cornish mortars. It is probable that a wider variety of mortars and bowls was regularly produced than is represented by extant styles, but until further examples are forthcoming, it seems best to leave the Cornish mortars as a simple unified sequence, and group the more elaborate variants with the Trethurgy bowls in the expectancy that this category will one day be large enough to subdivide meaningfully.

Weights

Stone mensuration weights have not previously been identified as artefacts characteristic of Roman Cornwall. Details of twelve are given in the gazetteer and a selection illustrated in Fig 4. Four, from Trethurgy, Reawla, and the two from the Bosence Shaft, date to either the third or the fourth centuries AD. The uncontexted finds from the Porthmeor and Chysauster courtyard house settlements almost certainly belong to the later Roman period. With the exception of the possible Iron Age date suggested by the hillfort findspot of the Castle-an-Dinas weights, none belong to any other period. Shapes vary but can be quite elaborate. The forms, evenly made and carefully finished, seem more appropriate to use in a system of measurement than as for example thatch or net weights. Stone mensuration weights have not been recorded elsewhere in Britain or in adjacent provinces of the Empire; bronze was used both for steelyard counterpoises and for stacking balance weights, the latter normally being marked with their (nominal) value. The use of stone weights for measurement has recently been established in pre-Roman southern Britain, most significantly with the sequence from Danebury (Brown 1984, 408-12). No weight from Cornwall or South West Britain has yet been allocated to the Iron Age, although this date must remain a possibility for those from Castle-an-Dinas. Stone weights may have been current, but as yet not found, in Iron Age Cornwall, and the tradition continued through into the Roman period in preference to 'foreign' metal weights. The use for mensuration is supported by the three pairs, Bosence, Treggerthen and Castle-an-Dinas, each of very different sizes. Given the sparsity of stone weights in the periphery of the Empire, the identification of a previously unknown sequence is an important addition to this artefact category and may provide additional data for both Celtic and Roman metrology.

In Table 1 the weights are considered in relation to suggested standardised units. Measurements given are accurate within 10 g, but most probably weigh less than they originally did. Porthmeor and Bosence 2 are of a rock which is likely to have lost mass since deposition, and Bosence 1 and Treggerthen 1 are definitely chipped. Wear and slight chipping are difficult to assess. These artefacts are made from a far wider variety of rocks than the bowls, and precise assessments of weight alteration would involve both detailed study of their petrology and information, much not

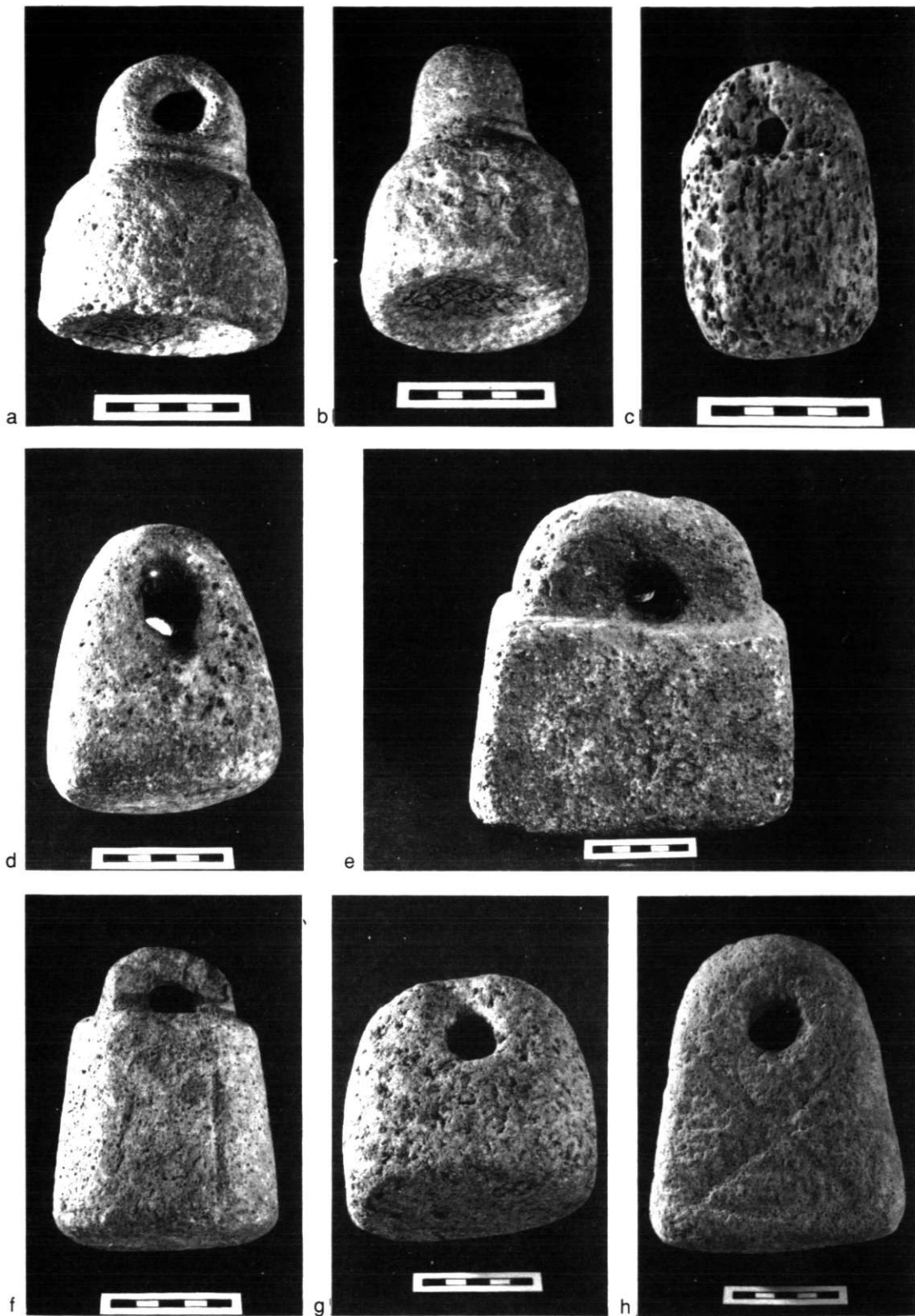


Fig 4 Weights. a & b Trethurgy; c Porthmeor; d Castle-an-Dinas 1; e Castle-an-Dinas 2; f Tregerthen 1; g Tregerthen 2; h unprovenanced. Scale in cms. Photos: P Brierley

currently available, about conditions at their findspots and of storage since recovery. There appear currently three weight standards to which they might be expected to conform. The pound of the Roman Empire was 327.45 g (Oxford Classical Dictionary) although this is under discussion (Grierson 1964). A Celtic pound of 309 g was suggested by R A Smith (1905) and a second Celtic standard of 638 g has been argued (Schwartz 1964). The Table presents the weights as simple proportions of these standards. Further work could usefully be done on their metrology, particularly if new weights are discovered to extend the sample, but would involve detail inappropriate to the present paper. No attempt has been made to assess probability fits to the suggested standards by statistical means as the data is not precise and statistical presentation tends to present a picture of spurious precision to probabilities.

	g	Roman 327.45 g	Celtic 309 g	Celtic 638g
Porthmeor	383	1.17	1.24	0.60
Trethurgy	882	2.69	2.85	1.38
Tregerthen 1	1106	3.38	3.60	1.73
Castle-an-Dinas 1	1370	4.19	4.44	2.15
Unlocated	1716	5.25	5.55	2.68
Bosence 1	1846	5.65	5.97	2.89
Tregerthen 2	1937	5.92	6.29	3.03
St Ives	2504	7.65	8.10	3.92
Bosence 2	6390	19.54	20.67	10.06
Castle-an-Dinas 2	7980	24.40	25.82	12.50

Table 1 Cornish stone weights as proportions of Roman and Celtic suggested standards

Wear indicated by the gloss on the upper side of most of the perforations (see gazetteer) suggests the use of a device involving rope or leather for attachment; the length of the perforation holes would have made the direct use of a metal hook difficult. The mass of the larger weights suggests that these at least were used in a simple balance, rather than on a steelyard. The presence of these weights, if accepted as usual in Roman Cornwall, indicates a society in which the regular measurement of some materials was important. The sparsity of coinage on excavated sites is generally taken to indicate that a full monetary economy was not established in the area, and by implication, that markets and exchange systems remained unsophisticated. The latter need not be true. A wide range of materials could have been regularly exchanged, the most obvious being metals and grain. The weights may indicate a community refining pre-Roman exchange mechanisms, a community in which precisely defined values became increasingly important as a means of enhancing comparative wealth, status and ranking. Any mensuration system may also have been affected by the needs of the collection of taxes in kind, of greater importance in the later centuries of Roman rule than at its start, and which were the responsibility of the local civitates. For Cornwall we may be looking at small tribal groups who were treated as *pagi* within *Dumnonia* with their own agreed rules. So little is known about the organisation of peripheral regions that it is quite possible that local members of relevant *pagi* were also responsible for the extraction of metals, including tin. This is another area in which a system of metrology was necessary and where activity seems to have intensified in Britain in the third and fourth centuries.

Discussion

Apart from bowls, mortars and weights, stone artefacts were widely used in Cornwall. The majority continue the local pre-Roman tradition for objects such as querns. In Fig 1 and the gazetteer only greisen objects are detailed, to indicate the extent to which a greisen source(s) may have been utilised. All the 'other' greisen artefacts listed are likely to have been moulds, with the

exception of the bead from Porth Godrevy, Illogan. Their dating would be consistent with a peaking of use of greisen in the third and fourth centuries. Querns have not been included as it has not been possible to examine all examples, and published identifications may not have distinguished greisen from granite. Greisen rotary querns have been identified from Trethurgy (fourth century), Carn Euny, Sancreed (uncontexted with a wide possible date range fifth centuries BC to fourth AD (Christie 1978, 388 & Fig 49)) and possibly St Mawgan-in-Pyder (uncontexted, site date range ?second BC to early second AD (Threipland 1956, 76)). Both the Trethurgy and St Mawgan examples have a suggested origin in the St Austell granite.

Cornish society during the Roman period continued to allow for the construction of small earthworks or rounds; these were probably widespread throughout Dumnonia (Griffith 1984) and may be interpreted as the residences of the local elite. This would indicate that outward statements of status were still expressed in traditional forms, rather than in buildings of Roman style. This continuance may have been the result of local preference, an expression of identity, rather than the effects of comparative poverty and distance from Romanized commercial centres. Cornwall was, as always, accessible by sea, and it is arguable how far it was 'poor' in real terms. There are considerable areas suitable for arable farming, much upland grazing, and a variety of metals. Finds, from settlements in the area west of Bodmin Moor, are profuse compared to those of much of rural Wales; we as yet lack data from east Cornwall but recent work in Devon may be showing a comparable pattern. Coins and items of bronzework are sparse but how significant is this? It may be suggested that in pre-Roman times any artefact exchange involving objects of currently accepted value was controlled by the local elite. These late prehistoric exchange systems are as yet hardly understood. The initial military occupation may have temporarily disrupted local societies and their ranking. It is quite possible that the profuse finds from Carvossa (Carlyon 1987) and St Mawgan-in-Pydar (Threipland 1956) from the late first and second centuries may reflect the pre-eminence of local leaders who emerged early as supportive of the new situation and moved to control imports of the new artefact ranges, and such persons would have had an interest in increasing the effectiveness of existing exchange systems, in which coinage and a market economy had no place. It is to be presumed that overt displays of military equipment were no longer allowed, and despite the continuance of enclosed settlements, ways must have been sought to reinforce status; the distribution of 'exotic' artefact types may have been useful here.

From a date within the second century AD the amount of imported material decreases on settlement sites. Around 5-10% of pottery continues to be imported throughout the Roman period, the rest being provided by the gabbroic industries presumed to have been located on the Lizard (Quinnell 1986). This pottery gradually, through the second and third centuries, adapts the most common forms of jars and dishes (Quinnell forthcoming). After an initial period of adaptation it is reasonable to assume that the favourable effects of early pro-Roman support were lost. Maintenance of position and status would have reverted to control over land and its products. As suggested above, persons of status may have been allowed to continue to exploit metal sources within some legal framework arranged within the canton. This would then provide resources to be exchanged for imported pottery, wine etc. The second century may be viewed as a period of transition; most enclosures occupied during the Iron Age go out of use and are replaced by new foundations (Quinnell 1986, 124). These new sites remain in use for varying periods, sometimes into the fifth or sixth centuries. They now contain the distinctive oval houses of the Cornish Roman period and it is in the second century that the courtyard houses of the far west emerged. After some competition for comparative ranking within the second century, the resulting pattern may have remained fairly stable until well after the formal 'end of Roman Britain'.

Together with recognisable imports, two other 'invisible imports' may have been important. The first is high quality metalwork or other materials which do not survive, but the influence of which may be seen in the Trethurgy and Treloy bowls. The second is craft skills of various kinds, including the tools and ability to work stone to produce a far finer product than in the pre-Roman

period. Such skills were needed for the massive Trethurgy bowls, to a lesser extent for the mortars and weights. The mortars themselves suggest a change in food preparation habits; cooking is yet another skill.

Of the three stone artefact classes considered here, the weights are thought to represent a reinforcement of a pre-Roman tradition, linking with the increased importance of the valuation of exchange commodities. Their date sequence remains vague because the sample is so small, but they were undoubtedly part of the third/fourth century stability of artefacts, society and exchange. The Cornish mortars emerged during the second century, the period of change, and continued to be used until at least the fifth century. The Trethurgy bowls are probably third century and later. The amount of work in their manufacture must have been considerable, and they must have had a high exchange value. The silver-grey greisen of the best sources may have been highly valued for its similarity to metal, the prestige of control of its source(s) considerable. The sparsity of these artefacts outside Cornwall suggests no deliberate attempt to export them. Their distribution seems more in line with the localised patterns of identity detected recently in artefacts in most of the cantons of *Britannia* (Millett 1990). If the west Cornish *pagi* of *Dumnonia* (and presumably other *pagi* as well) were deliberately seeking to reinforce their own identity and secure their own patterns of ranking throughout the Roman period, it is reasonable to see the adoption only of those Roman features which fitted local conceptions of the acceptable and the rejection of much else. We may be seeing a positive statement of identity which provided a firm base for social continuity through the troubled fifth and sixth centuries. Close fostering of local traditions may have produced a community which was successful for far longer than those in regions of Roman Britain usually appraised as comparatively civilised both in classical and modern terminology.

GAZETTEER

'Uncontexted' is used for objects without a proper archaeological context, whether these are chance finds or from sites with an inadequate record of data. Those objects given no museum reference and those described as 'not located' remain in the possession of the excavation director(s).

Trethurgy bowls

Cornwall

St Austell, Trethurgy SW 034 556 'Round' or enclosure. Parts of seven, four with handles, three of appropriate rim form and diameter, all of elvan; from contexts currently dated between late 3rd cent. and c. AD 500 (Quinnell 1986, 129, Fig 6; Quinnell forthcoming).

St Just, Calartha SW 373 342 Greisen, 0.30m diameter, handle with central raised rib; included in category because of handle although it is small for its size (Hirst 1936, 13, no 4). Found in a field. Truro Museum.

Wendron, Grambla SW 693 283 Round. Parts of two greisen bowls, from site with date range from 2nd to 6th cent. (Saunders 1972 & pers. comm.).

Isles of Scilly

St Agnes SV 880 082 Found in field wall, now kept by F Hicks, Old Lighthouse. Greisen, complete handle in surviving half, roughly made, only 24 cm diameter, 6 cm deep internally but 8 cm thick

Kent

Richborough TR 32 60 Found in a pit outside the fort in 1850 (Roach Smith 1850, 104; Dunning 1968, 114). Now in Liverpool Museum M7053. Greisen, virtually complete with two opposing handles, 53 cm diameter, 20 cm high.

London

Pudding Lane From a fourth century context. 46 cm diameter, 14 cm high, about 2/5 surviving. Two surviving lugs project from the rim; their spacing suggests there would originally have been four (Richardson 1982). The form derives from the four-lug form common in the classical world and copied in Britain particularly at Purbeck (Eldridge 1978). So far no such mortars have been found in Cornwall, but the greisen is allocated to Cornwall by R T Taylor.

Cornish mortars

When no comment is made about rim form, either body sherds only are present or items are not currently available for study.

Cornwall

- Forrabury and Minster** SW 1138 8769 Elvan, bead-rim with spout. Chance find. Truro Museum.
- Gerrans, Porth Bean** SW 881 367 Elvan, chamfered rim. Chance find on beach. Truro Museum.
- Gulval, Chysauster** SW 472 350 Greisen fragments from courtyard house settlement (Hencken 1933, 259). Truro Museum.
- Gwinear, Reawla** SW 605 363 Elvan, chamfered rim from context probably in the later 3rd century (Appleton 1992, S1, 106).
- Illogan, Magor** SW 637 424 Elvan, rounded rim; not mentioned in excavation report (O'Neil 1933). Truro Museum
- Illogan, Porth Godrevy** SW 582 428 Greisen, grooved rim. From early stage in use of 'hut', ?second century (Fowler 1962, Fig 14 no 1 and 56-7) but reexamination of the pottery suggests date range easily extended until 3rd. Truro Museum.
- Lelant, Trink** SW 505 371 Courtyard houses. Parts of two greisen with rounded rims (Thomas 1956). Truro Museum
- Ludgvan, Glebe Farm** SW 50 53 Greisen, collared and grooved rim, 18th century find not closely located and now lost. (Borlase 1769, Pl XXV, 309; Hirst 1936, 13 no 3).
- Morvah, Trevean** SW 411 356 Greisen ?, uncontexted (Russell 1971, 105). Not located
- Paul, Kerris Veau** SW 446 271 Coarse greisen, grooved rim with spout. Found in 1844 with bones in possible grave (Hirst 1936 no 2; Borlase 1872, fig p 177 incorrectly reconstructed with two symmetrical spouts). Penzance Museum.
- Probus, Carvossa** SW 919 483 Elvan, three with grooved rim (one has spout), fourth with rounded rim. Uncontexted from excavations of enclosure not occupied much beyond AD 300 (M M Irwin in Carlyon 1987, Fig 14). Truro Museum.
- Poundstock, Widemouth Bay** SS 198 005 Elvan, grooved rim, found with Antonine samian (Carlyon 1981, Fig 78).
- St Agnes, Mawla** SW 702 459 Elvan, parts of one chamfered, one rounded rim. Found c. 1910 (Hirst 1936, 14, no 8 although here called greisen). Truro Museum
- St Austell, Castle Gotha** SX 027 496 Elvan, two unfinished bowls from round where occupation probably did not continue much beyond second century (M M Irwin in Saunders and Harris 1982, 132 & Fig 9). Truro Museum
- St Austell, Trethurgy** SW 034 556, 5 elvan; collared bead-rim from 3rd century, chamfered rim (Fig 2) from 4th century context, two bulbous rims and one unfinished uncontexted (Quinnell forthcoming)
- St Buryan, Vinek Boscawen** SW 40 25 Greisen, found in 1867 with Roman material at a site not now identifiable (Hirst 1936 no 1). Penlee Museum, Penzance.
- St Erth, Bosence** SW 575 325 Probably greisen, flat-topped. Found in upcast from Bosence shaft with weights (Borlase 1769, Pl XXVIII and 320). Now lost.
- St Eval, Trevisker** SW 888 687 Elvan (not granite as stated in report), bead-rim with spout. Found with material probably of the later second century AD (ApSimon and Greenfield 1972, 347, Fig 26B No 4). Truro Museum.
- St Merryn, Constantine Chapel** SW 865 747 Elvan, chamfered rim. Chance find. Truro Museum
- Sancreed, Higher Bodinnar** SW 415 325 Greisen, from hedge near courtyard house settlement (Hirst 1936, 15). Not located.

- Sancreed, Goldherring** SW 411 282 Greisen, rounded rim. From courtyard house settlement (Guthrie 1969, 37). Finds in excavator's possession.
- Tintagel, Tintagel Island** SX 049 891 Greisen, rounded rim. Uncontexted from 1930s excavations. Truro Museum.
- Towednack, Bussow** SW 496 387 Greisen, rounded rim. Found among hut group (Russell 1971 54, 110). Truro Museum.
- Tywardreath, Kilhallon** SX 072 549 Elvan, grooved rim from enclosure not occupied beyond mid-3rd century (Carlyon 1982 and forthcoming).
- Wendron, Grambla** SW 693 283 Parts of at least two greisen, one flat-topped rim with spout, one with bead-rim, two elvan rounded, from enclosed settlement with date range from 2nd to 6th cent. (Saunders 1972 and pers. comm.)
- Zennor, Kerrow** SW 447 380 Greisen. Found in hedge 1933 (Hirst 1936, 14 no 6). Not located.
- Zennor, Porthmeor** SW 434 370 Courtyard house settlement 2nd to 4th cent.; excavation report (Hirst 1937) inadequate to locate specimens precisely. Greisen, about ten examples including bead-rim, grooved rim, collared and simple out-turned; one granite and two elvan rounded rims (Hirst 1936, 11, 15). Truro Museum.
- Zennor, Tregerthen** SW 465 392 Greisen, grooved rim. Chance find 1879 (Hirst 1936, 14 no 5, incorrectly referring to 1897) probably with weights. Truro Museum.

Devon

- Axminster, Woodbury** SY 298 973 Elvan footing from 1990 Axminster by-pass excavations. Found on settlement adjacent to enclosure (Silvester and Bidwell 1984). Exeter Museum.
- Exeter**, greisen, grooved rim from Period 2C in the basilica (Bidwell 1979, 242, Fig 75 No 83) dating to c. AD 250-270. Elvan, bead-rim (Fig 2) from context c. AD 275 in Rack Street (Holbrook and Bidwell 1991, no 7, 279).
- Membury, Crib House** ST 270 032 Elvan, chamfered rim. From surface collection of Romano-British material. Accession No. 69/1985 Exeter Museum.

Weights

Cornwall

All appear to have perforations of the hour-glass type.

- Gulval, Chysauster** SW 472 350 Unpublished, marked IIIB, among courtyard house settlement material. Greisen. Simple oval shape with unfinished hour-glass perforation which broke in manufacture. 1700+ g. Truro Museum.
- Gwinear, Reawla** SW 605 363 In pit pre-dating a midden of c. AD 300. Broken, upper part only, similar to Tregerthen 2 (Appleton 1992, S2, 106). Lamprophyre. 680+ g.
- Ludgvan, Castle-an-Dinas** SW 484 370 Two weights found about 1770 together but uncontexted within hillfort (Borlase 1871; illustrated *Gentleman's Magazine* 1802 Fig 8, 393-4). No 1 rounded rectangular shape. Greisen 1370 g. No 2 rectangular. Greisen. 7980 g. Both have slight wear/gloss inside upper part of perforation. Truro Museum.
- St Austell, Trethurgy** SW 0347 5563 From pit probably early 4th cent. Of easily worked kaolinized granite; oval, cordon below perforation, slightly concave base. Weight 882 g. Truro Museum
- St Erth, Bosence** SW 575 325 Two weights found in 1758 among upcast from the 'Bosence Shaft' for which metalwork indicates a fourth century date (Borlase 1769, 319, Pl XXVIII; Fox 1964, 154, Pl 91). No 1 a neat well-finished rectangular shape with narrow suspension loop; perforation shows wear-gloss on upper side. Greisen. Weight 1846 g. No 2 irregular rectangular shape, conjoined triangles incised on both faces; perforation with gloss as No 1. Some damage. Spilite. Weight 6390 g. Ashmolean Museum.
- St Ives** SW 51 40 'From St Ives 1937'. Oval, hour-glass perforation with gloss on upper side. Greisen. Included because of general similarity in shape and finish. 2504 g. Truro Museum.
- Zennor, Porthmeor** SW 434 370 Marked Porthmeor but not mentioned in report on courtyard house settlement (Hirst 1937). Rough oval. Spilite. 383 g. Truro Museum.
- Zennor, Tregerthen** SW 465 392 Two weights found together but uncontexted in 1879, probably with

Cornish mortar. No 1 octagonal with lightly incised rectangle on two largest and opposing surfaces. Kaolinized granite. Some damage. 1106 g. No 2 flat-based oval. Greisen. 1937 g. Truro Museum.
Unprovenanced. Included because of general similarity of shape to Castle-an-Dinas 1 and of surface markings to Bosence 2. Kaolinized granite. 1716 g. Marked Noall 1944, Truro Museum.

Other

Only distinctive artefacts in greisen are listed. A scatter of artefacts in other rocks suggests that, as more objects are brought to light by future work, detailed analysis would be profitable.

Breage, Castle Pencaire SW 599 300 Mould and cover for small ingot similar to 4th century example from Dinorben, N Wales (*Current Archaeology* 65, p 187). Found uncontexted probably within Castle Pencaire hillfort about 1853 (Rundle 1887). Greisen. Findspot on main greisen outcrop. Truro Museum.

Illogan, Porth Godrevy SW 582 428 Bead 2nd century or later. Greisen. (Fowler 1962, fig 14 no 2, 57). Truro Museum.

Probus, Carvossa SW 919 483 Possible part of a greisen mould (No 6, Fig 14, 135 (M M Irwin in Carlyon 1987)), no specific context but site occupation does not extend beyond a date in the 3rd century AD. Truro Museum.

St Austell, Castle Gotha SX 027 496 Mould half and another probably similar (Nos 8, 9 Fig 10, 132, Saunders and Harris 1982) from contexts probably 2nd or 3rd century AD. Described as 'muscovite granite from St Austell area'; macroscopically indistinguishable from greisen. Truro Museum.

St Austell, Trethurgy SW O34 556 Mould cover from probable 5th century context; greisen. Part of mould from probable 5th century context; mica lamprophyre.

St Just, Leswidden SW 398 304 Both halves of a mould for a pewter dish, probably later third or fourth cent. Uncontexted. Greisen. (Brown 1970; Borlase 1769, 310, Pl XXV.) Ashmolean Museum.

Acknowledgments

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Bibliography

- ApSimon, A M, and Greenfield, E, 1972, 'The excavation of the Bronze Age and Iron Age Settlements at Trevisker, St Eval' *Proc Prehist Soc* 38 pp 302-81
- Appleton, N, 1992, 'Excavations at a Romano-British round: Reawla, Gwinnear' *Cornish Archaeol* 31, 69-123
- Bidwell, P T, 1979, *The Legionary Bath-house, Basilica and Forum at Exeter* Exeter City Council/University of Exeter
- Borlase, W, 1769, *Antiquities Historical and Monumental of the County of Cornwall* Republished 1973 EP Publishing Ltd
- Borlase, W C, 1871, *Ancient Cornwall* MS in Royal Institution of Cornwall, Truro
- Borlase, W C 1872, *Naenia Cornubiae*, London, Longmans
- Brown, L, 1984, 'Objects of Stone' in B Cunliffe, *Danebury: an Iron Age Hill-fort in Hampshire* 2, 407-25

- Brown, P D C, 1970, 'A Roman Pewter Mould from St Just in Penwith', *Cornish Archaeol* 9, 107-110
- Carlyon, P M, 1981, 'Some Second Century Finds from Widemouth Bay' *Cornish Archaeol* 20 pp 224-6
- Carlyon, P M, 1982, 'A Romano-British Site at Kilhallon, Tywardreath: excavations in 1975' *Cornish Archaeol* 21 155-170
- Carlyon, P M, 1987, 'Finds from the earthwork at Carvossa, Probus' *Cornish Archaeol* 26, 103-44
- Christie, P M, 1978, 'The Excavation of an Iron Age Souterrain and settlement at Carn Euny, Sancreed, Cornwall' *Proc Prehist Soc* 44, 309-424
- Dudley, D, 1956, 'An Excavation at Bodrifty, Mulfra, near Penzance' *Archaeol J* 113, 1-32
- Dunning, G C, 1968, 'The Stone Mortars' in ed B W Cunliffe, *Fifth Report on the Excavations of the Roman Fort at Richborough, Kent*, 110-114 Res Rep Soc Antiq London XXIII
- Edmonds, E A, McKeown, M C, and Williams, M, *British Regional Geology: South-West England*, Fourth Edition, Stationery Office, London
- Eggers, H J, 1966, 'Römische Bronzegefasse in Britannien' *Jahrbuch Römisch-Germ. Zentral Museum Mainz*, 67-164
- Eldridge, D, 1978, A Survey of Stone Mortars in Roman Britain, Unpublished Dissertation, Weymouth College of Further Education
- Fowler, P J, 1962, 'A native homestead of the Roman period at Porth Godrevy, Gwithian' *Cornish Archaeol* 1, 17-60
- Fox, A, 1964, *South West England*, Thames & Hudson
- Grierson, P, 'Presidential Address' *Num Chron* 1964, xi-xiv
- Griffith, F M, 1984, 'Aerial Reconnaissance in Devon in 1984: A Preliminary Report and the Discovery of a Hillfort' *Proc Devon Archaeol Soc* 42, 7-10
- Guthrie, A, 1969, 'Excavation of a Settlement at Goldherring, Sancreed, 1958-1961' *Cornish Archaeol* 8, 5-39
- Hencken, H O'N, 1933, 'An Excavation by H M Office of Works at Chysauster, Cornwall, 1931' *Archaeologia* 82, 237-84
- Henwood, W J, 1874, 'On the Detrital Tin Ore of Cornwall' *J Roy Inst Cornwall* (1874) 191-254
- Hirst, F C, 1936, 'Stone Mortaria in West Cornwall' *Proc West Cornwall Field Club* I pt 1, 12-16
- Hirst, F C, 1937, 'Excavations at Porthmeor, Cornwall, 1933, 1934 and 1935' *J Roy Inst Cornwall* 24 Appendix II
- Holbrook, N, and Bidwell, P T, 1991, *Roman finds from Exeter*, Exeter Archaeological Reports 4
- Miles, H, and Miles, T J, 1973, 'Excavations at Trethurgy, St Austell: Interim Report' *Cornish Archaeol* 12, 25-30
- Millett, M, 1990, *The Romanization of Britain*, Cambridge University Press
- Mutz, A, 1972, *Die Kunst des Metalldrehens bei den Römern*, Birkhauser Verlag, Basel und Stuttgart
- Needham, S P, et al, 1988, 'A Technological Study of the Ham Hill Stone Moulds' *Somerset Archaeol Natur Hist* 132, 15-22
- O'Neil, B H StJ, 1933, 'The Roman Villa at Magor Farm near Camborne' *J Brit Archaeol Assoc* 39, 117-75
- Penhallurick, R D, 1986, *Tin in Antiquity*, Institute of Metals
- Quinnell, H, 1986, 'Cornwall during the Iron Age and the Roman Period' *Cornish Archaeol* 25, 111-134
- Quinnell, H, 1987, 'Cornish gabbroic pottery: the development of a hypothesis' *Cornish Archaeol* 26, 7-12
- Quinnell, H, forthcoming, Excavations at Trethurgy Round, St Austell
- Radford, C A R, 1951, 'Report on the Excavations at Castle Dore' *J Roy Inst Cornwall* 1 ns, Appendix
- Richardson, B, 1982, Stone Mortarium from Pudding Lane: Level Three Report Museum of London
- Rivet, A L F, and Smith, C, 1979, *The Place-Names of Roman Britain*, Batsford
- Roach Smith, C, 1850, *Richborough, Reculver and Lymne*, London
- Russell, V, 1971, *West Penwith Survey*, Cornwall Archaeological Society
- Rundle, S, 1887, 'Tregonning Hill and its Surroundings', *J Roy Inst Cornwall* 9, 358-363

- Saunders, A, and Harris, D, 1982, 'Excavation at Castle Gotha, St Austell' *Cornish Archaeol* 21, 109-53
- Saunders, C, 1972, 'The Excavations at Grambla, Wendron 1972: Interim Report' *Cornish Archaeol* 11, 50-2
- Schwartz, G T, 1964, Gallorömische Gewichte in Aventicum, *Schweizer Munsblätter* 13-14, 150-7
- Silvester, R J, and Bidwell, P T, 1984, 'A Roman Site at Woodbury, Axminster' *Proc Devon Archaeol Soc* 42, 33-58
- Smith, R A, 1905, 'The Ancient British Iron Currency' *Proc Soc Antiq London*, 20, 179-95
- Thomas, C, 1956, 'Antiquities at Trink Farm, Lelant' *Proc West Cornwall Field Club* 1:4, 169-70
- Thomas, C, 1966, 'The Character and Origins of Roman Dumnonia' in ed C Thomas *Rural Settlement in Roman Britain*, Council for British Archaeol Res Rep 7, 74-98
- Threipland, L M, 1956, 'An excavation at St Mawgan-in-Pydar, North Cornwall' *Archaeol J* 113, 33-81
- Todd, M, 1987, *The South-West to AD 1000*, Longman

Appendix: A stone weight from Gwithian

A greisen weight was found during excavations at Gwithian in 1957. It had been built into the top of the wall of House I on Site GM/1, a structure in Layer A dated somewhere within the eighth to eleventh centuries AD (Thomas 1958, fig 10: small find symbol in south east corner of house plan). It is presumed to be residual and to have derived from earlier levels B or C, with a date range from the fifth to the eighth century AD.

The object weighs at least 375 g.; parts of its surface have decomposed and it would originally have been heavier. It is 92 mm high, 70 mm across and 45 mm thick. The perforation is of hour-glass type but irregular. Both faces, the base and the sides appear to originally have been finished smoothly. Its shape compares most closely to that of Castle-an-Dinas 1 (Fig 4 D) or the unprovenanced weight (Fig 4 H). Its weight is most similar to the 383 g. of Porthmeor (Table 1).

The interest of this weight relates to its context. None of the other weights discussed belong to the post-Roman centuries although several of the mortars listed could be as late as the sixth century.

I am grateful to Professor C Thomas for drawing this to my attention and permitting its

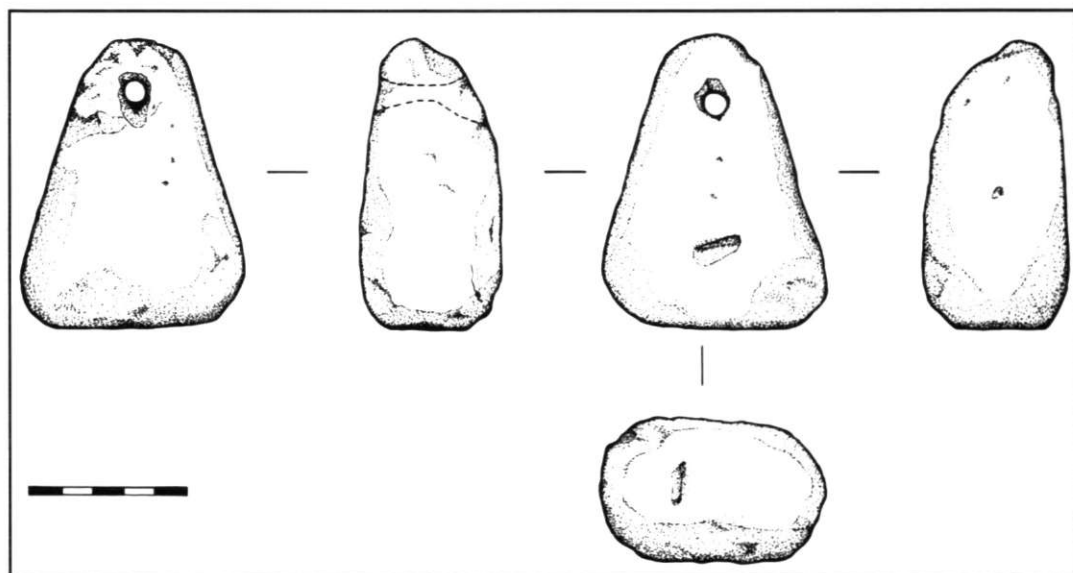


Fig 5 Weight from Gwithian: scale in cms.

publication here as an addition to the article published in *In Search of Cult*, and to Carl Thorpe for the drawing. It is to be hoped that this will result in the recognition of other significant finds.

Reference

Thomas, A C, 1958, *Gwithian. Ten Years' Work 1949-58*.

Tintagel Castle: archaeological investigation of the Steps area 1989 and 1990

COLLEEN BATEY (\$), ADAM SHARPE (#) and CARL THORPE (*)
with contributions from CHARLES THOMAS, LESLIE ALCOCK and CARL HERON

Introduction (Fig 1):

The popular misconception of the association between the site of Tintagel and "King Arthur" is one which is difficult to dispel. It is, however, one which attracts large numbers of visitors to the site throughout the year, making Tintagel Island the fifth most visited English Heritage site (based on 1990 figures). Most of the visitors make their way around the island on a predictable and limited set of paths which link the more obvious structures. The maritime grasses which bind the surface of the generally rather thin soils on the island, are fragile and certainly cannot withstand heavy and

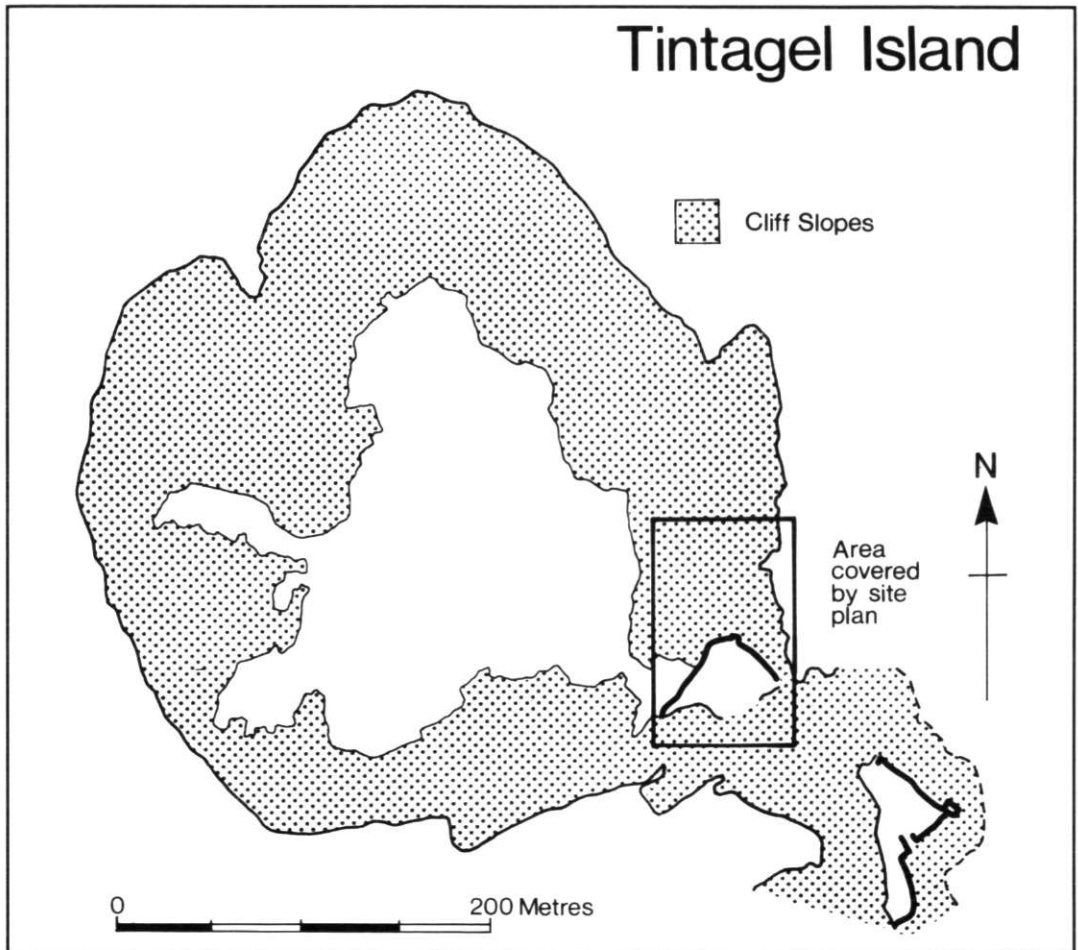


Fig 1 Tintagel Island. (Based on Thomas and Fowler 1985, 18-19). Drawn by L McEwan

continued foot pressure, especially during dry summers. With the loss of binding vegetation, surface erosion and widening of many tracks has occurred. Gullying due to surface water run-off on slopes has exacerbated the problem and, in places, paths have cut their way down to the bedrock. Continuous surface polishing makes such exposed rock surfaces slippery and hazardous.

On the south-east side of the island, above the Inner Ward, the topography limits the choice of suitable routes from the upper plateau back towards the mainland to a single path with a series of steps (Fig 2). This lies on a slope of about 30 degrees and its surface, denuded and badly cut into, shows signs of accelerating erosion.

To achieve the stabilisation of the surface of this particularly vulnerable route, a hard wearing surface, together with some remedial works including re-seeding, and the re-instatement of original ground profiles in the most used areas, was proposed by English Heritage. At two points above the Inner Ward where visitors most frequently pause to take photographs of the Mainland, vegetation denudation was permanent by 1989. Here, hard-surfaced levelled viewing platforms were proposed. Landscape architects Lisney and Partners suggested a schema of works in which the majority of the path reconstruction could be achieved through the building up of eroded path surfaces. However, the provision of steps up the steeper parts of the slope would require shallow excavation and surface levelling. It was in response to this schema that the Cornwall Archaeological Unit was commissioned by English Heritage to undertake appropriate evaluation excavation on the line of the path and at the viewing areas, and to assess the potential archaeological damage which would be incurred (see Fig 3). This work was undertaken by Adam Sharpe in 1989 and the results are outlined below.

In 1990, during the course of English Heritage excavations elsewhere on the Island directed by Christopher Morris and Colleen Batey, it became obvious that the subsequent work associated with the building of the lower steps, was destroying an area of considerable archaeological sensitivity adjacent to Site F (see Fig 3). In this area, rich midden-like deposits, on a scale much greater than that encountered by the work in 1989, were being removed and necessitated



Fig 2 Location of pathway, steps and 1989 trenches, in relation to Site F. Drawn by L McEwan

immediate archaeological investigation, and remedial recording action where possible. This work was undertaken by Colleen Batey and these 1990 results are also outlined below.

The general archaeological context of this work has been well-aired elsewhere (see for example Thomas 1988a and b). This is now a final report on the work already mentioned in interim publication (Morris, Nowakowski and Thomas 1990; Sharpe 1989).

Previous Excavation in the Vicinity of the Steps

Excavation was undertaken at the site termed 'Site F' by Dr C A R Radford in 1936, with additional work and survey in 1938. Site F lies immediately to the north of the lower part of the Steps, and indeed it is thought likely that some of the upcast from these earlier excavations, particularly in the form of the stone slates recovered (see below), was disturbed during the construction of the Steps. Radford interpreted Site F as 'the monastic scriptorium', an identification based on the suggested presence of underfloor heating, comfortable wooden benches and open-ended lower chambers allowing good lighting (Radford 1939, 19). The final report on this work is awaited.

The recovery of several perforated roofing slates, presumed to have formed part of the roofing of the structure at Site F, lends support to the identification of the standing remains now visible at the site as being medieval in date. Radford noted that 'the masonry of this group [of buildings] is among the best in the monastery' (*op cit*, 19), and referring to a 'firing chamber' to the right of the complex, presumed here to be at the opposite end of the complex to the Steps area.

An unpublished section by J A Wright (dated September 1938) and held by the Royal Commission on the Historical Monuments of England, Southampton Branch, was drawn to the south of Site F (redrawn here as Fig 4), and indicates pockets of material, in one case specifically a 'Burnt layer', lying in undulations in the bedrock. Stratigraphically, this underlies traces of 'Revetment' and the 'Make up behind revetment'. There is also possibly an (unlabelled) additional deposit beneath the Revetment but over the Burnt layer. In addition, a layer of 'Soil with traces of burning' abuts the revetment to the east and this is apparently overlying and also abutting 'Natural soil in pockets in rock'. It is difficult to be certain how close this section was to the north edge of the area disturbed in 1990, but it seems likely that the burnt layer may equate with Layer 17 as distinguished in 1990 and Layer 6 in 1989. An additional 'soil pocket' is noted beneath this layer, to the west of the revetment, which is curious, but if *this* had been a deposit of dark soil this ought to have been annotated on the original section drawing.

An additional, rather more recent, disturbance in the vicinity of the Steps, was the building of a hut for workmen on the island. This lies below a steeply scarped rock edge and adjacent to the main modern pathway leading from the Castle to other sites on the Island. A small cutting to the south of the hut (marked 'EC' on Fig 2), produced a large piece of medieval roofing tile and four sherds of imported pottery (*Bii* and *Bv* types) (pers. comm. Charles Thomas).

This adjacent pathway still yields sherds of pottery, many of them handed to the custodians, including 12 *Bi* sherds, three *Biv*, a rim and a base of Phocian Red Slip Ware and a single sherd of medieval pottery in the period 1989-90 alone.

Work in 1989: Adam Sharpe, Cornwall Archaeological Unit

A preliminary investigation on site, based on the survey work by Lisney and Partners, indicated those areas where intrusion into archaeological deposits could be expected during the works detailed. These were: A) one section of path, and B) the lower of the two viewing areas (see Fig 2). In the case of the path, the surface was to be lowered by *c* 100mm, and at the viewing area by *c* 150mm. At both sites it was clear that the Lisney survey presents a simplified and, in places, misleading picture of the existing topography. As a result, it was likely that more extensive excavation by the contractors would ensue.

Over the remainder of the path, such soil removal as would be required to enable steps to be

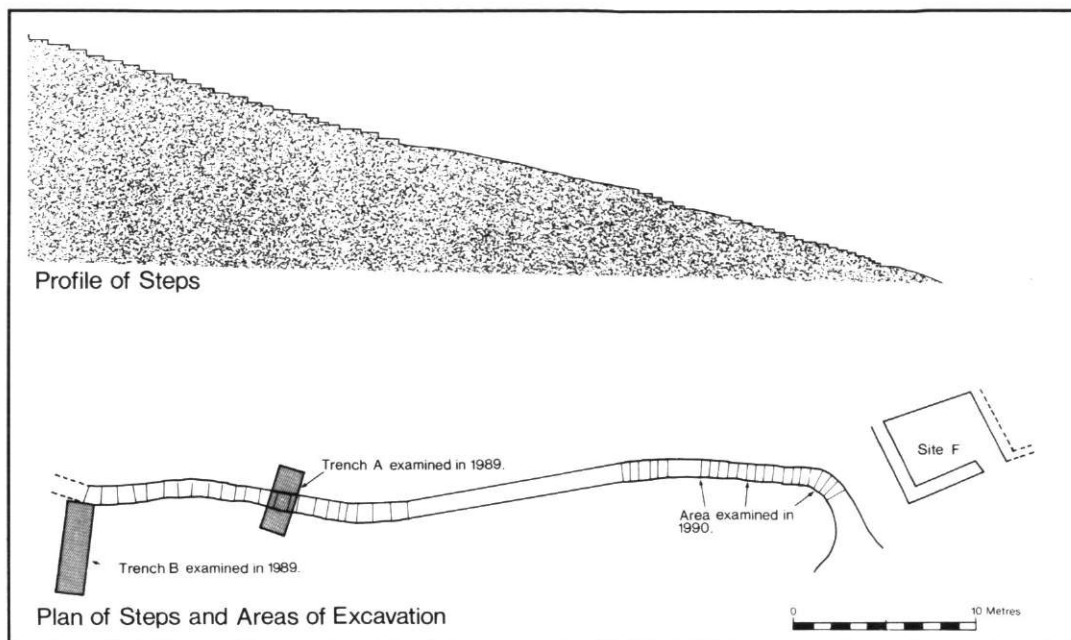


Fig 3 Plan of steps and areas of excavation. Drawn by L McEwan and R Harry

constructed was to be of a very limited nature, confined to the edges of the existing track. At this stage, in view of the very limited depth of material which it was proposed to remove, it was thought likely that this would remove only hillwash deposits of relatively recent date. Lower down slope, where bedrock was not exposed, it was originally intended to build up the steps above their existing levels, and thus no significant ground disturbance was anticipated.

The stratigraphy of the deposits was examined by means of two small evaluation trenches. This work was undertaken in September 1989.

Trench A

A cross-path scarp and the presence of an anomalous semi-levelled area to the east of the path had the appearance of a building platform c 6m x 4m cut into the slope, and subsequently partly buried. It is similar to many other such platforms on this side of the island (see Fig 2). Additionally, ground evidence suggested a ramped path leading from this part of the track to the former buildings on the larger platformed area upslope to the west. A metre square trench was excavated at a point where it was felt that there would be the greatest potential to test for the presence or absence of these features, and where it would still be possible to maintain the footpath downslope.

When apparently undisturbed bedrock was discovered at a shallow depth in the initial area examined, the trench was extended to the east by a further square metre, and the whole area of the larger trench excavated down to bedrock. After the recording of the sections, this area was backfilled.

Trench B

In order to test deposits in the area to be disturbed by the lower viewing platform and its approach path, an elongated trench, 3.7m long x 0.6m wide, was laid out from the western face of the curtain wall towards the main path. This alignment was to test not only deposits under the viewing platform and path, but also to see whether the curtain wall was set in a foundation trench in this part of its length. This trench was similarly excavated down to undisturbed bedrock, recorded and backfilled.

Interpretation

Trench A

An eroded, highly compressed clayey layer overlying a thin band of shillet fragments (Layers 1 and 2) were found to form the upper deposits over the eastern half of the trench. These, in turn, overlay a relatively homogeneous, almost entirely stone-free, silty loam (Layer 3) which extended over the whole area examined, and which averaged 15cm in depth. The lower band of material seems to be a typical topsoil on the Island: a fine-textured, medium brown (10YR 3/4) worm-sorted loam supporting short maritime grasses and herbs. The clayey material overlying to the east, which was also partially grassed, appears to represent stabilised, heavily trampled, redeposited silts, and small stones which form the surface of the present path; probably a surface wash-off product. None of these upper layers produced any artefactual material.

Below these topsoils, Layer 4 extended up to 39cm in depth. This consisted of a dark (10YR 5/3), gritty, clayey, slope-bedded soil containing numerous small fragments of slate and quartz. Within the material, and to a certain extent concentrated near its upper surface, was a large number of split slates lying at the prevailing slope angle. Smaller fragments within this layer were irregularly bedded. This layer also contained a small number of abraded sherds of pottery.

On the evidence available, it seems likely that Layer 4 represents a much disturbed and almost certainly re-deposited soil. The introduction of slate fragments into the matrix apparently occurred as a number of episodes, the slope-bedding of all the large fragments suggesting deposition on the surface of a soil aggregating on this slope. The size and shape of the slates, and the proximity of this site to the curtain wall upslope, both suggest that the stoney material here represents waste discarded during the construction of the wall. This accumulated on the slope below during the course of these operations, mixing with disturbed soil to fill up hollows and generally raise the ground level.

The matrix of the underlying layer (5) was identical to 4, but contained significantly fewer large stone fragments, particularly towards its upper surface. The majority of residual pottery came from near the top of this material, which was up to 25cm deep. The many similarities with Layer 4 suggest that these materials must have shared a common origin. Although difficult to detect, it seems probable that the relatively stone-free, upper 5cm of Layer 5 represents a buried topsoil. In view of the interpretation of Layer 4, this is likely to represent the turfline immediately before medieval construction upslope. The bulk of the pottery came from near the base of this supposed topsoil. Its relationship with already-surveyed structures nearby remains to be clarified, but it must originate somewhere on the slope above. The extent of abrasion is variable, but some of the pottery is now considerably rounded off.

It is likely that Layer 4 was formerly an upslope equivalent of Layer 5, subsequently redeposited over Layer 5, but mixed with builders' rubble.

As indicated above, bedrock (Layer 7) was found to be close (10-20cm) to the present ground surface in the western 1m square area initially selected for excavation. When the area to the east was excavated, however, this outcrop was found to drop away rapidly down to a gently sloping shelf at c 0.85m from present ground surface. No evidence of tool marks was found on either the horizontal or vertical surfaces of the bedrock, although significant polishing was noted down to 0.45m from the surface on the upper surfaces of the rib of rock at the western end, probably indicating former exposure to foot traffic. This depth from present ground level corresponds reasonably well with the upper surface of Layer 5, tending to confirm that this level formed an exposed ground surface immediately before the deposition of Layer 4. Given the small sample of the rocky hollow excavated, it is difficult to interpret whether what was revealed represents part of a rock-cut platform, or is simply a natural feature on a hillside marked by small outcrops and hollows.

The discovery of a small, oval, charcoal-rich spread (30cm x 20cm, Layer 6), lying on the bedrock at the intersection of the horizontal and vertical planes, however, indicates that this rocky

surface was at some time exposed. This rather strengthens the suggestion that the 'platform' was used and possibly modified, if not necessarily wholly fashioned, by human agencies, apparently prior to the construction of the medieval curtain wall. The nature of the spread itself is less easy to interpret. Although having the appearance of hearth residues, there was no sign of local burning on the nearby rock, and no associated finds. This dark (10YR 3/2) deposit may, alternatively, represent decayed organic substances, rather than burnt material. This context was bulk sampled and, despite sieving and careful analysis, produced only small fragments of charcoal (pers. comm. Vanessa Straker).

Despite the limited size of the trench, some evidence for a rather more complex stratigraphy than might be expected from surface indications was encountered in this area, as well as a reminder of the variable underlying topography. As became apparent in 1990, this factor was to be of particular significance lower down the slope.

Trench B

Stratigraphy in this area was, if anything, simpler than in the first area examined. Topsoil (Layer 8) was identical to Layer 3 in Trench A, and averaged 20 cm in depth. Where vegetation cover had been lost at the eastern end adjoining the wall, this was reduced to 5cm, and immediately upslope, polished bedrock was exposed.

At the eastern end, this soil overlay a thin, reddish-brown (7.5YR 3/4) loam (Layer 9) containing small stone fragments, together with crumbs of mortar, traces of lime and sand, and some thin lenses of clay. This material is interpreted as a disturbed medieval soil layer, containing mortar fragments which were incorporated into it during wall construction.

This material lay directly on bedrock (Layer 11), and filled crevices in the rock, which appeared to have been quarried on a small scale, immediately adjacent to the wall. There was no footing trench for the wall, which sits on the levelled-off surface of the exposed bedrock, to which it is

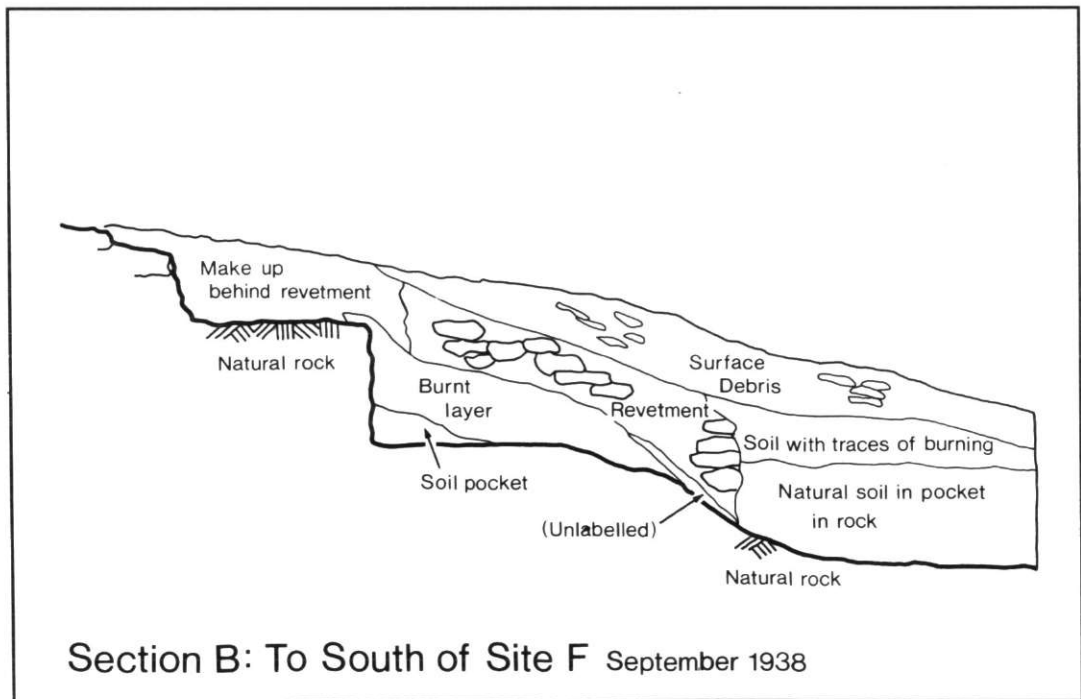


Fig 4 Section B to south of Site F September 1938. Redrawn by L McEwan (after J A Wright)

mortared with an apparently lime-rich mix.

To the west, Layer 9 merged into Layer 10, which appeared to be identical with the disturbed stony soil (Layer 4) in Trench A. Where exposed in Trench B, however, much of the stone was concentrated in one area: its appearance suggested a pile of stone mixed with soil, centred c 3m from the wall. Individual stones within this feature were, on average, larger than those found in Trench A, and some were only slightly smaller than those incorporated into the wall. These stones are interpreted as likely to be those remaining unused from a dump of material supplied for wall construction, incorporated with earth and small stone originating in disturbance upslope. Like Layer 4 nearby, this apparently disturbed material contained very few finds.

Bedrock (Layer 11) dipped away at the western end, as well as to the north (downslope). Apart from the possible quarrying of its western end, its surface showed no evidence of polishing or other human activity. It must be concluded from the excavated evidence that this thinly soiled rocky outcrop has been little exploited in the past, despite its proximity to other relatively densely used areas of the Island.

1990: Colleen Batey

Although the detailed examination in 1989 of deposits along the line of the step repairs had indicated some limited archaeological potential, the deposits which were cut through in 1990 for the bedding of the lower steps, adjacent to Site F (Fig 2), were considerably more extensive and richer in content. Work was already underway when archaeologists due to work on Site C and related terraces arrived at the site in April 1990. The careful observations by the stonemason undertaking the step building, Mike Rosewall, indicated rich, dark deposits containing large numbers of sherds of imported pottery, lying immediately over bedrock. The bedding for the steps required removal of these deposits down to the level of bedrock and, in some places, remodelling of the bedrock. Although this work was already underway, it was possible at least in part to reconstruct some of the stratigraphy which had been disturbed and to work in advance of further destruction, with the willing cooperation of the stonemason.

Three layers were distinguishable overlying the bedrock layer. Layer 15, the upper layer, was a loose mixed deposit of hillwash and topsoil (Munsell 5YR 6/4), including sharp stones, corresponding to Layer 2 in 1989. The only artefactual material to be discovered from this deposit was in the form of perforated roofing slates, considered to have come from the adjacent building on Site F or buildings higher up the slope.

Layer 16 (below Layer 15) was a crumbly brown loamy deposit (Munsell 5YR 4/3 5YR 4/2), with some charcoal flecks and of maximum thickness c 10-12cm. It is possible that this was truncated by the hillwash action which had created Layer 15. Possibly equating with Layer 4/5 of 1989, this contained several sherds of imported pottery and a glass fragment (Recorded Find (RF) 1046).

Layer 17 (beneath Layer 16) was a deposit of rich black midden-like material (Munsell 5YR 3/2), with some mammal bone, equating with Layer 6 in 1989. Lying in a hollow in bedrock, this had accumulated to a maximum depth of c 40cm. This likewise produced several sherds of imported pottery and a glass vessel fragment (RF 1047). Layer 18, undulating bedrock with infilled fissures, equates with Layer 7 from the 1989 excavations.

The two apparently undisturbed contexts, Layers 16 and 17, were extensively sampled for environmental material and indicate the survival of both carbonised grain as well as animal bone fragments. These are the first such deposits to be analysed from the Island. Although large, bulk samples were taken, some 90.5 litres of soil from Layer 17 for example, the material produced from sieving proved to be very limited in scale.

The density of plant remains in the samples as a whole, is low, although samples taken from the excavation areas, C01 C05 and also from the Churchyard excavations (Morris, Nowakowski and Thomas 1990, 845-9), did however, prove to be more productive. Due to the paucity of material,

large samples had to be taken and floats were retrieved on a mesh with aperture of 250 microns and the residues on 500 microns. However, it is obvious that all plant macrofossils were preserved by carbonisation and no mineralisation was observed. The material in general from Tintagel relates to the cultivation of barley and the seeds of wild plants were recovered, mostly of arable taxa. The oats recovered may be either wild or cultivated species. The material from the Steps however, yielded only two seeds, one an oat grain (*avena* sp) and the other a redshank (*Polygonum persicaria* L.), both from Layer 17 (from 155kg of sample!). 0.65grams of fragmentary charcoal was recovered from Layer 16 (from 10kg of sample — pers comm Vanessa Straker). In addition, mammal bone was recorded from Layer 17, although in all cases the bone was fragile and poorly preserved (pers. comm. Ingrid Mainland).

Although the deepest deposits to be encountered during the course of step construction were recorded during this archaeological investigation, other patches of material were also subsequently disturbed. However, due to the careful recording by the stonemason, who noted not only the location of artefacts relative to the number of the step, but also, in some cases, the nature of the soil matrix, it has been possible to assign some of the finds to the deposits previously identified in excavation. These items, predominantly sherds of pottery, but also glass and worked slate, are included in the following discussion.

Interpretation

Despite the simple stratigraphy of this area of the site, it is nonetheless possible to suggest an interpretation. It is possible that the upper layer encountered, Layer 15, may well have been a mixed deposit made predominantly of redeposited material from the adjacent building. Site F was laid out for the public following Radford's work in 1938, and it is possible that the internal deposits, including the remains of a collapsed stone roof, may well have been dumped to the side of the structure. It is, however, interesting to note, following the comments of Sharpe in relation to the deposits to the south, which had a mixing with lime fragments (related to the building of the 12th-13th century Castle wall), that despite the possible later date of the building on Site F, there were no lime fragments identified in this debris.

Disturbance of the upper stratigraphy due to dumping and possible remodelling for previous steps at this point, does not readily allow for the distinguishing of an earlier turf line, but both Layers 16 and 17 did not appear to be unduly disturbed in the area excavated under controlled circumstances. Both deposits yielded imported pottery, with approximately 40.65% of the total

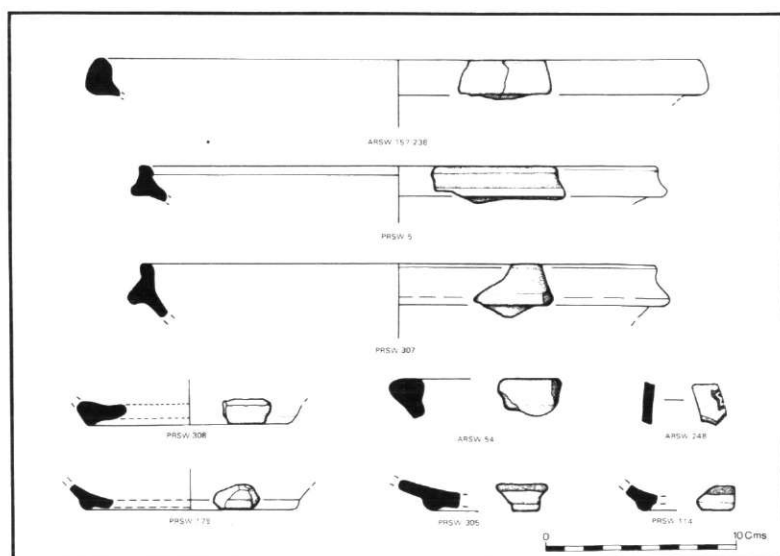


Fig 5 Selected African Red Slip Ware and Phocian Red Slip Ware sherds. Drawn by C Thorpe Scale: 1/4

number being recovered from Layer 17 and 20.77% from Layer 16, where it could be either demonstrated during controlled excavation or subsequent detailed recording by the stonemason.

The circumstances of deposition for Layer 16 are not clear, but the apparently richer deposit, Layer 17 underlying it, lying within a natural hollow or gully in the bedrock, appears to have been dumped material, although remaining *in situ*. In other words, we have here a midden-like development, accruing to an adjacent site. This was to the west in all likelihood, given the disposition of the land as it now is (although the area to the east has clearly been severely modified in the recent history of the site). Identification of this structure or group of structures would obviously be highly desirable, as it clearly dates to the earlier period of occupation of the site, and in the area of the Island where it is most likely that the superimposition of the Castle structures onto the earlier ones may be identified.

THE FINDS

Pottery (fabrics identified by Carl Thorpe)

Several fabrics have been identified within this assemblage, and the numerical breakdown is supplied in Table 2. The detailed measurements and degree of attrition etc are available in the site archive, housed both with English Heritage in London and The Royal Institute of Cornwall in Truro. A brief summary is provided here to supplement the table.

Thirteen sherds of *Phocean Red Slip Ware (PRSW)* as originally identified by Hayes (1972) have been identified, including five basal or footing fragments and two rims (both of Form 3); most are in a highly abraded condition. The five sherds of *African Red Slip Ware (ARSW)* (Hayes 1972) have survived better and include three rim sherds (with two conjoining) and a sherd with a pointed stamped decoration.

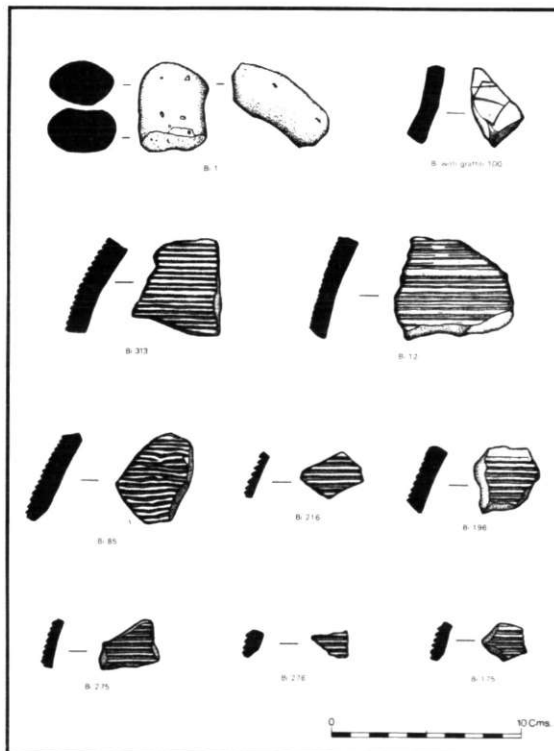


Fig 6 Selected *Bi* amphora sherds.
Drawn by C Thorpe. Scale: ¼

The bulk of the remaining sherds from imported sources are from amphorae, or large storage vessels used in the transportation of olive oil and other commodities. The so-called *B-amphorae* (Peacock and Williams 1986) are most commonly represented by sherds of *Bi* vessels Form 43 in the Peacock and Williams scheme. This covers some 103 sherds of the total, including several with the distinctive grooved decoration, as well as three handle fragments, one with incised graffiti, another piece of a nipple foot; three appear to have been clipped to form discs which would have acted as lids for the vessels (see below). Amphora type *Bii* (Peacock and Williams 1986, Form 44) is the second most common type, with 88 sherds identified, mostly abraded wall sherds, but including four handle pieces, one with possible graffiti and a clipped disc.

Amphora type *Biv* (Peacock and Williams 1986: Form 45) is less common, being represented by only four sherds, all highly abraded. It is possible that this is under-represented due to the poor condition of the surviving surface of the sherd. Type *Bv*

(Thomas 1981), represented by 43 sherds from the excavations includes a single basal piece and a handle fragment in addition to three clipped sherds of disc-form.

Fabric D (Rigoir and Meffre 1973: Form 4) is represented by a single rim sherd from the Steps. The fabric had not been commonly identified at Tintagel, and so this is a particularly interesting sherd (see below).

All the sherds so far noted are of fabrics which have been identified and provenanced commonly from sites in the west of Britain. The remainder of the assemblage has been identified as representing coarse wares from the same regions as these relatively fine imported sherds. This work awaits full publication, but the identifications presented here are by Thomas and Thorpe who will publish elsewhere the basis for the distinctions made (Thomas and Thorpe forthcoming). Each fabric is described here since the full publication is not yet available, and with the single exception of Coarse Fabric 1, which produced 13 sherds, all other types are represented by a maximum of three sherds (see Table 2).

Fabric 1 has been identified as an Eastern Mediterranean Red Ware which is similar to North African Redware, and purple-red to reddish orange in colour. It has a hard, smooth texture and is micaceous with numerous well-rounded quartz grains. Some white limestone specks are present but not common. The 13 sherds are all from the 1990 work.

Fabric 2 is Eastern Mediterranean White Surface Ware, which is similar to North African white-surface ware, of red, orange-red or buff colour, and a surface of white or cream skin. It has a hard and smooth texture with some rounded quartz grains, and is micaceous, with some white limestone specks present. Only three examples of this have been noted.

Fabric 5 is Eastern Mediterranean Sandy Cream Ware which is similar to North African Cream Ware. Cream or buff throughout, it occasionally has a darker buff or grey core. It has a hard, rough texture, and is micaceous, with common sand inclusions; it is represented by only three sherds.

Fabric 7 is similar to Tripolitanian Ware, and is purple-red-orange in colour, and generally smooth and hard. White limestone specks are very common, and it is micaceous. It has a possible origin in the East Mediterranean. The two examples are from Layers 16 and 17.

Fabric 9 is a grey-brown hard fabric, which is very fine-grained and slightly micaceous. It has several voids and a few limestone inclusions with traces of Muscovite mica. A possible origin in Egypt or North Africa has been suggested. The single sherd of this type is from Layer 16.

Fabric 16 is of Phocaeen Red Slip Ware fabric, with an origin in the East Mediterranean. The single sherd is unstratified from the 1990 work.

Fabric 20 is of *Bi* Amphora type with an origin in the East Mediterranean. Once more the single sherd identified is unstratified from the 1990 work.

Fabric 21 is termed Square Profiled Ridge Ware and is of pale pink to buff coloured fabric which is hard, smooth in texture, and micaceous with numerous quartz inclusions and distinct volcanic glass. Rare limestone fragments. Thin sectioning by Peacock (pers. comm. to Charles Thomas) has suggested an origin in Central or Southern Anatolia, or the islands of Melos, Antiparos or Gaili. A single sherd was recovered from Layer 17.

Fabric 22 is an Amalgro 51 A-B Amphora Fabric of dull orange to buff brown colour with a grey core. It is micaceous and has rare inclusions of ? iron ore, very rounded quartz grains. An origin in Andalucia, southern Spain or possibly North Africa has been suggested, cf Keay XIX Amphora. The three sherds are from Layers 16 and 17.

Fabric 25 has a reddish brown surface and grey core. It is coarse-grained with numerous inclusions, mostly quartz and feldspar. It has an unknown origin and is hand made. The single sherd was recovered from Layer 16.

In addition to these sherds of fabrics which have been identified as imported to the region of Tintagel, a single sherd from Layer 5 has been identified as a rim sherd of a small beaker of *Romano-British/ Native* ware. The fabric is greyish and has traces of a darker brown grey slip or wash externally. There is shallow beading below the rim and a single furrow; the vessel is

obviously wheelmade.

The remaining categories of material are here tabulated and discussed in the Finds Discussion section below.

TABLE 1 (see Fig 10)

Glass

		Layer	
	3	16	17
Vessel		1	2
Bead	1		

Metals

		Layer	
		US	17
Copper Alloy	1		
Iron	3	1	2

Stone

		Layer				
	US	US to S	4	5	16	17
Whorl						1
Quartz Pebble					3	
Notched slate			1	1		
Roofing Slates	17	15				

Finds discussion

Pottery (Figs 5-9)

Table 2 indicates the types of fabric distinguished from each of the contexts discussed above. It is immediately obvious that the bulk of the 337 sherds recovered are from the lower Steps, examined in 1990, with only 22 sherds being recovered from the upper Steps examined in 1989. Thomas has suggested (pers. comm.) that the deposits examined in the lower Steps area may have been deposits which have been swept down the slope from these terraces. Perhaps in favour of Thomas' argument, it may be noted that the recovery of material, stratified or otherwise, ceases approximately 35 m above Step 10, where the gradient becomes shallow and where Sharpe's Trench B, also failed to produce artefactual material. The paucity of material in this upper area coincides roughly with a point on a level with the structural traces identified by Thomas and Fowler (1985, 18-19) and where it would be difficult to argue for a downward movement of material.

Of the 315 sherds of pottery from the lower Steps area, 207 are stratified from Layers 16 and 17 and unfortunately 108 are unstratified to some degree. It is, however, clear that they were recovered from the lower Steps area, and in some cases they can be assigned to individual 'Steps' if not specific archaeological layers. Of these sherds, the bulk are of fabrics readily identified as imported fabrics — Phocian Red Slip Ware, African Red Slip Ware, B amphorae — some 238 in total. There is, however, a sizeable component in the assemblage of Coarse wares which have been identified by Thomas and Thorpe. Most of these have origins in the Eastern Mediterranean and the identification of these as such may well engender discussion! Future collaboration between Roman and Post-Roman pottery specialists on this particular front will be welcomed and would inevitably be a fruitful liason.

TABLE 2 (abbreviations as used in the discussion above)

Fabric Type	Layer							Totals	%	
	16	17	US	2	3	4	5	4/5		
PRSW	1	5	5		1				13	3.56
ARSW	1	2	2						5	1.48
<i>Bi</i>	18	46	30	1	1	1		6	103	30.56
<i>Bii</i>	17	32	34		2	2	1		88	26.11
<i>Biv</i>	1		3						4	1.19
<i>Bv</i>	6	26	8				3		43	12.76
D		1							1	0.30
Coarse 1	2	4	7						13	15.13
Coarse 2			3						3	0.89
Coarse 5		1	2						3	0.89
Coarse 7	1	1							2	0.59
Coarse 9	1								1	0.30
Coarse 16			1						1	0.30
Coarse 20			1						1	0.30
Coarse 21		1							1	0.30
Coarse 22	1	2							3	0.89
Coarse 25	1								1	0.30
Roman Coarse Indet							1		1	0.30
Indet	20	16	12			1	2		51	15.13
TOTALS:	70	137	108	1	4	4	7	6	338	100.01

%* : 20.77 40.65 32.05 [combined 6.56]

(* expressed as totals of sherd count)

The catalogued sherds indicate the large range of sizes represented, ranging from smaller pieces of fine-wares to large, hand-sized sherds of B amphora. Perhaps the most significant feature of these sherds is, however, the state of the sherd as it emerges from the ground, ie the amount of attrition which has occurred either in the ground or before deposition. Since the amount of wear on sherds is often used as a criterion for assessing a potential age of the sherd on deposition or as a strong argument for suggesting redeposition, it is important that the attrition is monitored as the sherd is exposed in the ground, rather than in the post-excavation process. Of the sherds presented here, a little under a third of the total number had been cleaned using conventional on-site methods, and hence there is a notable proportion of sherds which are recorded as abraded. Experiments to record the nature and degree of damage caused in cleaning are to be reported elsewhere (Thorpe and Batey forthcoming). It is important to realise that most of the material had sharp edges, ie clean breaks, on recovery, and that many of those in the old collections from the Island, may well have been the same originally.

Comment: by A C Thomas and C M Thorpe

The assemblage of pottery from the Steps area, remarkable as it will seem to those accustomed to recovering a handful of such sherds in the course of a prolonged excavation, has to be seen in the broader context of all the Tintagel finds. An overdue re-assessment has yet to be made, but it would be fair to suggest that fragments representing well over a hundred amphorae of all types must have been found by 1992, and fine-ware dishes must similarly be approaching the hundred mark. The current model to explain the presence of this exotic material has been set out by one of us (Thomas 1988a); it is still uncertain whether more than a single shipment, and if so perhaps in the period AD 500-530, is responsible, but it is also clear that any such shipment(s) had a heterogeneous

character, with items acquired at more than one port in the eastern Mediterranean and possibly North Africa (Carthage? Fulford and Peacock 1984).

In cataloguing all the known finds from Tintagel during 1988 (Thomas and Thorpe 1988), we were hampered by the fact that only about 10 to 15 percent possessed any provenance. The bulk of the pottery had been preserved, unsorted and in some cases untreated, since the 1930s. However, provisional distribution maps of finds from the island, by types and by known densities, did allow a clear conclusion that the focus lay below the medieval Inner Ward. This can be explained by supposing that the nucleus of a post-Roman citadel is several metres below Earl Richard's Great Hall of 1233-36, and that Site A (with the Chapel), the slope below Site A to the path, Sites F and B, and a small area just outside the Inner Ward, make up a zone where such finds occur in greatest numbers. The Steps area falls within this.

As for the pottery itself, this forms a topic of ongoing research. Patently, amphorae were imported not for themselves as exotic objects but as containers, even if sherds might be

recycled occasionally as spindle whorls or gaming pieces, to be sharply distinguished from the generally larger and rougher discoidal pieces that came with the cargo as amphorae stoppers, fitted into narrow necks and secured with pitch or some other substance (see Fig 8b). Patently too, the numerous dishes and platters of African or Phocaean Red Slip Ware were attractive cargo-fillers, finding a ready market away from their centres of manufacture. Since 1988, the realisation that wheel-made coarse wares — pans, skillets, the kind of thing one would perhaps expect to find in a ship's galley amongst other places — are also represented has obliged us to make a preliminary classification of these by *fabric*; the most we can see at the moment is that nearly all such numbered fabrics are also of East Mediterranean origin.

Class *Bi* amphorae are still not provenanced (but see discussions in Fulford 1989 and Campbell forthcoming a); despite odd mentions in secondary literature no group of kiln sites has been found and we suspect in any case that *Bi* (a very widespread form, with several phases) was made in a number of locations in the Aegean, possibly including Crete. Class *Bii* thanks to work by colleagues from Athens, can be assigned to the Cilician coastal belt of southeast Turkey. The small micaceous Class *Biv* vessels are centred on Sardis (Sardes) in western Turkey. *Bv*, the metre-high vessels first noticed from reconstructed material in 1988, closely resemble the Tunisian *Africana grande* type linked to olive oil carriage, but the content of the fabric now implies that an East Mediterranean source must be expected. Untyped amphorae, represented in the Steps area

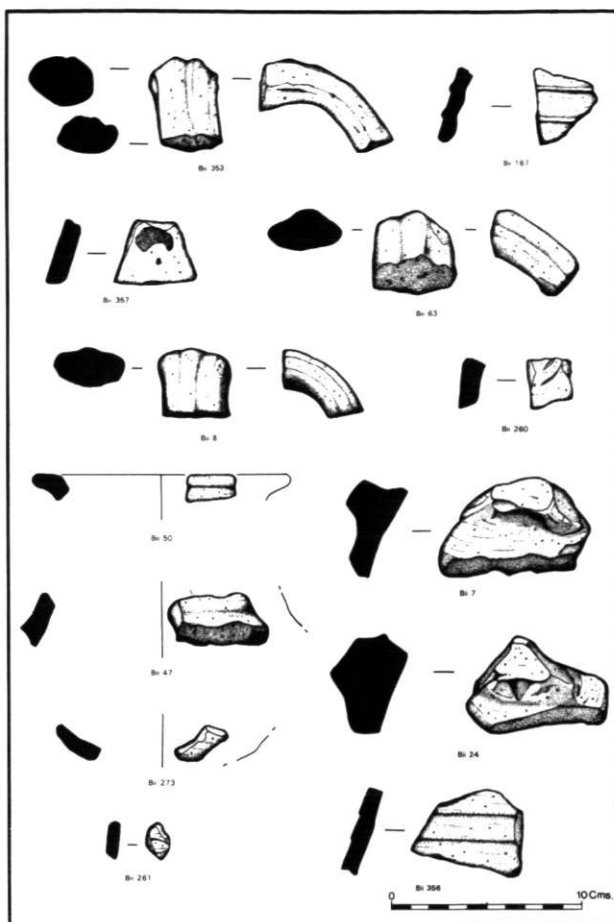


Fig 7 Selected *Bii* amphora sherds. Drawn by C Thorpe
Scale: $\frac{1}{4}$

midden, are not uncommon at Tintagel; they too are as yet unprovenanced. The fine wares have been covered by the work of John Hayes (1972; 1980).

Comment by Leslie Alcock

A single sherd, [105] from Layer 17 is suggested as being the rim from a heavy, flat-based dish or platter of D ware. The fabric is very hard, fine, homogeneous grey with very small dark inclusions, some of which have weathered out. There are traces of a fine battleship grey slip or colour wash, especially on the inner surface, but this has largely worn away. The fabric does not wholly conform with previous accounts of D ware, but it is increasingly being recognised that the class as a whole is not as homogeneous as has been believed.

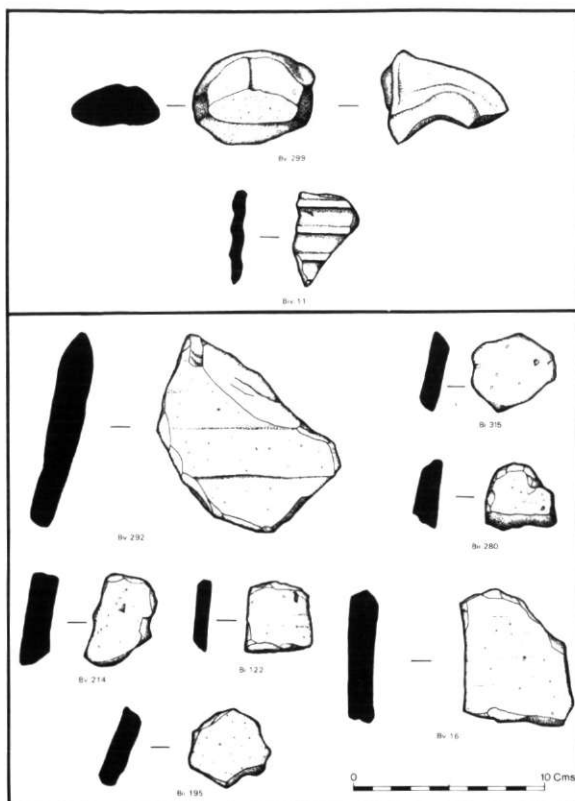
Given a fabric which is not at variance with the range, the form is quite conclusive for the identification of Rigoir Form 4 (Rigoir and Meffre 1973). The internally beaded rim is less common, but examples are known (eg nos 3703, 2930, 3735 and 4425 in Rigoir and Meffre 1973, 230-6). A source in western Gaul, centred on Bordeaux, is accepted for D ware, but there are uncertainties of distribution and dating in Gaul (Campbell 1988, 125).

The Western British chronology must be based on the observed site-associations. Rare D ware sherds, or even singletons (including a single vessel provisionally identified from the Island by E Campbell (pers. comm.), occur on sites with Mediterranean imports of A and B wares, perhaps also with continental glass as single (or rarely more frequent) sherds eg Tintagel (this report), South Cadbury Castle and Cadbury-Congresbury. In South Wales and southwest and western Scotland, D ware occurs with the continentally-derived E ware as well as with the continental glass, and either with or without Mediterranean imports, eg Dinas Powys, Hen Gastell (Briton Ferry), Longbury Bank, Mote of Mark, Dunadd (see summary details in L and E A Alcock 1990).

A tentative explanation to account for these associations would be that small-scale imports of continental products, including D ware and a little glass, were beginning in the later 6th century (perhaps the last third) as the Mediterranean connection was coming to an end. This minor wave was then swamped out in the 7th century by larger-scale imports of E ware and glass.

Scientific Examination of the Pottery

Although five sherds of imported pottery were submitted for Thermoluminescence dating from the 1990 excavations, none was from the Steps area. A preliminary assessment of the fabrics submitted is not promising since each contained variable amounts of unstable feldspar. A single preliminary date is the only one available to date from the Island (sherd RF 1006, DurTL 153-2ASQi 470 ±230AD) (pers. comm. I K Bailiff).



*Fig 8a Selected Biv and Bv amphora sherds.
Fig 8b Selected discs of Bi, Bii and Bv fabrics.
Drawn by C Thorpe. Scale: ¼*

Additionally, sherds were submitted for residue analysis, and a preliminary report on the organic residues in a single sherd from the Steps area is supplied here by Carl Heron, Department of Archaeological Sciences, University of Bradford, as the basis of a wider investigation into the contents of amphorae from recent excavations at Tintagel. Sherd 291, a *Bv* amphora sherd recovered from Layer 17 of the Steps area, was examined for traces of elements which could indicate the original contents of the vessel. Details of the sampling procedure, lipid extraction, sample work-up and chromatographic conditions follow the method given by Evershed, Heron and Goad (1990).

Analysis of the extract from a powdered sample of the sherd (2g) by capillary gas chromatography gave no chromatographic peaks. A subsequent extraction of a 5g sample gave several peaks in low abundance eluting between 30-40 minutes on the chromatogram. Peaks corresponding to free fatty acids or any acyl lipid species were absent, as were the presence of diterpenoid compounds characteristic of softwood resins and their heated derivatives (tar and pitch). Identification of the former has been used to suggest the presence of vegetable oil, normally assumed to be olive. In the latter case, there is extensive archaeological and documentary evidence in the Roman period for the use of softwood resins and heated derivatives to line the interiors of permeable jars with a hydrophobic sealant. These could then be used to transport liquid-based products, such as wine (Heron and Pollard 1988).

Analysis of the extract by combined gas chromatography/mass spectrometry (GC/MS) will be carried out in order to identify the unknown peaks on the chromatogram. The full results will appear in a forthcoming report on this sherd and a number of amphora sherds from the 1991 excavations on the site.

Glass (Fig 10)

RFs 1046 and 1047 have been examined by Dr H E M Cool of the York Archaeological Trust and distinguished as vessel fragments of Merovingian origin, probably from a single small open vessel, such as a cup or bowl, with a diameter of approximately 12-13cm. In Harden's original consideration of the Dinas Powys glass, he chose the term Teutonic to imply an origin in northwest Europe (1963, 178). The three pieces recovered from the Steps area are pale green in shade, with RF 1351 having a slightly more yellowish hue; the types have been recorded from Tintagel before. RF 1047, a solid rim fragment suggests a form of vessel not unlike that illustrated by Harden from Dinas Powys (1963, 178) and described as being of a shallow bowl. Although the glass is being reassessed in the work of Ewan Campbell, it is clear that this vessel form is common in the imported assemblages in the West of Britain (Campbell forthcoming b). A similar rim piece has been noted by Mrs Curle from the assemblage at the Brough of Birsay (1982, no 636, 121; discussed by Hunter

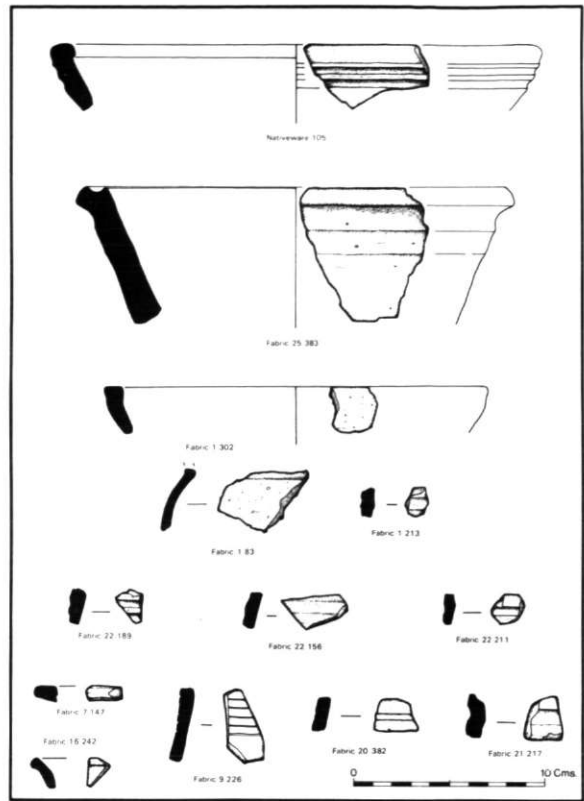
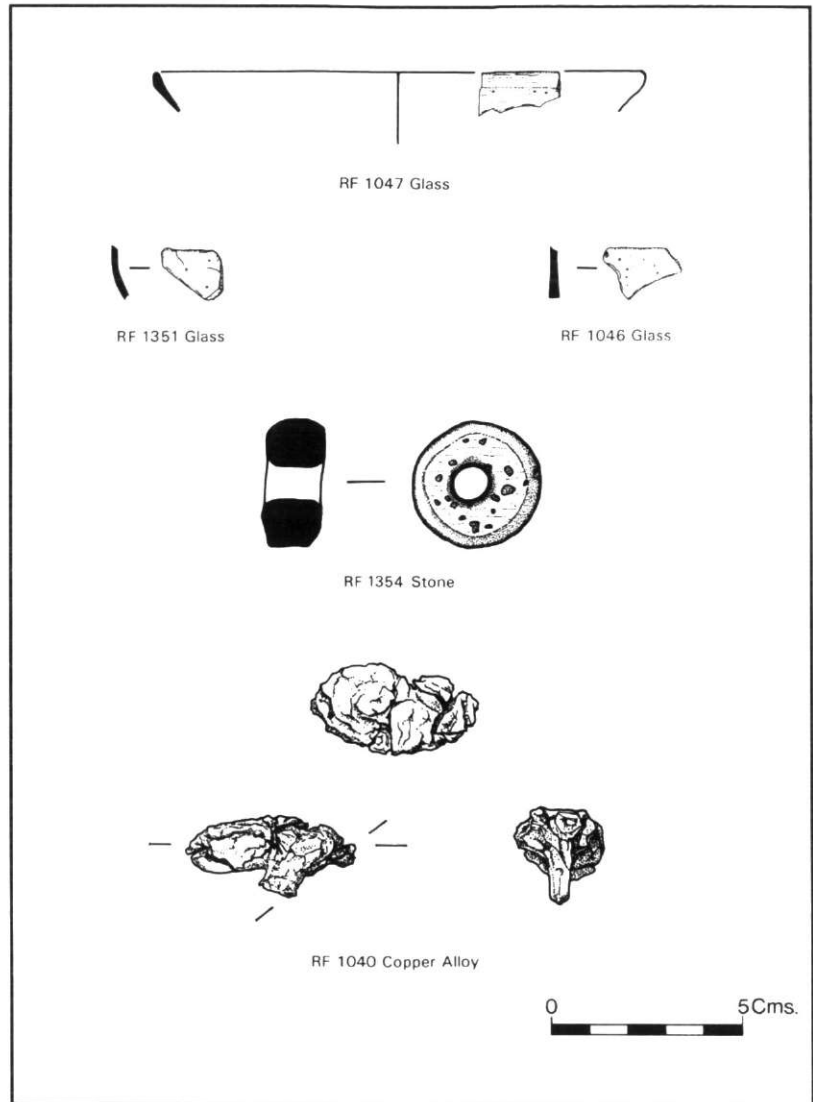


Fig 9 Selected D and coarse ware sherds.
 Drawn by C Thorpe. Scale: ¼



*Fig 10 Selected glass, stone and copper alloy finds.
 Drawn by L McEwan and C Thorpe
 Scale: 1/2*

1982, 30) and described as possibly part of a palm cup in that report.

The single bead, RF 1352 of dark blue/black opaque glass is difficult to date or parallel closely at this stage.

Copper alloy (Fig 10)

The single find of copper alloy, RF 1040, has been distinguished as probable casting debris, a sprue or in-gate (inf per Catherine Mortimer, Technology Section, Ancient Monuments Laboratory). Examination by X-Ray Fluorescence identifies it as a leaded bronze. Several examples of sprues, defined as the metal which filled the 'in-gate' part of the mould but which was not intended to be part of the finished object (Oddy, Craddock and La Niece 1990) have been noted from Saxon sites in England eg Facombe Netherton (Fairbrother 1990) and Buttermarket, Ipswich (pers. comm. C Mortimer), as well as several sites in the areas bordering the Irish Sea. Sites with related imported pottery assemblages in the west of Britain, such as Dinas Powys and the Mote of Mark, produced fragments of molten copper, slag, scraps and moulds (Alcock 1963, 104

and 145; A O Curle 1914, 140, 157-62). Recent excavations at Dunadd have also produced metal droplets and an in-gate runner (or sprue) (pers. comm. Alan Lane). The material published by Mrs Cecil Curle from the early excavations at the Brough of Birsay, Orkney, indicates extensive metalworking, with casting debris and moulds, and she illustrated a 'stopper or plug' very similar to the sprue from Tintagel, although somewhat larger (Curle 1982, 42, no 412, ill 25). The evidence is extensive and the methodology of manufacture in the period has recently been discussed by Craddock (1989) in relation to material in the 'Work of Angels' exhibition, with specific note of the extensive evidence from Moynagh Lough, Co Meath (Youngs ed 1989, 180-4, nos 158 168). The recovery of a sprue at Tintagel is hardly surprising, therefore, but it is the first such evidence to come from the site although there are bronze 'scraps' amongst the old finds from the Island (pers. comm. Charles Thomas) and does suggest manufacturing on the site rather than simply consumption. The lack of associated debris in the Steps area is worthy of note, but strongly suggests that a focus of working could be located up-slope from the Steps area and would certainly repay further work when resources allow.

Iron

The iron which survives from the area of the Steps is in very poor condition and little remains to be revealed through X-ray. The items which can be most readily distinguished are nails, RF 1041b, RF 1045 and possibly RF 1004. It is possible that these may have originally been associated with the stone roofing slates recovered, but they are to be found in both Layer 16 and the underlying Layer 17 and make such an association unlikely.

Stone (Fig 10)

All the items in this category are produced from locally available stone. The whorl of spotted slate, RF 1354, is of a common form and difficult to ascribe a particular date. Its significance lies in the fact that it implies some domestic textile working in the vicinity of the site, possibly having been lost from a building on Site A, above the Steps, or more likely from the terrace immediately to the west. The notched slate fragments could be incomplete roofing slates and the rest of the stone assemblage, 32 items in all, clearly fall within that category. Without exception, the roofing slates were recovered either before the excavation began on the Steps area, or were recovered from the disturbed upcast in the immediate vicinity during excavation. It is thought most likely that these were originally part of the roof of the adjacent structure at Site F, some at least having been displaced during the earlier excavations in that area. These may form additional support to the suggestion that the structures visible today at Site F are indeed related to the period of the Castle occupation, rather than to anything earlier (Thomas 1982). The relatively intact earlier deposits in the area of the Steps, Layers 16 and 17, did not produce any roofing slates at all.

Conclusion

The most significant feature about this work, which it must be stated has been very minor in scale, is that it has confirmed that where deposits on the Island are examined in detail, they can yield an unprecedented amount of material. The 337 sherds from these trenches, associated as they are with glass and metal debris as well as some ecofactual/environmental material (although disappointing in quality to date, it is the first to be examined from the Island!) indicates the scale of the material to be expected from Tintagel. This is not a site which produces a handful of imported sherds, for Tintagel always has produced more than all other known contemporary sites put together. In fact, this small-scale salvage and excavation work has produced alone virtually as many sherds as the whole excavation at Dinas Powys — 337, as against 391 sherds in all (Alcock 1963), although it does not include E ware, and twice that recovered from South Cadbury Castle (Leslie Alcock pers. comm.). This work provides us with a large amount of material from a very localised spot on the island, and helps an assessment, in at least part of the site, of concentrations

of material and artefactual associations. This brings us one further step along the path of reassessing this most significant but enigmatic site.

The recovery of glass fragments, although there were only three in this area examined, is once more in keeping with the picture of the importation of fine goods so far suggested by the assemblage at Tintagel and supported at so many other sites in the Celtic area — Dinas Powys, Mote of Mark, Dunadd and the Brough of Birsay for example. The reassessment of old collections being undertaken by Ewan Campbell in relation to the imports to Western Britain, including the glass, in addition to the creation of a framework to help analyse the new finds, is of crucial significance in this respect (see particularly Campbell forthcoming a).

The recovery of the sprue adds a possible new dimension to activities in this part of the site, although it is strange that there has not been more related material at the site. Once more, the related or contemporary sites mentioned above have provided comparanda.

The setting of the lower area of the Steps clearly indicates proximity to structural traces; to the north, there is Site F and to the west a series of potential building platforms or terraces have been distinguished by Thomas and Fowler (1985, 18-19). These are indicated on Fig 2. It is clear from the substantial number of stone slates recovered in the disturbed upper layers and upcast, that material from Site F may also be represented. Additionally, it is, however, clear that the lower material is infilling undulations in the bedrock and it is not *obviously* material which has been swept down the slope. Rather it seems to have developed *in situ*. There are sherds which have clean breaks and a few of which conjoin with pieces recovered nearby, probably from a further structure immediately to the north of the trench edge and not yet archaeologically examined.

Finally, it could perhaps be pointed out, on the basis of the experience gained in dealing with the Tintagel pottery of all kinds, and on fieldwork at the Island, that there is a very strong likelihood that any disturbance of the ground for new steps, for modern posts and pillars, for re-grading of path ways, for the siting of scaffolding will continue to yield material of this sort, and also produce it in similar quantities. Until it is clear where all the Post-Roman habitations, even temporary ones, are sited — and some are concealed by 13th-15th centuries building and modern Office of Works 1930s reconstruction — no particular spot can be claimed definitively not to conceal either occupation debris or some form of midden spread. The lesson of the Steps area discovery, the importance of which is obvious enough, is that at this monument above all others, archaeological considerations must have priority over those of management and presentation.

Acknowledgements

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References

- Alcock L 1963, *Dinas Powys. An Iron Age, Dark Age and Early Medieval Settlement in Glamorgan*. University of Wales Press, Cardiff,
- Alcock L and E A 1990, Reconnaissance excavations on Early Historic sites...Excavations at Alt Clut, Clyde Rock, *Proc Soc Antiq Scot* 120, 95-149
- Campbell E 1988, The post-Roman pottery, in N Edwards and A Lane 1988, Appendix 1, 124-136
- Campbell E forthcoming a, The Archaeological Evidence for External Contacts: Imports, Trade and Economy in Celtic Britain A D 400-800, in K R Dark ed forthcoming
- Campbell E forthcoming b, Glass vessels or cullet: a taphonomic study of the Early Medieval glass from Dinas Powys
- Craddock P T 1989, Metalworking Techniques, in S Youngs ed 1989, 170-74
- Curle A O 1914, Report on the Excavation of a Vitrified Fort at Rockcliffe, Dalbeattie, known as the Mote of Mark. *Proc Soc Antiq Scot* XLVIII (1913-14), 125-68
- Curle C L 1982, *Pictish and Norse Finds from the Brough of Birsay 1934-74*. Society of Antiquaries of Scotland Monograph no 1, Edinburgh
- Dark K R ed forthcoming, *External Contacts and the Economy of Celtic Britain 400-800 AD*, Woodbridge
- Edwards N and Lane A 1988, *Early Medieval Settlements in Wales AD 400-1100*, Bangor and Cardiff
- Evershed R P, Heron C and Goad L J 1990, Analysis of organic residues of archaeological origin by high temperature gas chromatography and gas chromatography/mass spectrometry, *Analyst* 115, 1339-42
- Fairbrother J R 1990, Faccombe Netherton. *Excavations of a Saxon and Medieval Manorial Complex*. British Museum Occasional Paper no 74, 2 vols London
- Fulford M G 1989, Byzantium and Britain: a Mediterranean perspective on Post Roman Mediterranean Imports in Western Britain and Ireland, *Medieval Archaeology* 33, 1-6
- Fulford M G and Peacock D P S 1984, *Excavation at Carthage: The British Mission. Vol 1:2 The Avenue de President Habib Bourguiba, Salamambo. The Pottery and other ceramic Objects from the Site*. University of Sheffield for the British Academy
- Harden D B 1963, The Glass, in L Alcock 1963, 178
- Hayes J W 1972, *Late Roman Pottery*. British School at Rome. London
- Hayes J W 1980, *A Supplement to Late Roman Pottery*, London
- Heron C and Pollard A M 1988, The analysis of natural resinous materials from Roman amphoras, in E A Slater and J O Tate eds 1988, 429-47
- Morris C D, Nowakowski J and Thomas [A] C 1990, Tintagel, Cornwall: the 1990 excavations. *Antiquity* 64, No 245, 843-9
- Oddy W A, Craddock P T and La Niece S C 1990, The Metalworking Debris, in J R Fairbrother 1990, 263-69
- Peacock D P S and Williams D F 1986, *Amphorae and the Roman Economy. An Introductory Guide*, London and New York
- Pearce S M ed 1982, *The Early Church in West Britain and Ireland*, B A R British Series 102, Oxford
- Radford C A R 1939, *Tintagel Castle, Cornwall*, Office of Works, London
- Rigoir J and Y and Meffre J-F 1973, Les dérivées des sigillées paléochrétiennes du groupe atlantique, *Gallia* 31, fasc 1, 207-63.
- Sharpe A 1989, Tintagel Castle: Two small evaluation trenches on the Island, Cornwall Archaeological Unit, unpublished report for English Heritage
- Slater E A and Tate J O eds 1988, *Science and Archaeology Glasgow 1987*. Proceedings of a conference on the application of science to archaeology. B A R British Series 196, Oxford

- Thomas A C 1981, *A Provisional List of Imported Pottery in Post-Roman Western Britain and Ireland*. Institute of Cornish Studies Special report no 7, Institute of Cornish Studies, Redruth
- Thomas [A] C 1982, East and West: Tintagel, Mediterranean Imports and the Early Insular Church, in S M Pearce ed 1982, 17-34
- Thomas [A] C 1988a, The Context of Tintagel. A New Model for the Diffusion of Post-Roman Mediterranean Imports, *Cornish Archaeology* 27, 7-24
- Thomas [A] C 1988b, Tintagel Castle. *Antiquity* 62, No. 236, 421-34
- Thomas A C and Fowler P J 1985, Tintagel: a new survey of the 'Island', in *The Royal Commission on the Historical Monuments of England Annual Review 1984-5*, London
- Thomas A C and Thorpe C M 1988, *Catalogue of all non-Medieval Finds from Tintagel*. Tintagel Project No 2. Institute of Cornish Studies and English Heritage, unpublished report on file in Truro and London
- Thomas A C and Thorpe C M forthcoming, The Imported Mediterranean Coarse Wares from Tintagel
- Thorpe C M and Batey C E forthcoming, Notes and observations on handling of potsherds from Tintagel
- Youngs S ed 1989, *'The Work of Angels', Masterpieces of Celtic Metalwork 6th-9th centuries AD*. London

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Interrogating Anglo-Saxons in St Dennis

PETER HERRING and DELLA HOOKE

The lights are being turned on to Early Medieval Cornwall. Post-Roman long-distance traders and 'kings' have been resurrected at Tintagel (Thomas 1993) and early Christians have been reassessed through new analyses of their inscriptions (Okasha 1993; Thomas forthcoming) and their settlements and graveyards (Olson 1989; Preston-Jones 1992). The farmers and their families who supported prince and priest have also come out of the shadows with Oliver Padel's work on Cornish place-names (notably Padel 1985) enabling Ann Preston-Jones and Peter Rose to recreate securely early medieval settlement patterns for the whole county (maps in Cornwall Archaeological Unit archives; examples in Preston-Jones and Rose 1986 and Rose and Preston-Jones forthcoming). Work on the extensive transhumance (summer grazing) systems illuminates contemporary agriculture, rural administration and social structure (Herring 1986, and forthcoming).

Now the insight of landscape history has been married to a reassessment of the several Cornish Anglo-Saxon charters (last considered by Finberg, 1963) to yield much valuable information on both particular estates and more general themes (Hooke, forthcoming 1994). This short paper, in extending the discussion of just one of these charters, that drawn up in AD 1049 to grant part of Trerice in St Dennis, seeks both to demonstrate their wider historical value and to add significant detail to the recent landscape study of the St Austell China Clay Area (Herring and Smith 1991, especially pp 26-30). The western third of the area defined by the charter's boundary clause falls within the china-clay industry's Winning and Working Area and is thus due to be either dug away or dumped on within its long-term plans (*ibid*).

A small block of land at Trerice, only half a yardland (or one eighth of a hide), was granted by King Edward to Eadulf his faithful minister, along with a whole yardland (quarter of a hide) in Tregony. (The hide, the basic taxable unit of land, calculated for Domesday Cornwall, appears to have been in the region of 768 acres - see Hull 1971, xi). The solution of the boundary clause presented here is secure, established independently by each of the two present authors (Herring using Finberg's 1962 translation), with the boundary originating and ending at Retew ford and containing references to several still extant features. It is also extremely precise, with each change in form or direction of the boundary carefully described. Its value is thereby greatly increased as each passage of the charter can be closely investigated, using later documents and maps and the evidence of the surviving landscape, to extract maximum information about Trerice and this part of Cornwall in the early 11th century.

Trerice lies in the south-west corner of St Dennis parish on mainly north and west-facing land running down from a rounded metamorphosed slate ridge, which reaches 165m (541 feet), to a broad curve in the upper reaches of the River Fal. Its north-eastern boundary, as revealed by the 1840 Tithe Map, follows a tributary of the Fal which runs towards the modern settlement of Lower Bodella and, to the south of this, a strong perimeter hedge (the 'old dyke' of the charter) which climbs up towards the east end of the ridge. The place-name Trerice, like that of Retew, its western neighbour across the Fal, contains the Cornish element *rid*, 'ford' (Padel 1985, 197) and both places were probably named after the same pre-existing and important 'highway' ford at SW 926 569, the starting point of our boundary clause. The prefix *tre*, 'estate, farmstead' (Padel 1985, 223) is, of course, one of the principal early medieval Cornish place-name elements and the distribution of this and other early medieval settlements in the area shows a well-developed farming landscape on these western slopes of the Hensbarrow uplands (see Herring and Smith 1991, fig 5). Retew and

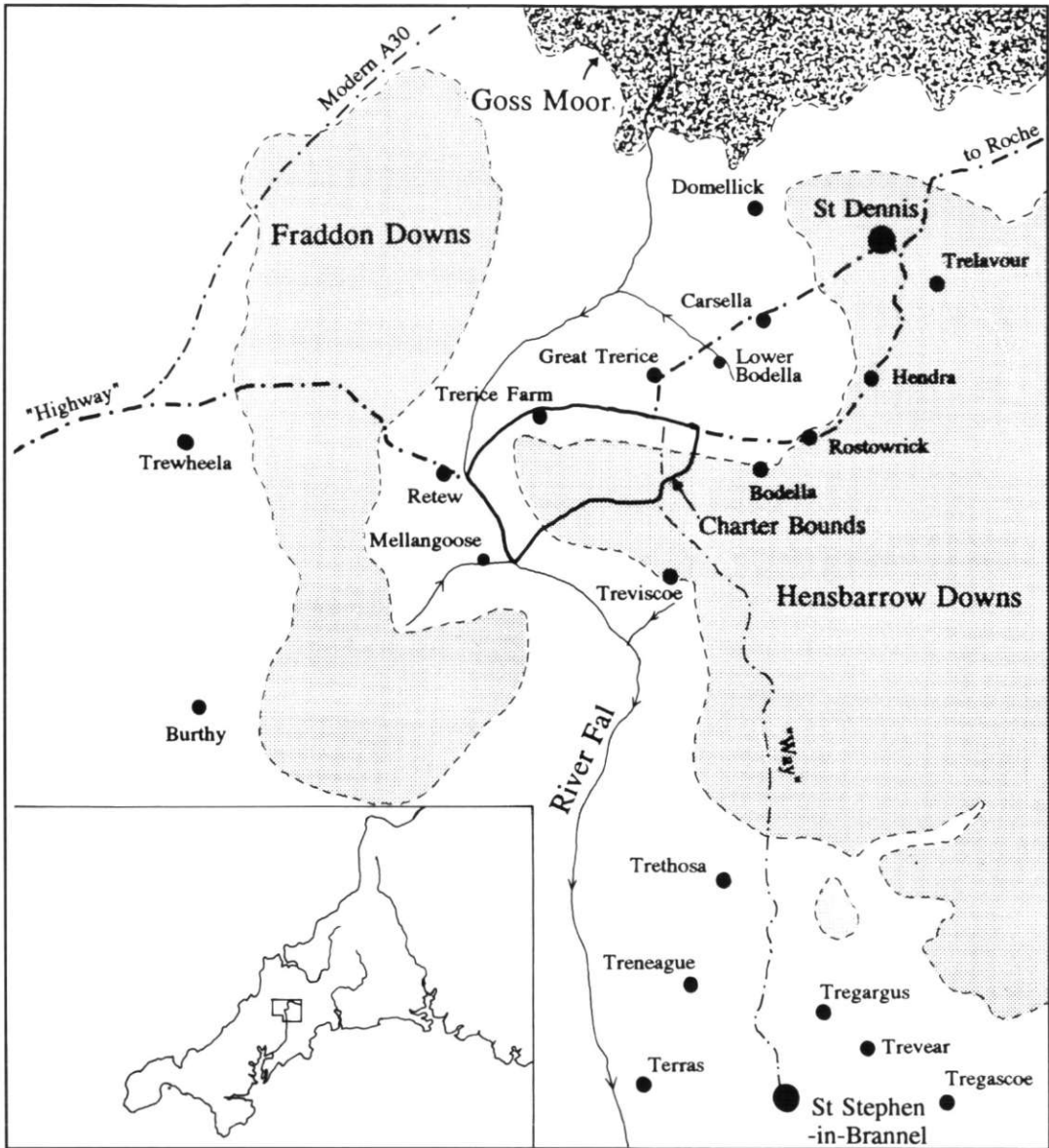


Fig 1 Trevice in its early medieval landscape

Treviscoe, the latter immediately to the south of Trevice, are referred to in the charter while Carsella, Domellick and Trevice itself all have entries in the Domesday Book (Thorn and Thorn 1979); further south, around St Stephen-in-Brannel, there is a cluster of *tre* names (places like Trethosa, Treneague, Tregargus, Trevear and Tregascoe, see Fig 1).

The boundary clause makes it clear that Trevice had been split by 1049 into two roughly equal parts, divided largely by the line of the 'highway'. The northern part was apparently farmed from Great Trevice (now called Rockwenna, at SW 937 575) - possibly the original Trevice - and the southern half, the land covered by the charter, presumably from the present Trevice Farm (SW 931 572). Later medieval 'disintegrations' of primary settlements and the establishment of new ones, together with consequent reorganisations of field systems, have been recorded in the 13th and 14th



Fig 2 The 1049 Trerice boundary clause plotted onto the 1881 OS map. The eastern 'old dyke' would have continued north to 'Bordella Mill' from which the boundary of Great Trerice ran north-westwards down the stream to the Fal. This map shows clearly how the 1049 property is approximately half the area of the original Trerice

centuries on Bodmin Moor (see Herring 1986); but this is a remarkably early instance. It should force us to re-examine notions of simple colonisation as the main settlement creation process in pre-Norman Cornwall and to consider the early existence of complex and flexible tenorial arrangements clearly capable of major reorganisation.

There is also tantalising but insecure evidence that the subdivided or 'strip field' system visible partially fossilised in the present field pattern at Trerice was in existence in 1049; if accepted this would again be a very early example of the strip field system, now known to have been widespread in later medieval Cornwall and whose origins are being sought in the pre-Norman period (Herring 1986).

After reciting the charter in its original Anglo-Saxon form and presenting its translation into modern English, the text of the boundary clause is broken down into eight parts where the solutions (or identifications of the bounds) and historical interpretations of each are discussed in detail.

þis syndon þære healfan gyrde land gemæru to træfhrýt.

Ærest up of fæle of hrýt ar þugan. andlang herpaðes to þære lanan. þanon up on þa ealdan dic. to þam hæþ felda. spa andlang peges to tref otcere dice hýrnan. spa pest on þam hæð felda on þære ealdan dic. spa to þære stanræpe. þonne on geriht to fæle t... an casec. up on strem. eft to hrýt ar þugan.

- beon þa porþigas. ⁊ þ bereland. ⁊ séo mýln ⁊ se ut hlýp gemæne.

‘These are the land boundaries [of the] half yardland at Trerice. First up from (the) Fal from (the) ford *ar thugan* (ie Retew); along (the) highway to the lane; thence up to the old dyke to the heathfield; so along (the) way to Treviscoe dyke corner; so west to the heathfield to the old dyke; so to the stone row, thence straight to (the) Fal t... *an casec*; upstream back to (the) ford *ar thugan* (Retew).

And the enclosures (farmsteads) and the barley land and the mill and the out-leap are common.’

1. ‘First up from (the) Fal from (the) ford *ar thugan* (Retew)’

This area has been heavily disturbed by china-clay working and no ford survives. A modern concrete and girder china-clay industry bridge, replacing a now overgrown 19th century stone bridge immediately to its south, is 30m north of the old ford which is clearly shown on the 1881 OS 1:2500 map (Sheet, Cornwall XL 16). Retew settlement, with its fields, corn mill and any remains of the early 19th century malthouse, has been lost, swallowed by the southern extension of the enormous Wheal Remfry china-clay pit.

2. ‘along (the) highway to the lane’

The ‘highway’, like Retew ford, shows clearly on the 1881 OS 1:2500 map, rising gently from the ford and following the curvature of the land north-eastwards to pass along the north side of Trerice Farm. It then hugs the contour for c650m before turning sharply downhill and northwards at SW 9375 5727, where our boundary leaves it to run 100m along the ‘lane’, also on the 1881 OS 1:2500 map, to SW 9386 5724.

Two classes of routeway are named, ‘highway’ and ‘lane’, and there will be a third, a ‘way’, in passage 4 (below). Each has its own meaning and together they indicate a mature landscape. The highway was a long distance thoroughfare, a public road open to all and probably maintained by the estates through which it passed; the way would also have been a public thoroughfare but of lower status, linking highways and villages; and the lane was probably simply a hedged trackway used by the workers of the land.

The highway, which was most likely a major east-west spinal route skirting the Goss Moors via St Dennis and no doubt also Roche, will have continued to the west of Retew ford. Its most likely route, the only one shown on early maps (eg Martyn 1748), was north-westwards, over the back of Fraddon Down (now greatly altered by Wheal Remfry’s pits and dumps) to drop down to Penhale in St Enoder where it slid into the ancient routeway which is now the A30 at SW 907 573. A fragment of this highway survives as a very deep and un-metalled hollow-way, c5.0m wide, c2.0m deep, running for c400m to the north of Trewheela. Unfortunately this rare survival of an early medieval road, continuously used for well over 900 years and still essentially in its original form, is to be finally cut and partially destroyed by the Fraddon/Indian Queens by-pass.

Returning to Trerice, the highway is now most clearly visible to the east of Trerice Farm where the present minor road to St Dennis runs along the centre of an otherwise overgrown broad passage

averaging 6.0m wide. The southern side of this passage is a stone wall retaining a substantial 1.5m high positive lynchet and equally significant, in terms of its age, is the 0.5m deep negative lynchet along the passage's north side. The highway, therefore, now runs along an evolved 'step' in the hillside which is clearly of some age and it is likely that we see here the early medieval road in a fairly intact state - broad enough for wheeled vehicles to have passed comfortably and for flocks of market or fair-bound sheep to have been driven along, broad enough, too, for an army to march along (see Rackham 1986, 259).

The 90° turn to the north which the highway takes on leaving our boundary is itself very revealing. Not only does the directness of its path to Great Trerice (now called Rockwenna) suggest that this farm existed by 1049 but, more intriguingly, the abruptness of the turn was clearly due to a need to respect an existing landscape feature. We have here our first hint of the prior existence of a strip field system, the line taken echoing the orientation of the fossilised strip boundaries still visible at Great Trerice (which incidentally depend from the east-west line of the highway and our boundary). The apparent insistence on not cutting the corner strongly suggests that the holders of the fields, likely to be in shares or allotments of subdivided arable, would not yield precious ground to the highway.

Did the highway originally continue along the contour towards St Dennis via Rostowrick? That the 100m-long 'lane' which continues its line eastwards maintains the highway's 6.0m width suggests that it did, as does the pronounced kink, again c6.0m across, in Trerice's perimeter hedge on the projected line of the highway. So not only was the highway downgraded to a lane after its re-routing through Great Trerice, but to the east of this retained stretch it was removed entirely and absorbed into the fields. Furthermore, if our reading of the first three words of the next passage of the charter is correct, all this occurred before 1049.

3. 'thence up to the old dyke to the heathfield'

The 'old dyke' is the perimeter of Trerice shown on the 1840 Tithe Map which runs uphill in a SSW direction from what is now Lower Bodella (SW 941 576). It is still a massive Cornish hedge or stone-faced earth wall, reaching 2.3m high, 2.0m wide, and with a strong external ditch. The 'thence up to' phrase suggests that the lane noted above (2) had already petered out some way short of this dyke, probably where it enters the field at SW 9386 5724. The dyke is, of course, referred to as 'old'. This may be an acknowledgement that Trerice's extent had been reduced and that this dyke had once served as the eastern boundary of the original, larger Trerice. In any event it was not 'new' in 1049.

We then follow this dyke up along a gently curving line, typical of medieval perimeter or ring fences in Cornwall, to 'the heathfield' at SW 9378 5690, at the eastern end of the rounded upland ridge forming the southern edge of Trerice. It is likely that the heathfield, incorporating the Old English terms *haeð*, 'heath' and *feld*, 'open land', served as common pasture. Remarkably, there is still a small triangle of heath here, created as the perimeter hedge of Bodella was attached to that of Trerice in such a way as to leave a sliver of unenclosed and unimproved ground between Bodella, Trerice and Treviscoe.

4. 'so along (the) way to Treviscoe dyke corner'

This phrase takes our boundary up the 100m or so to Treviscoe corner (SW 9374 5678). The principal perimeter hedge of Treviscoe, the next early medieval settlement to the south (SW 938 564), followed now by the road which runs through Treviscoe village, curves at this point. The 'way' is a continuation through the heathfield of the delightful narrow hedged hollow-way, still a public footpath, which runs up past Little Trerice cottage (see Fig 3). Its age is indicated by the depth of the gully (up to 1.5m below surrounding fields) and, by following its route further south, its use as a public thoroughfare linking St Stephen-in-Brannel with the 'highway'.



Fig 3 View down the early medieval 'way', from the 'heathfield' towards modern Little Trerice cottage. Photo: Trish Roberts.

5. 'so west to the heathfield to the old dyke'

The modern Treviscoe road takes us 350m west along the boundary between Trerice and Treviscoe to the other end of the upland ridge. Here there was a second 'heathfield' and a second 'old dyke', where there is now a modern bungalow. A heathy field is shown, on the Treviscoe side, on the 1881 OS 1:2500 map (Cornwall XXI.13, see Fig 2) but this has since been improved. The 'old dyke', however, is still visible, running away to the south-west with a distinct ditch, c2.5m wide, on the Trerice side of another substantial Cornish hedge. It appears, from the positioning of the ditch, that this was originally the Treviscoe perimeter. As such it is a useful indicator that Treviscoe, on more sheltered south-facing land, was probably primary in relation to Trerice, which itself seems, from the relationship between perimeters, to have preceded Bodella, on still more marginal land to the east (see 3, above). Incidentally, the parish boundary between St Dennis and St Stephen-in-Brannel runs along our estate boundary from 'Treviscoe dyke corner' to the Fal.

6. 'so to the stone row'

There are now no remains of a stone row, presumably an Early Bronze Age ceremonial alignment rather than contemporary boundstones, at the likely location, identified as SW 9309 5665 by back-reference from the next phrase (7, below); a china-clay waste dump now straddles the boundary here. The only large stones visible in the vicinity are gate posts, one at SW 9324 5674 re-used as a boundstone, although some or all of these may have been removed from the stone row. The Trerice charter provides our only reference to this stone row which was presumably still in reasonable condition in 1049 for the surveyors to have referred to it. No other stone rows are known on the Hensbarrow uplands although the settlement Ninestones in St Austell parish is considered to refer to another Early Bronze Age ceremonial site, either a stone circle or a stone row (see Herring and Smith 1991).

7. 'thence straight to (the) Fal t... an casec'

Again the boundary clause is impressively precise as this stretch really is perfectly straight. It crashes down the extremely steep and presumably then unenclosed and under-utilised slopes from the stone row to meet the Fal just upstream from Treviscoe Wood. If, as has been suggested (Hooke, forthcoming 1994), the missing word is Cornish **tnou*, 'valley', and if, as Padel speculates, this varies from the more common *nans*, also 'valley', by being a 'side-valley, tributary valley' (Padel 1985, 218), then the topography fits the interpretation very well. A short stream rising high up on Burthy Downs to the west cut a deep valley which meets the Fal directly opposite our boundary. The word 'casec' in the boundary clause is believed to be the Cornish *cassec*, 'mare' (Hooke, forthcoming 1994). A settlement called Mellangoose, now destroyed by china-clay workings, is

recorded here in the 19th century (eg 1881 OS), on the site of an un-named settlement shown on Martyn's map of 1748.

8. 'upstream back to (the) ford *ar thugan* (Retew)'

The boundary clause ends by confirming that it ran in the usual clock-wise direction.

'And the enclosures (farmsteads) and the barley land and the mill and the out-leap are common' (referring to features used in common).

Perhaps the greatest importance of this final phrase lies in its making explicit that the settlement of Trerice was occupied by more than one farmstead as the land and facilities (mill) were worked and used 'in common'. The 'enclosures' referred to may have been within the settlement itself and may have been the farmsteads themselves (implied by Hooke, forthcoming 1994) but the barleyland was no doubt an element of the field system, if not a reference to the fields as a whole. If it was worked in common, then we have at least a suggestion that the barleyland was 'open', capable of being grazed as well as cultivated in common and thus likely to be subdivided. Reference can also be made to the fossilised strip field system enclosed by the boundary to add weight to our argument for subdivided arable at Trerice by 1049.

We also now know at least one of the crops cultivated at Trerice in the early 11th century - barley, grown in Cornwall in later centuries as much for bread flour as for beer (eg Carew 1602) - and we have a pre-Norman reference to a mill, presumably a water-powered corn mill. Although there were post-medieval corn mills at Retew and Mellangoose on the other side of the Fal, none is recorded within Trerice. The mill would, no doubt, have been within the deep Fal valley to the south of Trerice Bridge but this area has, unfortunately, been utterly destroyed by china-clay working. Of interest is the lack of reference to a mill at Trerice just 37 years later in the Domesday Book (Cornwall 5.7.11; see Thorn and Thorn 1979). Although it is possible that the 1049 mill had been abandoned by 1086, it is probably more likely that the Domesday surveyors did not refer to it because it was not a demesne mill but held, as the charter states, by the tenants in common. If such a set-up was widespread in Cornwall it might explain why only six mills are recorded in the whole county in Domesday Book (cf Ravenhill 1967, 334). Other mills recorded in pre-Conquest charters but not in Domesday Book lay upon the manors of St Buryan (C10) and Tinnell (C11) (see Hooke, forthcoming 1994).

The common 'out-leap' was presumably the rough grazing and fuel grounds beyond the arable field system's stock-proof boundary (see attached note). Within the area defined by our charter, this probably consisted mainly of the heathfields and the 220m wide western strip of steep ground running down to the Fal.

The Trerice charter reveals an established farming landscape on the edge of the Hensbarrow granite uplands. Here specific uses could be ascribed to all land and there was already considerable chronological depth, visible not just through some features being recorded as 'old' but, more significantly, through previous shifts in settlements and changes in the status of roads. We can confidently push back the date of original settlement on this relatively marginal land to well before 1049 and suggest that our early kings and Christians were controlling, inspiring and serving such settled and peaceful people throughout lowland Cornwall.

The charter also demonstrates how stable this part of the Cornish countryside has been since 1049 with the bounds virtually unchanged over the whole of the eastern half of their route, from near Trerice Farm to the modern clay dumps in the area of the 'stone row', a distance of nearly 1¼ miles. There have, of course, been major changes within the farms and fields themselves with the hamlet reduced to a single farm and the subdivided fields now all enclosed. Nevertheless it is still possible to walk along the deeply hollowed and beautifully overhung 'way' climbing past Little Trerice (a registered public footpath) where people walked before the Normans came, and we can

also drive along the 'highway' to the east of Trerice Farm once followed by long-distance travellers and down which ox-drawn carts of fine Trerice barley must have lumbered on their way to St Dennis.

Finally, we should repeat that the Trerice charter was selected for treatment here solely because it deals with part of the china-clay area, a region under separate study by one of the authors, and not because this charter was regarded as especially valuable. The variety, extent and importance of the historical detail extracted from it can be regarded as typical of the wealth stored in these very early documents and emphasises the need for the fully transcribed, translated and interpreted edition of all the Cornish charters shortly to be available (Hooke, forthcoming 1994). If local archaeologists and historians use such a publication as the starting point for their own investigations of other charters we may force the Dark Ages a little further from our histories.

A note on the use of the term *ut hlyp* in the charter-boundary clause of Trerice, Cornwall by Della Hooke

The use of the term *ut hlyp* amongst the appendices of land attached to the Trerice land unit in AD 1049 is unusual in Anglo-Saxon charters. Its literal meaning is 'out leap', derived from the verb *hleapan*, 'to jump, dance, run', and implied, as in later times, 'An act of leaping or springing out; an escape, sally, or excursion; an outburst' (OED). This same source notes that in the 16th century 'outleaps' were synonymous with 'liberty' but also seen as places outside a city to which excursions might be made.

There were several similar words in use in other parts of England which clarify its usage in terms of rural farming. The outbye of north-eastern England and the outrun of Ross and Lewis was land used for hill grazing; 'uncultivated unenclosed lands, as distinct from enclosed parkland, which carries a semi-natural moorland vegetation and which is used primarily for grazing and rearing hill sheep' (Adams 1976, 95). In Yorkshire an outgang was the path used by cattle moving to the commons while in Shropshire the outrack was a cattle driving route across a common; in Cumberland the outrake was a similar track used for sheep (Adams 1976, 132). There seems to be little doubt that the Anglo-Saxon outleap was outlying common pasture over which stock roamed freely.

References

- Adams, I.H., 1976. *Agrarian Landscape Terms: a glossary for historical geography*, Institute of British Geographers Special Publication No. 9 (London).
- Carew, R., 1602. *The Survey of Cornwall*, reprinted 1953 (ed. F.E. Halliday) by Andrew Melrose, London.
- Finberg, H.P.R., 1962. 'Two Cornish Boundaries', *Devon and Cornwall Notes and Queries*, 29, 27
- Finberg, H.P.R., 1963. *Early Charters of Devon and Cornwall* (revised) Leicester University Press
- Herring, P.C., 1986. *An exercise in Landscape History. Pre-Norman and Medieval Brown Willy and Bodmin Moor, Cornwall*. Unpublished M.Phil. thesis, University of Sheffield
- Herring, P.C., forthcoming. 'Transhumance in Early Medieval Cornwall' *Landscape History*
- Herring, P.C. and Smith, J.R., 1991. *The Archaeology of the St Austell China-Clay Area*, CAU, Truro
- Hooke, D., 1994 forthcoming. *The Pre-Conquest Charter-Bounds of Devon and Cornwall*, Boydell Press, Woodbridge, Suffolk
- Hull, P.L. (ed.), 1971. *The Caption of Seisin of the Duchy of Cornwall (1337)*, Dev. and Cornwall Rec Soc, NS Vol 17
- Martyn, T., 1748. *A new and accurate map of Cornwall*, copy held at RIC, Truro
- Okasha, E., 1993. *Corpus of Early Christian Inscribed Stones of South-West Britain*, Leicester University Press

- Olson, L., 1989. *Early monasteries in Cornwall*, Boydell Press, Woodbridge, Suffolk
- Padel, O.J., 1985. *Cornish Place-Name Elements*, *English Place-Name Society* Vol 56/57, Nottingham
- Preston-Jones, A., 1992. 'Decoding Cornish Churchyards' in Edwards, N. and Lane, A. (eds.). *The Early Church in Wales and the West*, *Oxbow Monograph 16*, Oxford
- Preston-Jones, A. and Rose, P.G., 1986. 'Medieval Cornwall', *Cornish Archaeol.* 25, 135- 185
- Rackham, O., 1986. *The History of the Countryside*, J.M. Dent, London
- Ravenhill, W.L.D., 1967. 'Cornwall' in Darby, H.C. and Welldon Finn, R. (eds.). *The Domesday Geography of South-West England*, University Press, Cambridge
- Rose, P.G. and Preston-Jones, A., forthcoming. 'Changes in the Cornish Countryside, AD 400-1100' in Exeter University Occasional Series
- Thomas, A.C., 1993. *Book of Tintagel, Arthur and Archaeology*, Batsford/English Heritage, London
- Thomas, A.C., forthcoming. *And shall these mute stones speak?*, University of Wales, Cardiff
- Thorn, C. and Thorn, F., 1979. *Domesday Book 10. Cornwall*. Phillimore, Chichester

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Lanlivery church: its archaeology and architectural history

WARWICK RODWELL

Introduction

Lanlivery is a modest rural parish in central Cornwall, lying midway between Bodmin and St Austell, and overlooking the Fowey Valley. In the Middle Ages, however, the parish was of considerable extent and encompassed three chapelries and part of the township of Lostwithiel. The medieval living was appropriated to St Andrew's Priory, Tywardreath, c. 1150. Unfortunately, history has not served Lanlivery well: it manages no more than a minor entry in the Domesday Survey, and records relating to the parish church at all periods are scant indeed. The reasons for this are various and include the fact that the parish, now in the Truro Diocese, formerly lay in the Diocese of Exeter. Being at a considerable remove from the administrative focus, Lanlivery either escaped mention in records where one might have expected to find it, or the relevant records have been lost with the passage of time. A clear demonstration of the latter is the complete lack of Faculty papers and the paucity of documentation relating to post-medieval fabric repairs. Some of the losses are regrettably recent.

The *Lan* element of the placename points to a pre-Norman origin for the church, although nothing further is known of this. Even the medieval dedication is disputed. The church is now dedicated in honour of St Bryvyth or, in its Latinized form, Brevita.¹ Antiquarian tradition, on the other hand, has identified the place with Lanvorck, and thus the church with St Vorck.² Erroneously, the dedication has also been assigned to SS Manaccus and Dunstan.³ Nevertheless, despite all these uncertainties of pedigree, the church is mightily impressive, its Perpendicular tower being one of the more distinguished ecclesiastical landmarks of Cornwall.

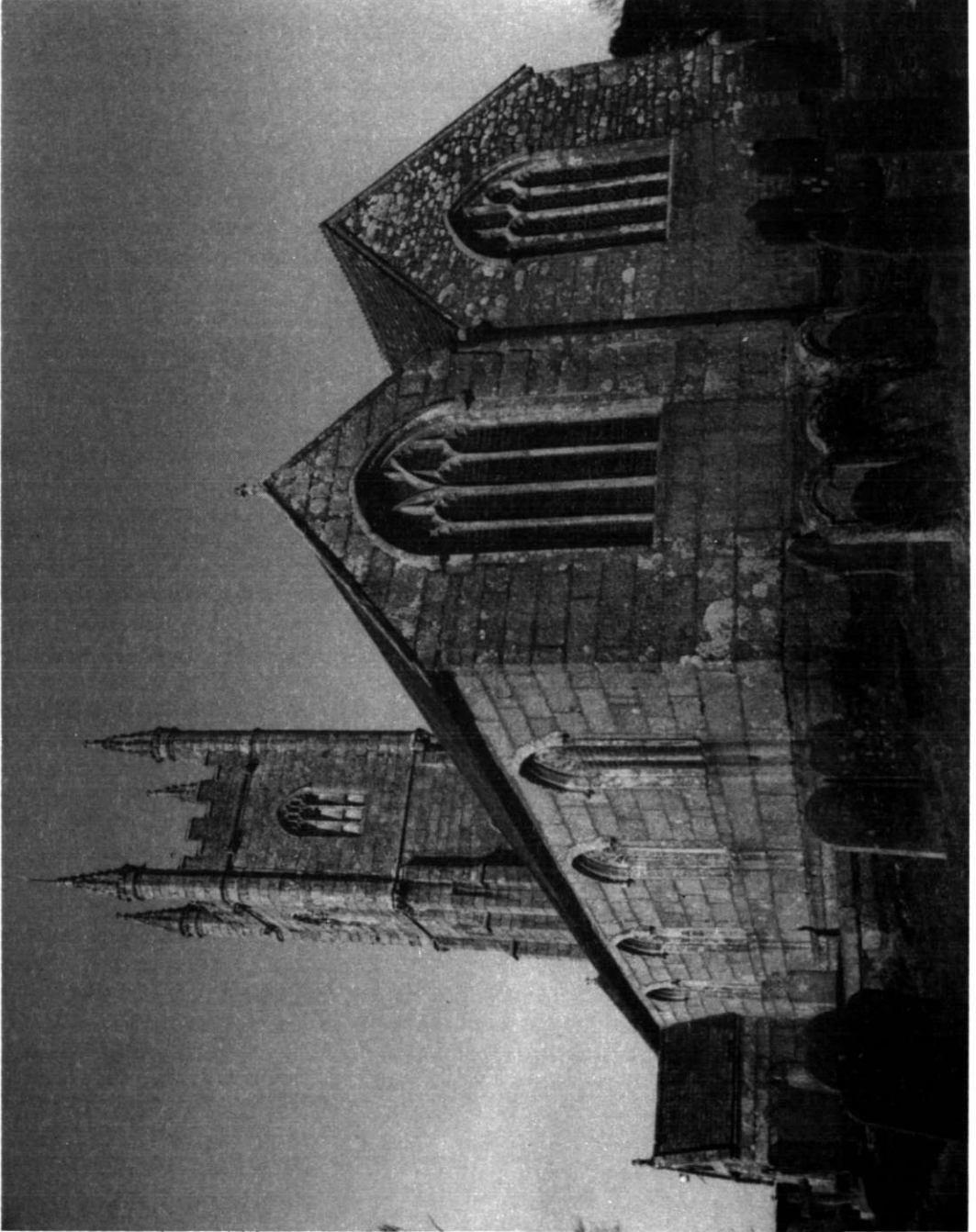
The fabric of the church was restored, and the interior reordered, between 1865 and 1891, but little was done subsequently. By 1992 the general condition of the building was poor, leaking roofs and dampness in the walls being particular problems. Consequently, a major repair programme was initiated by the Vicar and Churchwardens in 1992, and carried out with substantial grant aid from English Heritage. As part of that programme a brief survey of the architectural history and archaeology of the church was undertaken, partly to inform the restoration process, and partly because there had hitherto been no systematic study of the historic fabric. The only scholarly descriptions of the church available to date are those by Glynne (1862)⁴ and Pevsner (1951, 76-7), and a guide leaflet has also been published (Anon. n.d.). All are brief. Fresh discoveries have been made during the recent restoration, and the opportunity is therefore taken to publish these in the context of a more detailed description and analysis of the building.⁵

General description of the church

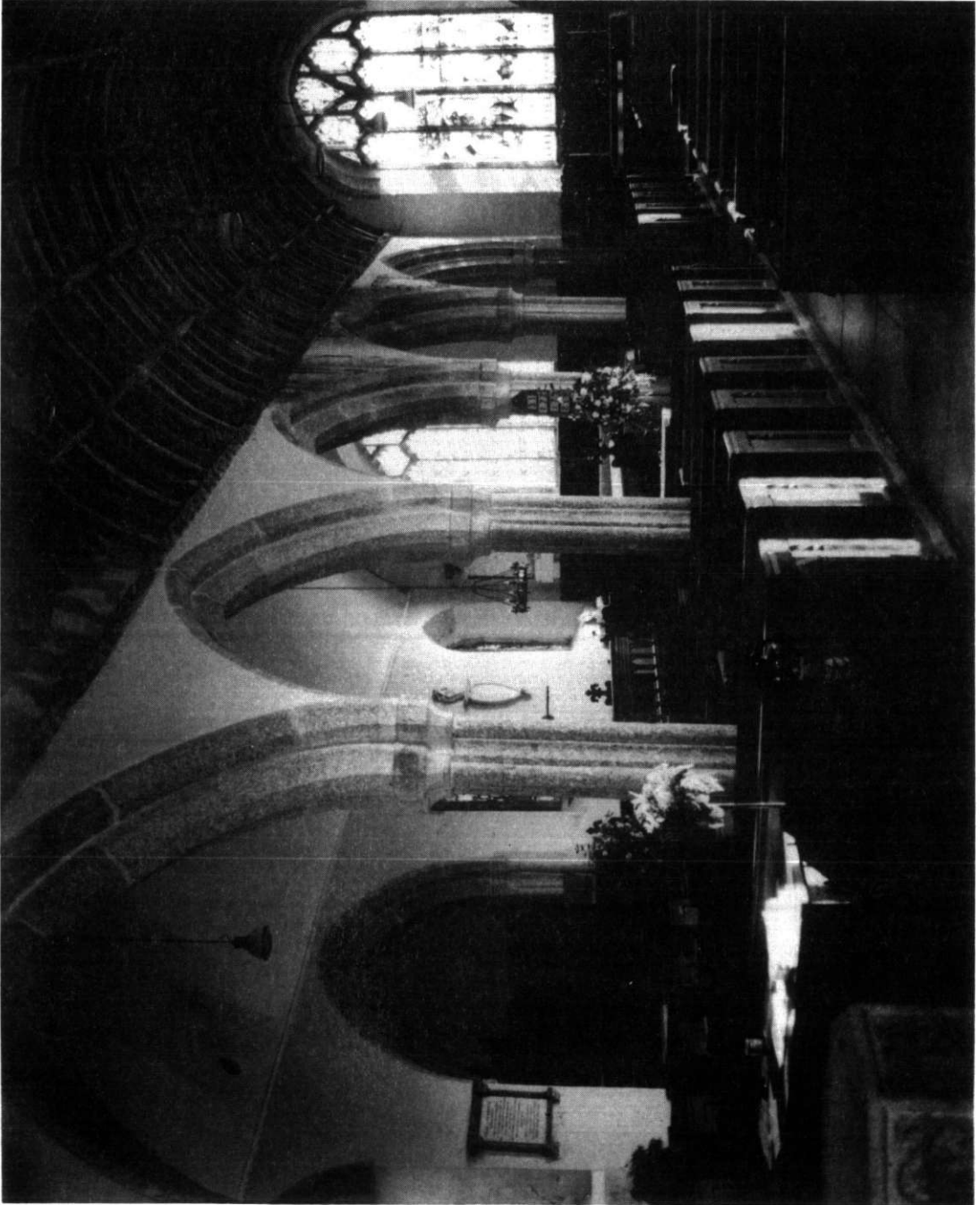
Lanlivery Church comprises a long nave and rectangular chancel under a single roof, and is without any structural division (Fig 1). A south aisle and south-east chapel are of similar overall length and are likewise structurally undivided.⁶ A continuous arcade of six bays separates the two main vessels (Fig 2); above is a valley gutter linking the two steeply pitched roofs. There is a south porch, containing the principal entrance to the church, adjoining the second bay of the aisle. These elements are all unbattered.

At the west end of the nave is the noble and lofty tower of three structural stages, with embattled parapets and a quartet of castellated and crocketed corner pinnacles. The lowest two stages have a full set of clasping buttresses, including the east face; there is an ornate west entrance. Finally, adjoining the north side of the nave, and internally connected to it by a single arch, is a low

*Fig 1 General
view of Lanlivery
Church from the
south-east,
before
restoration.
(Photo: English
Heritage)*



*Fig 2 Interior
view of
Lanlivery
Church,
looking north-
east, before
restoration.
(Photo: English
Heritage)*



rectangular appendage, commonly referred to as the 'north transept'. This was evidently once a side chapel, but has long served as a vestry. Its east wall is pierced by a small doorway, and the structure is buttressed at the north-west corner only. In the angle between the transept and chancel is a rood-loft stair-turret.

The church is built on granite bedrock, on a south-facing slope, into which it is terraced: the threshold of the south door is at churchyard level, but on the north side the transept is deeply set into the rising ground. Were it not for a deep Victorian drainage trench against the north wall of the nave, ground level would have been only 0.5 m below the window sills.

The construction of the church is almost entirely of granite, although visibly quarried from several different sources. A small amount of dense grey igneous rock used for certain medieval dressings may be from Pentewan. The masonry techniques also vary around the building. Basically, the nave, tower, south aisle, porch and south-east chapel are externally faced with large ashlars, but are of rubble internally. The north transept and part of the chancel are primarily of rubble construction. The internal wall faces are plastered. The church is Perpendicular in style, and essentially fifteenth century in date; only the north transept is obviously earlier.

The roofs are all of wagon construction, slated externally, and plastered to varying extents internally. The floors are partly of nineteenth-century timber decking and tiling, and partly of stone paving. The latter incorporates several important post-medieval memorials.

Archaeological investigation

The restoration undertaken in 1992-93 included: timber repairs and reslating of all the roofs, masonry repairs, replastering internal wall faces throughout, partial renewal of ceilings, relaying of some floors, drainage and landscaping works around the north side, conservation of wall monuments, and the complete refurbishment of the north transept to form a small chapel with a northward orientation. A great deal of archaeological evidence was therefore temporarily exposed to view during these works, and a modest level of archaeological recording was undertaken. A better understanding of the development of the church was thus obtained; nevertheless, some major questions still remain unanswered.

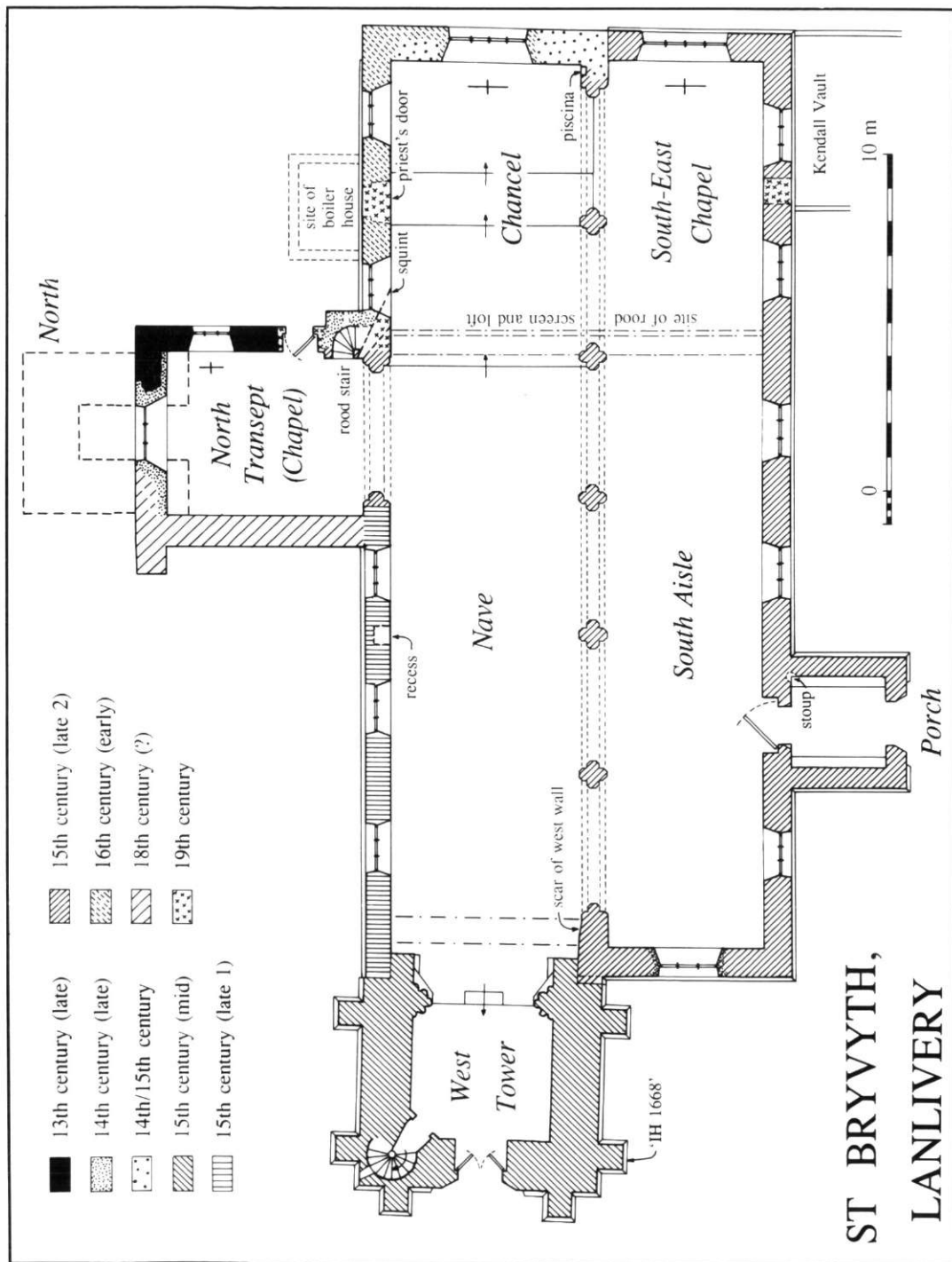
The Cornwall Archaeological Unit carried out an evaluation of the ground adjacent to the north transept in January 1992, followed by a watching brief during machine trenching in connection with drainage works (see p 172-3).⁷ The unexpected discovery of two wall stubs projecting from the north side of the transept raised fresh questions, including the possibility that there had once been a tower here. A further examination of the area in 1993 when landscaping was in progress located the third (north) wall of the lost structure, and thereby allowed the architectural history of this part of the church to be elucidated.

Documentation of the fabric

Diocesan records are virtually silent on matters concerning the fabric of Lanlivery Church; no Faculty papers have been traced, and no relevant petitions or visitations are known. Parochial records relating to the fabric certainly once existed, but these have been almost entirely lost. Such scraps as survive provide only tantalizing glimpses into the history of repair and refurbishment. Nonetheless, an outline picture can be traced.

The earliest references to building works are found in the surviving volume of Churchwardens' Accounts for 1721-82,⁸ but the process of Georgianization evidently began earlier. The Royal Arms bore the names of Walter Kendall and William Samwell, Churchwardens, and were dated 1719 (Polsue 1870, 22); they were probably *en suite* with boards displaying the Creed and Lord's Prayer which are known to have existed (see below), but all are now lost. The introduction of these items is likely to have coincided with decorative if not structural works in the church, especially in view of the prominent inscription by the churchwardens. The sundial on the gable of the south porch is dated 1715, and may be part of the same refurbishment campaign.

Fig 3
Ground plan
of Lanlivery
Church,
showing
principal
constructional
phases.



In 1724 the parish entered into an agreement with John Geach and John Hunt Helliers to keep the roof of the church in good repair for seven years, as they had done under contract for the previous twenty years. They were required to provide all materials, and were paid £1. 15s. 0d. per annum for their services. As part of this agreement Geach and Helliers did 'oblige themselves to wash the church with white lime once in three years, according to their former contract'. Additionally, they undertook to plaster the roof of the nave and chancel 'as high as the key beams', with the parish providing the materials in this instance.⁹ The description is of interest because it demonstrates that the nave and chancel, like the south aisle, had an ornamental wagon roof at the time ('key beams' being purlins with bosses at their junctions with the trusses). The implication to be drawn from this document is that roof repairs had recently been undertaken (to the main valley gutter?), and that the framing between the wall-plate and first purlin needed to be ceiled with lath and plaster.

The construction of Georgian box pews in the church is almost certainly reflected by the accounts for the late 1720s. Thus, in 1728, we find this entry: 'Pd. the Carpenters for making the Seats £05. 15s. 00d.'¹⁰ Another series of entries the following year reads: 'Pd. ye Carpenters for making ye Seats, etc. £10. 05s. 00d. Painting the pew £00. 04s. 06d. Timber and drawing boards for ye Seats £02. 13s. 06d.'¹¹

In the 1760s work seems to have been in hand on the tower, but again only glimpses are provided. The Churchwardens' Accounts for 1762 contain an item 'for timber stacking the Bells', which suggests that they had been brought down from the belfry. There were also sums paid to the carpenter and blacksmith, and 2s. 6d. was received for 'old glass sold'.¹²

A vestry meeting in 1765 determined that 'ye Pinicles & Tower shall be forth with & immediately repaired with all speed.'¹³ The tone suggests a significant problem, and attendant urgency. The work is reflected, but not detailed, in the annual accounts, where sums paid to various tradesmen are recorded, including masons, smiths, a carpenter and a glazier.¹⁴ Various other references to tradesmen are found throughout the surviving accounts, but rarely accompanied by a specific reference to the work carried out.

The accounts generally give an impression of protracted repairs and patching, rather than a comprehensive Georgian refurbishment of the church. Nor should we place much credence on the vicar of Lanlivery's assertion, in his reply to an episcopal enquiry in 1765, that 'All things relating to the Church are in decent and good repair.'¹⁵ Clearly they were not, and in 1768 the churchwardens reported, 'The North Isle of the Church as being out of repair but now repairing, as also one of the Bells lately by accident unhang'd, which we are preparing to hang again.'¹⁶ Funds were presumably short, since a public subscription had to be raised in 1774 to enable the church to be replastered, and a painted board was erected to record the fact (Polsue 1870, 22); that also has subsequently been lost. Perhaps the vicar was more truthful in his reply to the bishop's queries in 1779 than his predecessor had been fourteen years earlier: 'The Church and Churchyard are in excellent order and everything quite decent for divine service.'¹⁷

Two painted inscription boards in the tower have survived, and merit note, although not strictly part of the fabric. One is a ringers' board, dated 1811, which carries depictions of the five bells that the church had at the time. The other is a transcript of Charles I's letter of appreciation to the people of Cornwall for their support; the letter was dated 10 September 1643, but this board is clearly much later: it was probably painted in the latter part of the eighteenth century.

When Glynne wrote his detailed description of Lanlivery Church in 1862 it had a 'pewed and unimproved' Georgian interior. The transept was 'cut off from the body in neglected condition and not used'. Although the west gallery was not mentioned, it was still in existence. Also, the medieval wagon roof may have been lost from the nave and chancel by this time, or else it was too plain to merit mention, since Glynne described only that in the south aisle. Moreover, its wall-plates were then embellished with angels bearing shields, all since lost (Glynne 1862).

The next description of the church was in the form of 'rough notes' written for the Exeter

Diocesan Architectural Society in 1866.¹⁸ The south aisle was still being used as the nave and chancel, and had 'a fair cradle roof with angel wall-plate'. The remains of a medieval screen were also noted. However, the process of 'improving' the church was just beginning, and the arcade was described as 'well cleaned'. The north aisle had 'square pews, about to be altered'. It also had Georgian boards inscribed with the Creed and Lord's Prayer. The north transept, used as 'vestry and lumber room', contained pieces of a medieval screen, an old alms box, chests, etc., and the south porch still had its old wagon roof, ceiled. Finally, it was noted that the churchyard cross was 'broken in an attempt to restore it to its original position'. None of these items of furniture now survives, and there is no trace of a cross in the churchyard.

The 'restoration' of the church began in 1865, under the direction of a middling London architect, Joseph Clarke, F.S.A. (Wade 1967, 64-5). Progress was evidently slow, taking twenty-five years for the task to be completed: the work was presumably carried out intermittently, as and when funds became available. The sole surviving documentation seems to be three of Clarke's drawings.¹⁹ He obviously prepared a series of colourwashed ink drawings, showing the church as existing, the changes proposed, and details. The three surviving sheets may be briefly described:

1 North and south elevations of the church, as existing in October 1864. Ground and floor levels are marked, and some dimensions given. The south elevation shows the aisle and porch as they are today, complete with the iron-railed tomb enclosure of 1844/1850 that formerly lay in the west angle between the two. The slated roof had plain clay ridge tiles.

The north elevation shows plain clay ridge tiles on the nave, and heavily crested ones (late medieval) on the chancel. There is no doorway shown in the north side of the chancel: presumably it was already blocked. The north transept and rood-stair turret appear as they do today, except that there was a chimney stack at the north-west corner of the former. Ground level is shown high against the north wall of the transept (labelled 'vestry') and its floor is marked as 2' 8" (81 cm) above that of the nave.

2 Sheet no. 2 of a series headed 'Proposed Restoration, etc.', dated November 1864. Plans, elevations and sections show the proposed treatment of three features in the transept/vestry.

(i) A new window. It is unclear whether this was to be an additional window (in the west wall?), or a replacement for that in the north wall. The existing Decorated tracery pattern of the north window was to be replicated, but the new frame made of squatter proportions. There were to be square label-stops externally. This proposal was not effected, and the medieval north window remains, without alteration.

(ii) New fireplace. A small, square-headed feature with simple chamfers and stops. This was apparently constructed, and presumably succeeded a Georgian fireplace in the north-west corner of the transept-vestry. A black slate chimney-piece was later added in front of the stone surround.

(iii) New door and doorway. This was constructed in the east wall, and is still in use. No details of its predecessor were given.

3 Design and working drawings for new pine benches of very simple form. These have rectangular ends and an arcade of plain lancets along the back. The drawing is undated, but is evidently part of a later series. The existing benches of c. 1876 conform to this design (Fig. 2).

An entry in the *Truro Kalendar* for 1879 describes the church as having been reseated and improved, with a new altar, new pulpit and four painted glass windows. The cost was £800, and much of the decorative work was carried out by parishioners, free of charge. When the timber pew platform in the south-east chapel was removed in 1993 it was found to bear the date 'MDCCCLXXVI' (1876). About the same date the south-east stained glass window must have been installed (post-1874).

Work continued, and in 1881 a new east window was installed in the southeast chapel, formerly used as the chancel, but now renamed the Kendall Chapel.²⁰ In 1886 £34 were spent on repairing pews,²¹ and in 1888 the south porch underwent restoration, at a cost of £73.²² The following year saw the finishing touches being put to the interior, which included the provision of the altar frontal, dossal, sanctuary curtains and a brass altar cross.²³

Operations transferred to the tower in 1890, when H. Stokes of Woodbury was engaged as

architect in succession to Clarke (d. 1888). Under Stokes's direction the five old bells were rehung, together with three new ones, in a new oak frame. A new belfry floor was constructed at the same time.²⁴

Detailed description of the church

A ground plan of the church, differentiated according to period, is given in Fig. 3.²⁵

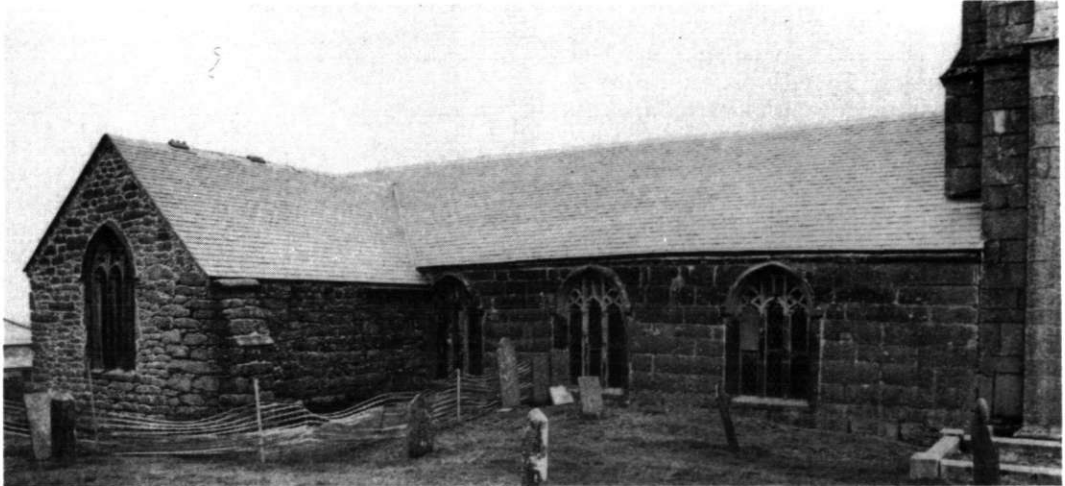


Fig 4 North side of the nave and north transept, during restoration. (Photo: Warwick Rodwell)

The Nave

The north wall of the nave is faced externally with large granite ashlar; it has a chamfered plinth of low angle and a slightly hollowed eaves-course (Fig 4). Beneath the plinth a rubble foundation is exposed in the side of a deep, narrow Victorian drainage trench. The stone-lined trench continues eastward as an enclosed culvert, apparently passing beneath the floor of the north transept, and beyond; its eastern outfall has not been traced.

Internally, the north wall is of roughly coursed rubble, bonded with clay-mortar. The wall was constructed as a single unit: the west end is butted into the angle between the north-east buttresses of the tower, and the east end terminates in a quoin, against which was built the respond of the arched opening into the transept.

The nave is lit from the north by three identical windows, with two-centred heads. The semi-circular rear-arches and plain jambs are formed from large, rough blocks of stone (some megalithic in proportions) which were almost certainly not intended to be visible. Although there has been some attempt to dress a margin c 8 cm wide around each opening, this may well be a nineteenth-century modification.

Each window has three lights with cinquefoiled heads and full-height mullions, typically late Perpendicular. Above the central section are two small trefoil-headed tracery lights; there are encircled quatrefoils over the outer lights. The hood moulding has chunky square stops with traces of foliate decoration, now severely eroded. All the masonry is granite, except for the lower mullions in the centre window, which are of fine grey stone. The east jamb of the easternmost window is tucked behind the wall of the north chapel, and the termination of the label moulding is similarly concealed. In this same window are two medieval wrought iron stanchions, and a pair of hinge crooks which evidently held an external shutter. The purpose of the latter is unclear. One tiny piece of old blue glass survives in a tracery light; otherwise the glazing is plain and nondescript.

Internally, between the second and third windows is a squarish socket in the wall, 2.5 m above floor level (Fig 5). This is certainly an original feature, constructed with jambs and a lintel; the floor of the socket was of slate, now partly broken up. The aperture measures 45 cm by 33 cm, and is 55 cm deep, its back being formed by the ashlar of the outer wall face. When found, the socket was loosely filled with

rubble and soil, which was removed. The interior of the feature provides no clue as to its original purpose: it is unplastered, and there is no soot staining, which eliminates interpretation as a lamp niche; and it is too high above floor level to have served as an aumbry. Equally, it is too low and inappropriately sited to be associated with the head of a major timber screen; nor can it relate to a post-medieval gallery or pulpit; and it is not a corbel housing. There is no indication of anything having abutted or interfered with the arcade pier standing directly opposite the socket. The nave antedates the construction of the aisle, and if the socket had a southern counterpart it will have been in the wall that the arcade replaced. The enigma remains. The socket has been infilled and plastered over again.

The south wall of the nave is fully arcaded, apart from a short length at the west end. This stub of walling, which exhibits a slight curve in plan, is tucked into the angle between the south-east buttresses of the tower. The curvature undoubtedly results from the need to make good a discrepancy between the alignment of the south wall and the corner of the tower, and is almost

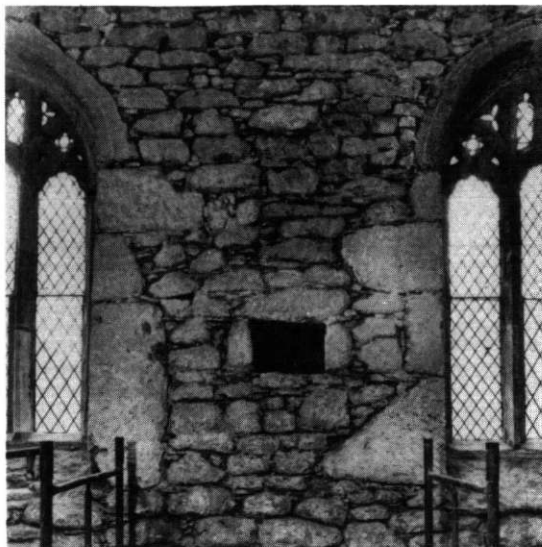


Fig 5 Socket in the north wall of the nave, exposed during plaster stripping. Note also the megalithic quoins to the rear-arches of the windows. (Photo: Warwick Rodwell)

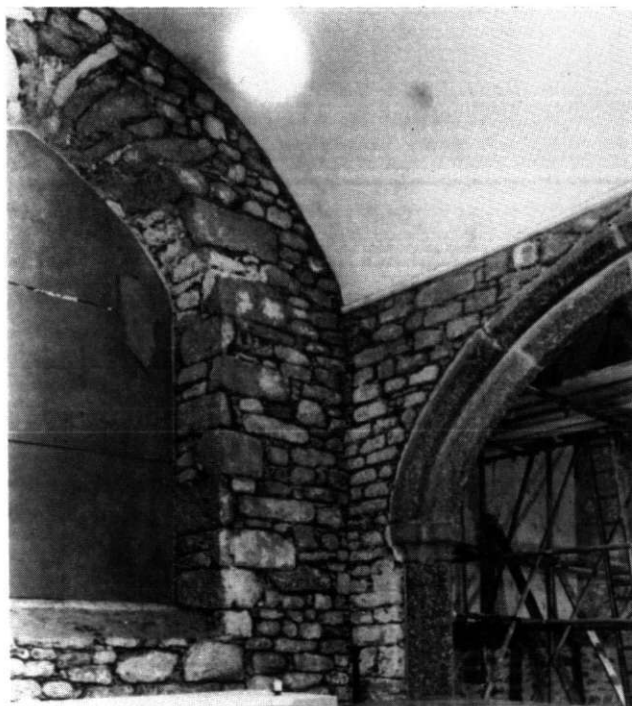


Fig 6 South-east corner of the chancel after plaster stripping, showing the beginning of the arcade, and the side-alternate quoining and non-radial voussoirs of the east window. (Photo: Warwick Rodwell)

certainly consequent upon the removal of a former west wall to the nave. Thus the length of the early medieval nave is indicated (Fig 3).

The plain, barrel-vaulted plaster ceiling of the nave and chancel is continuous and modern. Nothing remains of the medieval roof, which was presumably constructed in the fifteenth century and was evidently of wagon type; it may have been lost in the late eighteenth century (see p 88).

The Chancel

The structure of the chancel is problematic, and is clearly of several builds, although the exact sequence has not been elucidated. Internally, the east wall is seen to have a poor bond with the south wall, but that is likely to be the result of partially rebuilding the south-east corner when the church was aisled and the arcade was inserted (Fig 6). Externally, however, it is clear that the south-east quoin of the chancel is unaltered, and antedates the erection of the aisle and its chapel. Since the chancel has no moulded plinth – whereas all the identifiable fifteenth-century work in the church has — it is likely that at least

the lower part of the east wall survives from a pre-Perpendicular phase.

The east wall is visibly of two builds. The primary work is of large ashlars, and externally includes the south-east quoin and masonry below the east window (Fig 1). The later rebuild, which includes the north-east quoin, the gable and probably the entire window (including rear-arch), is of large, roughly dressed and coursed granite, and some rubble. The interior is of similar material. In the south-east corner of the chancel are the mutilated remains of a small piscina, made of grey stone. It is plain, rounded headed, and had a shallow basin, the projecting front of which has been hacked away. The piscina, which is probably late fifteenth century, is now low in relation to the chancel floor, which has been raised by c. 50 cm.

The east window is of four lights, with reticulated tracery and cinquefoiled cusping; the head is markedly four-centred. This would suit the date of 1520 which has been assigned to it on the basis of the surviving fragments of medieval glazing. The ancient glass comprises three separate quarters of a coat of arms (almost obliterated, and now set in a shield between the arms of a St George's cross), and a two-line inscription mentioning the Prior of Tywardreath (Polsue 1870, 21-2). These fragments are set in the central tracery light; the main lights of the window are filled with quatrefoil patterns of grisaille glass; the composition probably dates from the late 1860s.

The construction of the rear-arch of the east window differs from all other work in the church: it exhibits a mixture of stone types, and the fairly regular blocks used for the reveals are laid in side-alternate fashion. The arch itself is composed of a large number of non-radial voussoirs, and appears to be post-medieval (Fig 6).

The union between the east and north walls is effectively unbonded, and the joint has opened up in the past. The two walls were evidently not built together, but occasional bonders were introduced. The north wall is composed of coursed, squared stone in its lower parts, reducing to small rubble towards eaves level, and slate was used to level and pack some joints. The construction is the same both externally and internally, and the north-east quoin is megalithic. The wall does not align perfectly with its footing, the top of which has been exposed externally. At the west end there is a simple offset of 15 cm at ground level, which dies away and stops abruptly 1.0 m before it reaches the north-east corner of the chancel (plan, Fig. 3). It seems likely that the offset footing belongs to an earlier phase of building than that which now stands, and that the foundation at the north-east corner has been dug out and reconstructed.

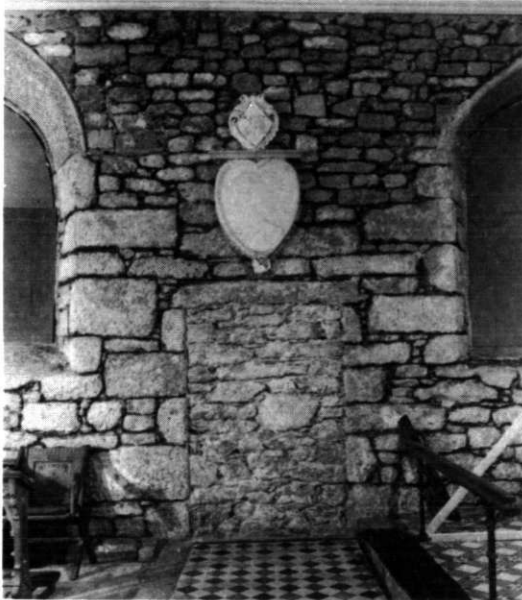


Fig 7 North wall of the chancel, showing the infilled priest's doorway and the different forms of construction between the lower and upper parts of the wall. (Photo: Warwick Rodwell)

The chancel clearly abuts the rood-stair turret, although the jamb of its west window is tucked behind the masonry of the stair.

There are two north windows, symmetrically flanking a now-infilled doorway, presumably the priest's door. The windows are each of three cusped lights with full-height mullions and simple hollow chamfers. The heads are pointed, have label mouldings and square, chunky stops, one of which is decorated with a simple saltire (the others are too weathered to decipher). Internally,

the rear-arches and splays are formed with very large, dressed stones (Fig 7). The head of the eastern window is simple and crude: it has a hint of four-centring. The rear-arch of the western window, an incongruous nineteenth-century replacement, is formed of two very large and immaculately cut blocks of granite. The west jamb of this window, and much of the surrounding masonry, has also been rebuilt, using cement mortar. The two windows have complementary glazing, comprising brightly coloured figural and canopy work of c. 1870-80. These are undoubtedly two of the four new windows recorded

in 1879 (p 82).

A medieval squint (connecting with the north transept), which emerged beneath the western window sill was largely destroyed by the rebuild of the 1860s in this area. What remains shows that the squint was contemporary with the lower part of the north wall. Finally, the same reconstruction destroyed the eastern jamb of the upper doorway which led from the stair-turret on to the rood loft (Fig 12).

The external head of the priest's door is three-centred and cut from a single stone; above it (and off-centre to the east) is a separate lintel. The plain jambs are monolithic and flush with the wall face. There is no hood or other moulding. The foundation offset, which served as the threshold, appears to have been deliberately chamfered. Internally, the jambs are formed with large dressed stones, and the lintel is monolithic; again, there is no embellishment (Fig. 7). The infilling of the doorway is eighteenth or nineteenth century (it was already blocked by 1864).

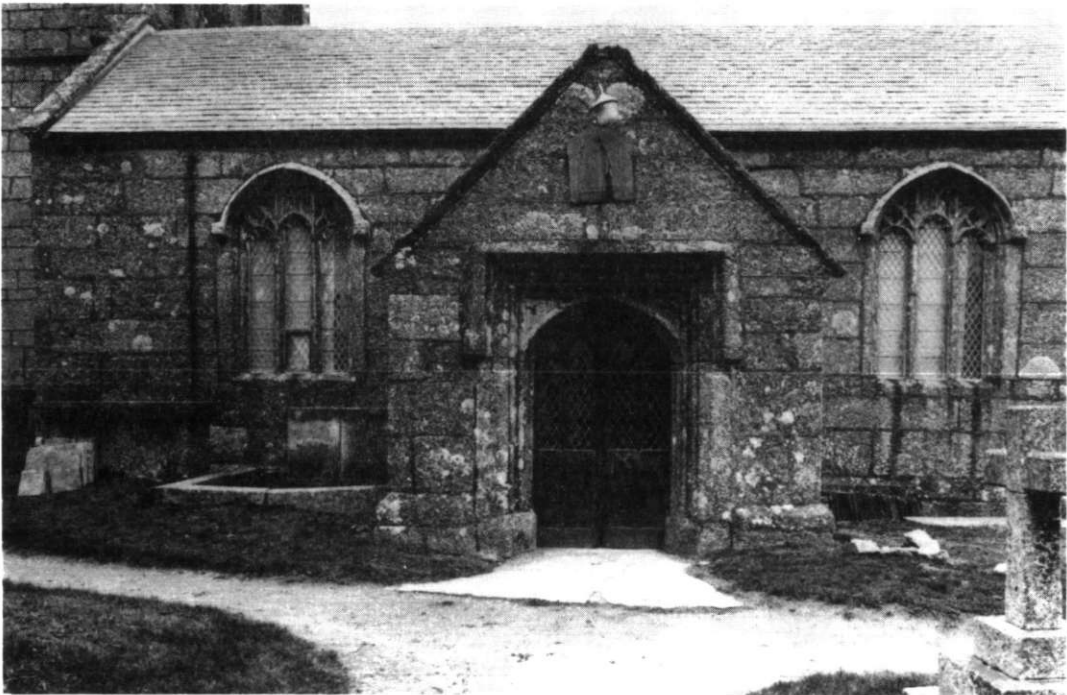
Between the northern windows is the scar of a lean-to Victorian boiler house, now demolished; it is indicated on the plan.

Wallplasters and limewashes

The internal walls of the church were entirely covered with a late nineteenth-century cement-based render, which has now been removed and lime-plaster substituted. Small patches of pre-Victorian plaster remaining at various points in the chancel (mainly behind wall monuments) indicate the medieval surface finishes. In the mouth of the squint is a lime-plaster layer, up to 5 mm thick, directly over the stone. Several coats of limewash had been applied before a second plastering took place: this was up to 10 mm thick, and its surface was also limewashed. A single layer of plaster, up to 10 mm thick, and again limewashed, is preserved in the reveals of the blocked north doorway.

On the north jamb of the east window is a very thin layer of lime-plaster and limewash, directly over the masonry; two more coats of lime-plaster have been superimposed, apparently to build up the battered wall face. The last may have been applied in association with a memorial dated 1839, and one of the layers presumably relates to the general replastering of 1774 (p 81).

On and around the reveals of the north-east window are traces of multiple coats of limewash, applied



*Fig 8 South aisle and porch with its heavily moulded outer doorway, all in granite.
(Photo: Warwick Rodwell)*

directly to the face of the masonry. These almost certainly belong to the eighteenth-century (and doubtless earlier) tradition of limewashing the interior every three years (p81). Very small areas of lamp-black were also noted on some of these limewashes, suggesting that there may have been post-medieval black-letter texts painted on the walls. Nothing of consequence is now recoverable.

Generally similar evidence was noted in the south aisle, where traces of limewashes and very thin lime plasters were also preserved by being trapped behind eighteenth-century wall monuments.

South aisle, south-east chapel and porch

These three components all belong to a single build, and include the nave arcade (Figs 1 and 2). Externally the structures are formed of large granite ashlars, but internally they are of roughly coursed rubble, all set in a matrix of puddled clay-mortar. There is a substantial, plain chamfered (slightly hollowed) plinth around the whole structure, and a hollow chamfered eaves-course. The gables, including the porch, have kneelers, parapets and gable-crosses (unlike the chancel, which is devoid of such detail).

South aisle and south-east chapel

The four-light Perpendicular east window is the most complex in the church (Fig 1). Basically, it has reticulated tracery with cinquefoil cusping (akin to that seen in the chancel and west tower), but the reticulation is interrupted by a component of Y-tracery, springing from the central mullion. This is a common feature of the local Perpendicular. The label moulding has chunky square stops. The rear-arch and jambs are plain and made of large, irregular, dressed stones. Granite was used throughout. The east wall of the chapel abuts that of the chancel, with a straight joint running from the ground up to valley-gutter level.

In the south wall is a set of five identical windows, the heads of which are very mildly four-centred; three windows lie in the aisle, and two in the chapel. They are wholly of granite, but a finer grade material was selected for the tracery and label mouldings than for the lower elements. Each window is of three lights, with full-height mullions and cinquefoil cusping. Above the central section is a pair of small trefoil-headed tracery lights, flanked by encircled quatrefoils over the outer lights. The label mouldings have square stops, some with the remains of saltire decoration; the jambs are monolithic. Internally, the reveals are of megalithic masonry, and the simple rear-arches are each formed with two massive stones. Some fragments of medieval glazing survive amongst the tracery in the third window from the east. Five small roundels remain, each painted with a similar rosette pattern; they are fifteenth century. Of uncertain date, but presumably post-medieval, are several pieces of plain blue and plain green glass filling the foils adjoining the rosettes.

The three-light west window is different in style, technique and material from the other windows of the aisle and chapel. It is of acutely pointed form and has intersecting geometrical tracery, filled with trefoils and quatrefoils, typical of the Decorated style. The hood moulding has short returns, and no label stops. The jambs, tracery and hood moulding are made of fine grey stone, and are composed of numerous pieces of comparatively small size. In stark contrast are the crude, one-piece granite mullions, and the granite sill. The mullions are gross and do not fit properly on the seatings. Internally, the splays are formed with large stones, carrying a dropped rear-arch. Despite its material and stylistic differences, there is no doubt that the west window is integral with the construction of the aisle: it is almost certainly a reused feature. It is identical to that in the north transept (Figs 10 and 12).

The west wall of the aisle is not bonded to the tower, there being a short, straight-jointed return between the two components. This piece of walling carries the outfall of the valley gutter between the nave and aisle. The aisle plinth is 20 cm lower than that of the tower.

In the south wall of the chapel, between the two windows is a rectangular opening infilled with brick which was the entrance to the Kendall family vault. This large, semi-subterranean structure, lies immediately outside the church and is capped with slate. The entrance is marked by a fine Jacobean slate wall monument of 1643. The Kendalls of Pelyn were a distinguished local family which figures prominently in the history of Lanlivery Church; several of their memorials have been discovered in the chapel. Some of the inscribed slabs were concealed by the pew platform installed in 1876 (p 82). The platform has been removed, and the Perpendicular font relocated in the chapel (now a baptistery), from its former position at the west end of the aisle.

The stained glass in the east window is a memorial to Nicholas Kendall, Member of Parliament for

East Cornwall (d. 1878): 'This window was erected by his friends and neighbours, A.D. MDCCCLXXXI'. The adjacent south window is a memorial to the Revd. Francis Kendall (d. 1874). This is doubtfully one of the four windows installed in 1879 (p 82).

Roof

The aisle and chapel are covered by a continuous wagon, or cradle, roof of familiar Cornish type, constructed in oak. As might be expected, the chapel ceiling is more ornate than that of the aisle, and is divided into eight small bays by curved and moulded principals of identical form (ribs). The wallplates and five purlins are all heavily carved with running leaf-scrolls; they delineate square ceiling panels, which were stripped of their plaster in the nineteenth century, but have now been restored. The junctions between the ribs and the purlins are all emphasized by applied carved bosses, mostly depicting leaf or rosette decoration, but including the occasional grotesque. Evidently, there were once shield-bearing angels affixed to the wall-plates in the chapel (p 81), but these have all been lost (c.f. Blisland Church, where a huge array of wall-plate angels survives).

The scars exposed by the removal of the angels are plainly visible. It is noteworthy that the feet of the arched principals were left plain, for the fixing of the angels, but the wall-plates immediately below were not similarly treated. At every division, the carving of the wall-plate has been crudely hacked away to form a seating for the angel. This demonstrates that decorated wall-plates were ordered by the foot from carvers' workshops and were modified as necessary on site.

Moving westwards, from the chapel into the aisle, the detailing of the roof changes in a very interesting way. The next four ceiling bays (corresponding to one structural bay in the aisle and arcade) are of simpler form. The wallplates and purlins are embellished with running scrolls, but the ribs are only moulded. The bosses at the intersections are carved in lower relief than those in the chapel, and their repertoire includes human heads and other non-foliolate motifs.

Further west again, the remainder of the aisle ceiling is plainer still. The wall-plates are carved, but differently from the preceding, while the ribs and purlins are only moulded. There are no bosses at the intersections, and no evidence of angels having ever been affixed. The arcade wall-plate is decorated with a regular series of stylized oak leaves, lying across its axis, whereas the outer wall-plate carries a winding leaf scroll (stylized ivy?). It is also notable that the plate is not flush with the inner face of the south wall, as it should be, but becomes progressively offset towards the west. By the time it reaches the west wall of the aisle, the plate is set back some 25 cm, so that its decoration is almost invisible from floor level.

Although the masonry of the aisle, chapel and arcade is of one build, the roof is not. It is three separate structures, set end to end. The high quality roof of the chapel, dating from the second half of the fifteenth century, is almost certainly the latest of the three sections and is probably contemporaneous with the south aisle masonry throughout. The plain roof covering the three western bays of the aisle could be late fourteenth century, and belong to a previous aisle on the same site. The fact that the roof is such a misfit on the wall below is a significant contributory argument.

That leaves the anomalous roof of the single bay between the chapel and the remainder of the aisle; this bears the hallmarks of an infill bay, between two separate components. Given its position, the roof is almost certainly a replacement for an earlier transverse roof over a south transept.

Contemporary with the chapel roof would have been a timber screen that created a non-structural division between the aisle and the chapel. Part of this feature evidently remained *in situ* in the 1860s (p 82), but it must already have been cut down because a monument to Mary Cotes, erected in 1758 on the south wall, falls exactly on the line of the screen. Indeed, when the monument was dismantled in 1993 for conservation, two pieces of painted and gilded screen tracery were discovered behind it, trimmed and used as wooden wedges.

South Porch

The porch has a ponderous outer opening (no doors intended) with a four-centred head, flanked by recessed spandrels and surmounted by a square-headed label moulding of heavy proportions; the square label-stops have the remains of roundels on them (Fig 8). Faint traces of decoration in the form of leaves survive in the spandrels too. The doorway is elaborately moulded: the opening is flanked by two rolls with a casement moulding between them; outside these is a cavetto which takes in the spandrels, and delineates the square head; beyond these again, the outermost order is formed by two

more rolls. On the gable is a fine, engraved slate sundial dated 1715. The glazed oak doors and their quaint art nouveau metal fittings date from 1909.

Within the porch, the south doorway to the aisle is four centred and has a continuous moulding comprising a hollow chamfer flanked by two large rolls, descending on to square bases. Its rear-arch is three-centred. The oak door itself is probably fifteenth century, refaced and rehung. It is a simple planked construction of two skins, nailed together: the outer is vertical, and the inner is horizontal. An extra outer skin of butt-jointed, edge-beaded boarding was added in the eighteenth century, and laid diagonally. The door is heavily studded and the ferramenta are of various dates, some medieval.

To the right of the doorway, and set into the corner of the porch at a curious angle, is a small stoup under a horseshoe arch. Its bowl was deep and hemispherical internally, and was supported on a semi-octagonal bracket. The front of the bowl has been hacked away, from which one might infer that the feature was infilled and concealed, most likely in the sixteenth century. Inexplicably, however, it was described as 'a perfect stoup' in 1866,²⁶ and has been claimed as Norman. The feature, which is partly obscured by cement rendering and limewash, is most likely to be late fifteenth century.

There are stone-topped wall-benches along both sides of the porch, and these have staggered series of circular holes in their upper surfaces, the purpose of which is uncertain. The floor, of lintel-like slabs of granite, is possibly medieval.

The open wagon roof is wholly nineteenth century, and of oak: it was evidently constructed in 1888 when the porch was restored (p 82). It has heavily carved wall-plates and purlins, with bosses at the intersections, all executed in the style of the fifteenth century, although without the vitality of the period. It may replicate the original roof structure, which was described in 1862 as 'a coved roof with ribs and foliated cornice' (Glynne 1862), and in 1866 as a 'ceiled wood roof'. It is closely similar to the renewed porch roof at Blisland.

Nave arcade

The well-cut granite arcade of six bays was built as a single unit, with short stub-walls at either end (Fig 2). The arches are mildly four-centred and of two chamfered orders, of which the inner is markedly hollow. The piers are of the standard Cornish Perpendicular type, the shafts being cruciform in plan, with four rolls and four hollows separated by small steps. The octagonal 'tablet' capitals have plain facets and neck-rolls. They are combined with the abaci, which are decorated on each facet with a four-petalled motif, carved in low relief. Identical work is seen in the arcade to the north-east chapel in Luxulyan Church.



Fig 9 Detail of the north side of the nave arcade, after plaster stripping, showing the stepped infill (emphasized) of the rood-loft passage leading from the nave to the south aisle.

(Photo: Warwick Rodwell)

The spandrels of the arcade are constructed of coursed and roughly dressed stone, all set in clay-mortar and intended for plastering. Integral with the construction of the arcade was the rood loft, which extended across the full width of the nave and aisle and was carried on screens in both. A rectangular opening was contrived through the spandrel above the fourth pier, to provide continuous access from the loft in the nave to that in the aisle. Owing to the restricted space available in the spandrel, one flank of the aperture had to be stepped (Fig 9). The full width was 70 cm, reducing to 36 cm; the maximum height of the opening visible below the present ceiling was 0.94 m. It was only fractionally more in the aisle, the available height being governed by the medieval wall-plate.

Following the destruction of the loft, the arcade aperture was blocked with masonry, probably in the eighteenth century. The blocking includes some fragments of hollow-chamfered mullions, both with and without glazing grooves.

These pieces may be derived from window and belfry openings in the west tower. They are too coarse and weathered to have come from internal screenwork.

North transept

This lateral projection, which evidently contained a medieval chapel, fell into disuse in the sixteenth century (Fig 4). Its conversion to a vestry probably occurred in the eighteenth century. The vestry was refurbished in 1865, or soon after, and the space later also served as an organ chamber for a small hand-pumped instrument. The organ was subsequently moved to the south aisle, and has now been superseded altogether. A fireplace and chimney, inserted in the north-west corner of the transept, have recently been removed.

The external construction of the three walls varies, and they are demonstrably of differing dates. The arched opening into the nave, and the adjoining rood-loft stair, represent two further phases of work. Each will be considered in turn. Glynné recognized the interest of the transept: 'It has some earlier work at its north end, and a good Decorated window of three lights ...' (Glynné 1862).

The transept carries the vestigial remains of a medieval oak barrel roof, now largely renewed. The structure, which is likely to date from the later fourteenth century, comprises a series of identical rafter-couples, each with a collar and arched ashlar-pieces; there are inner and outer wall-plates. Originally,

there were probably no purlins, the existing collar-purlin being a post-medieval introduction. A plain barrel-vaulted plaster ceiling was intended.

Excavations around the chapel yielded a great quantity of roofing slate and fragments of unglazed clay ridge tiles. These are of plain crested type, with an orange-brown sandy surface. One sherd had incised 'fir-tree' decoration. The tiles, which belong to a familiar local series, probably date from the fifteenth century, but could possibly be earlier (cf Thomas 1967, fig 17). They were removed during the Victorian restorations. Similar tiles were evidently still in place on the chancel in 1864 (p 82). A few medieval crested ridges survive on the roof of the north transept at Blisland.

The east wall, north-east quoin, and some parts of the north wall belong to the chapel's primary construction. This is characterized by small, mixed rubble, tightly laid, with the use of much slate for levelling and packing (Fig 10). Hard, cream lime mortar was employed for bedding the outer facing stones. The north-east quoin is of roughly dressed granite: the blocks vary in size but are all relatively small, and there are often packing pieces between them. Ashlar was not used.

Excavation around the base of the walls demonstrated that the primary work was free-built off the bedrock in an open foundation trench, the rubble being neatly laid in a clay matrix. There

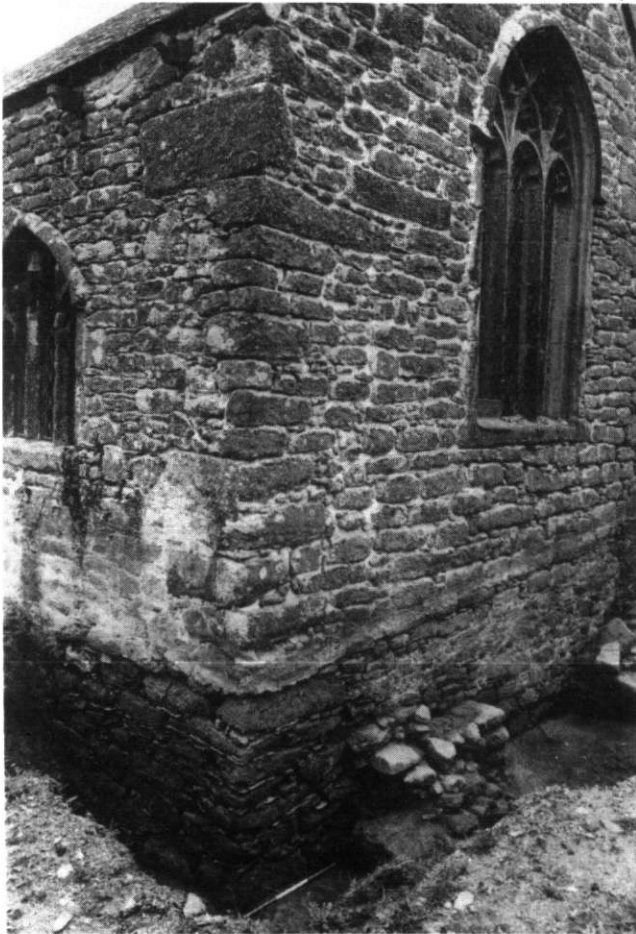


Fig 10 North-east quoin of the north transept, the earliest surviving masonry in the church. Note the preservation of the slate packing between courses, below former ground level. (Photo: Warwick Rodwell)

is no offset or plinth, and effectively no differentiation between the foundation and the wall proper, except that the use of lime mortar for bedding the outer facing stones seems to have begun at contemporary ground level. The wall thickness is 0.74 m.

When the transept was constructed there was probably c. 0.8 m of soil above the bedrock. The original character of the masonry is well preserved where it has been protected by raised ground levels; higher up, much of the interstitial slate has disappeared from the exposed surface of the joints as a result of their being hacked out for repointing. Prior to the 1860s restoration, internal floor level was 0.8 m higher than that of the nave, implying that there were probably four steps between the two cells (p 82).

East wall

The wall is pierced by a small doorway at its southern end and a window towards the north. Both are original features of the design. However, the present east doorway is wholly nineteenth century, built according to the architect's drawing of 1864 (p 82), and is of two moulded orders: the inner is hollow chamfered, the outer is convex and approximates to an ovolo. There are simple stops. This doorway replaces an earlier one which was set at a higher level in the wall. Externally, the outline of its arched



*Fig 11 Simple triple-lancet window in the east face of the north transept, the earliest extant architectural feature in the church.
(Photo: Warwick Rodwell)*

and pointed head is ghosted by undisturbed rubble, and a stone lintel which lay just above the arch also survives. Internally, the reveals were spanned by a timber lintel, which is still embedded in the wall. It is likely that the original doorway was dispensed with in the sixteenth century and the opening infilled, it being superseded by a more convenient doorway for the priest's use in the rebuilt north wall of the chancel. The springing of the present door head is c. 60 cm below that of its predecessor, and the threshold has probably been lowered too, again in association with the reduction of floor level. The undisturbed wall face of the chapel was seen to pass beneath the Victorian doorstep, although the fabric has mostly been cut away by a brick heating duct entering the building at this point, from the adjacent boiler house.

The east window comprises a triplet of unscuped lights with simple pointed heads, all surmounted by a crude label moulding without stops (Fig 11). The jambs are megalithic and the mouldings are hollow chamfered. Internally, there is no rear-arch to the splay, the reveals being spanned by an oak lintel which was renewed in the nineteenth century. The masonry of the reveals is very rough, and obviously intended for plastering. The window is clearly contemporary with the east wall, and the relatively high level of its sill suggests that there was intended to be an altar beneath it.

Immediately outside the door, adjacent to the east wall, what appeared to be the lowest course of a granite foundation was exposed in the drainage trench, 0.6 m below threshold level. The foundation, which abutted the chapel, was not explored, and it is doubtful whether enough survives in this seriously disturbed area to enable its further elucidation (for location, see Fig 16, 'A').

Rood-loft stair-turret

This forms a simple, rectangular projection in the angle between the chancel and the east side of the transept. It is built of small rubble of mixed types, with many pieces of slate packing the joints; the quoins are formed with small stones, only roughly dressed. The structure is not bonded to the present chancel, but may have been to its predecessor. The relationship of the stair to the transept is uncertain, since the junction between the two is largely coincident with the 1860s door jamb. On balance, it is

likely that the stair projection is later than the transept. A small, rectangular slit window to light the stair can be seen in the east face. The jambs are of a ferruginous stone, and the opening is now infilled.

The entrance to the stairway is from within the transept. The unmoulded doorway is formed in granite and has a four-centred, monolithic head, and megalithic jambs; there is a rebate to receive an outward-opening door, the fittings of which have been removed. The threshold stands 0.8 m above the present floor, but would have been closer to the medieval level; nevertheless, there must have been steps contrived somewhere within the transept. Inside the stair-turret, eight treads are visible, above which the structure has been infilled and capped. The remains of the high-level doorway leading from the stair,

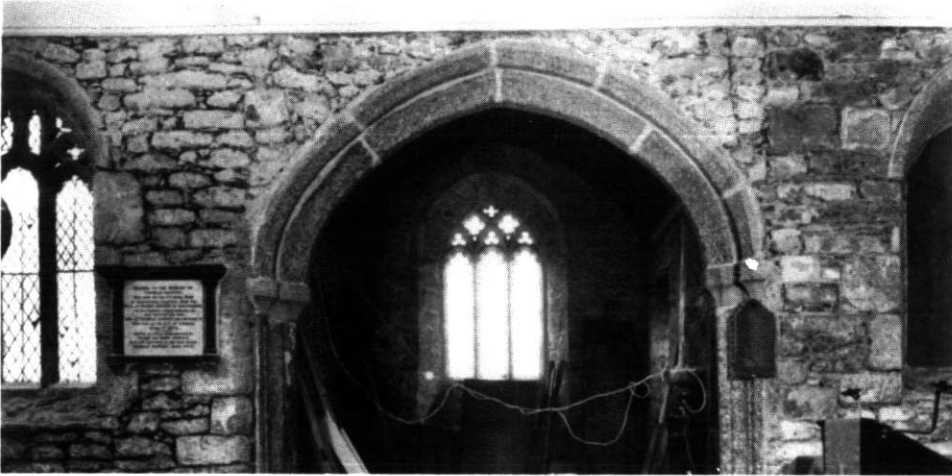


Fig 12 Arched opening to the north transept, after plaster stripping. Part of the infilled upper doorway leading on to the rood loft can be seen above the right-hand respond; all the masonry beyond is a Victorian rebuild. (Photo: Warwick Rodwell)

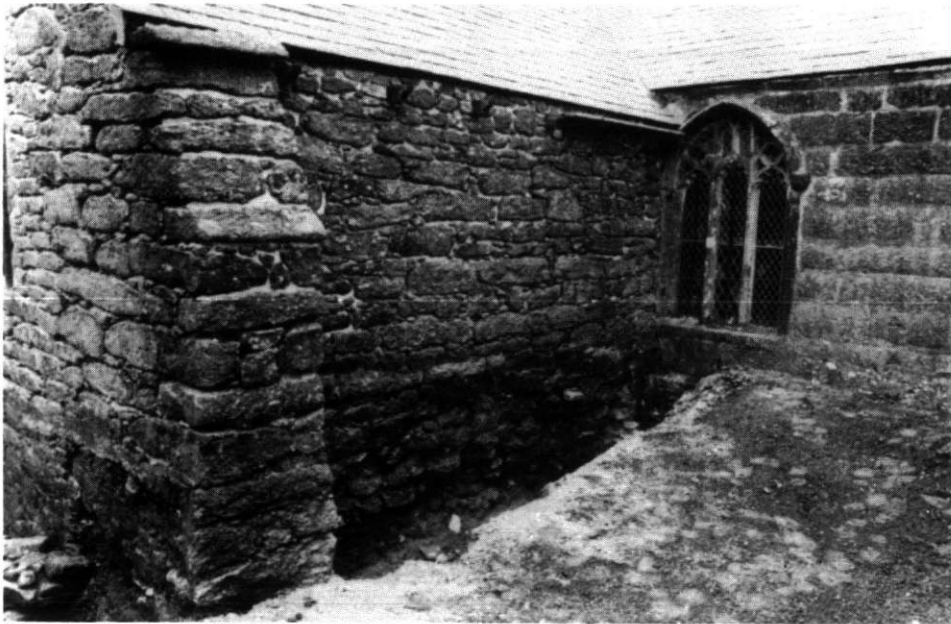


Fig 13 Buttressed west wall of the north transept, showing the loose rubble foundation exposed in a drainage trench. (Photo: Warwick Rodwell)

presumably via an upper door, on to the rood loft were seen in the north wall of the nave (Fig 12). Most of this upper doorway was destroyed by nineteenth-century rebuilding, but it appeared to mirror the opening in the arcade wall (p 89).

As seen within the church, the rood-loft stair represents a later fifteenth-century arrangement, contrived at the same time as the archway from the nave into the transept. However, the external shell of the stair-turret is utterly unlike any other masonry of that period at Lanlivery, but bears a closer resemblance to the construction of the north chapel. The stair turret is thus more likely to have been added as part of an earlier rood loft provision most plausibly in the fourteenth century and subsequently modified to suit a new arrangement when the nave was rebuilt. Following the destruction of the screens and lofts, the stair and associated openings in the walls were infilled, but probably not until the eighteenth century. The stair may have been blocked, and was partly reopened as a display feature during the Victorian restoration.

Alongside the loft entrance is a small rectangular squint, c. 1.5 m above floor level, which allowed a view from the transept-chapel into the sanctuary. The western aperture of the squint is preserved: it is not dressed with cut stone, and was evidently hacked through the pre-existing masonry of the transept. It is associated with the late medieval rebuild of the chancel. The squint was partly destroyed by the late nineteenth-century reconstruction of the western part of the chancel.

West wall

The west wall of the transept is featureless and is built of much larger pieces of granite, with small packers filling the interstices (Fig 13). Slate was not employed. The southern end of the wall abuts the nave, partly concealing the jamb of its easternmost window. The northern end is bonded to the solitary buttress at the north-west corner of the transept. The buttress is composed of large, roughly dressed slabs of granite (not true ashlar), laid to courses. It has no plinth. There is a chamfered weathering at a height of c. 2 m, above which the buttress dies back and terminates below a deeply projecting ledge at eaves level.

Excavation along the base of the wall and around the buttress exposed the entire foundation, the depth of which extended to c. 1.4 m below modern ground level. The wall clearly falls late in the building sequence, and was not constructed until after the graveyard level had risen very considerably. The foundation is of exceptionally crude construction, comprising boulders and some smaller rubble, all tipped into a trench, without the inclusion of any matrix. Consequently, the masonry was found to be loose and voided. Moreover, the original foundation trench had a battered side, causing the masonry to diminish in breadth, so that the outer wall face effectively overhung its footing. In places, the foundation scarcely reached the bedrock, and under the buttress 25 cm of soft subsoil still remains.

The west wall is considerably thicker (0.95 m) than the east wall, and it is evident, both internally and externally, that the former has been completely rebuilt and the buttress added at the same time. The reconstruction presumably followed a collapse, since no change to the plan seems to have been involved. The old foundation was dug out and the new one, which was c. 20 cm wider (and encapsulated a small fragment of the original), was noticeably slipshod in its construction. The thickening of the west wall explains the partial obscuring of the jamb of the easternmost window in the nave. It is impossible to date the rebuild, but there is little doubt that it is post-medieval: it could be as late as the early nineteenth century.

North wall

A single, large window occupies the centre of the wall, beneath the gable. The character of the masonry to either side of the window differs markedly, and up to 1.6 m of walling and foundation was concealed by grave earth. Much of this has now been exposed.

The original masonry and foundations of the north wall are identical to those of the east wall, but three major interventions have removed a great deal of the primary work (Fig 14). The north-east quoin is intact, together with a small amount of adjoining masonry, but nothing of the north-west quoin stands above ground, as a result of the general rebuilding of this corner which took place when the buttress was added. Hence the visible masonry to the west of the window is similar to, and integral with, that of the buttress; the gable must also have been at least partly rebuilt in the same operation. Below ground, however, the original north-west quoin is preserved. It does not align with the present external face of the west wall, on account of the thickening that occurred with the rebuild.

Inside the transept, beneath the north window, two vertical joints, 1.62 m apart, were visible in the masonry when the plaster was stripped. The joints ran from sill to floor, and the intervening rubble masonry was clearly an infilling between the jambs of a former opening through the wall. Small stones were used to create the angles of the jambs, which were obviously intended for plastering. The vertical joints were scarcely visible externally, although it was evident that the masonry beneath and immediately surrounding the window was of a different build from that to either side.

Internally, the character of the masonry is not the same as that seen externally; moreover, the north wall is 0.97 m thick, considerably more than the other original walls (0.74 m). It may therefore be suggested that the north wall has been thickened, or at least partly rebuilt; the jambs of the former opening beneath the window relate to the same alteration. This, it will be argued, was connected with the construction of a small north tower outside the transept.

The Decorated north window is identical in design to that at the west end of the south aisle, and the work is executed in the same dense grey stone, apart from the sill and mullions which again are of granite. The only difference between the two windows is the use of fewer and larger stones in the north transept.

The window is of three lights with cinquefoil heads, surmounted by geometrical tracery containing trefoils and quatrefoils; the mouldings are finely cut. The hood has short returns, but no label-stops. The dropped rear-arch is well made, and of the same stone-type; the splays are formed out of large pieces of granite. In view of there being some voids and small stones around this window, it might be argued that the feature is later than the surrounding masonry. Moreover, the white lime mortar used to bed the stones of the window is not the same as the cream mortar of the adjacent wall masonry. However, it was not uncommon for a finer mortar to be used for bedding stone dressings than that employed for general building. If the window is later, it must represent a fourth phase in the structural history of the chapel.

Site of the former North Tower

Excavation for drainage along the base of the north wall revealed the stubs of a pair of broad foundations running north from the transept, but both were truncated after a short distance by post-medieval graves (Figs 14 and 15). The foundations were 1.55 m (5 ft) thick, and stood to a maximum height of 0.8 m above the bedrock. Examination of the foundations revealed three relationships. First, their inner faces aligned with the vertical joints seen inside the chapel, indicating that a simple opening had been created through the north wall when the new structure was added. Second, the two foundations abutted and clasped an irregular breach in the original north wall of the transept. Indeed, infilled pockets could be detected in its wall face where stones had been extracted in order to key-in the new structure. Third, the inserted north window and the infill masonry beneath it postdate the demolition of the added structure. The masonry of this last phase is composed mainly of flattish stones set in a clay matrix, but with cream lime mortar used to bed the external facing stones.

A modest northward extension of the drainage excavation was carried out during landscaping, in an attempt to discover a continuation of, or link between, the two foundation stubs. Almost the entire area under investigation had been disturbed down to the surface of the bedrock by nineteenth-century grave digging, but a small island of stratigraphy was found intact. In it lay the lowest two courses of another section of foundation, and above this a column of loose rubble in what was evidently a robber trench. The northernmost stone of this fragmentary foundation abutted a slight but clear step in the small amount of subsoil that still remained above the bedrock: this almost certainly defines the northern edge of a foundation trench which ran in an east-west direction and originally linked the two stubs of masonry previously discovered.

The plan may be reconstructed to define a rectangular feature projecting 3.2 m (10 ft) beyond the north wall of the transept (Fig 16). This is most plausibly interpreted as the foundation of a small tower; and scarring on the surviving north wall of the transept, east of the window, hints at the keying-in of its superstructure, which may have been very slightly inset from the foundation. The overall width (east-west) of the tower foundation was 4.8 m (15ft). While it is likely that the tower was square in plan, the present north wall of the transept is substantially too thin to admit such an arrangement.

When the 1860s floor of the transept was dug out in 1992, prior to the present concrete raft being laid, Mr Tim Turner, Churchwarden, noted a pair of foundations against the north wall: they ran southwards for nearly one metre, and their inner faces aligned with the vertical joints below the north window. Although the evidence was not archaeologically recorded, there seems little doubt that the discovery



Fig 14 Lower part of the north wall of the transept, showing the foundations of the former north tower exposed during drainage works. The three main phases of construction of the wall are clearly seen: left, the original masonry and quoin; centre, infill, refacing and new window following the removal of the tower; right, rebuilt quoin and added buttress. (Photo: Warwick Rodwell)



Fig 15 The three surviving foundation fragments of the former north tower, exposed during drainage and landscaping works. (Photo: Warwick Rodwell)

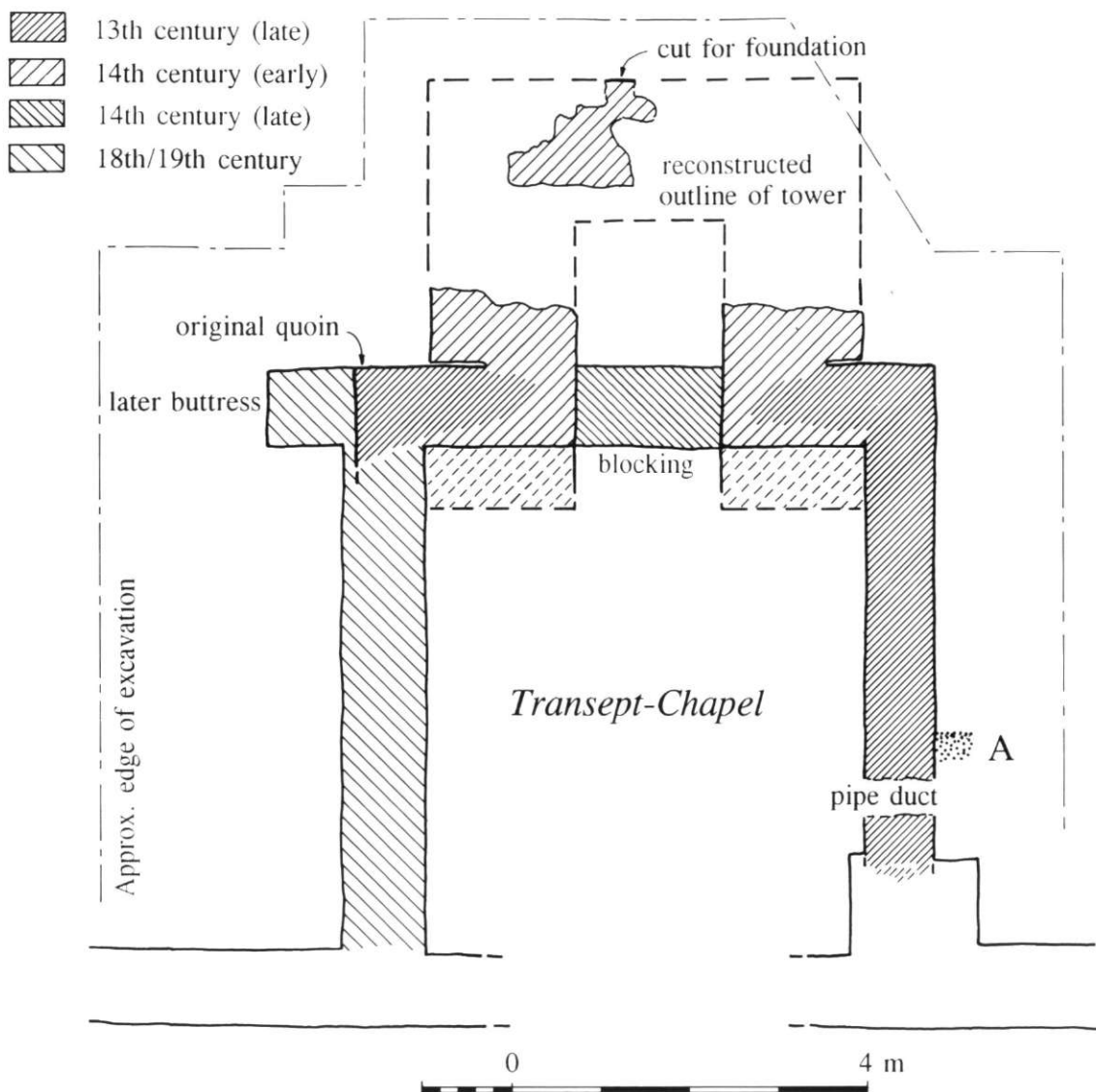


Fig 16 Foundation plan of the north transept and former north tower, showing the four periods of construction. The small patch of foundation masonry at 'A' is undated.

relates to the south wall of the tower, and its entrance: the plan is readily reconstructable (Fig 16). Basically, the tower was built with its south wall inside the transept, and incorporating part of its north wall.

The north tower was obviously not a long-term success, since it appears to have been demolished in the late fourteenth century, and replaced by the reticulated window. The north wall of the transept was largely rebuilt, although somewhat thicker than it had been originally. No hint of contemporary ground or floor level survived, and nothing remained of the northern angles of the tower, so that it is impossible to be certain whether they were buttressed. No masonry fragments of architectural interest were recovered. It may also be noted that very few pieces of disarticulated human bone were found in the soil hereabouts, indicating that the area had not been put seriously to use for burial prior to the nineteenth century.

South wall

This consists almost entirely of a single-arched opening which connects the transept with the eastern part of the nave (Fig 12). It is associated with a general rebuild of the church in the later fifteenth century, and must have superseded an earlier opening on the same site. The four-centred arch is similar to those of the south arcade, having two chamfered orders (the inner one hollow); the responds match too. The only difference between the two is the rope-moulded decoration on the imposts of the transept arch.

While the construction of this opening can be associated with the north wall of the nave, the work was carried out in two stages. The nave wall was built first, terminating in a plain quoin which rose only to the height of the intended impost; above that the masonry was stepped back and finished more roughly. The transept arch, and the filling over it, were

then inserted into the gap as part of an operation which seems to have included the construction of the rood loft. The eastern respond has its base set 30 cm higher in relation to floor level than the western, implying that it stood on a step that has since been cut away. The base also has a deep slot in its west face, showing that a screen was fixed here.



Fig 17 West tower and nave abutment, viewed from the north. (Photo: Warwick Rodwell)

West Tower

The tower, which is of three structural stages, plus a parapet, is built of granite ashlar both externally and internally, with slate used to level the courses. Its walls have never been plastered. The stage divisions are marked by simple chamfered string-courses. Pairs of buttresses clasp each angle and rise to the top of the second stage, where they are crowned by sculptured corbels carrying the octagonal corner turrets. These rise well above the parapet, their tops are embattled, and each is finished with a crocketed spirelet. Perpendicular in style, and 29.5 m (97 ft) tall, the tower is plainly of one build throughout (Fig 17). In its lowest two stages the tower is closely similar to its neighbour at Luxulyan.

There is an integral newel stair at the north-west angle, lit by a series of small openings on the north face. Each differs from the next: there are circles, quatrefoils and slit openings, all cut from single blocks of fine grey stone. Two have label mouldings. There was originally a door opening into the base of the stair, now replaced by a crude outward-opening door dating from the early nineteenth century.

Ground stage

The tower rises from a heavily moulded plinth, the chamfered base-course of which is partly buried. This course is 20 cm below the plinth of the south aisle and 30 cm below that of

the north wall of the nave. The tower is structurally earlier than both the nave and aisle, with which it is straight jointed.

The west face is dominated by a substantial doorway, and an even more substantial window above (Fig 18). The mouldings of both are finely cut from grey igneous stone. There are two orders of hollows and rolls defining the two-centred door arch, over which is a heavy, square hood with a deep drop and



Fig 18 Ground stage of the west tower, showing the modest doorway and large window with uncarved label-stops. (Photo: Warwick Rodwell)

of the sill, but this is not matched on the north, where the stooling remains square and uncut (Fig 25A). It is unfinished. The hood moulding terminates in two large, cubical blocks of unmoulded stone: these were intended for the carving of elaborate label stops, probably in the form of addressed human heads. The sculptures were never begun, and Glynne (1862) referred to the stones as 'block corbels'.

Above the window is a relieving arch composed of a double ring of voussoirs. Internally, the window has a rear-arch with a dropped and chamfered head, in brown stone similar to that used in the tower arch. The present glazing, all post-medieval, is of three periods and is supported by internal ferramenta. Tell-tale sockets and fractures in the stone bespeak the loss of external medieval ferramenta.

On the north and south faces of the tower are good sets of blocked putlog holes, showing the original scaffolding arrangement for building the ground stage. Putlog holes do not occur at higher levels, which perhaps implies that stone was hoisted inside the tower, and that the masons worked overhand, without the use of an external scaffold. That would not have been easy: a cantilevered scaffold would be expected, but no evidence for it remains visible.

An eroded inscription cut in letters 12 cm high in the south face of a buttress at the south-west angle, reads: IH 1668. The 'I' is barred. This may represent an otherwise unrecorded restoration date, or, less likely, it could be the memorial for a nearby burial.

Internally, the ground stage is a lofty open space from whence the bells are rung. The west wall is

short returns, but no label stops. The two spandrels contain well-cut quatrefoils, each housing an uncarved armorial shield (Figs 19 and 25A). While the detailed design and quality of carving on the doorway are good, the whole has an uncomfortable appearance, largely because it is too low. Indeed, the returns on the hood moulding virtually rest on top of the bolection moulding of the main tower plinth, instead of being some 50 cm higher, as the proportions demand.

Doubtless the reason for the diminutive height of the doorway was the desire to accommodate a large west window within the ground stage of the tower. The small amount of solid wall between the two elements contains a low, segmental relieving arch, and even that is clipped by the window sill.

The window is of four cusped and ogee-headed lights, arranged in two pairs with Y-tracery rising from the centre mullion. This design is overlaid on a reticulated tracery pattern, with each of the elongated reticulations being cusped, both top and bottom. The hollow-chamfered centre mullion is larger in section than the plain-chamfered outer ones. All three mullions are of granite and are undoubtedly replacements, presumably of eighteenth- or nineteenth-century date.

The tracery and jambs are finely moulded. The southern jamb rises from a moulded stooling cut on the extremity



Fig 19 Detail of the west doorway with its heavy label-moulding, squat proportions, and uneasy relationship to the tower plinth. (Photo: Warwick Rodwell)

pieces of slate, crudely pierced; they are potentially nineteenth century, but an earlier date may not be ruled out. Single, opposing pairs of timber sockets are seen in the north and south walls at three levels, approximately on the axis of the tower. The timbers that they once housed were up to 35 cm square, and were evidently not related to the internal structure of the tower. Most likely these represent successive positions of the lifting-beams that would have been required to facilitate winching up large blocks of granite.

Third stage

The octagonal corner turrets of the third stage rise from massive, flat corbels. The south-west corbel bears the finest sculpture, an enchanting pair of lions facing one another, flanking a wheat ear (Fig 20). The south-east corbel has two complete crowned human figures, in 'flying' posture, holding a head between them. The two northern corbels depict angels, flanked by crude human masks.

This stage is dominated by large belfry openings on all four faces. They have three lights each, with cinquefoiled cusping; there are five super-mullions defining four small trefoil-headed tracery lights. The belfry openings were originally an identical set, although changes in the tracery lights and mullions have occurred subsequently. The only design difference is seen in the hood mouldings: on the south these terminate in carved head-stops, whereas on the other faces there are only short returns and no stops. The jambs are of granite, but the traceried heads of the openings are of grey stone. The same

dominated by the large window and the diminutive doorway beneath appears relatively insignificant. The east side is wholly taken up by a full-height arch of three orders which interconnects with the nave. The granite responds are conjoined rolls, while the impost and two-centred arch are of a light brown stone. The apex of the tower arch is clipped by the barrel-vaulted ceiling of the nave, which is at a lower level than was originally envisaged. This is also demonstrated externally by the gap between the nave roof-line and the stone weathering on the east face of the tower: the existing nave roof is too low.

Scars and infilled timber sockets remain where a Georgian west gallery was removed in the nineteenth century.

Second stage

While this may originally have been intended as the ringing chamber, there is no internal evidence to suggest that it has ever been used as such: it has therefore probably only served as a baffle chamber. The timber floor dates from 1890 (p 83).

Apart from a two-light window in the east wall, the chamber is plain. The window has a low, pointed head with cinquefoiled cusping to the lights. The plain chamfered jambs are granite, but the tracery and hood moulding are of fine grey stone. There are no label stops, only simple returned ends to the hood. Above is a relieving arch with radial granite voussoirs. The lights are now filled with



*Fig 20 Sculptured corbel supporting the south-west corner turret of the tower.
(Photo: Warwick Rodwell)*

material was evidently used for the original mullions (of which some parts survive on the east side), but these have mostly been replaced in granite. The openings all have simple granite rear-arches.

The belfry contains a peel of eight bells hung in a good oak frame of 1890 (p 83). There were formerly only five bells. One ancient and decayed beam, evidently medieval, survives as a support beneath the present roof structure.

Parapet stage

The roof, which is recessed well below the crenellated parapet, is of two steeply pitched slopes, falling to a central north-south lead-lined valley supported by a steel beam. The roof structure is modern, slated. There is but a single outfall, via a lead chute, to the north; this appears to replicate the medieval arrangement. The eight gargoyle-like projections from the stringcourse at the junction of the third and parapet stages are purely ornamental, and have never functioned as water spouts.

Analysis and discussion

The structural sequence

The church as seen today is almost entirely of fifteenth-century construction, albeit the product of several phases of activity; these can now be chronologically ordered (plan, Fig 3). The north transept, or chapel, is however clearly anomalous, and unrelated to the later medieval building. It is plainly the remnant of a pre-Perpendicular church that has otherwise disappeared. There has been a general assumption by antiquaries, at least since the early nineteenth-century, that Lanlivery Church was once cruciform and that the northern appendage was a transept. Whether the building was truly transeptal, or whether this feature was simply a side chapel unmatched on the south can only be demonstrated with certainty through excavation. Nevertheless, it will be argued that the church probably was once cruciform in plan.

It has further been claimed that the transept is relict from a Norman church, but this seems unlikely on present evidence. The nature of the masoncraft, the presence of white lime mortar, the thinness of the walls, the lack of an offset, and the use of free-built foundations, all point to thirteenth-century or later construction. A close date cannot, however, be offered, since there is no distinctive architectural detailing. Indeed, the only surviving original feature is the small east window. Its simple, triple-lancet form is generally assignable to the thirteenth century.

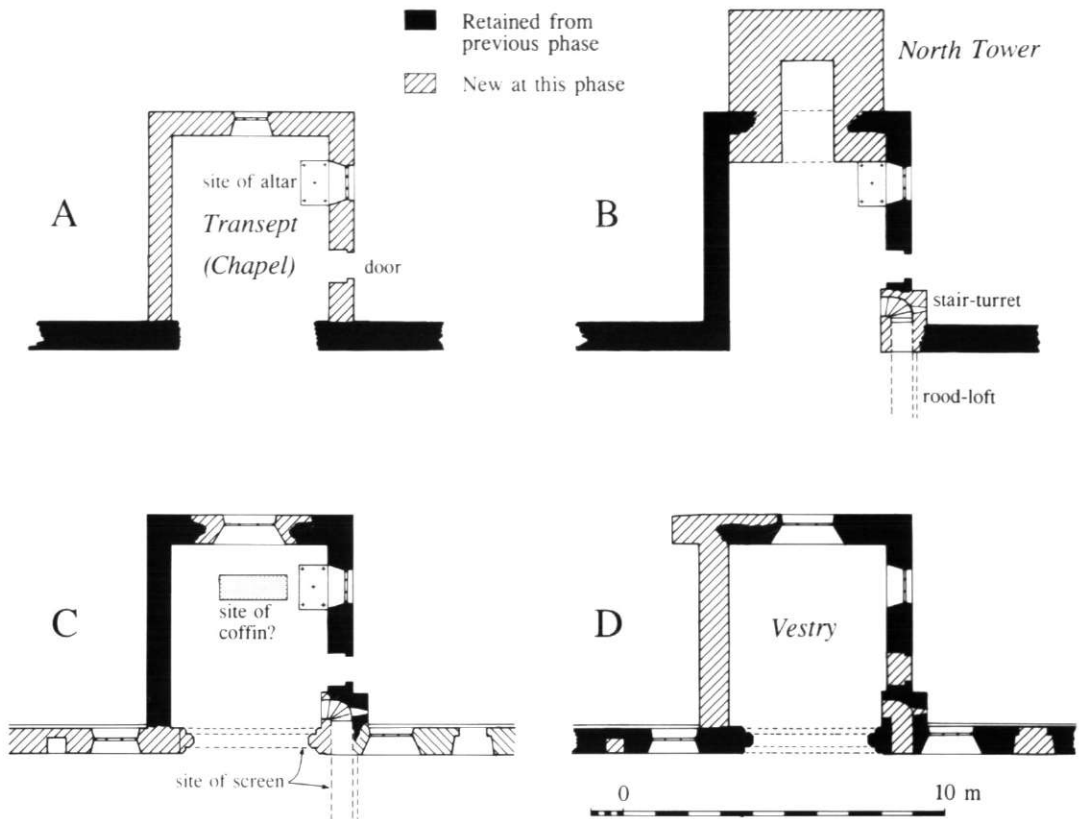


Fig 21 Plans illustrating the development of the north transept and tower. A. Later thirteenth century; B. Late thirteenth or fourteenth century; C. Late fourteenth century; D. Seventeenth to early nineteenth centuries.

The existence of a Norman church on this site is not in doubt, and the remains of its mid-twelfth-century font have sometimes been commented upon. The font was of the ornate Fowey type, in Cataclewse stone (Pevsner 1951, 58, 77). Three adjoining pieces of the hemispherical bowl are extant. This was decorated with a continuous series of large, encircled palmettes, with lotus buds in the intervening spandrels. Around the outer edge of the rim were two bands of chip-carved saltires, one upright, the other canted. The carving is crisp and the tool-marks well preserved. The font was presumably broken up in the fifteenth century and used as building rubble; it is not known whence the surviving fragments were recovered. Sedding's observation, 'Nothing remains from Norman times except the upper portions of a stoup in the south porch', is a slightly confused reference to the font fragments, and not to the integral stoup in the porch (p 89; Sedding 1909, 194).

There can be little doubt that the transept-chapel is late thirteenth century, constructed *de novo* (Fig 21A). Transepts and side chapels were not normally provided with doorways in their eastern sides; however, its provision was an original feature, albeit that the dressings have been renewed. The presence of a door here implies a private entrance, which is more likely to have been for the convenience of a local family of substance than for the parish priest.

There are two further indications that the transept housed an important private chapel. In 1824 it was noted that, 'In the north transept of this church, against the east wall, there are two fragments of sculpture in alabaster. One of these represents the Resurrection of our Saviour, and the other the General Resurrection.' (Hitchins and Drew 1824, 394). The alabasters, only one of which survived the Victorian restoration, were probably derived from a late fifteenth-century altarpiece of high

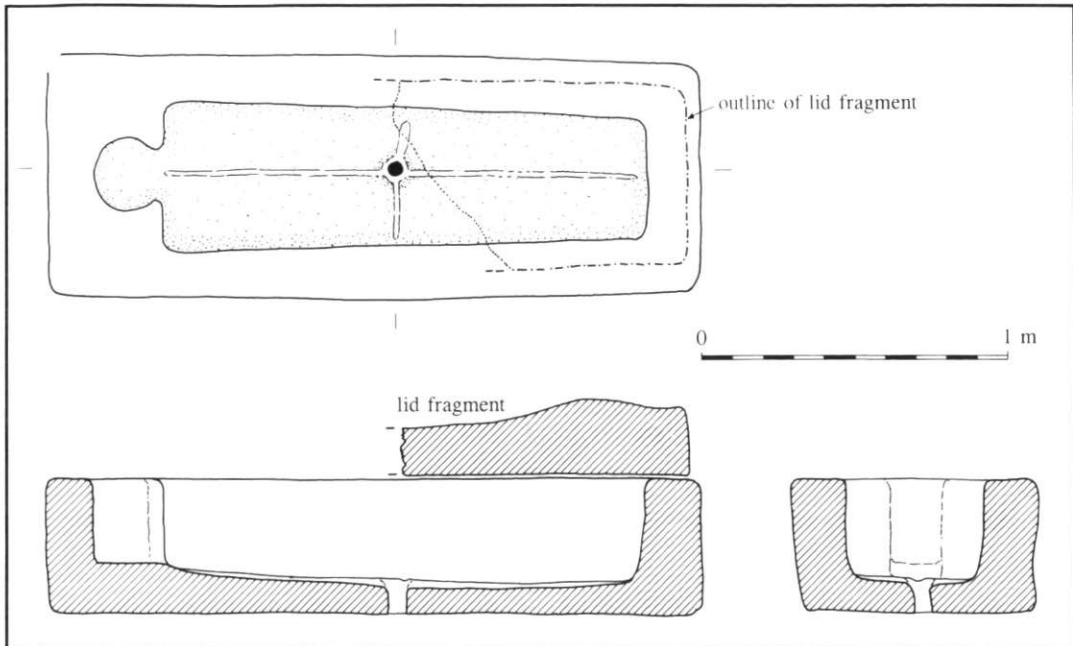


Fig 22 Sketch plan and sections of the granite coffin found in the north transept, now in the churchyard.

quality²⁸ The description of them as ‘against the east wall’ implies that the sculptures were probably *in situ*, and were not merely loose artefacts that could have been derived from a reredos elsewhere in the church²⁹ The whereabouts of the second panel is unknown: it appears to have been lost within the last twenty years. When last described, it was referred to as ‘Nottingham alabaster’ (Anon. n.d.).

A private medieval chapel will have contained one or more focal burials associated with the founder or his family. It is therefore of interest to note that ‘a ponderous granite coffin’ was dug up in the transept, before 1820, and was ejected into the churchyard. It was further reported that ‘the cover has been broken and used for some common purposes’ (Gilbert 1820, 878). The coffin has received frequent mention by antiquaries, acquiring its own legendary connections in the process (Polsue 1870, 24).

The coffin is still extant, and lies in the churchyard between the porch and the south entrance gate; it is now weathering badly (Fig 22). The coffin is hewn from a single block of granite measuring 2.13 m by 0.8 m by 0.45 m deep, and was provided with a head recess and a central drainage hole fed by four channels. A fragment of similar granite, now lying beside the northern entrance to the churchyard, is apparently the lower end of the cover to which Gilbert (1820) referred. It is plain. Monolithic coffins of this type were common between the thirteenth and fifteenth centuries, and close dating is not easy. However, the form of the head recess is typically late, and this specimen is most likely to belong to the fifteenth century. In which case, it related to a late medieval burial in the chapel.

Regrettably, nothing substantial can be said about the church to which this side-chapel was attached, without excavation beneath the Victorian floors.

The next element in the structural sequence was the north tower, now gone. This was added to the transept, the north wall of which was rebuilt on a more massive scale (Fig 21B). The tower was very modest in size, and internally the available space was tiny, probably c. 2.0 m (6 ft) square. The structure may have housed no more than a single bell.

There is no independent dating evidence for the north tower at Lanlivery, except that it is structurally later than the chapel. An inspired guess would place it in the first half of the fourteenth century. Likewise, the date of its demolition is open to question. It would be logical to suppose that removal followed soon after the completion of the new west tower in the mid-fifteenth century. But this conflicts with evidence of the present north window in the transept, which is certainly earlier. This Decorated window, unless it was already secondhand when used here, points to a date for the demolition of the tower in the later fourteenth century. That seems unlikely. The possibility that the window was recycled deserves serious consideration. It is too big (and too late) to have come out of the demolished tower, but its size makes it an ideal candidate for the west window of the former nave. Chronologically, the sequence fits perfectly.

The only other example of Geometrical tracery in the church is the window at the west end of the south aisle. It is the twin of the transept window. The south aisle window cannot be *in situ*, but may not have moved far from its primary position. The feature must have been salvaged and recycled during the later fifteenth-century rebuilding. It is worth noting, *en passant*, that its frame is too tall for a side window, and its proportions are only suited to use in a gable end. The scale is too small for a former chancel window, but is perfect for an aisle or transept. Since it has been demonstrated that the present south aisle is a rebuild of an earlier one (p 88), surely the west window is likely to have been reused more-or-less in its original position? And if the window currently in the transept is derived from the nave, then the church had a matching pair of Geometrical windows at its west end. Luxulyan Church has a similar, although slightly smaller, Geometrical window in the west wall of its south aisle.

Next in the sequence came the huge west tower, which was built as a freestanding structure, although patently with the intention of effecting a connection with a new and slightly extended nave. However, because there was no nave here to provide buttressing for the east face of the tower at the time of its construction, a pair of conventional buttresses was included on the east at the outset. The only difference between these and the other six buttresses of the tower is the lack of moulded detail at plinth level.

The structure belongs to that distinctive group of Cornish west towers, erected between the early part of the fifteenth century and the second quarter of the sixteenth. The later examples would appear to be the most elaborately decorated: Lanlivery is undoubtedly amongst the plainest, having large expanses of unrelieved wall face. It has been compared to St Austell's tower, on account of the similarity of the sculptured corbels which carry the octagonal corner turrets (Allen 1932, 91). St Austell is datable to c. 1480, and its exterior carries more embellishment than Lanlivery. A date in the middle years of the fifteenth century may be argued for the latter. This is supported by the ogee-headed lights and the generally early style of the Perpendicular tracery in the windows and belfry.

After the west tower came the rebuilding and extension of the nave: this is clearly a work of the second half of the fifteenth century. The broad arch opening into the north transept-chapel was probably part of this programme, as may have been the introduction of the rood loft. The chancel was probably still an unaltered early Gothic structure at this stage. In any case, being an impropriated rectory, the Prior of Tywardreath was responsible for the maintenance of the chancel, not the parish. It was clearly the parish that was lavishing money on its church in the fifteenth century, rather than the monastic rector. Associated with the fifteenth-century rebuilding is the unusually large Perpendicular font. It is of octagonal plan, decorated with quatrefoils containing blank shields.

What lay on the south side of the church at this time is uncertain, but the tripartite construction of the aisle roof provides vital clues. It has been argued that there was both a transept and an earlier aisle. The latter was probably an addition of the second half of the fourteenth century. The final stage of enlargement involved the construction of the present south aisle, chapel and porch, and with them the entire south arcade of six bays. There was never any structural division between the

aisle and the eastern chapel, the demarcation being formed by a timber screen, the continuation of the rood loft above, and increased sophistication in the embellishment of the roof. There is some evidence to show that timber screens were erected in the two arcade bays between the chapel and the chancel.

Differences between the windows of the nave (north side) and those of the south aisle are trivial, and the ashlar masonry is generally comparable: consequently, there is no reason to suppose that a significant time lapse occurred between the two works. The doorway of the south porch represents a local mason's attempt to emulate in granite intricate and highly skilled work of the type seen in the west door. The south porch doorway at Luxulyan is a similar emulation.

Some time after the church had reached its present size, a partial reconstruction of the chancel took place, in more than one stage. This involved renewing much of the north wall, and the east window, although the two elements are dissimilar in their detailing. There is no doubting that the north wall, with its unmoulded, lintelled doorway and debased Perpendicular windows, belongs to the first half of the sixteenth century. We may suspect that a twelfth- or thirteenth-century chancel survived until this stage, and that the overall dimensions were unchanged.

No significant post-medieval alterations have occurred to the fabric of the church, which probably fell into gentle decline after the mid-sixteenth century. Refurbishment of the interior and some minor structural works took place in the eighteenth century, and were probably completed by c. 1775. The Victorian restoration, carried out intermittently between 1865 and 1891, although responsible for a good deal of alteration inside the building, seems scarcely to have touched the exterior, or the masonry in general. It nevertheless managed to sweep away a great deal of archaeological evidence without record.

The Early Medieval plan: a reconstruction

It may be posited that the Norman nave and chancel occupied the same sites as at present, but whether of the same dimensions is impossible to tell without excavation. All that can be said is that the plan and proportions would be acceptable for a twelfth-century church. However, the wall thicknesses, as transmuted through later phases, are most unlikely to represent Norman work: they are substantially too thin. This is one of the reasons given for the rejection of the north transept as a Norman structure (p 100). Whether the transept was an addition to an earlier nave is, on present evidence, indeterminate.

What is deducible from the plan is the basic footprint of the thirteenth-century church at Lanlivery (Fig 23). The transept is the one remaining part, and it has been argued above that the chancel ghosts the earlier plan. It aligns with the nave, as does the later tower: there is nothing to suggest that the width of the building has altered. The length of the nave, however, has clearly been adjusted. It has already been noted that the Perpendicular tower was built as a freestanding structure to the west of a pre-existing nave, and the misaligned stub of masonry at the end of the south arcade testifies to an imperfect connection. The evidence bespeaks a west wall to the early nave just over a metre from the face of the tower.

This leaves the putative south transept for which there is no positive evidence. If the plan of the north transept is mirrored, it is found that the south wall would fall immediately outside the present aisle. This is not an uncommon phenomenon in the evolution of church plans. The resultant reconstruction falls comfortably within the plan-forms encountered in twelfth- and thirteenth-century Cornish churches of the Tintagel type (Sedding 1909, plan pl CL)

Apart from the east door in the north transept, which certainly was an original feature of that arm, nothing is known of the entrances to Lanlivery Church. However, the position of a south door to the nave can be deduced with confidence, based on the location of the much later porch. It was common, when a church was given aisles, simply to reposition the nave doors laterally so that the original axis was preserved. If that were the case at Lanlivery, the early south door would have been centred on the internal plan of the nave (excluding the crossing), again a typical Cornish

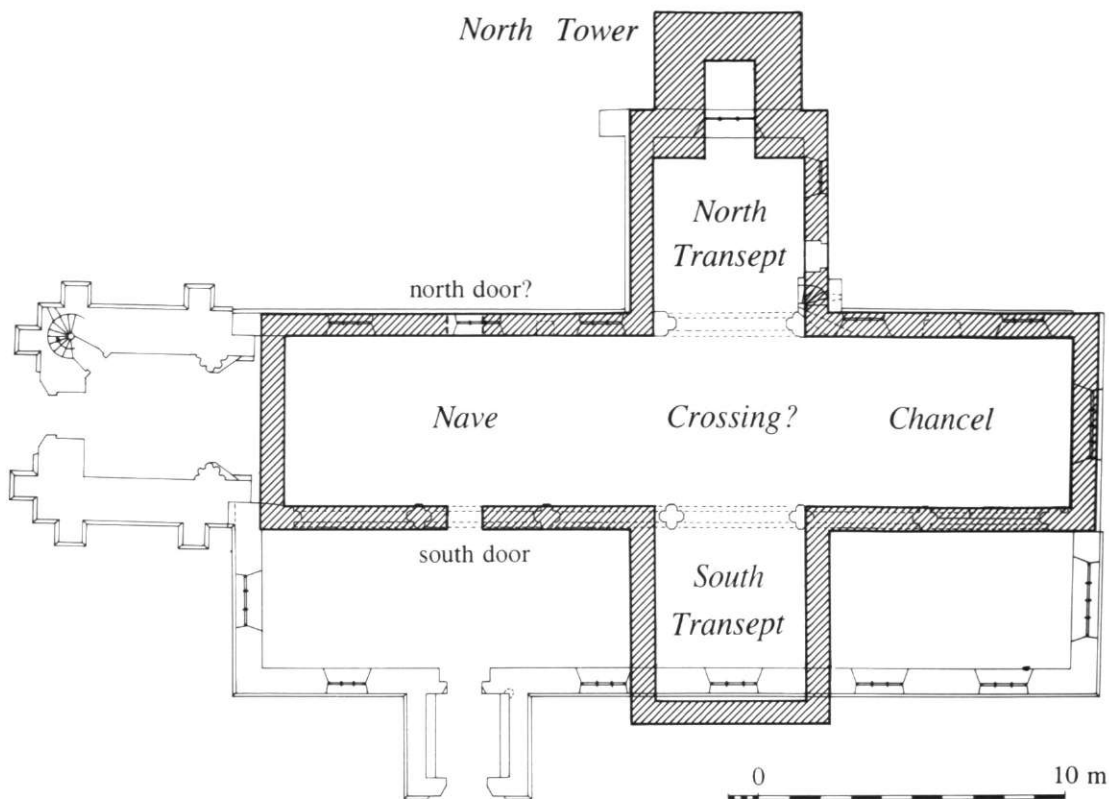


Fig 23 Possible reconstruction of the footprint of Lanlivery Church in the late thirteenth to early fourteenth century, in relation to the fully developed medieval plan.

arrangement (cf Blisland, Fig 24.4). There may have been an opposing north door, but that is more speculative.

Linked to the cruciform plan was the north tower, demonstrably an addition. Towers and tower-porches were not commonly built as adjuncts to the naves or other lateral components of English medieval churches, except where topographical constraints dictated. This was usually an urban phenomenon, as seen in churches such as St Martin's, Exeter. Lateral towers do, however, occur in certain localized rural groups in various parts of England: there are notably more examples in Devon and Cornwall than in most other counties. Towers constructed directly alongside naves, in the 'transept position' are found, for example, at Braunton and Ermington, in Devon.³⁰ The type has its origins locally at Exeter Cathedral, where there are two Norman transeptal towers. The addition of a tower to the extremity of an existing transept is, however, a much rarer phenomenon.

A clutch of these extra-transeptal towers is found in central Cornwall, and the discovery of a hitherto unsuspected example at Lanlivery is of considerable interest, especially since its sequential relationship to the transept can be shown. The tradition evidently started early. At Bodmin a very substantial tower fairly certainly of Norman origin was erected adjacent to the north side of the church, where it is presumed originally to have been extra-transeptal, although the evidence is now masked by a later rebuild (Fig 24.5; Sedding 1909, 21-30). The tower itself has also been redressed and heightened in the late Gothic period.

At the opposite end of the size range is the diminutive tower at St Enodoc, again on the north side of the church and opening from the transept (Fig 24.3; Sedding 1909, 104-7). The plan replicates Lanlivery in miniature. Blisland provides a further instance, but there the tower is both

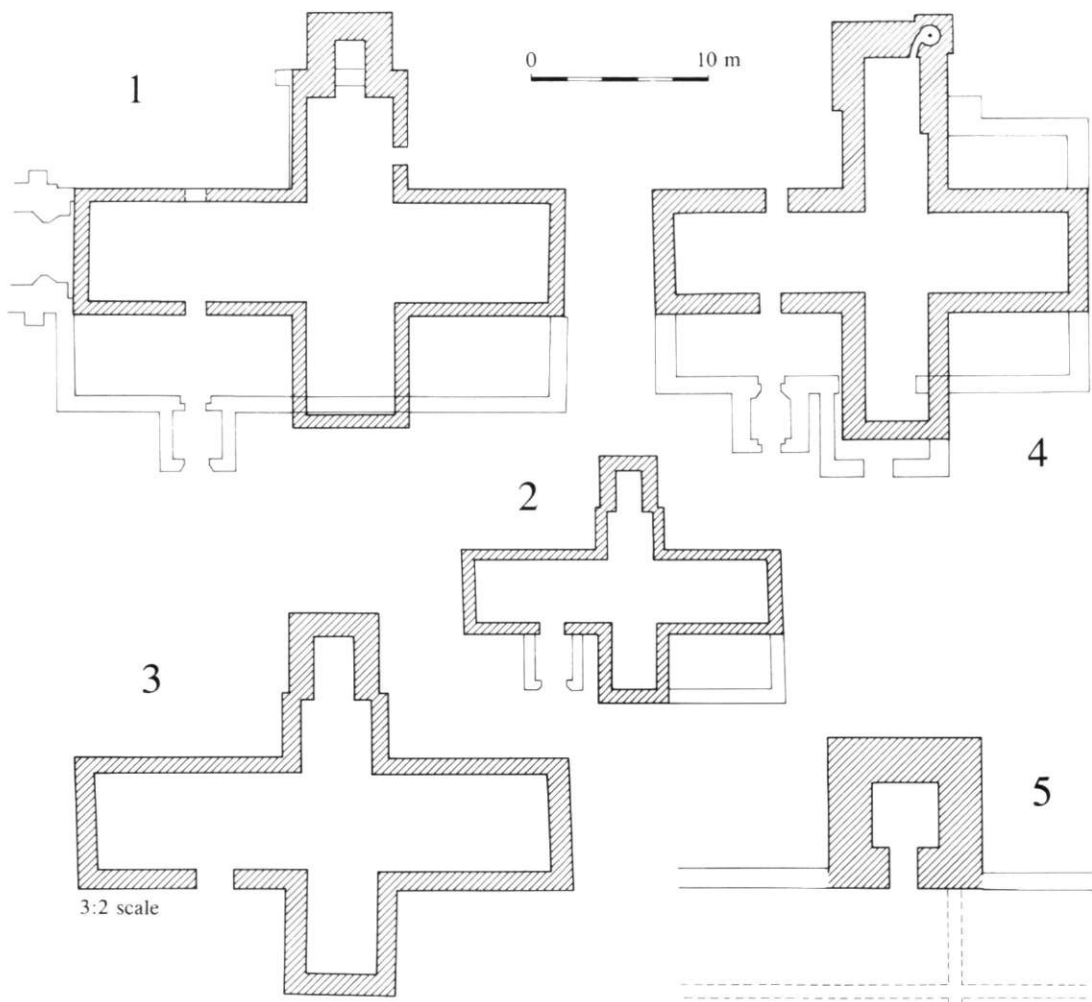


Fig 24 Comparative plans (partly reconstructed) of some twelfth- and thirteenth-century Cornish churches with towers adjoining the north transepts. Major late medieval additions are shown in outline. 1. Lanlivery; 2. St Enodoc; 3. St Enodoc (scaled up by 50%); 4. Blisland; 5. Bodmin (tower only, remainder rebuilt).

later and broader than the Norman transept to which it is attached (Fig 24.4; Sedding 1909, 18-20). The Blisland tower seems to be fifteenth century in origin. Another extra-transeptal tower group exhibits a similar arrangement, but this time on the south (eg Duloe, Mawgan-in-Pyder and Veryan).

Comparisons between the plans of Lanlivery and St Enodoc are so striking — the later being a small-scale reflection of the former — that it is relevant to enquire whether a design relationship between the two can reasonably be adumbrated. ‘Blueprint’ designs for parish churches were clearly in circulation in southern and eastern England in the eleventh and twelfth centuries, and these were scaled according to the size required³¹. There is no inherent reason why the same should not be applicable in the south-west peninsula. It is not therefore surprising to discover that a geometric ratio of 3:2 exists between Lanlivery and St Enodoc. If the plan of the latter is scaled up by 50%, striking similarities are revealed (Figs 24.1 and 24.3). Most significant is the fact that both the width, and the overall length of the nave plus chancel, correspond. The plan of the south

transept at St Enodoc is virtually a replica of that on the north at Lanlivery,³² and the overall sizes of the two towers are identical.

Other commonly noted proportional relationships are evidenced, such as the transepts being externally square in plan, with their base dimension derived from the mean width of the nave. Perhaps more surprising to find in these small rural churches is the unambiguous use of the formula $1:\sqrt{2}$, or the 'golden section'. The medieval use of this formula to determine the ratio between the length and width of a building's components has been much discussed in relation to certain major churches, such as Salisbury Cathedral (Cocke and Kidson 1993, 62-79). The plans of the chancels at Lanlivery, St Enodoc and Blisland all appear to be based upon the $1:\sqrt{2}$ formula. So too are the elongated transepts at Blisland. Wider research into the design and planning of Cornish early medieval churches would clearly be fruitful.

Prefabricated architectural detail

The hard, fine-grained grey stone — possibly from Pentewan — used for certain architectural detailing in the fourteenth and fifteenth centuries opens another avenue of enquiry of wide potential interest. There are two groups of features in this material at Lanlivery.

First, the two large windows in the Geometrical style are an identical pair and belong to the later fourteenth century. It is argued that they may have been made for the western gable-ends of the nave and aisle (p 87). Their high quality workmanship and non-local stone single them out as prefabricated products, brought to the site ready for use. It is not therefore surprising to find identical tracery, in the same stone, in other local churches (eg Luxulyan).

It is becoming generally recognized in the limestone areas of eastern England that complex traceried windows, doorways, piscinae, and certain other features, were manufactured in standard sizes at specialized workshops which were almost certainly situated at the quarries. The use of relatively small blocks of stone is a commonly perceived feature; thus a simple moulded jambstone, for example, would not be cut on an unnecessarily bulky block, nor one of megalithic proportions. This avoided waste of fine quality stone, and eased cartage problems. Moreover, the 'kits' of parts turned out by these workshops often comprised only the more intricate components of a given feature, and did not usually include uncomplicated sills, or the plain jambs for rear-arches: these were made on site, using the local stone. The two Decorated windows at Lanlivery conform to such a manufacturing specification.

Secondly, extensive use was made in the tower of prefabricated detailing, which was probably ordered from a workshop pattern-book. The four belfry openings came as a set; so did the small windows for the stair-turret, although each one is to a different pattern. The large west window in the ground stage was also undoubtedly bought in, and in this instance it came complete with a sill. The reason for including the sill with the kit of parts was probably on account of the complex mouldings that its stoolings needed to carry, for seating the mullions and jambs. It would have been difficult to cut those mouldings in coarse granite of the type used to build the tower.

However, the window arrived on site with one of the sill mouldings still uncut; the local masons evidently did not have the interest, or perhaps the instruction, to tackle the omission, and thus it remains incomplete to this day (Fig 25A). Likewise, the label-stops on the hood moulding were left as plain blocks, the intention behind this being that the client could choose whose heads he wished to have copied. The carving was often done *in situ*, to minimize the risk of damage to the portrait during construction work. It is interesting to note that the two head-stops high up on the south belfry window were carved while scaffolding was in place, as they had to be, but the easily accessible low-level ones never were tackled. Hence the blocks remain as quarry rough-outs. Omissions of this nature are not uncommon in churches. At Luxulyan, on the other hand, the label-stops of the porch doorway, also in this fine grey stone, were superbly carved with the heads of a king and queen.

Finally, in this context, the west door at Lanlivery provides a striking example of pattern-book

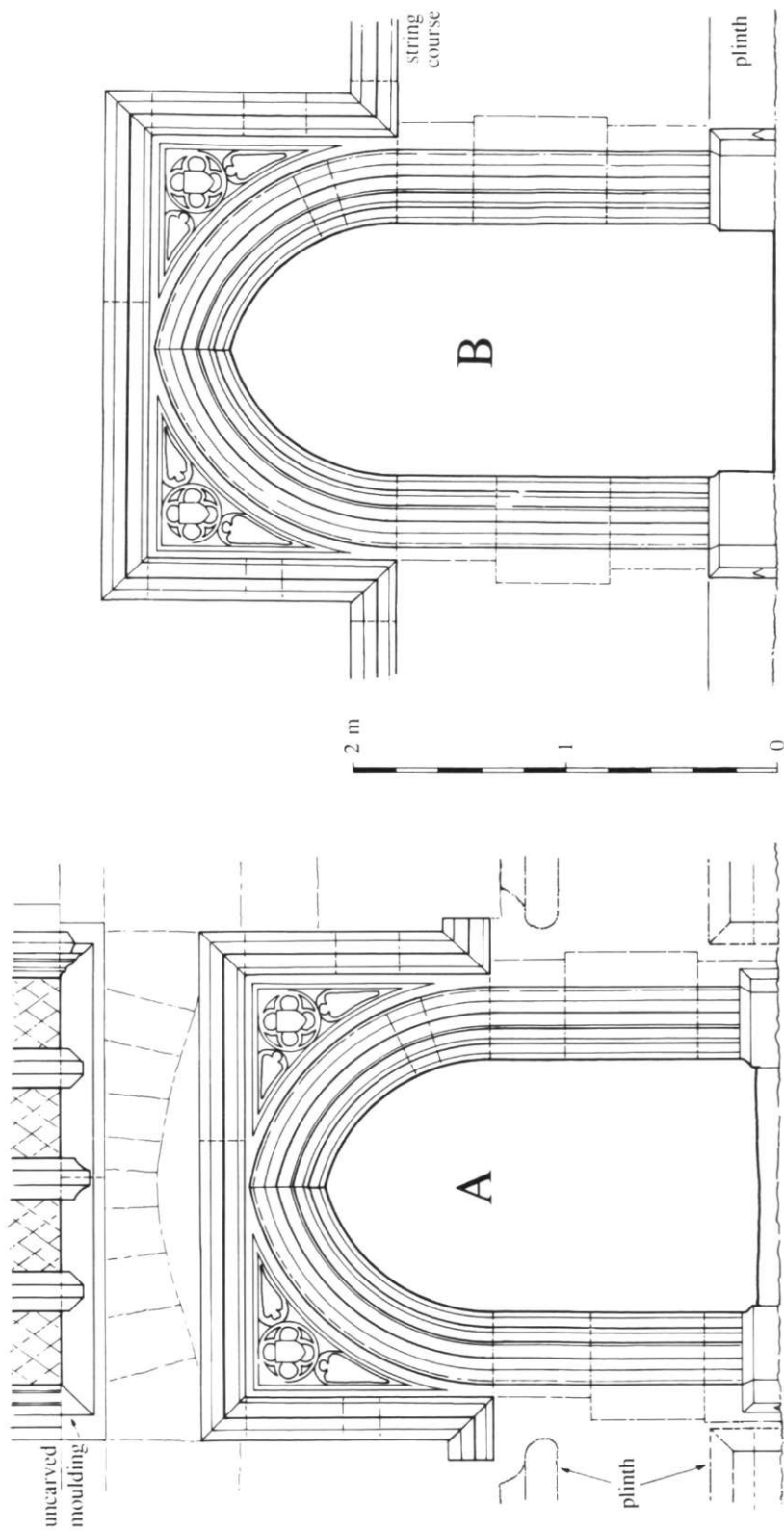


Fig 25 The west tower doorway. A. As built at Lanlivery, in relation to the base of the window above; B. Reconstruction of the approximate proportions of the original doorway design.

ordering. While in provincial terms the design and execution of the carving are of high standard, the proportions of the doorway and its integration with the ground stage of the tower are architecturally inept. The design belongs to a much taller doorway which, if constructed, would have been elegant (Fig 25B). However, the desire to incorporate a large window in the lowest stage of the tower meant that the doorway had to be compressed: in all probability, the masons omitted one course (c. 30-40 cm) from the mouldings of the door jambs. It will also be noted that, unlike the Luxulyan porch, the label moulding around the door head has no provision for stops, but instead has short returns. These were intended to connect with a string-course, yet the design of the Lanlivery tower did not allow for such a connection. This provides further confirmation that the doorway was ordered as a prefabricated product, and not individually designed for this church. The plain shields on the spandrels were also intended for painting according to the client's wishes.

Lanlivery thus provides interesting and seemingly hitherto unnoticed clues for the use of pattern books and prefabrication amongst later medieval stonemasons in central Cornwall. Fourteenth- and fifteenth-century products of the 'Pentewan factory' are to be seen in numerous churches, and a full study of the surviving output of this industry would be valuable. Similarly, the work of another factory that produced fine architectural detailing in the fifteenth century, in a cream-coloured stone, can be seen in the window tracery at Bodmin Church, and elsewhere in the locality (eg Lanivet). We may also suspect that the familiar clustered piers made of granite, and seen in so many aisle arcades, represent another mass-produced component. Clearly, the wider application of archaeological techniques to the analysis of Cornish churches has the potential for achieving major advances in our understanding of the design and development of ecclesiastical architecture in the south-western peninsula between the twelfth and the sixteenth centuries.

Acknowledgments

I am indebted to the following for making on-site arrangements, providing facilities, and generally ensuring the smooth running of the investigation: Mrs Rebecca Child of English Heritage, Mr David Scott of Stratton Creber (surveyors for the restoration), the Reverend David Keighley, Vicar of Lanlivery, and Mr Tim Turner, Churchwarden. Grateful thanks are also due to Mrs Christine Rodwell for assistance with the recording, and to the Reverend Michael Warner for some of the archive references.

Notes

- 1 This is the sole English example of what has been dismissed as an 'untraceable dedication': Arnold-Forster 1899, 561.
- 2 Lysons and Lysons 1814, 179. St Vorck is otherwise unrecorded; it is possibly a corruption of Feock, a name which occurs once only as a British church dedication.
- 3 *E.g.* by Polsue (1870, 21). The dedication has been confused with Lanreath: *c.f.* Henderson 1925, 131.
- 4 The Lanlivery entry is dated 23 August 1862.
- 5 This paper is an expanded version of a study carried out by the writer at the behest of English Heritage in 1992-93, in association with the repair programme. A copy of the original report is lodged with the Cornwall and Scilly Sites and Monuments Record.
- 6 The conventional nomenclature is used here for the parts of a medieval church, but antiquarian descriptions of the building differ. Some refer to the two main vessels as the north and south aisles; others describe the church as having a nave and chancel on the south side, flanked by a north aisle, whereas the reverse obtains. The potential confusion arises because the liturgical nave and chancel were moved, presumably after the Reformation, from their original sites into what had previously been the south aisle and south-east chapel, respectively. The position was reversed again in the late 1860s, returning to the medieval disposition.
- 7 These investigations are recorded in two manuscript reports by S. Hartgroves, dated 10 January

- 1992 and 23 November 1992, deposited in the Cornwall and Scilly Sites and Monuments Record. (See also p 172)
- 8 Cornwall Record Office, DDP 111/25/1; Churchwardens' and Overseers' Accounts, 1721-1782.
 - 9 *Ibid.*, 5 May 1724. The contract refers to this part of the church as the 'north aisle', and the description leaves no doubt that the present nave and chancel were being referred to.
 - 10 *Ibid.*, 7 May 1728.
 - 11 *Ibid.*, accounts for the year 1729.
 - 12 *Ibid.*, accounts for the year 1762.
 - 13 *Ibid.*, 6 June 1765.
 - 14 *Ibid.*, accounts for 1765-66.
 - 15 Devon Record Office, Chanter 228 C64; dated 17 January 1765. This is five months earlier than the suspected crisis over the tower.
 - 16 *Loc. cit.*, Churchwardens' Presentments, Box 27, no. 7; dated 1768. A mere handful of these documents survives, and this is the only one to contain mention of the fabric.
 - 17 *Loc. cit.*, Chanter 232, B416; dated 1779.
 - 18 Exeter Diocesan Architectural Society, 'Rough Notes (for correction) on the Churches in the Deanery of Powder', Sheet 29 (1866). Printed and issued as a single folded sheet, supplementary to the Society's *Transactions*.
 - 19 CRO, DDP 111/2/13-15.
 - 20 *Truro Kalendar*, 1881. An inscription on the glass also records this date.
 - 21 *Ibid.*, 1886.
 - 22 *Ibid.*, 11 October 1888.
 - 23 *Ibid.*, 25 December 1889.
 - 24 *Ibid.*, 7 April 1890.
 - 25 This plan is based on one prepared in 1992 by Stratton Creber, surveyors.
 - 26 See note 18; also Polsue 1870, 22.
 - 27 See note 18.
 - 28 For the type generally, see Cheetham 1984, 276-81 and 315-16. The Lanlivery Resurrection is mentioned in sources that imply its existence in the church down to the early 1970s. It has not been there during the incumbency of the present vicar.
 - 29 Polsue, writing in 1870, refers to a single alabaster fragment, attached to 'the north wall' (nave?), implying that it had been resited during the recent restoration. The second panel seems to have disappeared about this time.
 - 30 For the plan of Braunton see *Trans. Exeter Diocesan Archit. & Archaeol. Soc.* 1 (1843), pl. VIII; and for a reconstructed plan of Ermington, see *ibid.*, ser. 3, 1 (1899), pl. I.
 - 31 For discussion of examples in eastern England, see Rodwell and Rodwell 1985, 135-7; and Rodwell 1993, 71-3.
 - 32 The north transept of St Enodoc's may have been shortened when the tower was added.

References

- Allen, J F, 1932. *The Great Church Towers of England*. Cambridge.
- Anon. n.d. [H.B. York, 1960s]. *A Short History of Lanlivery Parish and Church*. Privately printed.
- Arnold-Forster, F, 1899. *Studies in Church Dedications*, II. London.
- Cheetham, F, 1984. *English Medieval Alabasters*. Oxford.
- Cocke, T, and Kidson, P., 1993. *Salisbury Cathedral: Perspectives on the Architectural History*. Royal Commission on Historical Monuments. HMSO, London.
- Gilbert, G S, 1820. *Historical Survey of the County of Cornwall*, II. London.
- Glynne, S, 1862. T Cam Hughes (ed.), 1935, *Sir Stephen Glynne's Notes on the Churches of Cornwall*. Collectively reprinted from *Notes & Queries*. Privately printed.
- [Henderson, C], 1925. *The Cornish Church Guide*. Truro.

- Hitchins, F, and Drew, S, 1824. *History of Cornwall*, II. London.
- Lysons, D, and Lysons, S, 1814. *Magna Britannia III: Cornwall*. London.
- Pevsner, N, 1951. *The Buildings of England: Cornwall*. Rev. edn. 1970, with E. Radcliffe. Harmondsworth.
- [Polsue, J], 1870. *Parochial History of the County of Cornwall*, III. Truro.
- Rodwell, WJ, and Rodwell, K A, 1985. *Rivenhall: Investigations of a Villa, Church and Village, 1950-77*, 1. CBA Res. Rep. 55. London.
- Rodwell, WJ, 1993. *The Origins and Early Development of Witham, Essex*. Oxbow Mono. 26. Oxford.
- Sedding, E H, 1909. *Norman Architecture in Cornwall*. London.
- Thomas, A C, 1967. *Christian Antiquities of Camborne*. Privately printed, St Austell.
- Wade, D, 1967. *A Short Dictionary of British Architects*. London.

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Stowe: the country house and garden of the Grenville family

A survey by the Royal Commission on the Historical Monuments of England

W.R. WILSON-NORTH

Summary

The Royal Commission on the Historical Monuments of England (RCHME) has completed a survey of the site of the 17th-century house and gardens of the Grenville family at Stowe in North Cornwall. The investigation has revealed the ground plan of the great house for the first time and made possible the recording of the overall layout and the intricate details of the formal gardens which surrounded the house. Features which indicate the presence of an earlier house and gardens have also been identified.

Introduction

Stowe is known as the site of the country house which was constructed in 1679 for John Grenville, first Earl of Bath, and which was described as 'by far the noblest house in the west of England' (Lysons, 1814, 165). Pictorial evidence shows it to have been surrounded by extensive, contemporary formal gardens. The site is the first relict garden in Cornwall to be recorded in detail for the National Monuments Record (NMR) of the RCHME. The bulk of the garden remains can be closely dated: they are contemporary with the construction of the great house in the late 1670s, and were in place by 1694. As such, they belong to a period from which relatively few gardens survive as earthworks. They are also remarkable for their completeness and exceptional preservation. In addition, within the area is the alleged site of a 14th-century chapel, as well as the site and garden of a predecessor to the 1670s house.

Both the archaeological and the architectural divisions of the Royal Commission have been involved, bringing to bear three of the Commission's areas of expertise: analytical earthwork survey, architectural interpretation and air photographic transcription and interpretation.

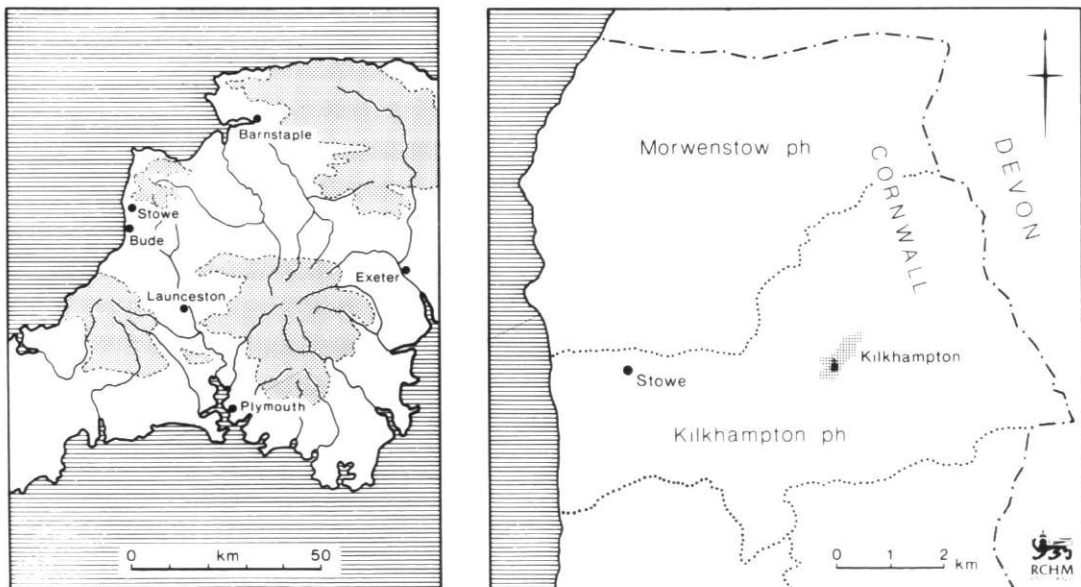


Fig 1 Stowe, location plan. (RCHME Crown Copyright).

Topography and Situation

Stowe (NAR no SS 21 SW 14) is located within Kilkhampton parish in the extreme north of Cornwall (Fig 1). It lies on shales and sandstones of the Upper Carboniferous (Geological Survey, 1980) in a landscape of deep, wooded valleys and undulating hills. The earthworks lie on the southern lip of Coombe Valley, to the south-east of Stowe Barton farmhouse. The site of the 1670s house and the main element of the formal layout lies within a minor valley and has views both to the sea and to Kilkhampton village.

Historical Background

The first specific reference to Stowe occurs in a licence of 1386 for a chapel (Polsue, 1867, vol 2, 373), which by 1519 was dedicated to St Christina de Stowe (Henderson MSS, East Cornwall, 215). Granville (1895, pt 1, 18-19) asserts that the origins of the Grenville family in this country began at the Conquest when Richard de Granville had lands in North Devon and Cornwall bestowed on him by William Rufus. Their principal manors were at Bideford (Polsue, 1867, vol 2, 370) and Kilkhampton. By 1546 the manor, borough and demesne lands 'at Kilkhampton' were worth annually £62 3s 5d (Polsue, 1867, vol 2, 374).

In 1620 Sir Bevil Grenville took up residence at Stowe and appears to have rebuilt or improved the existing house there as well as perhaps creating or altering a garden. Certainly live carp from the Grenville estate at Bideford were being transferred to ponds at Stowe around this time and in 1621 new stables were being constructed there (Granville, 1895, pt 1, 147, 149).

The house itself was apparently of considerable size for the Hearth Tax records 24 hearths at Stowe, far in excess of anything mentioned in the surrounding parishes and the ninth largest number in the county (Stoate, 1981, 32). Yet no depiction of this house or of its contemporary surroundings has survived, and it was apparently demolished around 1679.

The late 17th century marked a high point in the history of the Grenville family. They had an illustrious involvement in the Civil War on the side of the King, which culminated in a succession of titles and positions bestowed on John Grenville, first Earl of Bath, in the decades after the Restoration, and until his death in 1701 (Trinick, 1979, 91-2). It was Earl John who in the 1670s set about the creation of a new residence in keeping with his post-Restoration status though in the event he seems to have visited it only very rarely (Markham, 1984, 228).

Description and Interpretation

The house and garden of the 1670s were planned and laid out in a sophisticated and contrived manner which took every advantage of the local topography. The basic design, however, was simple: a rectangular block, 192 by 103 m, was divided into eight compartments, each 45 to 50 m square, arranged in two lines of four and aligned east to west. The southern four compartments were laid out as walled gardens while the northern four were occupied from east to west respectively by an entrance court, the house itself, a garden, a detached service building and probably another garden (Fig 2).

The central axis of the four northern compartments which bisected the house, service wing and the parterres in the central garden compartment, was projected eastwards by an approach drive which also bisected the entrance court and then ran on to the east. It was continued westwards beyond the gardens by another track or drive which was perhaps in part at least a rear or service approach. This layout is depicted on the only known surviving cartographic evidence for the house and gardens, a map of the Stowe estate, made by Joel Gascoyne (Fig 3; Cornwall Record Office, 1694).

There are also two drawings of 1716 (Harris, 1964, nos 101 and 102). One is a distant view of the eastern aspect of the house, the other a closer view which shows the eastern and southern side of the house and part of the garden in some detail (Fig 4). There is also a later watercolour which appears to be a copy of a pre-1694 painting, now lost (Trinick, 1979, 94). Useful as this

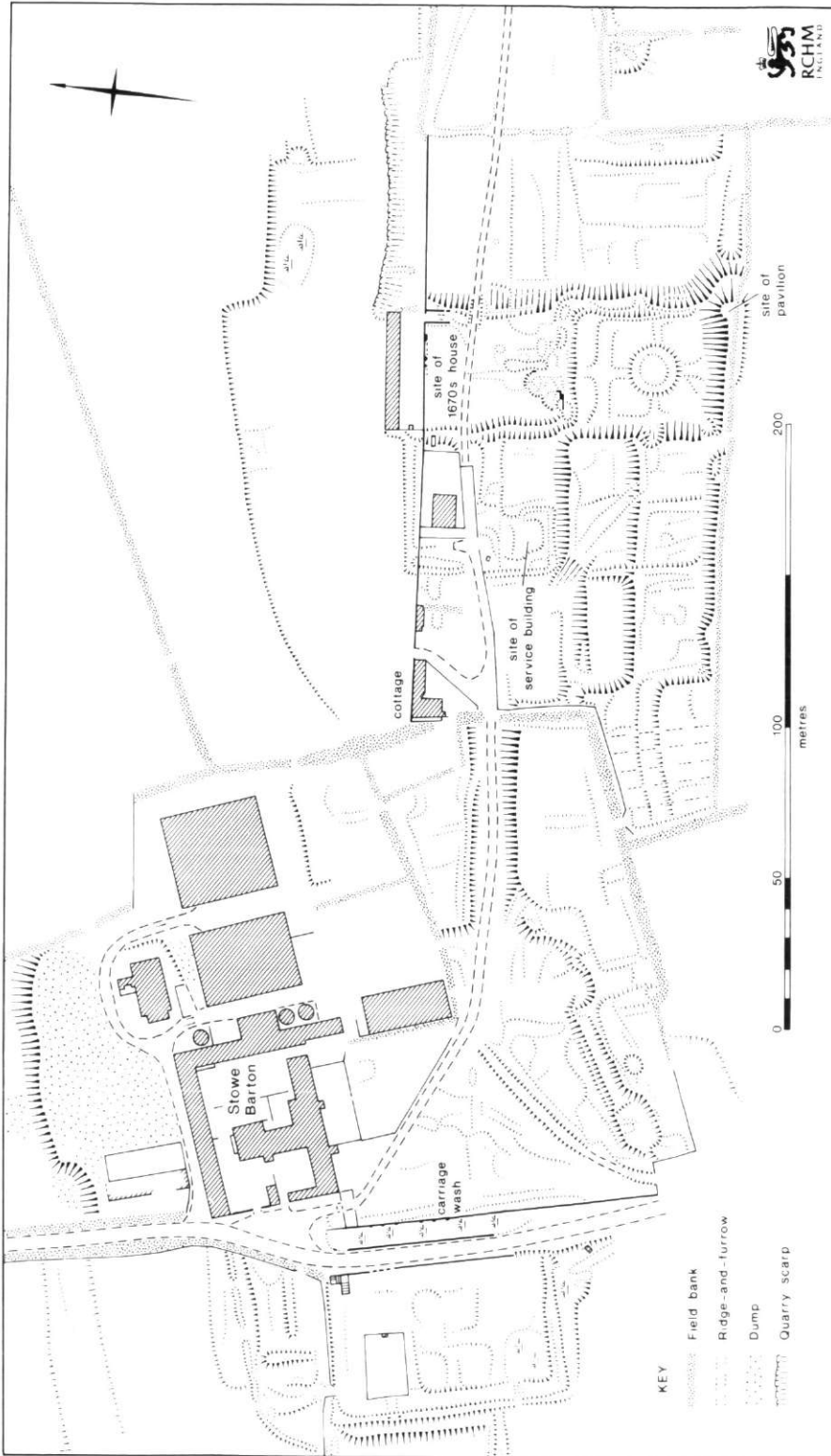


Fig 2 Stowe, earthwork survey. (RCHME Crown Copyright).

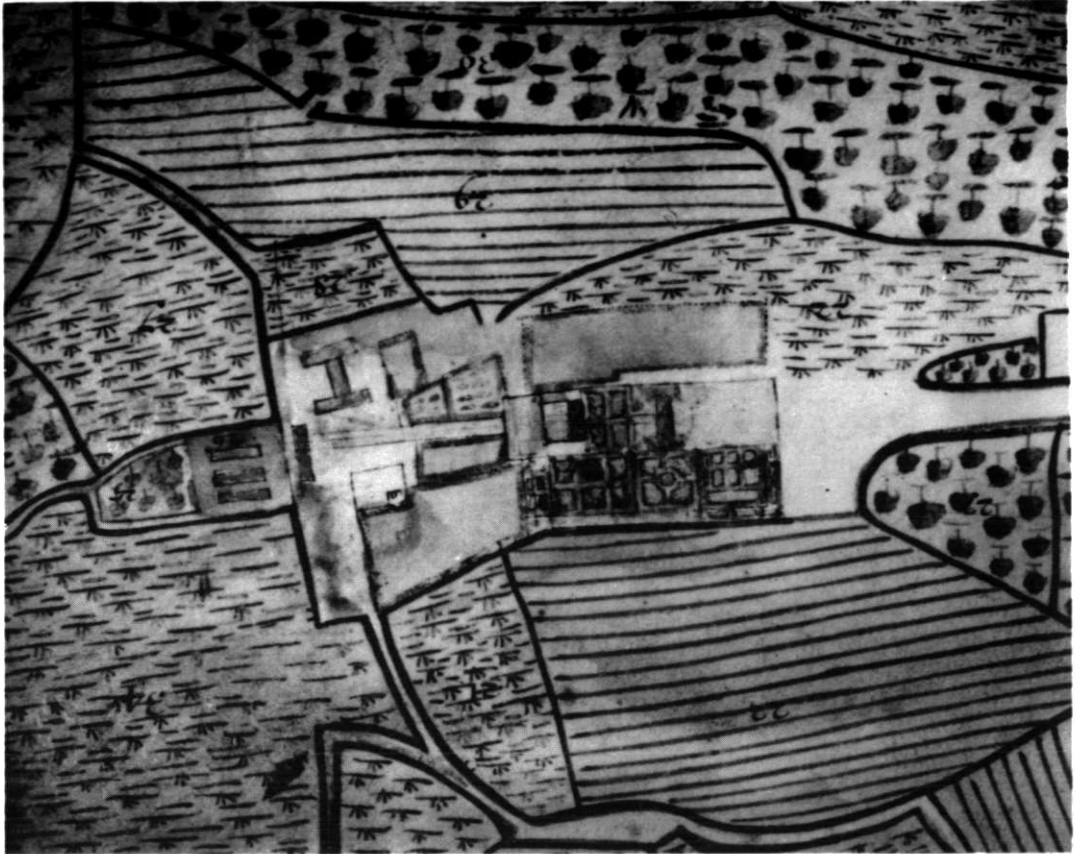


Fig 3 Stowe: Joel Gascoyne's plan of 1694, turned to show north at the top. (Cornwall County Record Office, Copyright Reserved, reproduced with grateful thanks to Mr I. Potter)

documentary evidence is, none of it relates the garden design to the local topography. In fact the northern line of compartments was laid out along the narrow head of the valley so that the forecourt, house and service building were on ground which sloped slightly eastwards. The approach drive, which was aligned on the centre of the house, rose out of the deep, wooded valley to the east. This drive can still be traced, hardly deviating from the straight, for over 950 m, and it allowed a distant prospect of the main front of the house, set high above in the valley head, and was no doubt itself intended as a vista to be viewed from the eastern front of the house. The final approach would have set the house, silhouetted on the horizon, steeply above the visitor. Something of this intended effect can be seen in the long view of the house of 1716 (Harris, 1964, no 102). The rear approach drive from the west, which was also aligned along the centre of the northern compartments, was set in a broad cutting up to 2.3 m deep which was sliced through the ridge, forming the watershed, at the head of the valley. This not only allowed the drive to make an easy approach to the house, but more importantly created an uninterrupted vista from the upper floors and roof of the house, westwards to the sea, some 1 km away. The end of the view is framed by the natural declivity in the coastal horizon formed by Warren Gutter. It is not without interest that these two views to the east and west were specifically noted by John Loveday on his visit to Stowe in 1736 (Markham, 1984, 228).

The aligning of the northern compartments of the layout within the valley bottom, which achieved the vistas described, meant that the southern line of compartments were laid out along the steep southern side of the valley. The result is that the compartments here are defined on the

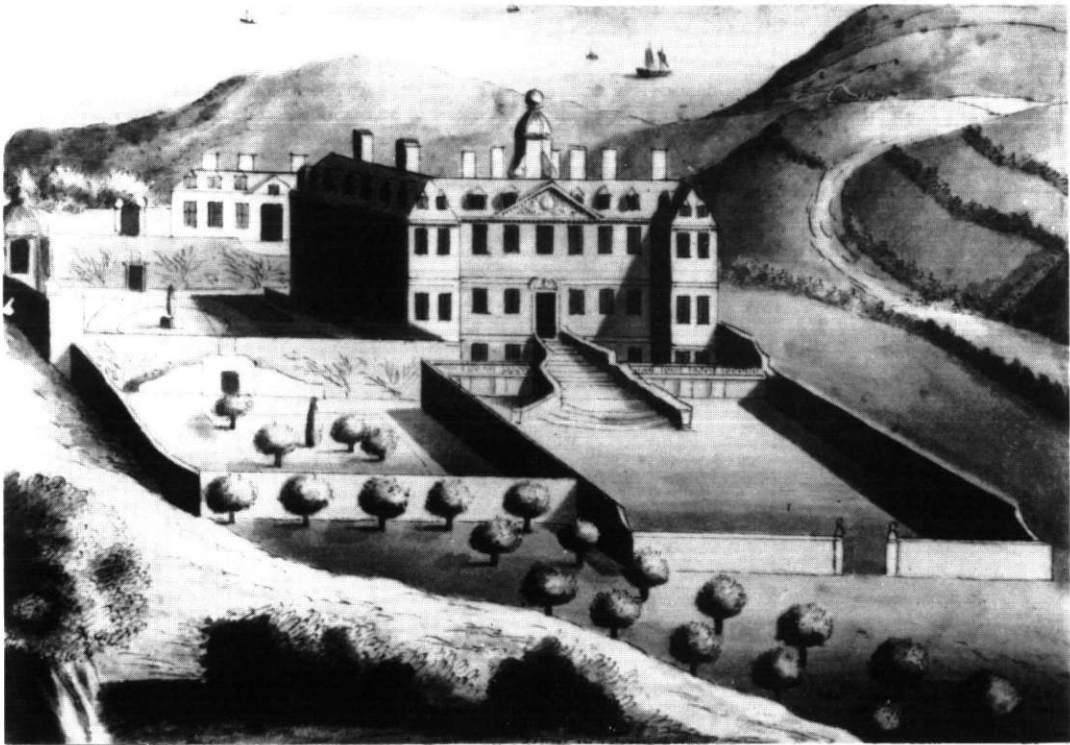


Fig 4 Stowe: Edmund Prideaux's view of the east front of the 1670s house, drawn in 1716. (By kind permission of Mr Peter Prideaux-Brune. Copyright Reserved).

ground by earthwork terraces rising up to 3.4 m in height (Fig 5). The picture now is one of dramatic changes of level within the garden, an effect which would have been even more impressive when the original walls bounding the compartments existed, as shown on one of the 1716 drawings (Harris, 1964, no 101). This, as well as the plan of 1694, indicates that each compartment was an enclosed garden in its own right, being connected to the others by doorways and flights of steps. In at least two of the southern line of compartments, massive cross-scarps indicate that there were considerable internal differences of level. The importance of the terraces and other level changes, though partly a constructional element of the gardens, was also vital in terms of the aesthetics of the original design and the way in which they were intended to be viewed. A further advantage, particularly in the exposed maritime position in which the gardens lay, would have been to achieve better protection for, and to allow a greater diversity of, plants.

The only part of the original walling of these gardens that survives is a length along the northern side of the northern compartments (Fig 6). This is, therefore, among the earliest examples of surviving brickwork in Cornwall, the best known from the 17th century being at Ince Castle, Saltash (Clifton-Taylor, 1983, 30).

In outline the surviving earthworks correspond well with the 1694 plan, but there are significant differences in the details of some of the compartments. In addition there are discrepancies between the plan and both the copy of the pre-1694 painting and the 1716 drawing, which may indicate either artistic licence in the illustrations themselves, or that alterations to the layout took place between 1694 and 1716.

The north-eastern compartment was originally the outer court fronting the house. In 1716 it was apparently a featureless area enclosed by brick walls with a gateway on the east through which the approach drive entered. On the west was a balustraded revetment wall with a broad splayed central flight of steps leading to the front entrance of the house. Now, though the northern side still survives



Fig 5 Stowe: aerial photograph from the north-east, April 1987, serial no CAU/ABP/F11.71; NMR no APR 2352/5/72. (S. Hartgroves, Cornwall Archaeological Unit. Copyright Reserved).

as a brick wall, the eastern side has been robbed and is marked only by linear hollows. The footings of the southern wall are visible as parchmarks on air photographs while the western side is edged by a massive scarp with a central bulge, the latter marking the position of the former steps. Above the scarp is a parchmark, visible on air photographs, which indicates the line of the balustraded revetment wall. Within the interior of the compartment one slight linear scarp can be identified representing the southern side of the approach drive. Other scarps appear to be of more recent date.

The next compartment to the west was the site of the house itself, which is described separately (*see below*, p 120). However it seems that the house did not occupy the full area of the compartment and according to the 1694 plan the central part of the western side contained an axial path running west from the west front of the house with a square parterre on each side. Nothing of these survive on the ground, though the western edge of the compartment is marked by a double scarp, implying the existence of former steps.

The western end of the adjacent compartment was occupied by the detached service block which is also described separately, but whose southern half and part of the northern end of the western side are still recognizable as two banks with robber trenches on the outer sides. The 1694 plan shows that the eastern half of this compartment was divided into four rectangular parterres separated by four axial paths. That running east to west is still marked by a broad straight linear hollow. A modern bungalow now occupies the northern end of the compartment.

The north-western compartment has no earthwork remains that can be interpreted as part of the original layout, and the 1694 plan is unclear at this point beyond suggesting that there were some rectangular areas of planting. On air photographs, however, two short lengths of almost parallel



Fig 6 Stowe: seventeenth-century walling to north of the site of the 1670s house. (RCHME Crown Copyright)

east to west parchmarks appear to indicate the axial path or drive that must have existed here. In the north-western corner, and built into the late 17th-century brick wall which extends along the northern side of the whole block, is a small cottage, described below.

All four southern compartments on the rising ground of the valley sides contain well-preserved details indicating their original arrangements. That to the south-east is shown on the 1694 plan as divided into at least seven rectangular parterres of various sizes with, perhaps, a pond on its eastern side and two smaller ones on the south. The 1716 drawing shows a quite different layout within the enclosing walls with a formal walk around at least three sides and a central, probably grassed, square, planted with clipped bushes and a small columnar tree, probably a juniper or yew. Espalier fruit trees line the western wall which also has a doorway and a double flight of steps leading into the next compartment to the west. In contrast the copy of the pre-1694 painting shows a circular central feature here, presumably that in the compartment to the west, wrongly positioned. On the ground traces of linear scarps, now too degraded to be coherent, and a pair of rectangular hollows on the southern and eastern sides which may mark former ponds, suggest that the 1694 plan is perhaps the more accurate depiction. However, the complex double scarp and its central projection which mark the eastern side of this compartment might indicate that the steps and doorway shown on the 1716 drawing did indeed exist, and that the layout had perhaps been simplified by that time.

The compartment west of the latter is shown on the 1694 plan with a central circular feature surrounded by a pathway from which radiate four paths linked to a walkway around the edges of the compartment. The 1716 view also shows a central circular feature, perhaps grassed, with a tall clipped shrub or small tree, possibly a yew or juniper, in the centre. Traces of the outer walkway

and one parterre are visible. On the east-facing wall are espalier fruit trees and a central doorway leading to the next compartment. The copy of the pre-1694 painting shows much the same layout, but mistakenly positioned in the compartment to the east.

Today the interior of the compartment is occupied by a central circular depression, possibly a former pond, 12.3 m in diameter and defined by a low bank, the circular path depicted in 1694. From it radiate four banks, almost certainly the paths shown on the same plan. Part of the surrounding walkway is also visible, as is a short path which extends northwards to a position which would have been the central point, and thus a doorway, on the southern front of the house.

The 1716 drawing also shows an elaborate hexagonal or octagonal single-storey building with openings in all sides and with a cupola capped with a ball finial, in the south-eastern corner of this garden. This was a pavilion or summer-house sited high above the enclosing walls in order to look over the gardens and the countryside beyond. The 1694 plan does not appear to depict the summer-house, though it is shown on the copy of the pre-1694 painting. That it was actually built is confirmed by a pronounced circular flat-topped bulge at the eastern end of the broad terrace that marks the southern side of this compartment. This terrace indicates that there was a high-level walkway, presumably brick-reveted, which ran the entire length of the southern side of the garden block; the summer-house was, therefore, sited at its eastern end. The scarp marking the western side of the compartment has a pronounced hollow in it, which indicates the removal of a substantial flight of steps. The overall form of this compartment as well as its position in relation to the former house shows that it probably functioned as a privy garden.

The next compartment to the west is shown with a simple rectangular layout in 1694 with four parterres or flower-beds separated by axial paths, and surrounded by a walkway. The ground evidence confirms the 1694 plan, having both the four parterres and the paths and walkways visible as low scarps. However, as a result of the difference in height across the compartment from north to south, the east to west axial path is actually a terrace scarp, which divided the compartment into two separate parts. The same is true of the south-western compartment which also has an axial terrace path across it. There are some indeterminate scarps on the upper half which may be the remains of flower-beds, and even more fragmentary scarps in the northern part.

On the northern side of the main block on the almost flat top of the ridge between the valley in which the house and gardens lay and the valley to the north, a marked east to west scarp defines the northern side of an extensive platform cut down 1.2 m into the natural ridge. At least part of this scarp keys in with the compartments to the south: a dog-leg aligning well with the eastern front of the house. The area to the south of the scarp is devoid of surface features. The 1694 plan depicts a long west to east rectangular featureless area here, but it is not clear either how it was bounded or what function it performed. The area on the plan does not coincide with that bounded by the scarp; the former extends further north but not so far to the west. The interpretation of this area is made more difficult by the fact that nothing is shown here on the 1716 illustration, though the copy of the pre-1694 painting shows a long single-storeyed building with a central door surmounted by a wide pediment, stylistically very similar both to the adjacent house and to its service building. A horse is shown in front of the building. Trinick (1979, 94) suggests that the building was perhaps the stable block for the earlier house at Stowe and was demolished by 1694.

This suggestion is inherently unlikely. The style of the building indicates that it is the same date as the 1670s house. It certainly could not be as early as the 1620s. Thus it may be that it was erected at the same time as the main house but had been demolished by 1694. However, there are good grounds for assuming that the stables of the main house lay elsewhere and if this argument is accepted then another contemporary stable block would be unnecessary. It must be, therefore, that either the copy of the painting is wrong or that the building had only a brief existence, possibly associated with the levelled area of the ridge on which it stood. It is also possible that the building was proposed but never built (National Trust Vernacular Buildings Historical Survey. Ref S1/23e).

The 1670s house (Figs 4 and 7)

The house which forms the focus of the elaborate gardens described above was demolished in 1739. The 1694 plan, the copy of the pre-1694 painting, the two 1716 views, the surviving earthworks, parchmarks visible on air photographs and a few pieces of written information (Trinick, 1979 and 1986-87), give considerable details of its appearance and layout. Nevertheless future excavation and perhaps the discovery of other documentation may confirm or modify the following account.

As already noted the house stood within an almost square compartment on the northern side of the garden layout. At several places on this platform stone and brick footings have been exposed. These enable the north-eastern corner and the southern side of the house to be located. In April 1992 repairs to the revetment wall on the northern side of the northern line of compartments revealed a section of the brick rubble core of the northern wall of the house and the splayed jambs of a doorway at basement level. The revetment wall had been rebuilt on the line of the external face of the northern wall of the house. The repairs also revealed part of the basement of the house itself, filled with demolished brick up to 2 m deep. Air photographs taken in July 1989 (CCR 5985, 20-26) revealed much of the ground plan of the house as parchmarks which indicate the existence of a central range with short cross-wings (Fig 7).

The actual design of the house, as one would expect from a man of the Earl of Bath's position and ambition, is clearly derived from Pratt's Clarendon House of 1665 and resembles, but is not as sophisticated as, Belton House, Lincolnshire of 1684. The use of metropolitan craftsmen, including the builder James Fitch, the brickmaker John Rumball and the carvers Stephen Chucke and his son, Michael, is also in keeping with the Earl's position at court and with the up-to-date design of the building.

The house was of brick with stone dressings and was two storeys tall with a basement and attics under a hipped roof. The plan consists of a central range of seven bays with two-bay wide wings at each end projecting one bay on the east and presumably one bay on the west (Trinick, 1979, 96; Markham, 1984, 227). There was a plinth and a platband at first-floor level; at the eaves was a dentilled cornice. The corners of the house had freestone quoins, not visible in the drawings, but recorded as being sold at demolition. On the east there was a pediment containing a coat of arms flanked by foliage decoration, but there does not appear to have been an associated break forward. The main east door was surmounted by a broken pediment. The windows had architraves without cornices and the dormers were gabled. On the roof was an octagonal cupola with dome and large ball and flanked by huge consoles. It may be that the cupola was intended as a viewing platform from which to see the vista westwards to the sea, and the approach drive eastwards to Kilkhampton.

The position of the cupola suggests that the main range was double-pile, as would be expected for a house of this scale, and this is supported by the axis of the principal garden to the south. On the other hand the parchmarks visible from the air do not indicate a west wall corresponding with a double-pile main range, and there are no earthwork indications either. A single-pile main range cannot, therefore, be ruled out. The basement storey was contrived so that it was a full storey on the east where the land fell away and presumably contained the kitchen and service rooms.

The parchmarks on air photographs allow some idea of the size of the house and, together with the 1716 views, also give some indication of its internal arrangements. The main range is shown as being some 9.2 m wide with a single internal partition. This defines the northern end of a 7.5 m long compartment on the south which implies a 12 m long hall in the centre and a second 7.5 m long compartment to the north. The southern wing, overlooking the principal or privy garden, can, in the absence of any other information, be assumed to have contained the principal suite of rooms on the ground floor. There are no parchmarks which show any internal divisions here, but the north to south axis of the privy garden led to a pedimented doorway and this possibly opened into the centre of the principal ground floor as occurs at the almost contemporary garden at Kirby, Northamptonshire. This southern elevation appears to have been of seven bays, so that the central

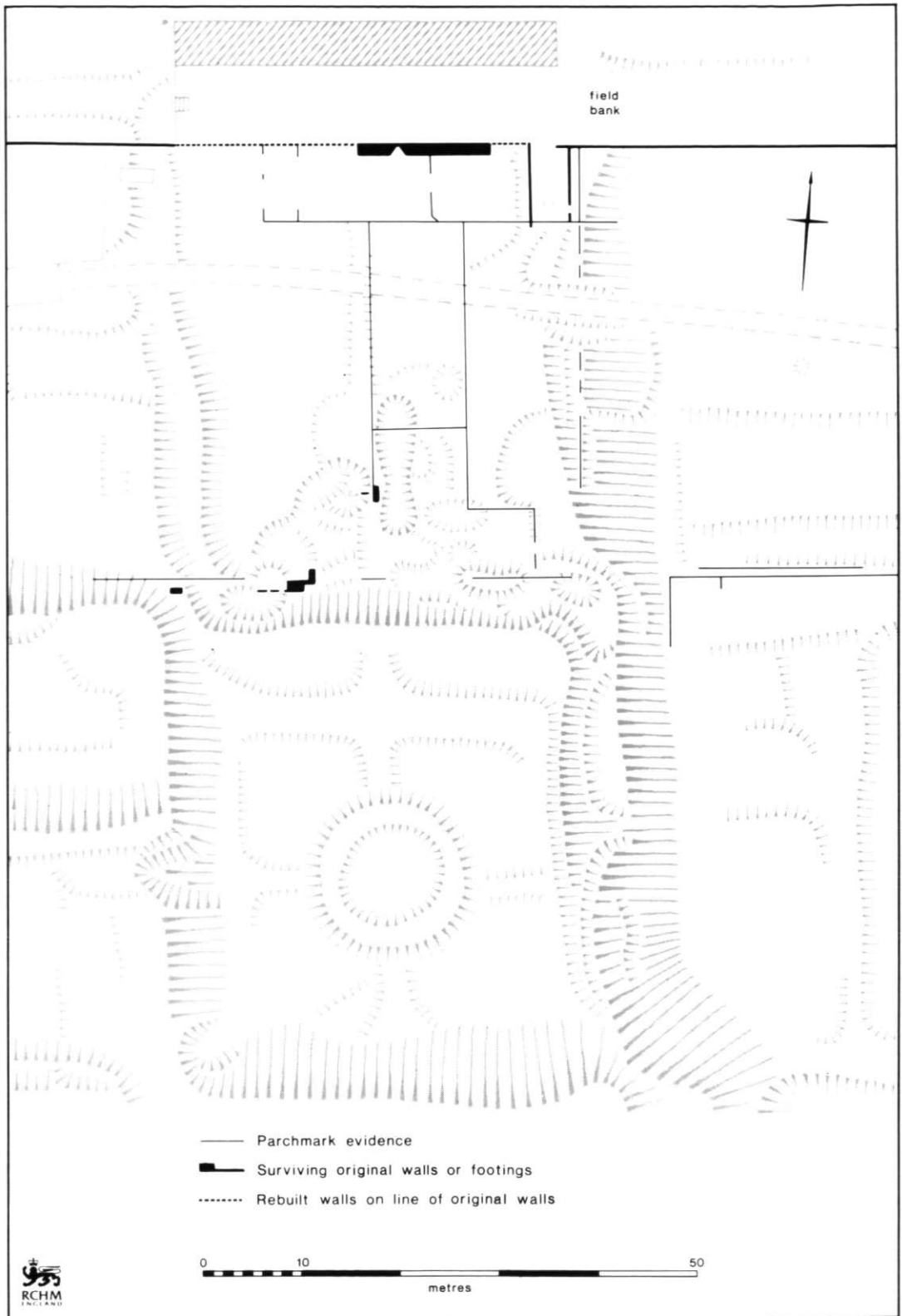


Fig 7. Stowe. The site of the 1670s house from a transcription of parchmark evidence recorded on CAU aerial photographs, serial nos CAU/ABP/F26.20-26, July 1989; NMR nos 5984/20-26. (RCHME Crown Copyright).

parlour or saloon would probably have been three bays long, leaving two bays at each end for other rooms. The northern wing should have contained service or minor rooms or possibly the chapel recorded in 1736 (Markham, 1984, 227), as at Belton. The uncertain pattern of parchmarks on the site of this wing is not therefore easy to understand.

Considerable quantities of fittings from the house survive in other residences in Devon and Cornwall and these appear to have been of sophisticated design and execution. The principal staircase had a carved and pierced balustrade while some of the internal doorcases had pediments (Trinick, 1979, 103; Markham, 1984, 227).

The Service Building

This building lay to the west of the house within the adjacent compartment. The surviving earthworks suggest that it was some 35 m by 20 m. The copy of the pre-1694 painting and one of the 1716 views indicate that it was a range of a single storey and attics with a central door and pediment, aligned through the main axis of the drives, house and gardens, and with gabled dormers in the hipped roof. It had several chimneys and probably contained the brew-house and laundry. It survived the demolition of the main house through its use as a farmhouse (*see below, p 125*), but the late 18th-century belief that it had been the kitchen is almost certainly erroneous, and was perhaps based on the presence of at least one large hearth. It was pulled down in 1787 but its southern end is still marked by earthworks.

The Cottage

A small brick cottage lies in the north-western corner of the 1670s rectangular block of compartments. It contains certain features, such as a large fireplace and internal brick-nogged partitions, which suggest a late 17th-century date (National Trust Vernacular Building Historical Survey. Ref S1/23f), although it cannot be correlated with the plan of 1694 and is not shown on any of the contemporary illustrations of the site. Its position within the angle of the 1670s layout, and the fact that it appears to reuse the brick garden walls in its northern and possibly its western sides, may indicate that it was constructed after the demolition of the 1670s house, in the period when the detached service building was being used as a farmhouse. It is certainly shown on a sketch map of the site which may date to the 1780s (Cornwall Record Office, A), when it is described as ‘the old stable’.

The ‘Tennis Court’

Immediately north of the line of the northern wall of the 1670s house is a long narrow rectangular area cut back vertically into the steeply rising ground and shown as such on the 1694 plan. At its western end it is revetted on the north and west by a wall of 17th-century brick up to 4.5 m high (Fig 6). A 19th-century lean-to animal shed has been built against the 17th-century brick wall. This walled area is alleged to be the remains of a Real Tennis court of late 17th-century date apparently based on the reference in Charles Kingsley’s *Westward Ho!* (1855) chapter VII. However, apart from its dimensions there is no evidence that it ever functioned as such and none of the surviving illustrations show any structures in this position. A sketch plan of 1750/1789 shows the revetment wall. It is much more likely that the area was merely a yard adjacent to the service rooms in the north wing of the house.

The Demolition of Stowe House

John Grenville, first Earl of Bath, died in 1701 a little more than twenty years after he had built Stowe. His eldest son is alleged to have shot himself in the same year, and though his grandson succeeded to the title and estate at the age of nine, he died in 1711. With his death the main branch of the Grenville family came to an end. The house ceased to be a principal residence and after a long legal dispute to the succession, it and its land passed to the Thynne family through the

marriage of one of the Earl's daughters (Morgan, 1969, 12). In 1736 the gardens were described as being 'in decay' (Markham, 1984, 228) and the house was demolished in 1739 (Trinick, 1979, 95 and 104). Many of the internal fittings went to other houses in Devon and Cornwall and have been traced by Trinick. Of the fate of the house itself there is additional evidence. An undated sketch map (Cornwall Record Office, A) of the northern part of the site, said to be of c. 1750 (Trinick, 1979, 97), but probably as late as 1789, marks the position of 57 heaps of bricks containing a total of 450,000 bricks. Other accounts (Cornwall Record Office, B) record the dispatch of lead pipes and sheeting to Bristol in July 1789, the existence of 1049 (318.1 m) feet of lead piping on the site and, in August 1789, the value of 'the bricks as they now stand at Stowe'. A further undated record (Cornwall Record Office, C) indicates that many of the garden walls still stood in 1787. All this suggests that much of the material from the demolition remained on the site until long after 1739. Certainly the detached service range survived until the 1780s (*see above, p 122*). It may even be that the house itself survived, albeit in a ruinous state, until the latter part of the 18th century.

The Earlier House at Stowe

There is no doubt that a medieval house existed at Stowe, at the centre of the Grenville estates. As has been noted, the documentary evidence indicates that by the 17th century there was a considerable residence on the site, which was demolished at or soon after the construction of the 1670s house. The problem is to locate the site of this house and, if possible, to establish its setting.

Trinick (1979, 100) suggested that the earlier house stood on the site of the present Stowe Barton farmhouse, and that it was replaced by the H-plan stable block depicted and named as such on the 1694 plan. Trinick also suggested that the earthworks in the valley to the west of the modern north to south road at the extreme western end of the site were associated with this earlier house. There can be no doubt that, in general terms, Trinick was correct, although the present investigation can refine his arguments.

The area to the west of the 1670s gardens is on a different orientation, and is strikingly different in character. It now forms a roughly rectangular area, bounded on the west by the modern road, on the north by a degraded scarp 2.5 m high on the northern side of the existing farm complex, and on the east and south by field walls. The rectangular nature of this layout is evident on the 1694 plan, although at that time it extended further south into what is now arable land. The interpretation of the field evidence through the present investigation suggests that this rectangular area was the setting for the pre-1670s house.

The northern and north-eastern part of the existing rectangular area is occupied by Stowe Barton farmhouse and its associated buildings (Fig 8). Most of the latter are recent, or at least of 19th-century date. The T-plan farmhouse itself is older despite the present main south elevation which is largely 19th-century in date. Although the farmhouse is difficult to date because of its stone rubble construction and the lack of original architectural features, its position and T-shaped plan suggest that it is, in fact, the southern half of the H-shaped stable block shown on the 1694 plan. The date of the stable block has been assumed to be late 17th-century and contemporary with the construction of the mansion, mainly because it was depicted in 1694. It may be, however, that its origins are in the earlier part of the 17th century and that, in fact, it is the stable recorded as being built by Sir Bevil Grenville in 1621, no doubt enlarged and embellished at the time of the construction of the 1670s house.

The remainder of the rectangular area is covered by earthworks, not all of which are interpretable. In the south-east the rising ground is dominated by the wide cutting through the ridge for the vista from the 1670s house. The cutting seems to have truncated earlier features, perhaps of a garden, fragments of which exist as low scarps on either side of it. On the north the 1694 plan certainly shows garden-like features, although these are not clear. At the western end of the cutting its scarps turn abruptly north and south, and these latter may mark the edge of a pre-vista terrace running north to south. The northern scarp has in turn been truncated by a later field bank. The



Fig 8 Stowe Barton farmhouse from the south. (RCHME Crown Copyright)

southern scarp turned south-west and though extremely mutilated and partly quarried away, becomes a massive double terrace extending almost to the modern road. Halfway along its length, however, the upper part of this terrace turns south-south-east in the form of a slight hollow defined by banks on either side. The feature is cut by a later field bank at its southern end and a slight mound protruding from beneath the field bank may mark a former structure. It coincides with the south-eastern corner of a small enclosure shown on the 1694 plan. The double terrace continues westwards, and opens out to form a platform with slight traces of a structure upon it.

The area to the south of these earthworks is shown as a featureless roughly rectangular enclosure on the plan of 1694, within the overall rectangular form of this part of the site. As already noted most of this area is now modern farmland which has been improved; the only earthwork survival, therefore, is a degraded, curved scarp with brick and slate visible in the ploughsoil. However, some 100 m to the east, in the western projection of the field occupied by the 1670s garden remains, is a series of low terraces with subdivisions. These are overlain by later ridge-and-furrow.

All the above earthworks can best be interpreted as part of a garden layout predating the late 17th-century garden. Despite their damaged nature, the broad terrace, embayment and overall form of the layout can be compared to similar garden features of the late 16th to mid 17th century elsewhere (RCHME, 1975, 104; RCHME, 1991, 176-7 and 198-9; Everson, 1991, 7). They are almost certainly the remains of the gardens of the pre-1670s house, whose position can thus be suggested as having been to the south of Stowe Barton farmhouse, and presumably on the same alignment as both the farmhouse and the double terrace to the south. The area below the double terrace which extends north to the farmhouse is more or less level and is covered by low, amorphous scarps. A raised drive curves from the south-western corner of the field through this

area, and may be contemporary with the 1670s house. To the north and visible in a modern farm track are areas of cobbling which may also be contemporary with the 1670s house. The field was called 'The Green' on the Tithe Apportionment (Cornwall Record Office, 1840). If the earlier house did stand in the position suggested above, there would have been an uninterrupted view westwards to the sea, as the western side of 'The Green' is marked by a revetment wall 3.8 m high, beyond which the land falls steeply away in a separate valley.

In the head of this valley is another group of earthworks which Trinick associated with the earlier house. They are now altered and damaged due to their subsequent use as gardens for the existing farmhouse, but are clearly the remains of another 17th-century or earlier garden, presumably associated with the earlier house. They are described as a 'garden' on the Tithe Apportionment (Cornwall Record Office, 1840). It is possible that the area was originally some form of water garden or privy garden. If the former, then water was readily available from wells in the field to the south, called 'Well Park' in 1840, and from a naturally occurring supply to the east. This latter has been formalised into a rectangular pond which is known locally as the 'carriage wash' and forms a fine example of a carriage-washing pit, presumably of late 17th-century date.

The lower or sunken garden is precisely rectangular with sides of 77 m and 48 m. It has been levelled into the hillside and has a retaining wall 3.8 m high on the east. The western side is a substantial flat-topped bank which originally functioned both as a walkway from which to view the garden and as a dam. The walkway continues east around the northern and southern sides. The northern third of the interior is now a garden for Stowe Barton farmhouse. Part of it is a sunken walled garden, perhaps formerly a pond. To the south are the earthwork remains of another pond which has been subdivided into four, and to the south again are the remains of a further pond. Both the elaborate nature of these ponds and their symmetry is not evident on the plan of 1694 which only shows three narrow ponds within the area, and describes it as 'ponds and pond orchard'. These may well be the ponds referred to in 1621. There can be little doubt that this garden formed part of the surroundings of the earlier house. Furthermore, its central west to east axis may have articulated with the earlier house, and as such would provide a clue to its exact position.

Immediately to the north of the garden and west of Stowe Barton farmhouse is a substantial platform 0.8 m high defined by a much mutilated double scarp on the northern and western sides. On the platform are the remains of a substantial building at least 25 m long and 9 m wide. It is represented by two low, parallel banks on the same alignment as the garden to the south. It has been suggested that this is the site of the chapel of St Christina, recorded in the 15th century (SMR No: SS 21 SW 63). The interpretation is presumably based on the fact that the field was called 'Chappell Park' in 1694 and 'Chapel Park' in 1840. At the latter date the area of the building was separately enclosed and called 'Potatoe Plot'. Only excavation could ascertain the function and date of this building.

It seems from the foregoing description that the pre-1670s house and its associated stables and gardens existed in this western part of the site. When the new house was constructed in c. 1679, the old house was demolished and a drive or drives constructed across its site to give rear access to the new house via the vista cutting across the intervening ridge. The older stables, however, continued in use.

The final changes to the area are recorded in a series of late 18th-century accounts, already noted above, as well as others (Cornwall Record Office, 1787a, b; Cornwall Record Office, C). During the late 1780s plans were made to demolish the only surviving part of the 1670s building complex, the detached service building. By that time the building was being used as the farmhouse of Stowe Barton. However, in 1787 it was described as being in 'a very ruinous state'. It was decided to demolish it and 'make a farmhouse out of part of the stables and put the rest into good repair for barns, stables and out-houses for Stowe Barton'. Thus, in March 1787, a contract was signed to convert 'the buildings at Stowe.....which were originally used for stables' into a farmhouse.

The medieval centre of the Grenville estates at Stowe, like many feudal estates, began as a

collection of contiguous farms (Ravenhill, 1972, 66). It flourished during the 17th century, beginning with a shadowy yet great residence by 1664, and culminating in a short and glorious period towards the end of the century. The 18th century saw the wheel turn full circle with the destruction of the great house and the gradual reversion of the estate centre to a more mundane agricultural function.

Method

An investigation of the site was carried out by staff of the Royal Commission on the Historical Monuments of England Exeter office during the winter of 1991-92. The site was surveyed at 1:1000 scale using a total stations instrument. Field data, including all modern detail and some archaeological slope detail, was captured with this instrument. Field completion of the archaeological detail was carried out with fibron tapes and an optical square using normal graphic methods.

Advice on the interpretation of the standing structures and those represented in the pictorial evidence was given by staff of the Royal Commission's Cambridge office. Transcription of the parchmark evidence recorded during aerial reconnaissance by Cornwall Archaeological Unit (CAU) in July 1989 was carried out by the Royal Commission's Air Photographic Unit at Swindon, using metrically accurate control supplied from the ground survey.

Completed field plans, air photographic transcriptions, a report and ground photographs have been deposited in the National Monuments Record (NAR no: SS 21 SW 14).

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Bibliography

Unpublished documents

Cornwall Record Office, A. DX 117/2/13.

Cornwall Record Office, B. DX 117/2/1, 2, 14 and 19.

Cornwall Record Office, C. DX 117/2/18.

Cornwall Record Office, D. DX 117/2/9.

Cornwall Record Office, 1787a. DX 117/2/5.

Cornwall Record Office, 1787b. DX 117/2/4.

Cornwall Record Office, 1840. Tithe Map and Apportionment, Kilkhampton Parish.

Henderson MSS. East Cornwall, 215.

The National Trust Vernacular Buildings Historical Survey.

Printed sources

- Clifton-Taylor, A., 1983, Building Materials, in Pevsner, N., *The Buildings of England, Cornwall*
- Everson, P. 1991, 'Field survey and garden earthworks' in *Garden Archaeology*, CBA Res Rep 78, 6-19, ed. A.E. Brown
- Geological Survey, 1980, Sheets 307 and 308
- Granville, R., 1895, *History of the Granville Family*
- Harris, J., 1964, 'The Prideaux Collection of Topographical Drawings' *Archit Hist*, 7, 17-108
- Lysons, D. and S., 1814, *Magna Britannia III*, Cornwall
- Markham, S. (ed.), 1984, *John Loveday of Caversham 1711-1789. The life and tours of an Eighteenth-century onlooker*
- Morgan, E., 1969, *Sir Bevill Grenville of Stowe*
- Polsue, J., 1867, *Parochial History of the County of Cornwall*
- Ravenhill, W., 1972 'Joel Gascoyne, a Pioneer of Large Scale County Mapping', *Imago Mundi*, 26, 60-70
- RCHME, 1975, Royal Commission on Historical Monuments of England. *An Inventory of the Historical Monuments in the County of Northampton* vol 1
- RCHME, 1991, Royal Commission on the Historical Monuments of England. *Change and Continuity: Rural Settlement in North-West Lincolnshire*
- Stoate, T. L., 1981, *Cornwall Hearth and Poll Taxes 1660-1664*
- Trinick, M., 1979, 'The Great House of Stowe', *J Royal Inst Cornwall*, 9, 90-108
- Trinick, M., 1986-7, 'The Great House of Stowe – An Addendum', *J Royal Inst Cornwall*, 10, part 1, 58-61

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Granite towers on St Mary's, Isles of Scilly

JOHN GOODWIN

There are five granite towers on St Mary's which are said to have been built by the Board of Ordnance two hundred years ago to defend the island against attack. Their true history is both diverse and different and begins with Admiralty interest in the neighbouring island of St Martin's.

When war with France broke out again in 1793 one of the measures taken to ensure the protection of mainland Britain was the setting up of naval signal posts every few miles along the coast. Their purpose was to signal the route of a French invasion force to the nearest naval squadron or port. Between the North Foreland in Kent and Land's End signal posts were established in 1795, stood down in 1802 during the temporary Peace of Amiens, and reopened when war began again the following year. The system did not at this time extend to the Isles of Scilly which lie 40km off the Cornish coast¹. As the war continued attacks by French privateers on merchant ships sheltering near the islands whilst awaiting favourable winds became a dangerous nuisance. In February 1804 Captain Terence O'Neill in the sloop Nimrod on regular patrol between the Scillies and Cape Clear in southern Ireland told the Admiralty that if a signal post was set up on one of the islands it would widen the range of his patrol and enable him to reach the enemy quicker². The Admiralty asked Captain Edward Marsh, the senior naval officer in the area, for a report and he told them: *St Martin's Head, Scilly, is the best site for a signal post and I conceive the establishment of such a signal post will be attended with material advantage*³. The Admiralty agreed and on 20th March asked the Navy Board to erect one, but because of the distance and building difficulties the work was to take several months⁴. It was not until September 1804 that Thomas Rowe wrote from Penzance to the Plymouth naval yard to tell them that the signal house on Chapel Down was ready and the mast in place⁵. Lieutenant Collins, a midshipman and two seamen were appointed to staff the station. Their duties were to watch for the enemy and signal his position to naval vessels patrolling around the islands. This was done by using a coded combination of flag, pennant and ball signals to display about 59 set messages⁶. Although most of the mainland signal houses were built of timber and canvas because of its exposed location that on St Martin's was constructed from granite blocks quarried locally. Of its three rooms one was used by the lieutenant, one by the men and the third served as a store for the flags and ropes. The signal mast was 24m high and was placed a few metres from the signal house. St Martin's was different from the majority of mainland signal stations in that because of its isolation it could communicate only with ships and not with other naval land signal posts of which the nearest were at St Levan and Pendenick Point near Land's End⁷. It was to remain operational for the rest of the war with France. Any vessels seen were carefully recorded in a journal which was sent every week to the Admiralty in London. In 1807 Lieutenant John Trinder was put in charge and he remained until the station closed. Like many men appointed to this duty he was partially disabled. Whilst engaged in disembarking the British army in Egypt six years previously he had been hit by a charge of grapeshot in the legs⁸. Within a year of his arrival on the island he married the eldest daughter of Mr Mathias Nance who was grandly described as the governor and commander of the island of Tean; an extravagant claim as it was inhabited by goats and seagulls⁹.

Most of the signal stations on the mainland were shut down in December 1814, but St Martin's was kept open until a new but different one on Newford Down was expected to be ready a year later. If the signal station on St Martin's had given such satisfactory service why did the Admiralty

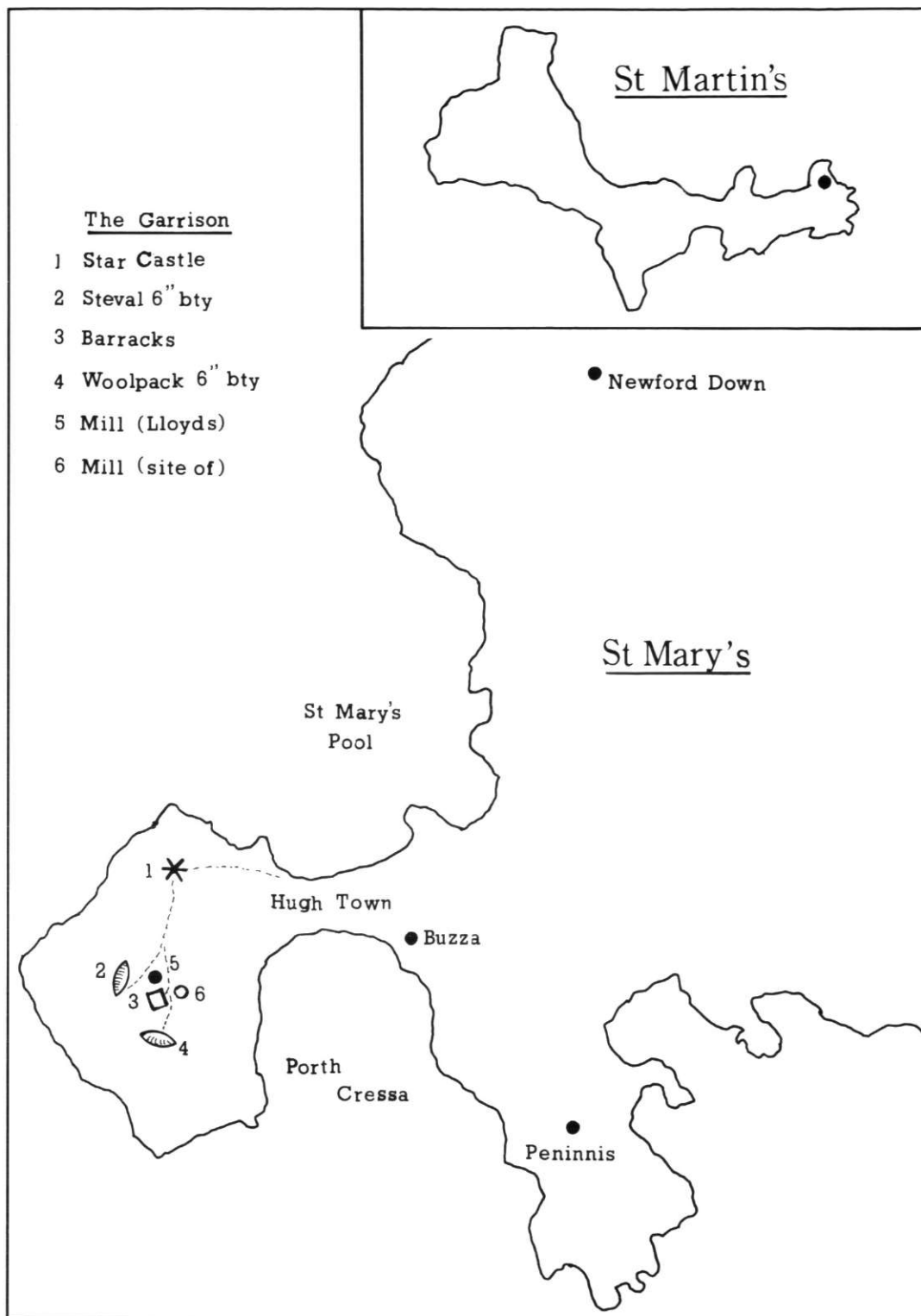


Fig 1 Location of towers on the Isles of Scilly



Fig 2 Chapel Down, St Martin's. The Seamark dominates the ruins of the Admiralty signal post built in 1804. Photo: author, 1992.

decide to build a more expensive version on St Mary's when the war with France was almost over and nearly all the signal posts on the mainland were being closed down? The answer lies in correspondence between Lieutenant General Vigoureux, military governor of the Scillies, and the Admiralty two years previously. In May 1812 he had asked for a new signal station to be built on Newford Down to facilitate communications between the military on Garrison Hill, St Mary's, and the nearby islands as well as the naval forces at sea¹⁰. The Admiralty, apparently willing to accede to the Governor's wishes passed the matter to Sir Richard Calder commanding the Western Squadron. He asked Captain Parish of HMS Foxhound and Lieutenant Trinder from the St Martin's signal post to report on the suitability of a site for a signal tower. It was agreed that Newford Down on St Mary's which stands 51m above sea level would command a wide sweep of the horizon around the islands and would enable signals to be sent across St Mary's Pool to the batteries below Star Castle¹¹. The Admiralty sent orders to the Navy Board to build the Newford Down station in September 1812 stipulating that it was to be a tower suitable for being fitted with a semaphore machine on the roof¹². This new form of signalling was in the process of being fitted into signal stations in Kent and Sussex. It is at this point that a long delay occurred. Seven months later in response to enquiries about progress Lieutenant Trinder told the Admiralty that no work had started and nothing seemed to be known about the project on the island¹³. The reasons for the delay are not known and it was not until 9th October 1813 that a notice appeared in the Royal Cornwall Gazette inviting contractors to inspect the plans, for a tower, at Plymouth Dockyard and submit tenders by 1st November¹⁴. This led to a contract worth £1024.55 being awarded to a mainland firm, Messrs Hambledon, for the erection of a tower 12m high. It was to be built of granite blocks quarried locally and had three floors linked by a stone staircase running up one side. The building work was probably finished by 1814, but the tower was not taken into service because in the summer of the next year the Admiralty and the Lieutenant Governor were pressing for the tower to be finished, *so as to render it comfortably habitable*. The reason for the delay possibly resulted

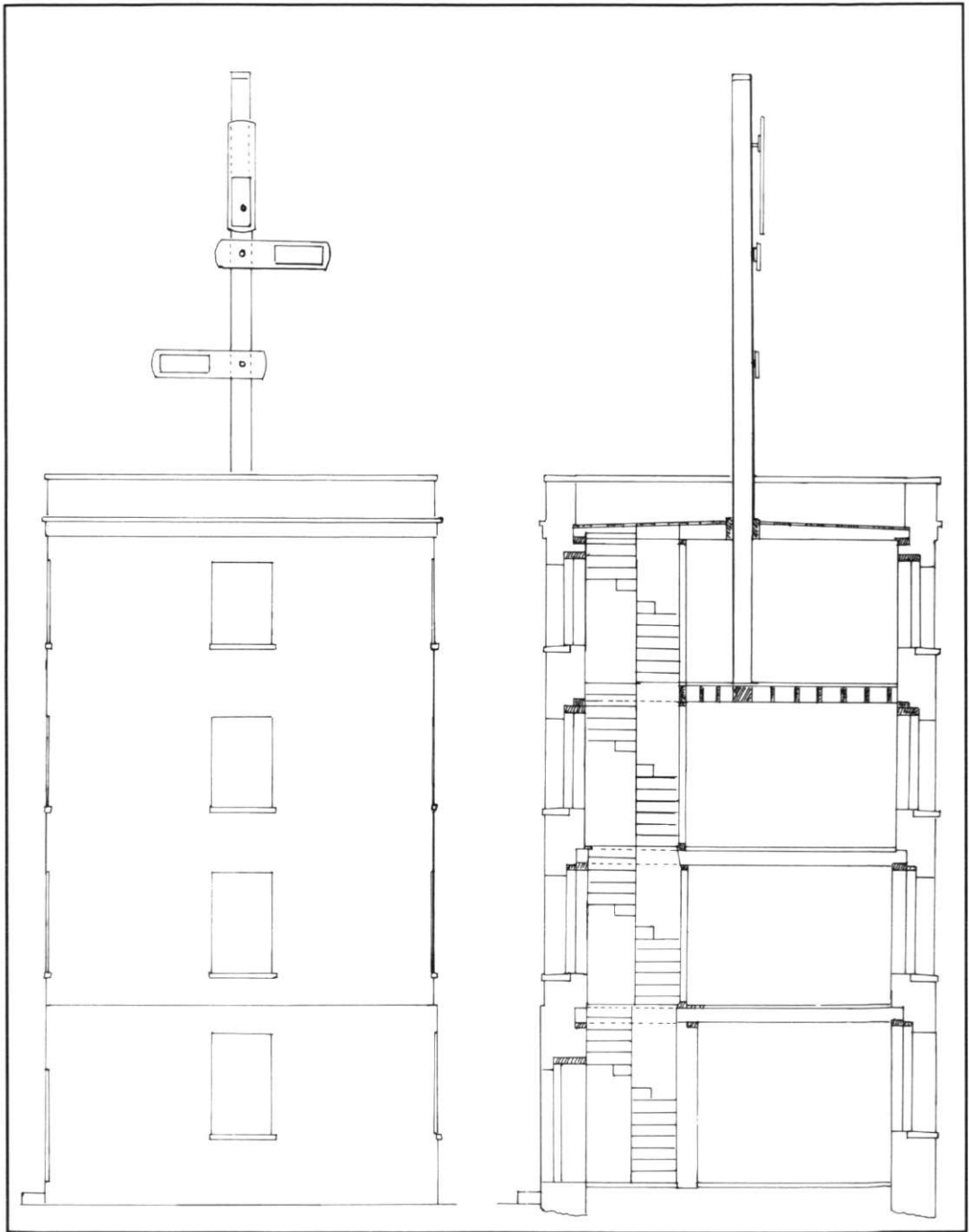


Fig 3 Elevation and section of Newford Down Semaphore Tower. Each floor has a closet under the stairway. From drawing captioned '... a signal tower proposed to be erected at Newford Down...' PRO ADM 140/655.

from the end of the war with France and uncertainty over policy for the future of the entire coast signal service. The Admiralty were trying, unsuccessfully as it turned out, to persuade either the Treasury or the Coastguards to fund the service, claiming it would help to curb smuggling.

To complete the tower and put it in good order Messrs Hambledon were then paid a further £338.20, part of this going towards hauling the semaphore apparatus up the hill from the beach and fitting it into the roof of the tower¹⁵. The correspondence suggests that initially the tower was to have a French type three vane semaphore, but that this had been returned to store and an improved (Sir Home Popham) two vane machine supplied in its place from the Sheerness naval yard in July 1815¹⁶. Thus it was not until November of that year that Newford Down was ready for service. Lieutenant Trinder was transferred from the old post on St Martin's which at first it was thought might be retained although this was not to be¹⁷.

At his new station the lieutenant soon found a lot to complain about, and within a week or so wrote to the Admiralty and asked for a privy and coal store to be built. He said the masonry work on the tower leaked in a gale, and that the rods and chains of the semaphore had broken, injuring the hand of his midshipman. Smoke from the fires blew back down the chimneys and chimney pots were wanted to prevent this happening. There were no shutters on the windows, and the cills had been made so high that his men had to stand on a chest to use a telescope. Finally, he said that because there was no doorbell visitors threw gravel at the windows and had already broken three panes of glass. The Admiralty, concerned that they were paying for workmanship which had been defective, ordered an inspection, but their agent reported that all the fuss and noise made by Lieutenant Trinder could be put right by the contractor for £5.00. They authorised payment of up to £17 for a coal shed and £15 for a privy.

Some of the Admiralty comments suggest that they found the persistent correspondence from Lieutenant Trinder, however reasonable, something of a nuisance. His veracity was also doubted over a matter involving the diligence with which he carried out his duties. Certainly during his short stay at Newford Down he complained repeatedly: about the supports for the semaphore which had sunk, and about the shortness of the signal arms which could not be seen for more than six miles distant. He found the signal codes too intricate and was concerned about lights from the unshuttered windows of the tower which he thought misleading to shipping. As to his staff, he found them lax and untrustworthy on lookout duties, and accused his midshipman with four months service of not knowing a merchantman from a warship. A signalman, George Gibbart, had lost both legs through disease, suffered crippled hands, and was incapable of doing much¹⁸. In an age of naval patronage such appointments out of loyalty and compassion were usual, and the Admiralty probably thought that the lieutenant should have been pleased to have a job and got on with what many will have thought was an easier life than one afloat. It is hard, therefore, to escape the conclusion that the Admiralty found Newford Down a worrying and expensive burden with perhaps little advantage now that peace with France seemed permanent. On the mainland at this time they were concerned about whether a coast semaphore system west of Plymouth could really be justified. Eventually in January 1816 they were to decide that if war broke out again portable semaphores would suffice so that permanent stations were not necessary¹⁹. Even Lieutenant Trinder in one of his many letters to the Admiralty wrote in September 1816 about his doubts as to whether the station as then operated was of much use. The Admiralty agreed and Newford Down was closed down in December 1816. Lieutenant Trinder arranged the discharge of himself and his men and returned the semaphore and stores to Plymouth and the signal code books to London²⁰.

Under the terms of the lease with the Duke of Leeds the signal tower reverted to the custody of his steward until it was wanted again by the Admiralty. However, it was to be taken over later by the Coastguard. In 1903 a wireless mast and receiving office were built nearby and five years later a telegraph house was erected on the roof of the tower by the contractor, Arthur Carkeek²¹. During this latter part of its history it became known as Telegraph Tower and it still stands today near the junction of Pungies Lane and Telegraph Road (Fig 4).



Fig 4 Newford Down, St Mary's. The Admiralty semaphore station, now known as Telegraph Tower. Photo: author, 1992.

As this account makes clear Telegraph Tower had no connection with the Martello Towers which were copied from the design of defensive Corsican watch towers which originated in the Mediterranean and were built in England and the Channel Islands during the war with Napoleon. The claim that Telegraph and other similar towers on St Mary's were Martellos seems to have been made first by the noted historian Bryan St J O'Neil in a guide to the fortifications on the island, and repeated in many other publications of repute since then²². Apart from adequate supporting evidence to the contrary they are neither sufficiently strong or large enough to serve as gun batteries and their sites serve no strategic purpose. From time to time it was suggested to the War Department that Martello towers should be built on the Isles of Scilly, but there were always more urgent priorities and none were ever sanctioned. Two towers which came closest to being adapted for the protection of St Mary's stood at the south-west end of the island on the level crest of an 800m long peninsula named the Garrison. This had long been a principal fortified military position with Star

Castle, a tiny and useless 16th century fortlet, at one end overlooking the harbour and houses of Hugh Town. Around the perimeter of the headland batteries and breastworks command the sea approaches. On top of the Garrison and 320m distant from the castle stood two straight-sided granite towers 48m apart. These circular towers had a diameter of 4m, their unbattered walls rising 9m from the ground. Neither were built as part of the defence works on the Garrison. They were windmills erected during the reign of Elizabeth I to serve the soldiers and townsfolk, there being no other mills at the time. These mills were working until the 18th century when a dispute arose between the owner and the military governor over rights and times of access following which a new mill was built on Peninnis Head. The mills on Garrison were abandoned and in his *Survey of the Ancient and Present State of the Scilly Isles* John Troutbeck wrote in 1796:

In the midst of a level plain covered with green turf extending to the southward of (Star) castle are standing two circular walls of windmills formerly in use before the mill on Peninnis was built... The Walls of these old mills are seen at a great distance and from the castle apartments look like obelisks, and add improvement to the prospect.

In August 1803 Captain David Lyman²³ of the artillery arrived from the mainland to review the island's defences because of the expectation of French attacks. In his report to General Simcoe of the Western Military District he commented on the two windmills:-

In front of (Star) castle, on that part where an enemy would make his approach after the lines were carried, at a distance of about 350 yards are two stone towers or old windmills at 50 yards distant from each other. Here ought to be a redoubt or half moon battery extending from one or other of the towers which would serve as blockhouses or bastions to flank and cover the work²⁴.

A month later he wrote again recommending that three round towers should be built instead. The first of these he wanted on Mount Todden (Toll's Island) where there was already a battery known as Pellew's Redoubt. The second was to be placed on top of Bassu (Buzza) Hill on the eastern side of Porth Cressa bay and about 500 yards (457m) from Star Castle. Finally he proposed a third tower on *the height of the peninsula where the lines of the Garrison are which surround the Castle nigh the two ruins of windmills*. Each tower was to be 20ft (6m) high and the same in diameter with walls 5ft (1.5m) thick at the base and 4ft (1m) at the top. It is worth mentioning that the martello towers built on the south coast of England were nearly double these measurements. Captain Lyman estimated the cost at £74 10s 0d (£74.50) made up of separate amounts for carpenter, mason and smith's work²⁵.

Twelve months of indecision by military officers on whether to build these towers then followed. It is clear from the correspondence that the risk of a French attack on the Scillies was thought to be low, but the political ructions which would follow if it happened and was successful would be tremendous. Few of those involved in making a judgement had been to the islands and so their reports were written to protect their backs. At the hub of the matter was Captain Lyman who wrote from time to time to emphasise the danger and complain that nothing was being done. As well as more fortification he also wanted 300 extra men for the garrison and abolition or control of the Sea Fencibles, a voluntary force under the command of Captain Marsh, the senior naval officer on St Mary's. Major Lyman probably weakened his case and upset his superiors when he asked to be appointed supreme commander for the islands²⁶.

Captain Marsh had been informed by the Admiralty of Major Lyman's proposals for towers and disagreed:

Building round towers will be attended with great expense and delay for all the materials but stone must be brought here. After the enemy has landed he will not regard them as his objective will be to capture the garrison which will be diminished in strength in proportion to the number of men shut up in the towers²⁷.

Both officers were also at loggerheads over control of the Sea Fencibles, and the protection given to the islands by the navy. Major Lyman had made a critical and misleading report about French raiders which had alarmed Whitehall and annoyed the Admiralty. General Simcoe gave

some support to Major Lyman's request for towers and more men, but wrote cautiously: ... *but how far the measures proposed can effect the security of the Scilly Isles must depend on a variety of military, naval and political questions that need a more expensive investigation than I have materials to supply*²⁸.

In October 1803 the issue was referred to General Mercer of the engineers for his views. He also had reservations about the suggested sites for the towers and regarding costs wrote: ... *Major Lyman's estimate is very low and I think double the sum would not be sufficient*²⁹. At this date plans for the English martellos were still on the drawing board, but a cost of £3,000 a tower was expected³⁰.

Due to the political sensitivity of the issue the Commander-in-Chief, Frederick, Duke of York, consulted Lord Hobart, (Secretary of State for War) and William Marsden, (Secretary at the Admiralty), but a decision was deferred yet again while another engineer officer was despatched to St Mary's for a report on the land defences³¹.

Meanwhile Captain Marsh had suggested that better protection could be afforded to the islands by sending carronades which, mounted on boats crewed by Sea Fencibles, would be able to destroy French troop transports before they could land³². This proposal was accepted, the Ordnance supplying twelve carronades and the necessary expertise for them to be mounted on fishing boats. Initially this caused problems because of the narrow beam of the island boats and only eleven could be armed in this way³³.

Captain Anderson the engineer officer returned from his visit to the islands and his report was duly considered by a standing committee of engineers who reported to General Morse, the Inspector General of Fortifications. He informed Lord Camden, who had replaced Hobart at the War Department: *I am of the opinion that to reform the present works even in the judicious manner which Captain Anderson has suggested would not be advisable until more troops are sent to defend the works than the 60 invalids already there. In my opinion there are too many works and too many guns already on the island and the true means of defending them would be a small naval force*³⁴.

Here the matter apparently ended for all subsequent Board of Ordnance reports, surveys and maps continue to show the two towers on Garrison as being old windmills standing on farmland³⁵. And when a dispute over boundaries with the Duchy of Cornwall was resolved in 1851 it was decided that the site of the windmills was outside Ordnance land, which would not have been the case if they had been adapted as works of defence³⁶.

Major Lyman who had pressed so assiduously for more fortifications and men appears to have turned his attention to the island's internal politics and in the course of doing so upset everyone. He became embroiled with the Duke of Leeds' steward and in the ensuing correspondence and arguments the Duke asked that *good temper and peaceable demeanour may be the order of the day*, and appointed a Mr Grylls to arbitrate on their differences. Major Lyman complained of the *fractionary and contentious of these islands* who spoke against him, but lost his case and was dismissed from his command early in 1806³⁷.

Today only one granite tower remains on Garrison (Fig 5), the second shown as a ruin on late 19th century maps has disappeared. The survivor stands surrounded by trees within a few metres of the entrance to the defensive barrack block excavated to house the custodian and men of the Steval and Woolpack batteries which were established in 1898³⁸. The circumstances in which this remaining *ruined obelisk* in Troutbeck's survey was changed into the present substantial tower are known in outline, but are obscure in detail. Towards the middle of the 19th century the Coastguard apparently occupied the tower when they moved from using the old windmill on Peninnis Head as a look-out³⁹. About 1869 the tower was then acquired by the Shipping Gazette, a vigorous commercial rival to Lloyd's List - both firms collected and published intelligence about ship movements for the London markets. Lloyd's of London took over the station on 7th June 1871, and bought the site on 20th September 1882. The purchase price was £500, but this is believed to reflect the business value as well as that of the signal station and accommodation for seamen⁴⁰. The repair



Fig 5 Garrison Tower, St Mary's, formerly a 16th century windmill and later rebuilt for use as a Lloyd's signal station. Photo: author, 1992.

or conversion of the Garrison tower from windmill to signal station could, therefore, have been undertaken by the Coastguard or either of its later commercial owners, and over time all three may have been responsible.

Opposite the Garrison headland and overlooking Porth Cressa beach stands another slim tall granite building known locally as Buzza tower. Its appearance and position commanding the beach below and the approach to the rear of Hugh Town presumes a Martello tower and indeed this is one of the sites on which Captain Lyman proposed in 1803 that one should be put. It is, however, the last windmill to be built on St Mary's and Britain had already been at peace for five years when it began working in 1820⁴¹. Bereft of the conical roof and jib sails with which it was once fitted it now bears little resemblance to the mill it used to be⁴². Restoration was undertaken some years ago as the tower is deemed part of the island's architectural heritage, but it was never intended as a work of defence.

A short distance further east from Buzza mill, along the top of the ridge of high ground which

ends in Peninnis Head was once another granite tower rising to a height of about 9m⁴³. This was also a windmill, dating back to 1726 when the Earl of Godolphin built a mill in this place after the previously mentioned difficulties over access to the two mills on Garrison. Although it had no connection with defence Robert Maybee who died in 1884 wrote in his memoirs that he recalled the mill machinery being taken out and a semaphore being installed in its place⁴⁴. This was about the middle of the 19th century when the Coastguard used the tower as a lookout before moving to the one on Garrison.

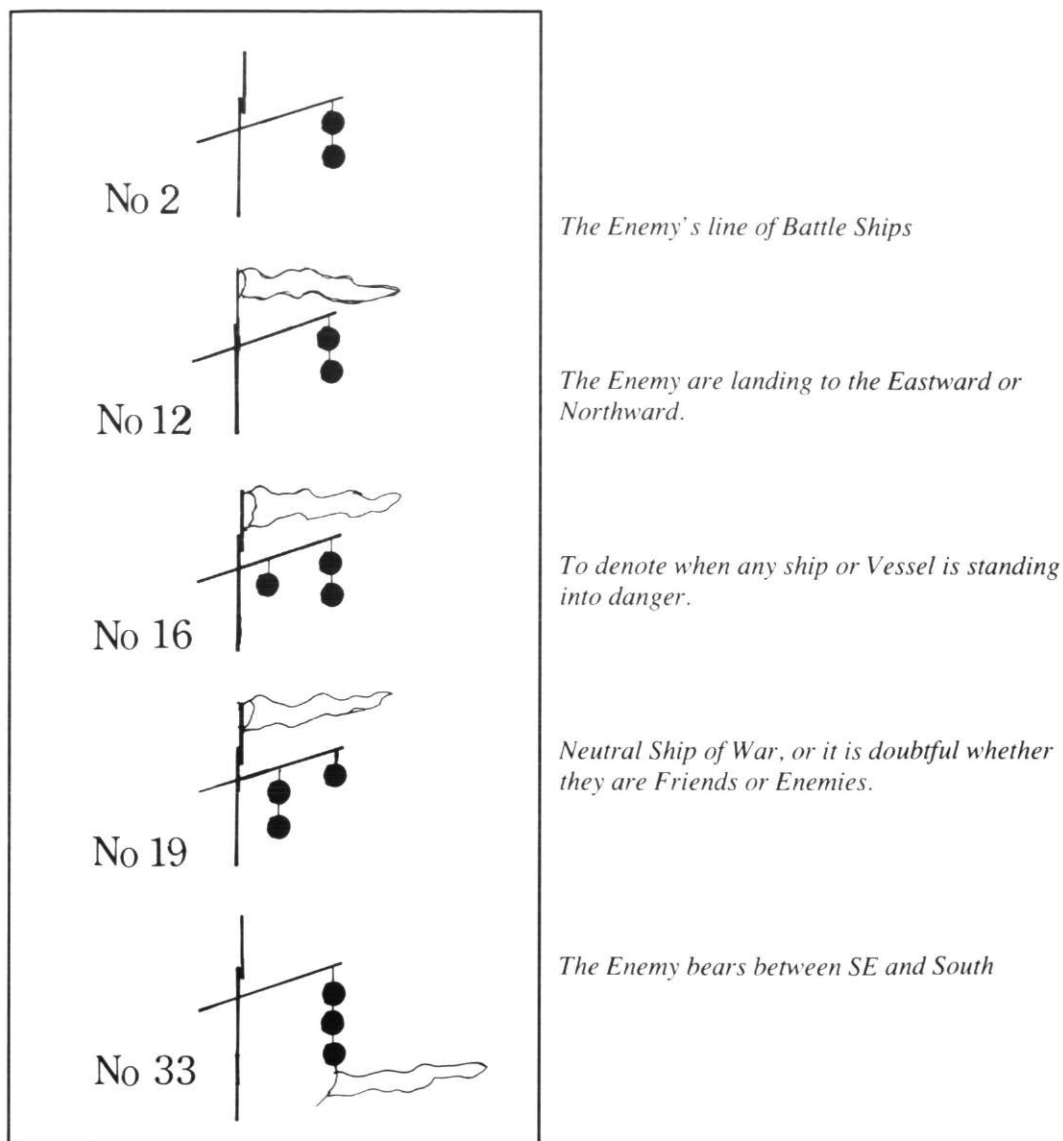


Fig 6 Example of naval signals, possibly designed by Rear Admiral McBride of Plymouth, for use at all Admiralty coast signal posts in preparation to counter a French invasion, 1794-1814. PRO WO 30/81.

The surviving towers today:-

St Martin's Signal Post, SV 9420 1603 (Fig 2)

The foundations and standing walls of the signal house are in a stable condition and the site was comprehensively surveyed by the Cornwall Archaeological Unit in 1989 and 1990⁴⁵. This is an important scheduled site as it may be the only surviving ruin of the coast signalling system set up by the Admiralty in 1795-1814.

Newford Down Semaphore Station (Telegraph Tower) SV 9123 1212 (Fig 4)

Apart from an early 20th century addition on the roof the tower has changed little since it was built. No other purpose-built semaphore towers remain in Cornwall and it is doubtful whether any of the few remaining in the rest of Britain are of the same design and early date.

Garrison Tower, SV 8980 1033 (Fig 5)

In 1989 and 1990 the Cornwall Archaeological Unit surveyed the fortifications on the Garrison headland⁴⁶. Their reports included a description of the former windmill, but wrongly identified it as a Martello tower. It is in good condition and is now a residence. Attempts to establish conclusively the nature of the changes made during the latter years of its 19th century history have not so far been successful, but may be possible eventually if the Deeds can be examined.

Buzza Tower, SV 9050 1041

The windmill on Buzza Hill was restored many years ago by the Isle of Scilly authorities and now stands empty, but secure.

Peninnis Tower, SV 9103 0970

This former windmill and Coastguard lookout became unsafe after the 1939-45 war and was partially demolished. Only the foundations and a millstone now remain⁴⁷.

Notes

- 1 PRO ADM 3/112. Admiralty Board minutes March 1794.
- 2 PRO ADM 12/111. Digest, Capt. O'Neill Feb 1804.
- 3 PRO ADM 1/2146. Capt. Marsh March 1804.
- 4 PRO ADM 3/149. Admiralty Board minutes March 1804.
- 5 PRO ADM 49/110. St Martin's Signal Post completed.
- 6 MOD NM 224. Signals at Coast Signal Posts.
- 7 PRO ADM 49/110. List of Signal Stations, undated.
- 8 PRO ADM 1/3175. Lt. Trinder 1812.
- 9 Tangye M, 1970, *Scilly 1801-1821: Through War & Peace*, Redruth.
- 10 PRO ADM 12/156. Digest. Lt. Gen. Vigoureux May 1812.
- 11 PRO ADM 1/832. Capt. Parish reports Aug 1812.
- 12 PRO ADM 12/156. Digest. Orders to Navy Board 1812.
- 13 PRO ADM 1/3176. Lt. Trinder April 1813.
- 14 Royal Cornwall Gazette 9 Oct. 1813. Courtney Library.
- 15 PRO ADM 106/3128. Correspondence Jul.-Sep. 1815.
- 16 PRO ADM 106/3128. Papers about the Semaphore system.
- 17 PRO ADM 17/106. Lt. Trinder's posting and accounts.
- 18 PRO ADM 106/3128. Correspondence Jan.-Feb. 1816.
- 19 PRO ADM 106/3127. Admiralty Board decision. Jan. 1816.
- 20 PRO ADM 1/3179. Closure of Newford Down Sep. 1816.
- 21 PRO WORK 30/3206-8. Plans, additions to tower 1903.
- 22 See the English Heritage handbooks: *Ancient Monuments on the Isles of Scilly*, (1949 & 1983 editions) and also the Information Board in the Powder House at Star Castle on Garrison, St Mary's.
- 23 Although ranked as a captain in early correspondence the Register of Officers and Royal Marines for 1804 lists Major David Lyman of the Artillery as being on the Isles of Scilly.

- 24 PRO WO 30/74. Report by Capt Lyman Aug. 1803.
- 25 PRO WO 1/626. Capt. Lyman to War Dept. Oct. 1803.
- 26 PRO WO 1/627. Feb. 1804. PRO WO 1/629. Oct 1804.
- 27 PRO ADM 1/2146. Capt. Marsh to Wm. Marsden March 1804.
- 28 PRO WO 1/626. Gen. Simcoe to War Dept. Oct. 1803.
- 29 PRO WO 1/626. Gen. Mercer Oct 1803.
- 30 PRO WO 55/831. Capt. Ford's proposals May 1803.
- 31 PRO WO 1/783. Mar. & Apr. 1804. WO 1/627 Apr. 1804.
- 32 PRO ADM 1/2146. Capt. Marsh to Wm. Marsden March 1804.
- 33 PRO WO 1/2146. Capt. Marsh to Wm. Marsden Jun. 1804.
- 34 PRO WO 1/783. Gen. Morse Nov. 1804.
- 35 PRO WO 55/2337. (1806): WO 1/1605 (1823): WO 44/307 (1830).
- 36 PRO WO 55/3007. Dispute over Ordnance boundaries resolved.
- 37 CRO GO 702-706. Maj. Lyman's dispute & dismissal.
- 38 PRO WO 78/2409 (1894-8): WO 78/4100 (1903): Steval and Woolpack batteries.
- 39 Correspondence with F. S. Ottery, Isles of Scilly Museum Assn. 1993.
- 40 Correspondence with David Burrell, Lloyd's Intelligence, Colchester Essex, 1993.
- 41 Woodley, George, 1882, *A view of the Present State of the Scilly Isles*.
- 42 Wailes, Rex, 1954, *The English Windmill*.
- 43 Douch, H. L. *Cornish Windmills*.
- 44 Bowley, E. L., 1945, *The Fortunate Isles*.
- 45 Ratcliffe J. *The Archaeology of Scilly 1989* and Ratcliffe J. and Adam Sharpe *Fieldwork in Scilly Autumn 1990*, Cornwall Archaeological Unit, Truro.
- 46 Ratcliffe, J. *The Archaeology of Scilly 1989* and Cathy Parkes *Fieldwork in Scilly March 1990*, Cornwall Archaeological Unit, Truro.
- 47 Correspondence with H. Wakefield, St Mary's, Isles of Scilly. 1993.

PRO: Public Record Office, Kew.

MOD: Ministry of Defence Library, Whitehall.

CRO: Cornwall Record Office, Truro.

Acknowledgements

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The Hendra adze

STEVE HARTGROVES

Late in October of 1992, Mr Roberts, a farmer from Ruan Minor on the Lizard brought in to the Cornwall Archaeological Unit HQ a number of objects picked up from the fields on his farm at Hendra following ploughing. Among the natural pebbles and post-medieval pottery was an artefact which immediately caught the eye and fired the imagination. It was a small smooth oval stone, light grey in colour, and measuring about 10 by 14 cms (4 x 5½ ins) and 4 cms (1½ ins) thick, with an hour-glass shaped hole drilled through the centre.

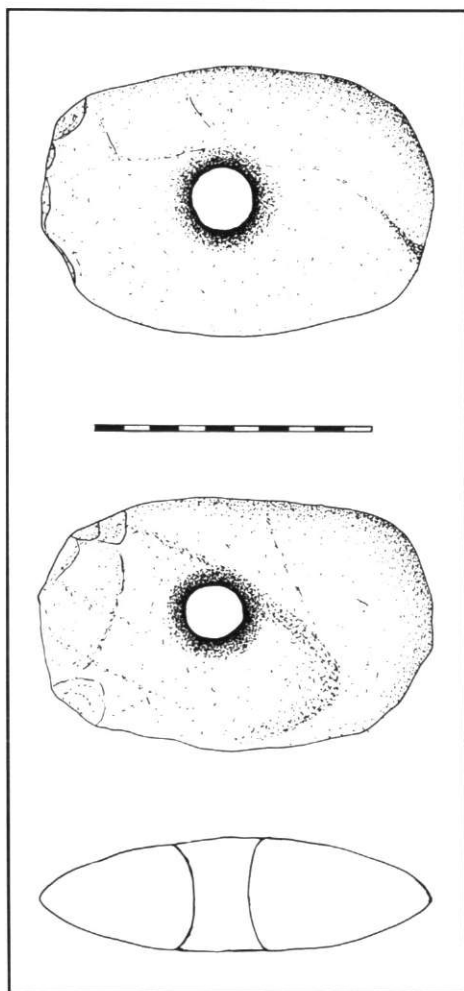


Fig 1 The Hendra adze. Scale 10cms

First impressions tended towards its identification as a macehead, which would have originally been hafted onto a wooden shaft. Examples of this type of implement have been found in association with rich 'Wessex Style' graves, and are usually given ceremonial rather than utilitarian associations, and are assumed to be Late Neolithic/Early Bronze Age in date.

Following the scheme devised by Roe, however, the object from Hendra should be classified as a Shafthole Adze (Roe, 1979, p36, fig 13). It has a roughly symmetrical oval outline, with the ends rather flattened and shaped to a blade, though it would not appear to have been capable of cutting. Adzes are differentiated from axes by the fact that the long edge of the blade is perpendicular to the shafthole. Close examination of the object revealed traces of wear, and flakes missing from both ends suggesting that it had been used as a hammer.

There is a considerable variety of implements with hourglass perforations or shaftholes. At one end of the scale are the extremely large axe hammers, which may be up to 30 cms long and must have been extremely unwieldy, through the various classes of sculpted well-finished, sometimes highly elaborate battle-axes and maceheads, to the smaller, apparently utilitarian shafthole adzes and pebble hammers.

The need to distinguish between ceremonial and functional objects may be the result of the late 20th century tendency to separate the material from the spiritual realms. Neolithic polished axes and some Early Bronze-Age flint implements for example were certainly functional but the level of craftsmanship and the amount of effort expended to produce a highly aesthetic object go well beyond the requirements of

simple utility. Although the Hendra adze seems to have been used as a tool, it is quite possible that 'tools' in the Early Bronze-Age may have had more than a straightforward functional value, and

the symbolic or ceremonial attributes of the adze do not have to be discounted altogether, because of signs of use on both tips.

On the other hand, Bradley has noted a tendency for innovations in material culture, and metalwork is a good example of this, to have symbolic or ceremonial associations, and to emerge as the particular preserve of an elite in the social hierarchy. Through time, he observes, the object moves gradually down-market, and enjoys wider associations as the object in question becomes more familiar and generally more widely available (Bradley, 1984). In this scenario, the adze may just be a 'poor man's macehead'.

Artefacts identified as stone adzes are sparsely distributed across Britain, with a tendency to cluster towards the south and east, despite the fact that origins lie among the hard rocks of the west. Petrological examination of selected shafthole adzes has revealed that Cornish quarries were supplying the raw material for adzes which were being exported from Cornwall mainly to central and south-east England (Roe, op cit, fig 12). Petrological examination of this new find would be most useful.

Only three or four adzes are recorded in the Cornwall SMR, but a further eighteen objects are described as maceheads and pebble maceheads; it is likely that many of these would, upon inspection, be better classified as shafthole adzes. Few Cornish examples are adequately provenanced, but there are recorded associations with both Neolithic polished axes, as at Kelynack in St Just in Penwith, and with Bronze-Age barrows, as at Glendorgal, on the Helford. This situation reflects the national picture and seems to indicate a date range for these products which spans the Late Neolithic and Early Bronze Age periods.

The finding of the Hendra adze prompted a search of the area where it had been found, and a rapid inspection of the ploughed surface produced three fragments of Bronze-Age pottery and some flint flakers. The pottery, though very fragmentary, consisted of a thick gabbroic body sherd from a large vessel with no trace of charring inside or out - possibly a fragment of a funerary urn; a small gabbroic body sherd from a small jar, heavily charred on both faces - possibly a food vessel; and a small thin, non-gabbroic sherd with a smooth surface - possibly a beaker fragment, though with no trace of decoration. The flints were all indeterminate waste flakes.

References

Bradley, R., 1984. *The Social Foundations of Prehistoric Britain*, Longman, London

Roe, F., 1979, *Typology of Stone Implements with Shaftholes*, in Clough and Cummins, eds, *Stone Axe Studies*, CBA Research Report 23

Recent archaeological acquisitions at the Royal Cornwall Museum

ANNA TYACKE

A dagger from Trengwainton, Madron (Fig 1)

A lozenge-shaped flint dagger, the first of its type to be found in Cornwall, was submitted to the Royal Cornwall Museum for identification. It was found amongst the roots of a tree while clearing those blown down in the storms of 1990 at Trengwainton House. The tree had already been dragged some distance before the dagger was noticed, so that the exact findspot is not known. I recently returned to the area with the finder, Murray Vincent-Greenhall, and Peter Herring of the Cornwall Archaeological Unit, to do some further fieldwalking. One sherd was found.

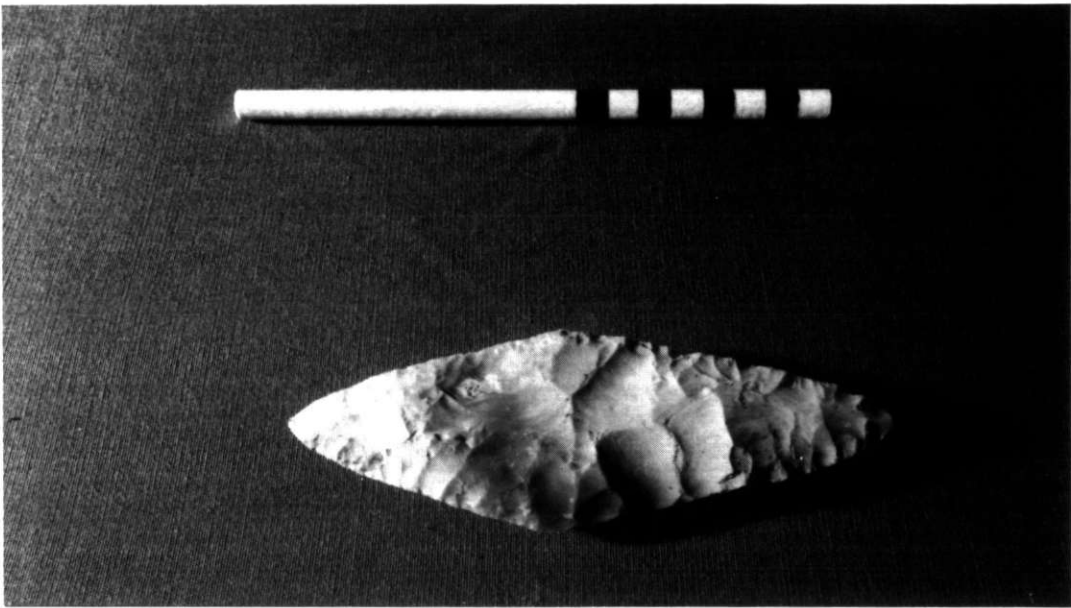


Fig 1 The Trengwainton dagger

Daggers of this type are associated with inhumations containing long-necked beakers of Clarke's Southern types S1-S3, which are Lanting and van der Waals' steps 2-6, dated to c 1850-1400 bc: c 2200-1700 BC (Green, Houlder and Keeley 1982, 496-7) and were also buried with artefacts such as whetstones, jet and amber buttons and other flint tools. The Beaker period has been extended to cover the period from c 2700-1700 BC (Parker Pearson 1993, 85) but long-necked beakers were generally in use in the latter half of this period, during the Early Bronze Age. Their distribution is generally focused in the lowland zone of Britain, with fewer finds in Wales and the South-West (Grimes 1932, 346). Fine flint daggers may have been buried to replace and represent the more valuable bronze daggers which were needed above ground as symbols of power and wealth (Parker Pearson 1993, 82). Bronze was still rare at this time and the knowledge of how to produce it only recently acquired. There is evidence of wear on many of the daggers found,

suggesting that they were not made purely for burial. The Trengwainton dagger has patches of gloss on the surface which indicate that it was probably hafted and placed in a leather sheath. A microwear study is being undertaken at the University of Sheffield.

The dagger (15.7 x 5.6 x 1cm) was not made locally, as the size of flint core needed to produce such a sizeable flake would not have been available in the South-West. Again, analysis may indicate the absence of internal shattering which would prove that the source was not a water-rolled flint pebble. More flint daggers are found in the south and east of Britain, within the Wiltshire-Sussex-East Anglia triangle, probably because of the availability of suitable flint in these chalkland areas, and because of the distance from the main metalworking areas in the north and west. A possible source could be as near as Easton Down, Winterslow, Wiltshire, where 90 shafts were dug 3-4m deep and working floors were found at the surface around the shafts. These continued in use into the Beaker period, when there is evidence of a settlement (Salisbury Museum). But it has been suggested that daggers were more likely produced in a few foci in East Anglia and Sussex and traded through exchange networks as prestige items (Green, Houlder and Keeley 1982, 500).

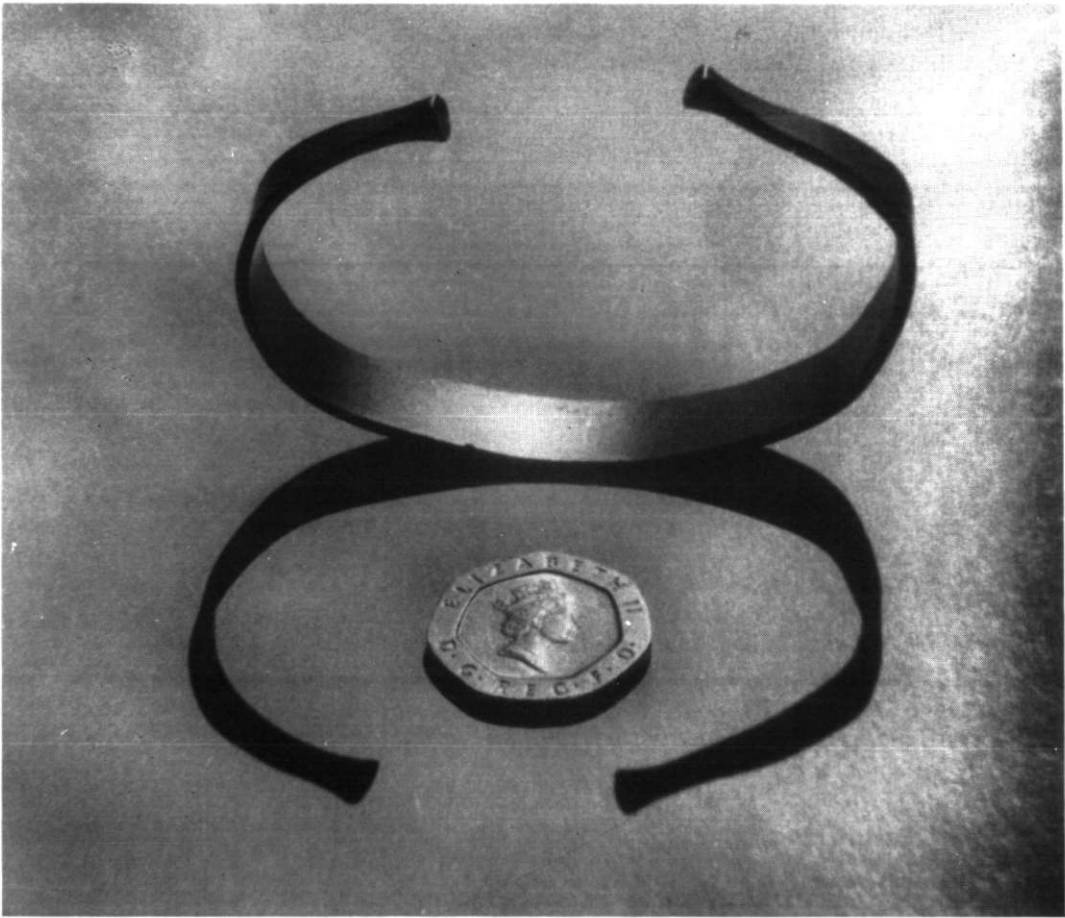
The lozenge shape has parallels in Brittany but daggers of similar length are considerably narrower than the Trengwainton example and the colour of the flint is closer to Le Grand Pressigny flint (*pers comm* Carnac Museum and the Museum of Le Grand Pressigny, 1993). The closest parallel in size and shape that I can find is a dagger found in Wick Barrow, Stogursey, Somerset associated with a long-necked beaker, which is now in the Somerset County Museum, Taunton. This dagger has two slight notches on either side of the butt end where the haft of bone, wood or antler would have been fixed. It also is a symmetrical lozenge shape and bi-convex in section, and has been flaked with remarkable skill using serial flaking and finer edge-trimming to the blade end to produce a sinuous cutting edge. The butt end is always cruder because it would not have been seen and some are notched for binding.

Was the Trengwainton dagger a symbolic artefact or a personal possession? Daggers are often buried with flint arrowheads and may therefore symbolise the role or rank of an archer in the grave (Humble 1990, 8). Discoidal flint knives are also commonly associated with these daggers which may indicate a utilitarian use by a craftsman. Or daggers may simply be symbolic of the clan of beaker-using people who used long-necked beakers, as opposed to other types used at the same time in Britain. The dagger distribution may reflect high-status Beaker burials and may not be connected with proximity to good sources of flint, but whatever its source, the Trengwainton dagger must have travelled some distance to end up in West Penwith.

I hope to write a further report for the next journal which will include the results of the analyses and of the further examination of the find area. The dagger has kindly been donated by the National Trust to the Royal Cornwall Museum and will be part of the new archaeology displays in the Main Gallery, opening in March 1994.

Bibliography

- Clarke, D L, 1970, *Beaker Pottery in Great Britain and Ireland*, Cambridge University Press
- Green, H S, Houlder, C H, and Keeley, L H, 1982, 'A flint dagger from Ffair Rhos, Ceredigion, Dyfed, Wales' in *Proc Prehist Soc* 48, 492-501
- Grimes, W F, 1932, 'The Early Bronze Age flint dagger in England and Wales' in *Proc Prehist Soc East Anglia* 6, 340-55
- Humble, J, 1990, 'Grave goods: the building blocks in the interpretation of Beaker burials' in *The work of the Central Excavation Unit 1988-9*, 7-8, English Heritage, London
- Parker Pearson, M, 1993, *Bronze Age Britain*, Batsford/English Heritage, London



*Fig 2 The St Martin's bracelet. Scale: 20 pence piece
Photo: Frank Gibson, St Mary's*

A gold bracelet from St Martin's, Isles of Scilly (Fig 2)

This Bronze Age gold bracelet was found by Peter Dent, a holiday-maker, on 30 March 1989, on the foreshore on the south-west side of the island of St Martin's. Its surface appears dull due to fine scratches received through sand and sea action, but it would originally have been highly polished. Analysis at the British Museum showed that it contained 77.3% gold, the rest of its content being made up of silver, copper and tin. The maximum diameter of the bracelet is 65mm, maximum breadth 10mm, and thickness 0.15mm. Its small size suggests that it was more likely worn by a woman or child than a man. It has a thin rectangular cross-section and buffer-like terminals which identify it as an example of the Brean Down (Somerset) type, a relatively rare form known from South-West Britain and Ireland. This dates to the Late Bronze Age (c 900-700 BC) and more specifically in the South West to the Stogursey phase or industry, after the large number of finds from Wick Park, Stogursey, Somerset (Pearce 1983, 65).

During the Bronze Age most of Scilly formed part of a single large land mass. The findspot is on the edge of what, in 1000 BC, would have been a lowlying cultivated plain stretching towards the 'uplands' of what are now the islands of Tresco and St Mary's. As a result of a gradual rise in sea level since prehistoric times, the bracelet was eroded from its original place of deposition.

Fine Bronze Age gold ornament is usually found in one of three contexts: burial, hoard or settlement sites. The Bronze Age entrance grave of Knackyboy Carn is 160m inland from the

findspot, but it is unlikely that the bracelet accompanied a burial as none of this type are known from graves. Gold items such as this one are more often lost or buried deliberately on the site of a settlement or as part of a hoard. If this bracelet was from a hoard then any associated artefacts may have been dispersed through wave action. Earlier in this century a Bronze Age settlement was exposed in the cliff face 140m east of the findspot. The Brean Down bracelets may have been deposited within a contemporary settlement and a bracelet was found at Potterne, Wiltshire, in a settlement context. Normally this type of bracelet is found with others, as at Craig-yr-Wolf, Clwyd, in a hoard with a bronze axe dated to c 900-700 BC.

At an inquest on 19 September 1989, the West Cornwall coroner, Derrick Pepperell, decided that the bracelet was Treasure Trove because it was unlikely to have come from a burial and therefore an act of final deposition, but instead was lost or buried in a hoard or settlement. It was awarded to the Duchy of Cornwall, on whose property it had been found, who in turn donated it to the Royal Cornwall Museum in 1990, on condition that the Museum paid Peter Dent £3000. The bracelet is now on display in the Royal Cornwall Museum, Truro.

Sources

Pearce, S M, 1983, *The Bronze Age metalwork of South Western Britain*, BAR British Series 120 (i)

Notes from Dr Ian Kinnes, Assistant Keeper of Neolithic and Bronze Age Antiquities, British Museum

Report from Jeanette Ratcliffe and Steve Hartgroves, Cornwall Archaeological Unit, 10/7/89

Archaeology along the hard shoulder- the Indian Queens project.

JACQUELINE A. NOWAKOWSKI

Introduction

As new roads are built or old ones modernised across Cornwall, the landscape of the county is necessarily transformed. Such changes can dramatically affect the historical personality of the landscape and damage or destroy archaeological and historical sites, thus CAU carefully monitors road proposals and gives advice on how best to minimise the archaeological and landscape effects. One such road scheme cuts through the heart of the county - the A30 Indian Queens-Fraddon Improvement. During the winter of 1991 a CAU archaeological reconnaissance survey funded by English Heritage and the Department of Transport identified sites likely to be affected by the road improvement proposals and the report formed the basis of a detailed project design recommending appropriate archaeological responses (Rose, Herring and Nowakowski, 1992).

Evaluation.

This initial survey was followed by a phase of evaluative work whose results served to clarify research objectives. A wide variety of archaeological techniques were employed: documentary sources and aerial photographs were examined, field survey and trial trenching undertaken, geophysical surveys commissioned and specialists consulted. It became clear that the study area offered the potential to examine sites as integral parts of a total landscape, rather than in isolation, and the A30 Project was designed in such a fashion as to contribute to the study of the evolution of lowland Cornish landscapes. It was accepted for funding by English Heritage in the summer of 1992 and a rolling programme of fieldwork got under way that autumn.

Overall aims and objectives.

There were four principal strands in the project design. The first, where site conditions permitted, was to undertake the recording of earthwork features - including surveys of field boundaries and industrial sites. The morphology of Cornish hedges has generally received little attention from archaeologists and it is hoped that the examination of a representative number across this section of the landscape will contribute to a corpus of information which will help in modelling the historical processes of enclosure and land-use. The second strand was excavation, both large and small-scale, of selected prehistoric and historic sites. The third was the monitoring of road construction operations in order to record sites not identified during the pilot study. Finally, a programme of locating and sampling buried peat deposits was included as a major component of the project.

The excavations.

At the core of the project was the excavation of selected sites within the corridor of the new bypass. A team of professional archaeologists was drawn together, and with occasional Society volunteers they embarked on an extensive programme of excavation from October 1992 to June 1993. Large-scale investigations took place on a Bronze Age barrow at Little Gaverigan Farm, an Iron Age defended settlement at Penhale and on an early field system at Halloon Farm. Small-scale

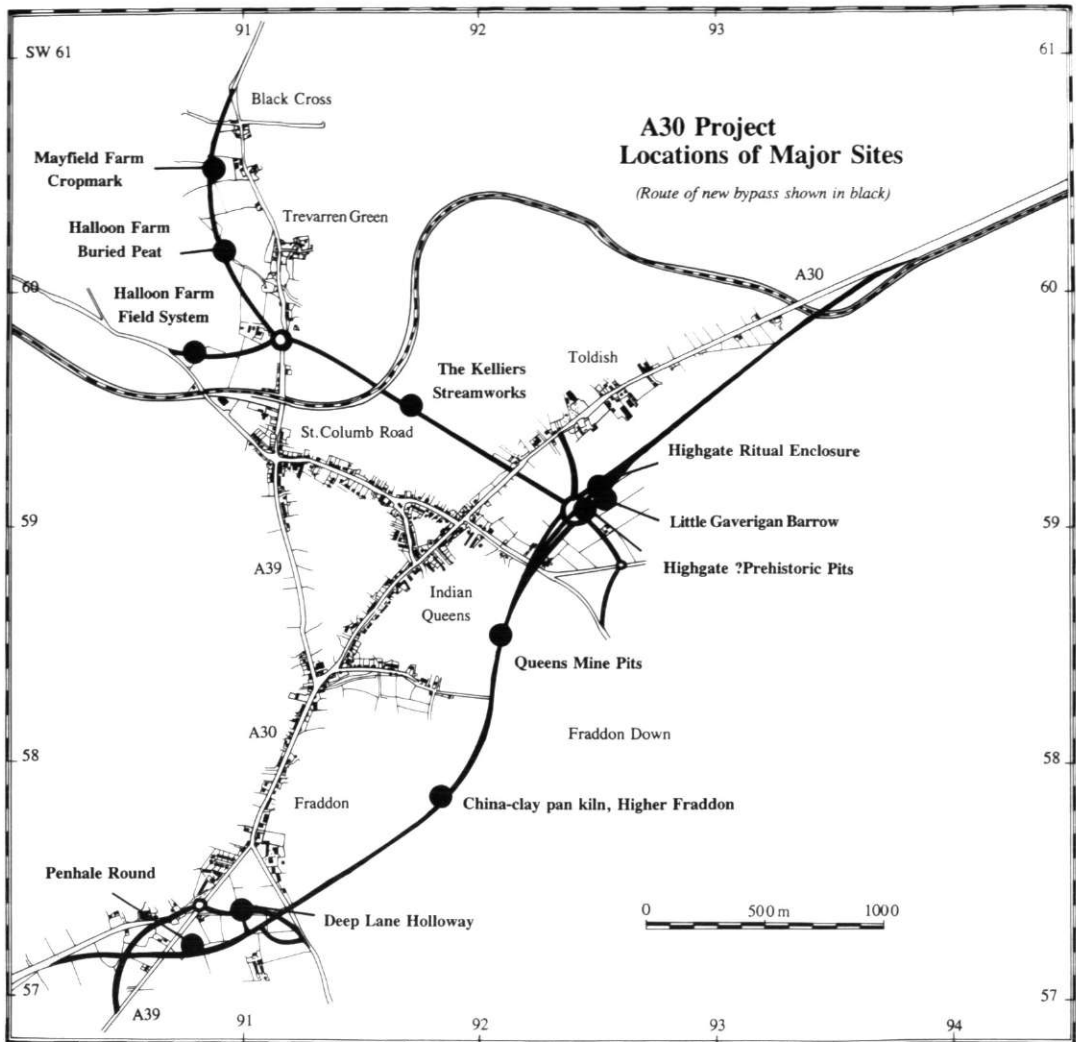


Fig 1 The Indian Queens project

excavations were on an early holloway at Deep Lane, a cropmark site at Mayfield Farm and on early mining features near Queen's Mine. Earthwork and photographic surveys of mining sites on Fraddon Down, the china-clay pan kiln at Higher Fraddon and the historic field system at Halloon Farm were also undertaken. A number of peaty areas in the Kelliers and at Halloon Farm were sampled (Fig 1).

Our work has been carried out within tight deadlines: all major excavations and surveys had to be completed before the start of bypass construction in early summer, 1993. Although the main phase of detailed investigation is now complete, monitoring of construction work is still under way. The programme runs from July 1993 to November 1994, and has already recorded a number of new sites.

An interim statement

This summary is intended as an update on project results. Post-excavation analysis will

continue into 1994, after which the results will be reviewed in line with the guidelines set out in MAP 2 (Andrews *et al*, 1991) and decisions on publication of the project results will follow.

Little Gaverigan Barrow

The first major site investigated was a Bronze Age barrow at Little Gaverigan Farm (SW 9248 5911). Surprisingly, the site was previously unrecognised, being first discovered during the 1991 reconnaissance survey (Rose, Herring and Nowakowski, 1992, 39-40). An evaluation trench confirmed its preliminary identification and total excavation was recommended (Nowakowski and Johns, 1992). The work was carried out during the wettest winter Cornwall has experienced for years, but despite at times appalling working conditions, significant results were achieved.

The site comprised three components: a turf mound, a peripheral ditch and an annular stony bank. The site history was shown to have involved episodic physical redefinition in a context of continuing ritual significance.

Prior to the creation of the mound the site appears to have been a sacred space defined by a regular circular ditch 33 metres in diameter. This was continuous - not breached by causeways - whilst along its inner edge was a stony bank. The internal space was notable for the lack of tangible evidence for activity apart from a central - perhaps ceremonial - pavement of quartz rubble. Very few finds were recovered from this earliest phase. The enclosed area seems to have been in use for a considerable period of time, since the base of the ditch had gradually filled with thin bands of weathered material to a depth of 0.65 metres. Leaf mould impressions, twig and bark were found, together with fragments of waterlogged wooden stakes and small posts on the floor of the ditch.

The symbolic importance of the ditch appears to have been reinforced during the subsequent remodelling of the site when a number of pits and post holes were dug on the north side of the site. We can only guess at the function of two much larger pits, though it is tempting to suggest that they were the sockets for stone menhirs or large timber posts - perhaps with a totemic function. The ditch was subsequently recut along the original line, but to a shallower depth.

Two small pits discovered in the eastern quadrant contained artefacts diagnostic of the Early Bronze Age. The first was the upper half of a degraded collared urn containing a cremation deposit; the second was an unusual cup-like vessel with an open mouth and base and a central perforated plate; both finds were poorly preserved. After initial conservation by Margaret Brooks of Salisbury Museum, small samples of the fabrics were sent to David Williams of Southampton University for petrological analysis, and were judged to derive from local clays (pers comm). There were no other traces of funerary behaviour.

The enclosure may subsequently have been deliberately abandoned. The ditch was backfilled and the stony bank partly levelled as a prelude to the creation of a turf barrow. Made of individual peaty turves layered to form a substantial mound about 1.0 metre high and 27 metres in diameter, it lay centrally within the ditched area, but did not conceal the stony bank. The pit containing the collared urn was on the periphery of the mound and may therefore represent a secondary feature. It is difficult to explain why only the top half of an urn was deposited - it may represent a votive offering or symbolic event rather than a true burial episode. A small collection of flint artefacts recovered from the mound material included microliths and blade tools and probably represent residual material. In common with other excavated turf barrows in the St. Austell area, the mound material seems to have been collected locally (Miles, 1975) indicating an origin for the flint within the immediate vicinity.

The mound was extensively sampled for macro-plant remains. On-site processing revealed well-preserved charcoal, and seeds and samples for pollen analysis were also taken from the ditch fills. Preliminary results look promising and it is hoped that after analysis they will provide a detailed record of the local environment during the Bronze Age.

The results of this excavation have provided important insights into the structural development

of a ritual site, which, if typical, suggests that the use-lives of barrows are far more complex than our received perception of them as single-phase monuments allows.

Highgate Ritual Enclosure

During road monitoring in August 1993, two new sites located in the vicinity of Little Gaverigan Farm suggest a wider ritual landscape setting for the barrow. One, at Highgate Roundabout (SW 9247 5917) was an unusual segmented ditched enclosure at the centre of which was a broken, though complete, Bronze Age urn containing a cremation and an awl (Margaret Brooks, pers comm). No evidence for a covering mound was detected, and the sub-oval enclosure was small - 12 x 10 metres. Nearby was a cluster of large pits (SW 9241 5910) whose purpose and date are presently unknown, though like a cup-marked slate found nearby, may be part of the same ceremonial landscape. Taken together they hint at a hitherto unsuspected concentration of early ritual activity just to the west of Indian Queens (See Fig 1).

Penhale Round

The second major excavation was at Penhale Round (SW 9075 5721) where the new bypass cut across one edge of an enclosed Iron Age settlement first discovered in aerial photographs from the 1950s. Above-ground remains were slight but a 1980s geophysical survey carried out by the Ancient Monuments Laboratory indicated a well-preserved multivallate circular enclosure within a network of small fields defined by ditch cuts; the outlines of at least three round houses could be seen in its interior (David 1982). The survey was an invaluable tool in helping the planning of the excavation strategy, whose aim was to record as much information as possible in order to explain the settlement development and date any sequences uncovered.

The largest excavation trench cut across the southern side of the settlement and revealed the line of the ramparts and accompanying ditches as well as the entranceway and a small part of the interior. Other smaller trenches in the vicinity of the round were sited to examine the contemporary and earlier landscape.

The underlying landscape

The geophysical survey had provided a two-dimensional image of a multi-layered landscape whose earliest components predated the occupation of the round by at least a thousand years. These included the remains of an early field system, an oval house and a small stake-post enclosure. The two-phase oval building yielded a dense quantity of fragmented decorated pottery and sections of charred structural timbers, which on analysis were revealed to be oak beams (Earwood, pers.comm.). The pottery is diagnostically Middle Bronze Age, and the oval building thus adds an interesting variation to the round house form generally held to be typical of Cornish dwellings of this period. Taken together, these components contribute significant new information concerning settlement form in lowland Cornwall during the second millennium BC.

The Round

The most complex features of Penhale Round were the ditches defining the perimeter of the enclosed settlement. As a rule, multivallate rounds are fairly uncommon in Cornwall and Penhale has allowed a close examination of the underlying motives for defensive works. Sections through the ditches were cut both close to and at some distance from the entranceway to achieve an overview of the construction sequence. The following results are interim and provisional.

The inner ditch was constructed first and in use on its own for some time. It was deep (2.0 metres), V-shaped in profile and fairly wide (2.5 metres at the top). There was no evidence for basal silting implying either a short life-span or regular cleaning and maintenance. The terminal ends of the flanking ditches of an early entrance revealed on this side of the settlement were offset. The recutting of the original ditch to a narrower profile was accompanied by the construction of a second outer ditch and the realignment of the entrance some metres to the east. This seems to mark

a distinct point in the history of the round, but it is still difficult to be sure whether these changes reflect an increasing anxiety about security or a desire to enhance the impressiveness of the site. What is clear, however, was the extraordinary degree of effort and time which this programme of alteration must have incurred. On the east side of the entrance the inner ditch was realigned at least four times, and well-preserved road surfaces contemporary with each episode of remodelling were recorded.

Although little of the upstanding structure of the ramparts had survived ploughing, a line of deep postholes along the spine of the bank to the east indicated the former existence of a wooden stockade, whilst two massive postholes flanking the entrance must mark the site of an impressive wooden gateway or even a timber gatehouse. During the later occupational history of the round, the need for ditches seems to have diminished - as witness their backfilling. The terminal end of the eastern ditch was infilled with refuse, the entrance was narrowed, but the revetted outer faces of the ramparts were enhanced. Pottery dating to the 2nd century AD recovered from behind the revetment suggests a late date for these features.

Excavation inside the round was limited in area though an oval structure 10 x 7 metres was found cut into the inner face of the eastern rampart. Originally a post-built structure with off-centre hearth pits, it was replaced by a stone and timber building of similar proportions. Pottery found from associated contexts indicates that both buildings belonged to later episodes in the settlement history.

In the surrounding landscape, a number of ditches were excavated, presumably the boundaries of early and later fields. Of particular interest was an enigmatic small segmented ditched enclosure next to an open hearth, both of which produced late Iron Age and Romano-British pottery. That these structures were located outside the round makes clear that not all settlement activities were contained within the ramparts.

Pottery and items of worked stone indicate a history of settlement at Penhale from the 2nd or 1st centuries BC to the 3rd century AD. Extensive sampling of well-sealed deposits for plant macrofossils should illuminate the economic lifestyles of the inhabitants of the round.

Halloon Farm Field System.

A magnetometer survey by Bournemouth Polytechnic at Halloon Farm detected a buried field system within the corridor of the road (SW 9076 5973) (Sutherland 1991). In June 1993 the A30 field team sampled these features in order to date them and assess their character. Of the nine linear features found by the magnetometer survey, four were evaluated. All proved to be ditches, none more than 0.35 metres deep and averaging 0.65 metres wide. None provided direct dating evidence, whilst finds ranged from post-medieval pottery to modern glass. The small flint assemblage recovered represents residual material though includes a transverse arrowhead.

It is difficult to date the features revealed at Halloon Farm. The ditch pattern is altogether different to that of the present enclosure system and it is possible that the excavated features represent prehistoric field divisions. It is hoped that the watching brief on this section of the road will produce the evidence of a broader context within which these features can be interpreted. A sketch survey of the present field system was undertaken to throw some light on the excavation findings. Whilst it was clear that elements of an earlier field system had been incorporated into the enclosure layout, these probably medieval components survived only in a very fragmented fashion.

Mayfield Farm cropmark

Three small trenches were cut at Mayfield Farm to investigate a possible sub-circular feature revealed on a geophysical survey undertaken by the AM Laboratory in 1992 (Linford 1992). The

feature appears to have been a combination of a pipe trench and animal and root disturbance. Finds were limited to modern material and a little worked flint.

Deep Lane holloway

A small trench was opened across the base of Deep Lane - a hidden and overgrown holloway near Fraddon (SW 9077 5735) interpreted by Peter Herring as a probable Early Medieval highway (see p70). Excavation revealed a cobbled surface of tightly-packed small pebbles filling the width of the holloway and running into a field entrance. The road was constructed on a levelled deposit of natural clay. No artefacts or dating evidence were found.

Queens Mine

Following sketch survey in the area to be affected by road construction, evaluative trenching was carried out on two features identified as belonging to the early development of Queens Mine (SW 9207 5850) as part of a CAU programme of investigation of early mining earthworks.

Although superficially identical in appearance at surface, the first proved to be the partly-backfilled remains of a post-medieval shallow outcrop shaft (lode back pit), whilst the second was a roughly contemporary prospecting pit. Though results were necessarily limited, both yielded valuable information. The trial excavation of a prospecting pit in hitherto untouched ground nearby was undertaken as part of a programme of experimental archaeology in this field of enquiry.

Acknowledgements

Thanks go to English Heritage and the Department of Transport for funding this project. Janice Grove and Charlie Johns supervised the excavation teams; finds study and environmental sampling were co-ordinated by Elizabeth Davis and Jenni Heathcote respectively; Chris Crowe ran a very successful schools programme at Penhale Round; Anna and Andrew Jones monitored road construction. Attached to the project have been a number of specialists: Margaret Brooks (conservation), Matthew Canti (AMLab, soils), Caroline Earwood (ancient wood), Simon Mayes (human bone), Henrietta Quinnell (finds), Vanessa Straker (AM Lab, environmental sampling). Thanks go to all those named above as well as to the members of the excavation team who worked admirably through very difficult conditions. The work also relied on the goodwill and assistance of many landowners and local people, as well as colleagues in the Highways Dept. Thanks also go to colleagues at CAU, especially Nick Johnson and Peter Rose for administrative support, John Smith for computer support and Adam Sharpe for everything, including editing several drafts of this report.

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Bibliography

- Andrews, G. *et al.* 1991, *Management of Archaeological Projects*, English Heritage
David, A., 1982 *Geophysical Survey of Penhale*, Ancient Monuments Laboratory Report 4/82, English Heritage.
Linford, N., 1992, *Geophysical Survey, Mayfield Farm, Cornwall*, Ancient Monuments Laboratory Report 1/93, English Heritage
Miles, H., 1975, 'Barrows on the St.Austell Granite, Cornwall', *Cornish.Archaeol.* 14, 5-81
Nowakowski, J. and Johns, C., 1992, *Results of Archaeological Evaluation Work for the A30 Fraddon-Indian Queens Improvement Road Scheme, a Report to English Heritage*, Unpublished, CAU, Truro.

- Rose, P., Herring, P. and Nowakowski, J., 1992, *The A30 Fraddon-Indian Queens Improvement: Recommendations for Archaeological Recording, a Report to English Heritage*, Unpublished, CAU, Truro
- Sutherland, T., 1991, *Halloon Farm, St.Columb Road, Cornwall: Geophysical Survey 1991, Archaeology Reports, Second Series No.6*, Bournemouth Polytechnic

St Michael's Mount: recent and future work

PETER HERRING

An early morning sea mist can so cut St Michael's Mount off from the Cornish mainland that only the causeway, snaking away into the sea, is left to suggest that an island exists here. The archaeology of the Mount has also, to some extent, been lost behind its mainly document-based literature and a bewildering array of representations of the famous profile. Wandering archaeologists, enjoying the warmth of the inhabitants' welcome and looking for a juicy problem, would imagine, from the volume and variety of books and leaflets in the National Trust shop, that there was little of their kind of work left undone. Such an impression would only be reinforced by the ability of Lord St Levan and the National Trust to inform, entertain and satisfy nearly a quarter of a million people each summer, mainly through reference to the Mount's romantic and dramatic past: its legendary Giants, medieval priory, oft-besieged castle, stately home, busy harbour and bustling village.

In fact surprisingly little work has been done on the material remains of all this. Since Dr William Borlase's two detailed descriptions of 1731 and 1762 (see, respectively, Herring 1993, Appendix VI, and Pool 1975), archaeological interest in the Mount has been confined to 19th century descriptions of the crosses (Langdon 1896), castle and church (Peter 1899), and a continuing discussion of the possibility or probability that it was the later prehistoric tin-trading station known to classical writers as *Ictis* (Maxwell 1972).

The Cornwall Archaeological Unit (CAU) was therefore delighted to be commissioned by the National Trust and Lord St Levan to produce an assessment of St Michael's Mount's archaeology and to make recommendations, in the form of a management plan, for the fuller recording, interpretation, consolidation and presentation of all remains. The opportunity to examine every corner of the Mount was seized and a full inventory of all known sites, together with a detailed 'time-line' was produced; this is now generally available as a CAU report (Herring 1993).

This note attempts to draw attention to the Mount's archaeological wealth and its many fascinating historical problems, to demonstrate that the almost-island off Cornwall's southern coast will as richly repay investment in archaeological investigation as Tintagel, that other almost-island off Cornwall's northern coast.

Prehistoric and Roman periods

So much later activity in such a small place has left little room for remains from the earliest periods to survive. There can be little doubt, however, that St Michael's Mount, rising so abruptly and beautifully from either a forest (to c2000 BC - see de Beer 1960) or the sea, will always have been a focus for human activity in west Cornwall. It is difficult to imagine that its possession would not have always conferred the greatest of local prestige. In addition, and particularly after sea had replaced forest, the Mount would have been a virtually impregnable stronghold. Surrounded by water, and with precipitous cliffs to south and west and extremely steep slopes to north and east, defenders here were almost unassailable until the days of firepower. Its location was also strategically and economically important; commanding Mounts Bay and its surrounding tin grounds, possessing a good sheltered landing place (now the harbour), and standing near the southern end of the important low passage between modern Marazion and Hayle (whose rivers were largely navigable until recent silting).

Two lines of now rounded and eroded banks, probably defensive earthworks, on the lower north-eastern slopes, protecting the main spring (now the Giant's Well) and cutting off the only

route to the summit, may be prehistoric, turning the high ground into a cliff castle of sorts (see Herring 1993, 97-99). It would be extremely tempting to present these lines as material evidence for Ictis. The text of Diodorus Siculus describing Ictis and the tin-trading system makes it clear that the principal feature of the trading station was that it was an agreed and distinctive location separate from the worlds of both sets of traders, tin producers and buyers; a neutral place, a port of trade. Such a place would, of course, also be exposed and vulnerable and can be expected to have been made secure to protect both the traders and their products. Without excavation caution is still advised; the lack of Iron Age chance-finds on the Mount may be significant (Cynthia Gaskell-Brown, pers.comm.) although it should be noted that since the village reorganisation of the late 19th century there has been very little ground disturbance.

The discovery of five undiagnostic flints - one a beach-pebble core, the others flakes - in a short stretch of exposed section of cliff on the Mount's south-east side not only demonstrates that artefact scatters do exist but also confirms that the place was at least visited some time in earlier prehistory. Indeed it is suggested that the Mount may have been an important centre of local or regional power from earlier prehistory (Herring 1993, 58). At the other end of our period, the finding of a Roman coin of Tetricus I (AD 270-273) in the harbour in the early 20th century could be evidence for the Mount continuing as a trading station from the days of Ictis into the Roman period.

Early Medieval

The Mount's impressive shape, its defensibility and its strategic location - employed above to support an important prehistoric role - have been used to suggest the possibility that it was a post-Roman 'citadel' similar to Tintagel (see Thomas 1988, 10). Again, though, without excavation and with no ground disturbance yielding chance finds, there has been as yet no archaeological confirmation.

The Ordnance Survey map also boldly states that St Michael's Mount had at its summit a Benedictine Monastery founded cAD 1044. Some would suggest that a Christian community had already existed on the Mount for four or five hundred years, since the days of St Cadoc and St Keyne (Pearce 1978) and until recently few have doubted that a pre-Norman monastery flourished here even if the Edward the Confessor charter granting it to the Abbey at Mont St Michel was considered dubious. Now historians urge caution; there is little direct documentary evidence for a monastery on the Mount before the 12th century priory (Orme 1986-7); only archaeological excavation can test this.

Ecclesiastical

The remains of the later medieval priory have never been satisfactorily disentangled from those of the medieval castle; indeed it has not been securely established that the two were really separate. Reconsideration of the layout of the summit complex might indicate that the castle was not built about sixty years after the priory in the last decade of the 12th century - by either Henry de la Pomeray or Richard I - as had been previously thought (eg Fletcher 1951, 24, and re-stated in Herring 1993). Instead it may suggest that both were constructed together as a fortified priory. Why, if the castle's strong west front was not holding the central part of the limited ground available at the Mount's summit, was the priory, begun in 1135, confined to the eastern third, forcing its builders to squeeze church, graveyard and accommodation into such a limited space? Why, too, is the priory's refectory (now the Chevy Chase room) built on top of, and therefore either contemporary with, or secondary to the castle's strong-walled 'garrison room'?

Detailed recording and close analysis of the design and walling of the medieval structures and the relationships between them have not yet been undertaken. Even if these were to confirm extensive later 12th century (or later) re-modelling of a previously more extensive priory, to accommodate a strong castle - and the building footings immediately south of the steps west of the



Fig 1 The early 20th century Gibson photograph of the west end of St Michael's Mount summit complex. Imagine away the 19th century extension to the north (left), the mansard gable on the large tower to the north of the door, all the chimneys, and Piers St Aubyn's pseudo-medieval windows, and the sturdy later medieval castle re-emerges. Poking up behind, itself battlemented, is the priory church's tower, with the fragment of medieval lighthouse on its south-west (right) corner. The remains of a medieval curtain wall were recorded curving from behind the 18th century battery in the foreground to the cross-shaft (right); this protected the long flight of steps running up to the castle. (Courtesy of the Royal Institution of Cornwall).

castle may support this - we must still see a priory working for up to 300 years in intimate proximity with a castle. Was there a garrison throughout this period, and to what extent were the monks involved? These are important questions which require more detailed archaeological investigation and a critical review of the documentary evidence.

There are other interesting problems to tackle in the ecclesiastical sphere. Assuming that it was not, after all, severely damaged by an earthquake in 1275 (see Taylor 1932, 3), how much of the church's fabric is original? (The windows and doors could all be 14th and 15th century insertions into an essentially Norman structure.) What is the vault beneath the church reached by a flight of steps leading down from the choir; hermitage, sacristy, dungeon or confessional?

Which, if any, of the crosses now on the Mount has been there since the medieval period? The only two for which we currently have no evidence of importation are the so-called Mount Cross, on a crag south of the castle (see Langdon 1896, 150-1), and the beautiful 14th century lantern cross head now fitted onto the 19th century balustrade north of the church. This lantern would fit perfectly on the octagonal shaft standing west of the castle and described as "a small cross standing upon 2 square steps of stone" by Dr William Borlase in a letter of 1731 (see Herring 1993, 74); was the lantern head still in place in 1731? Borlase makes no mention of any other cross, not even the Mount Cross. Perhaps most significantly, he does not record any beside the causeway (along which

he walked back to Marazion) and neither does any engraver working before the date (c1730) when, according to Gilbert (1820, 742), a storm broke down a cross whose large square base is still visible to the south of the causeway. Was there ever a cross here or is the 'base' the socket for a kind of fixed buoy - as shown on early 19th century drawings (eg those by Daniell held by the Penzance and District Museum and Art Gallery).

Work is required to confirm the suggestion that fragmentary east-west footings on Chapel Rock are really the remains of its later medieval pilgrim chapel (Herring 1993, 76-7). Fragments of blue/grey slate picked up from soil exposures (*ibid*) may confirm the form of roof shown on the coloured 1515 drawing of Mounts Bay (British Museum, Cotton MS Augustus II, 34 - abbreviated to BM, Cott. in future references - reproduced in St Aubyn 1978).

Castle and other military remains

Leaving aside the uncertain relationship between castle and priory (see above), what was the purpose of such an imposing pile? The Mount will still have had some strategic importance in the later medieval period, especially during the French wars, and there was an important harbour to protect. Nevertheless, it is likely that it was as a symbol of power that the Mount attracted military effort. The several actual skirmishes and sieges it witnessed, from Henry de la Pomeray's seizure in 1193 to the wild attack during the Cornish Rebellion in 1549, all have an underlying theme; attempting to gain or retain a symbol of regional or national power. The true military worth of the place was perhaps accurately summed up in John Taylor's derisive words soon after the uninspiring Royalist surrender of it in 1646: it was "not worth the taking or keeping" (Taylor 1649, 16). The castle itself, a strong square granite tower at each end of the western wall and at least two more square towers behind, has never been closely recorded but more survives of the original structure than is often believed. Viewed from the west, with 18th and 19th century accretions imagined away, it is a handsome structure; seen from the south, from 150 feet below almost vertical cliffs, it is awesome. This was an important castle and deserves more attention from both archaeologist and historian.

Fragments of what seems to be a medieval curtain wall - enclosing the flight of steps to the castle's main western entrance and linking naturally defensible cliffs just below the summit on the north, east and south sides - were recorded in the recent survey (Herring 1993, 99- 101). These can only be fully understood when a large-scale plan of the summit showing not just archaeological features but also natural cliffs, scree slopes etc (all of which were made full use of) has been produced.

In 1762 Dr William Borlase noted that "on the southern brim next the sea there seems to have been a breast-work for small arms" (in Pool 1975, 40). This breastwork was rediscovered during the 1992 survey running, intermittently now (the sea having nibbled away stretches), for c350m along the south and west sides of the island, with two, possibly three, small batteries still visible. It was also shown to be at least as early as c1515 when a drawing was made which depicted three wheel-mounted cannon defending the western shoreline (B.M., Cott.). A breastwork surviving from the first decades of the 16th century is unusually early and its date can most likely be pushed back even further. In 1481 money was being spent by the Priory "in divers affairs" for the Mount's "fortification", including "making divers bullewarkes" and for "gunpowder... and Brymstone for gunpowder" (see Fletcher 1951, 63-4). This was probably a direct result of the siege laid by the forces of Edward IV to remove the Lancastrian Earl of Oxford in 1472-3 and there is a real possibility that Oxford's men themselves built the breastwork; certainly considerable damage was done to the Mount by the "divers ordnance" on the King's side (see Taylor 1932, 122-132). Further documentary research is required, as is a large scale survey of the breastwork's remains.

The recent survey demonstrated the excellent survival of the Mount's military remains, from the medieval castle to Second World War pillboxes. Perhaps most impressive of the post-medieval defences are those created by the Royalist Sir Francis Basset during the Civil War. Lost among the

19th century gardens and landscaped walkways on the east and north slopes are four well-preserved gun platforms, one with a pillbox installed on top. The defended gateway towards the top of the path to the summit is also Civil War; its well-known watch tower, with four splayed openings for hand-guns, standing on the northern end of a massive wall with two internally splayed cannon embrasures, a small-arms hole and, covering the gate, a dreadful murdering-hole. A guard room or fusiliers block house from which the village and harbour could be reached with shoulder-held small-arms stood on the eastern side of the gate (see Herring 1993, 105-6 for details). The only Civil War defences which do not survive are those gun platforms and earthworks constructed and thrown up in the harbour area (see Coate 1933, Appendix 6).

Research is required to refine the dating of, and thus provide an historical context for, the 18th century batteries on the west side of the summit and on the western and south-eastern cliff edges.

Stately Home and Estate

For over twenty years after the Civil War Colonel John St Aubyn commanded a garrison on the Mount until it was disbanded in 1660 on the orders of General Monck (see Fletcher 1951, 74). The island had been bought by St Aubyn from the Basset family the previous year and its castle's subsequent function was first as an occasional summer retreat from the St Aubyns' principal seat at Clowance and then, from the 1870s, permanent residence.

There is much to record, investigate and explain here. It seems that some conversions and alterations of castle and priory buildings were undertaken almost immediately, in the 1660s, if not before; but we also know, from Dr William Borlase's letterbooks (see Herring 1993, Appendix VI), that by 1731 the summit buildings were ruinous. Why the neglect and then, in the mid-18th century, why the sudden investment of considerable resources and the display of exquisite taste (notably in the conversion of the Lady Chapel into the 'Blue Drawing Rooms')? To what extent did it go hand-in-hand with increased wealth in the port, itself ruinous in c1700 but repaired and re-vitalised by the 3rd baronet in the 1720s to serve a newly re-installed pilchard fishing village and to exploit the burgeoning copper mines to the east of Marazion?

The gradual improvements and alterations made at the summit in the 140 years leading up to Piers St Aubyn's extensions and re-modellings of 1875-8 still require some disentangling although John Cornforth has recently gone some way towards achieving this (Cornforth 1993). Many features on the slopes, and on the fringes of the village, can be associated with the gentrification. These include the mid-18th century walled terrace gardens on the southern slopes (with discrete bower house close by), grottos (notably St Michael's Cave), romantic walks to craggy knolls, further late-19th century terraced gardens, and even two circular bathing-tent bases on the western rocky foreshore. There are also pigeon-holes built into cracks in the granite cliffs, Piers St Aubyn's 'Glastonbury Abbey Kitchen' dairy, and a well-preserved subterranean icehouse.

Harbour and Village

The St Aubyns taking up permanent residence in the later 19th century coincided with radical alterations to the harbour and village. An important industrial port and fishing harbour, with warehouses on wharves and narrow streets of pilchard fishers' cellars and lofts, and their families' cottages, was transformed in a few decades into a tidy service harbour and village for the stately home above. A perimeter wall with arched gateway and neat gatehouse, all built in 1877, formally separated village from Mount and, with only a handful of exceptions, the largely 18th century buildings in the village were removed and replaced with relatively standardised estate accommodation (see Herring 1993, 145-162 for details).

Such changes may now be considered insensitive but must be seen in their historical context, and not only that of widespread, almost universal, estate improvement in the 19th century. In 1859 the opening of Brunel's Saltash bridge brought London trains to Penzance, and that town's harbour - very much secondary in importance to the Mount's in the medieval and early post-medieval

periods - had also been greatly increased in size over the previous century. The owners of the Mount were making a clear-headed decision to alter the island's economy in face of this overwhelming competition. The copper mines had also begun to fail; Newlyn was now the rising star in the Mounts Bay pilchard fishery; and tourism, the county's newest industry, was increasing rapidly. St Michael's Mount conceded trade and fishing and made ready to welcome visitors.

It is, however, unfortunate that one effect of the late 19th century changes has been to cause historians to under-estimate the previous importance of St Michael's Mount's harbour. The recent survey demonstrated that the existing piers are not wholly early 18th century constructions but in fact retain much medieval walling. We can still see the shape and size of the medieval harbour; only the width of the entrance has been enlarged (see Herring 1993, 130-134). The harbour is also shown square, as now, on 16th century drawings. As large as Mousehole's, it is not surprising to see the Mount, as Marazion, high in the list of Cornish ports recorded in the 1337 *Caption of Seisin* (Hull 1971, lvi).

The former size and importance of the village have also often been underestimated. Buildings are shown extending further east and south from the settlement's core, onto the Mount's lower slopes, on all early engravings (examples from 16th to early 19th century reproduced in Herring 1993). The 1992 survey noted the existence of clearly defined earthworks, including several building platforms, on the mown grass below the dairy; with less distinct earthworks to the south of the laundry (now the Island Cafe). These require measured survey and ideally trial excavation as it is also probable, if not certain, that any pre-medieval harbour and associated settlement (Ictis et al) would be located here where a stony beach developed in the sheltered corner to the west of the natural causeway.

Breezes are beginning to disperse the mist as we leave the island, but much detailed and critical archaeological recording and analysis is still needed to clarify the Mount's colourful and symbolic position within Cornwall's history.

Acknowledgements

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Archives were made readily available at the Manor Office, Marazion, the Royal Institution of Cornwall, the Cornwall County Record Office, the Local Studies Library in Redruth, and the Penzance Library in Morrab Gardens.

Inside CAU, much constructive help has been received from Nicholas Johnson (County Archaeologist) and Peter Rose (Senior Field Officer). However, should any of the kites flown in this article get blown away, the author accepts that it was he who launched them. Particular thanks to Cathy Parkes for help with the text and to Jenny McLynn who processed it.

References

- de Beer, G., 1960. 'Iktim' *The Geographical Journal*, 126, 160-7.
- Coate, M., 1933. *Cornwall in the Great Civil War and Interregnum*, Clarendon, Oxford.
- Cornforth, J., 1993. 'St Michael's Mount', *Country Life*, June 3rd, 84-87.
- Fletcher, Canon J.R., 1951. *Short History of St Michael's Mount, Cornwall* (ed by D.J. Stephen), St Michael's Mount.
- Gilbert, C.S., 1820. *An Historical Survey of Cornwall*, Ackerman, London.
- Herring, P.C., 1993. *An Archaeological Evaluation of St Michael's Mount*, CAU, Truro.

- Hull, P.L. (ed.), 1971. *The Caption of Seisin of the Duchy of Cornwall (1337)*, Devon and Cornwall Record Society, Torquay.
- Langdon, A.G., 1896. *Old Cornish Crosses*.
- Maxwell, I.S., 1972. 'The Location of Ictis', *JRIC*, N.S. 6.4, 293-319.
- Orme, N., 1986-7. 'St Michael and his Mount', *JRIC*, N.S.10.1, 32-43.
- Pearce, S., 1978. *The Kingdom of Dumnonia*, Lodenek, Padstow.
- Peter, T.C., 1899. 'Notes on St Michael's Mount', *JRIC*, 14, 221-246.
- Pool, P.A.S. (ed), 1975. 'The Ancient and Present State of St Michael's Mount, 1762, by William Borlase', *Cornish Studies*, 3, 29-47.
- St Aubyn, J., 1978. *St Michael's Mount, Illustrated History and Guide*, St Michael's Mount.
- Taylor, J., 1649. *Wandering to see the Wonders of the West*, republished 1967 by Frank Graham, Newcastle.
- Taylor, Rev. T., 1932. *Saint Michael's Mount*, University Press, Cambridge.
- Thomas, A.C., 1988. 'The Context of Tintagel: a new model for the diffusion of post-Roman Mediterranean imports', *Cornish Archaeol.* 27, 7-26

A note on the Excavation Index for Cornwall and the Isles of Scilly

HELEN ASHWORTH

Introduction

Since 1978 the National Archaeological Record (NAR) of the Royal Commission on the Historical Monuments of England (RCHME) has been compiling an index of archaeological excavations carried out in England. This project has four main aims:

- 1) To compile a list of all archaeological excavations which have been carried out in England
- 2) To locate the original archive from each excavation.
- 3) To locate the finds from each excavation.
- 4) To indicate those excavations for which a report has been published.

The project began in the North of England and has progressed on a county by county basis. National coverage was achieved in 1989 with the completion of the Index for Greater London. Cornwall and the Isles of Scilly were compiled in 1985 and 1988. Updating of the Excavation Index is now under way, prior to initiating a programme of annual maintenance. At the time of writing (September 1992) the Excavation Index contains over 27,000 records, of which 570 relate to Cornwall and 96 to the Isles of Scilly. Figures 1 and 2 illustrate the number of investigations recorded for these areas. The scope of the project has recently been extended to cover watching briefs since 1960, evaluations, and surveys funded by English Heritage and its predecessors.

The computerised record, in which each separate excavation has a unique number, comprises the following fields: site location details, NAR number, periods and types of remains, event type, dates of interventions, the name of the director, sponsors and funding bodies, the whereabouts of the finds, the whereabouts and types of archive, and bibliographical references.

Now that national coverage is complete, the Index represents a major resource for English archaeology. In addition to the enhancement of national and local monument records, the Index can contribute to national and regional thematic research and provides an essential input to national strategies for archaeological archives. The Excavation Index is part of the larger National Archaeological Record, which also includes the Microfilm Collection and Photographic Library.

Focus of Archaeological Interest

Table 1 reflects the apparent focus of archaeological interest in the Isles of Scilly and Cornwall, comparing the frequency of excavations for given periods with its frequency nationally, although it should be remembered that many excavations were on multi-period sites.

It is clear that Bronze Age sites were heavily favoured by excavators in both Cornwall and the Scilly Isles, accounting for almost 50% of all excavations. Of the 228 Bronze Age excavations in Cornwall, 139 were on barrows, and of the 36 Bronze Age excavations in the Isles of Scilly, 16 involved chambered cairns. In general, the percentage of excavations on sites of the prehistoric periods is higher than the national average. Excavations on sites producing evidence from the historic periods, that is Roman and later, are lower than the national average. The few excavations on Roman sites may reflect the lack of major Roman activity in the county, as presently understood; nationally the focus was on Roman military sites and urban centres. The numbers of excavations on medieval and post-medieval sites has increased, reflecting the growing interest in, and better access to, urban sites, and research on rural sites by Professor Charles Thomas and others.

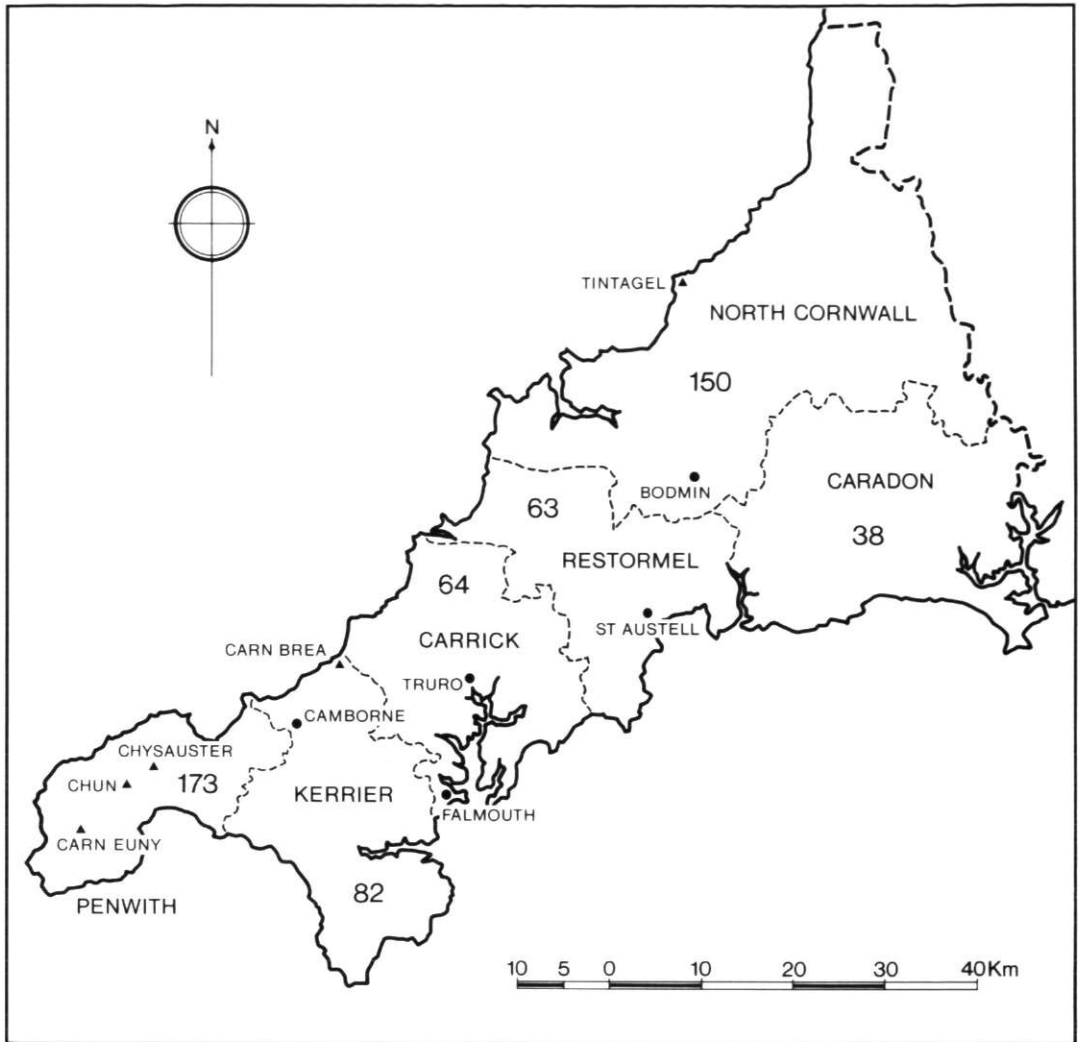


Figure 1. The number of archaeological interventions in each district of Cornwall.

Dates of Excavations

Cornwall

The earliest recorded 'excavation' in Cornwall was in 1580, when a Mr Gidley opened Bosneives Barrow in Withiel parish and found 'an earthen pott verie thyck' (Carew 1602). There are ten recorded excavations of eighteenth-century date, which include William Borlase's excavation at Bosavern Ros in 1748 and S. Williams' work on Gwallon Downs in 1740. The mid-nineteenth century saw a dramatic increase in archaeological activity, particularly in the 1860s and 1870s. During these decades W.C. Borlase directed 50 excavations in Penwith and North Cornwall. Thereafter there was a drop in the number of archaeological excavations until the 1930s, when there was a marked increase under the aegis of excavators such as Col. F. Hirst, H. O'Neill Hencken, C.A.R. Radford and C.K.C. Andrew. Since then there has been a steady increase in the number of archaeological excavations in the county, under the auspices of organisations such as the West Cornwall Field Club, the Cornwall Committee for Rescue Archaeology and, more recently, the Cornwall Archaeological Unit.

The Isles of Scilly

The earliest excavation noted on the Isles of Scilly was in 1752 when William Borlase opened two Bronze Age chambered cairns at Buzza Hill on St Mary's. Local lore believed him to have annoyed the Giants buried there by this interference, since his disturbance was followed by a terrible storm which ravaged the Isles (Pool 1986,152). The only other archaeological excavation recorded during the eighteenth century was a Bronze Age chambered tomb at Kittern Hill on St Agnes opened by J. Troutbeck, and only five excavations are recorded for the nineteenth century.

Archaeological interest in the Scilly Isles reached a peak during the period 1947-53 when Helen and Bryan O'Neil spent part of each year there. They directed 23 excavations in the Isles, mostly on St Martin's. Their excavations have been recorded in more detail elsewhere (Beagrie 1989).

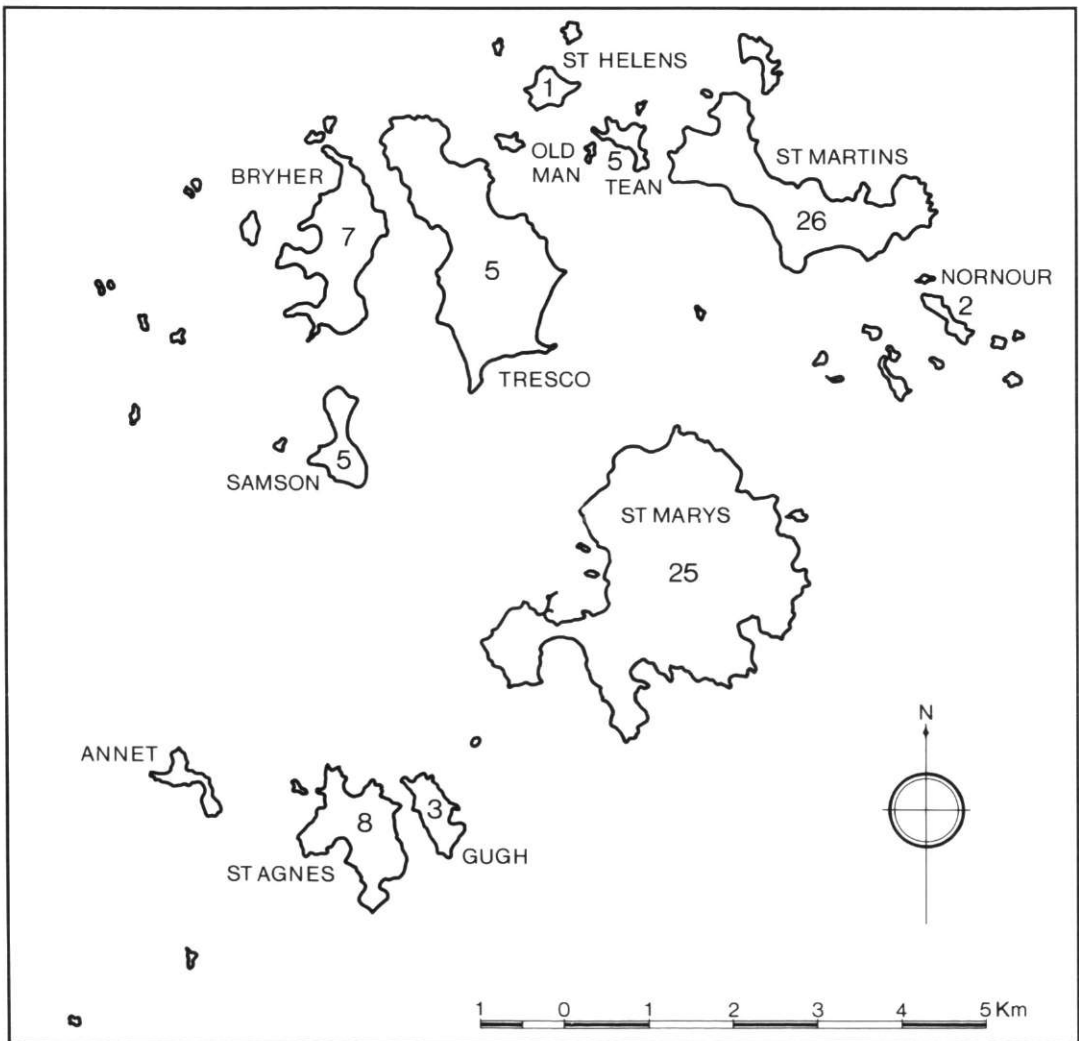


Figure 2. The number of archaeological interventions on each island in the Isles of Scilly.

Using The Index

The database created by the Excavation Index is a national archaeological resource, and is available in standard format for the whole of England. Its computerisation allows information to be retrieved from any combination of fields in the record. The NAR also houses an expanding collection of archaeological records on microfilm, which is available for public consultation. Enquiries can be made by personal visit, or by telephone or letter. On-line searching of the Index is possible via a computer terminal in the NAR library in Fortress House. Catalogues can be generated to answer specific enquiries from members of the public. This service is free, although a small charge is made to cover the cost of printout.

Contact Address:

National Archaeological Record, R.C.H.M.E., Fortress House, 23 Savile Row, London, W1X 2JQ. Telephone 071-973-3148.

Acknowledgements

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Bibliography

- Beagrie, N., 1989, 'Excavations by Bryan and Helen O'Neil on the Isles of Scilly', in M. Bowden, D. Mackay and P. Topping (eds) *From Cornwall to Caithness: Some Aspects of British Archaeology; Papers presented to Norman V. Quinnell*, Brit Archaeol Rep 209, 49-54, Oxford.
- Carew, R., 1602, *A Survey of Cornwall*.
- Pool, P.A.S., 1986, *William Borlase*, Truro.

Table 1 : Percentage of interventions by period.

<i>Period</i>	<i>Cornwall</i>	<i>Isles of Scilly</i>	<i>National Average</i>
Mesolithic	2.5	0	2
Neolithic	5	0	5
Bronze Age	42	38.5	19.8
Iron Age	17	16.6	10.4
Roman	12.6	19.8	36.7
Early Medieval	8	10.4	9.8
Medieval	19	10.4	26.7
Post Medieval	10.7	9.3	13.2
'Unclassified'	8.2	7.2	8.3

These figures record the percentage of interventions which have produced material of a given period. Owing to the presence of multi-period sites, these figures add up to more than 100%.

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An underground passage rediscovered

G. F WALFORD

Summary

In 1945 the late C K Croft Andrew (CKCA) investigated a hole that for a period of over twenty years had repeatedly appeared in Penvith farmyard. He found a tunnel running east-north-east through rock under a barn to a point where it was blocked by masonry. It was whilst converting this barn to a dwelling that the present owners found the entrance to a tunnel.

Introduction

Penvith Farm, NGR 283551, lies at the head of a valley 122 metres above sea level, 823 metres from the shore and 3.2 kilometres from Looe. It was formerly one of the farms purchased by the Great Western Railway between the wars when they had ambitious plans to develop the area for tourism. The scheme was abandoned after the war.

In 1945, on behalf of the agents acting for the railway, CKCA was asked to investigate a hole that for over twenty years had been appearing in the farmyard. He found a rock-hewn passage 13.4 metres long running east-north-east under a barn where it was 'blocked by masonry probably of the 18th or 19th century fallen from the foundations of the barn's eastern wall. The debris contained stalactites 152 millimetres long and stalagmitic deposits'. (Croft Andrew 1946, 337-8). He goes on to say that in the opposite direction the upper two-thirds of the passage was blocked by a very neat dry stone wall supported by a slate slab under which had been left a culvert nearly 0.6 metres deep.

The shape of the passage was a narrow ellipse approximately 6.2 metres high, 0.38 metres wide at floor level and 0.66 metres wide at shoulder level, the roof being crudely rounded. The style was that of the early drift miner and the marks of his pick can be seen. The passage falls evenly from east to west.

The Wheel Pit

The Farm buildings are now owned by Mr Ken Chitty and partners who have converted the barn into a dwelling. A local historian, Mrs Janet Wright, had read CKCA's report in *Devon and Cornwall Notes and Queries* and on several occasions had asked, jokingly, whether the developers had found the tunnel until one day Mr Chitty admitted he thought they had. The find was reported to the Cornwall Archaeological Unit by Mrs Wright and visited on their behalf.

To check the foundations a mechanical excavator had been used to dig along the eastern wall of the barn. The ground was found to be very soft. Some 4 metres or so below the ground level an opening appeared in the barn wall. It became clear it was in a water wheel pit 1 metre wide with an estimated diameter of 4.6 metres, the hole being the entrance to the tunnel. The north edge of the pit could not be seen, either because the excavator had not reached it or more probably because it had been destroyed. A granite millstone was recovered by the excavator from the soil over the wheel pit.

Although the pit had not been fully cleared of debris enough of the entrance to the tunnel was exposed for it to be entered. The passage did not continue to the east. It was possible to stand upright and walk to the west-south-west where it was blocked, presumably at the point where CKCA gained entry in 1945. It was found to be exactly as described above.

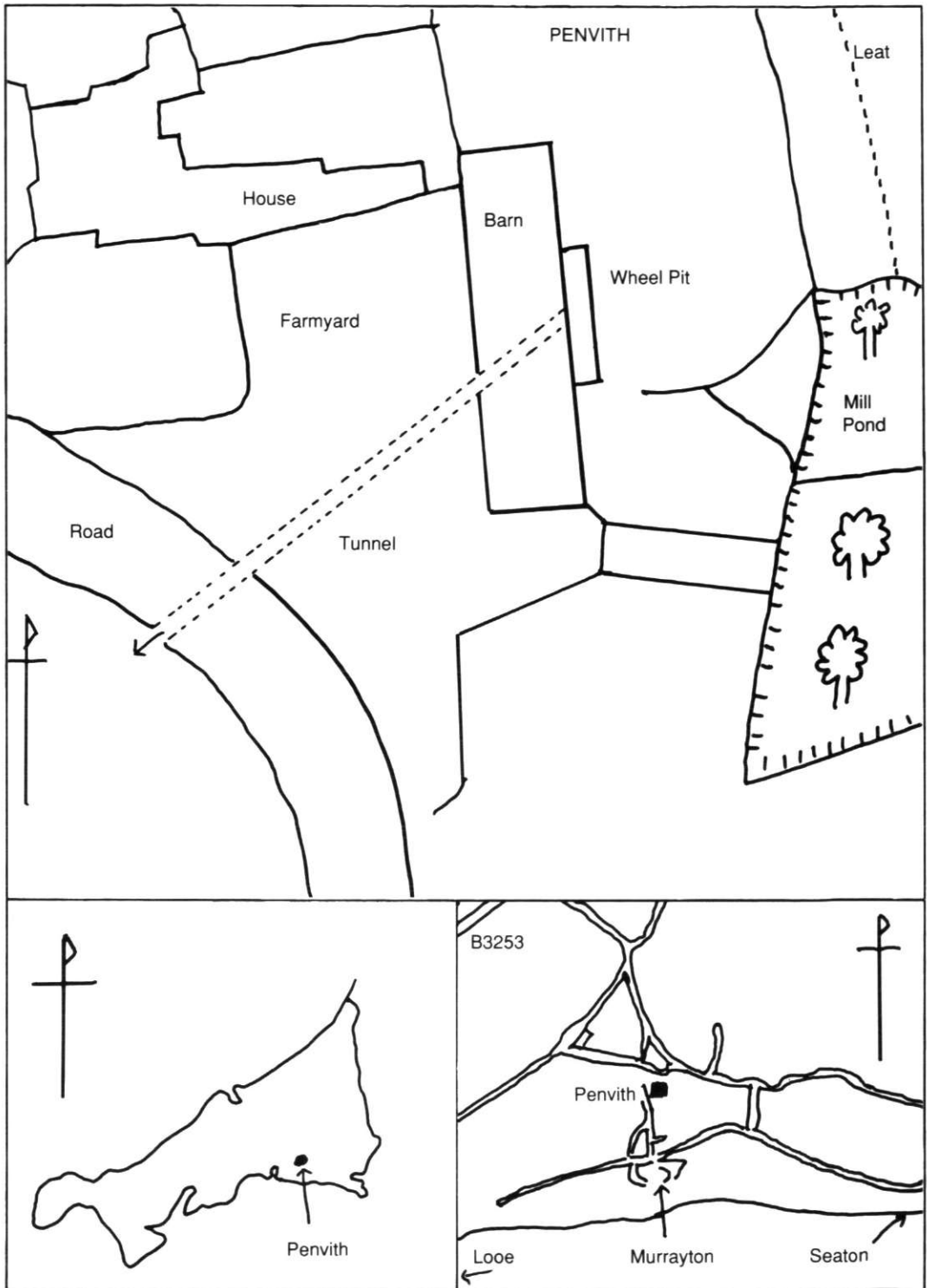


Fig 1 Location of the Penvith tunnel

Discussion

The date of construction of the mill and water wheel is not known. CKCA gives 1390 as the earliest mention he could find of 'Penveugh'. It seems unlikely that the present barn is older than the mid-nineteenth century for nothing is shown on the 1839 Tithe map yet the barn, but not the wheel pit, appears on the 1/2500 1907 Ordnance Survey sheet. This suggests that the wheel pit and tunnel may be earlier which fits CKCA's theory that Penwith was a manor, although not an ancient one, and that it would have been politic to provide a mill for the tenants. This could have happened in the late Middle Ages, five hundred years ago. He suggests that the mill may have been abandoned in the second half of the seventeenth century when the Manor was dissolved.

He was correct in deducing that the tunnel represented the conduit of the tail race of a water wheel. That he did not discover the site of the water wheel can be explained by the fact that it was buried under a considerable depth of soil. It is possible there had been a breach in the bank of the mill pond immediately to the east and above the water wheel allowing a heavy wash of silt to fill and cover the wheel pit. The recent excavators did not report finding the remains of a water wheel so perhaps it had been abandoned and removed before disaster struck. It is thus possible that the barn is built upon an older structure which included a mill. CKCA speculated upon the possibility that the passage was primarily intended as a smuggler's cache. Indeed, this is an interesting and romantic idea; it certainly makes a fine wine cellar for the present owners.

Reference

C. K. Croft Andrew, 1946, *Devon and Cornwall Notes & Queries* 32, 337 (218).

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St Just Mining District

The coast of the far west of Cornwall probably most completely fits the public conception of a Cornish mining landscape - the ruins of engine houses perched on rugged clifftops, hamlets of terraces interspersed with chapels and a mining history stretching far back into the mists of time. As elsewhere in Cornwall, ruined 19th century mine buildings have become part of the landscape, to be admired, photographed and painted by visitors, but they are equally markers of an important shared past for many local people. In the mid 1980s, the tin crisis had brought the closure of Geevor - the last working tin mine in the district. This was a traumatic event for local people, severing as it did one of the last direct links between the area and its mining past. In the surrounding countryside, where industry had become archaeology over a century ago, it was becoming increasingly clear that many ruined engine houses and other mine buildings were in danger of imminent collapse, and might soon be lost for ever.

As a result, Cornwall Archaeological Unit was commissioned by a group of concerned sponsors to undertake a programme of archaeological assessment of the whole mining district. Although the condition and importance of the engine houses were considered, this formed only part of the survey. Its broader aim was to try to record all the surface evidence for mining in the area, and to identify not only problems (open shafts and other public hazards), but also the potential of these industrial remains to make an economic, social and cultural contribution to the area in the future.

The survey results have now been published by the Unit. The first volume of the report introduces the area, its geology and long history and describes the wide variety of features discovered. The management of mining sites is considered with reference to public hazards, access, interpretation and education, though the accent is very much on the enormous potential of the area, rather than just its problems. The second volume discusses the sites in detail: site histories and feature-by-feature descriptions are accompanied by explanatory maps and plans, and for each site, conservation needs, public hazards and the potential for management are fully considered.

The survey has revealed that there is far more to the St. Just mining district than its two best-known mines - Levant and Botallack. Indeed, the range and quality of its sites probably surpasses those found in any other part of the county. Organisations such as Penwith District Council and the National Trust are already implementing many of the report's recommendations, whilst at Geevor, the far-sighted purchase of the mine and its buildings by Cornwall County Council has allowed work to begin on the creation of a unique heritage site where the history and techniques of mining can be explained in the midst of one of the most extraordinary historic landscapes in Britain.

The survey report: *St. Just - an Archaeological Survey of the Mining District* by Adam Sharpe is available from Cornwall Archaeological Unit for £15.00 incl. P&P.

Adam Sharpe

Pendennis Headland

The development of the new leisure pool on the headland overlooking Falmouth dock has brought into focus the importance of the headland as an historic military complex of national significance. The pool is built just behind Upton's Redoubt, the forward gun position in the Royalist defences of the castle during the Civil War. The Unit was commissioned by Carrick District Council and English Heritage to review the importance of the defences, their current condition and future potential. Research has revealed an astonishing range of defences, with many parts still surviving; the castle itself, in the care of English Heritage, is just one component in this complex. A very large part of the headland is now a Scheduled Monument.

The offensive capabilities of the fortifications were designed to defend the anchorage of Carrick Roads and, from the late 19th century, the newly constructed docks. There were also many gun positions and defensive works to defend the headland fortifications from landward attack. The fortifications represent examples of all the major technological changes in armament design from the time of Henry VIII to the Second World War. For 300 years guns fired cannon balls from smooth bore cannon. In the latter part of the 19th century shells replaced cannon balls, rifled barrels replaced smooth bore, and breech loading replaced muzzle loading. Later, all the bigger guns had Position Finder stations, and searchlights with their associated electrical generators.

From the early 19th century, St Anthony's Battery and Half Moon Battery provided long range guns to prevent ships entering the anchorage. Later defences covered mine fields in Carrick Roads with Quick Fire batteries on the Headland and at St Mawes Castle. In the Second World War the headland was an armed camp. Falmouth was an important collecting point for Atlantic convoys and for D Day preparations. Coastal defence was abandoned in 1957 and the castle became a public monument and the headland acquired by the Local Authority.

The principal recommendations for future management include:

- * locate and re-form historic earthwork fortifications including the Hornworks, Upton's Mount Redoubt, and the Elizabethan Traverses.
- * Excavation and consolidation of Little Dennis Fort including the Blockhouse Platform and also Crab Quay Battery.
- * Re-creation of the 19th century Arboretum.
- * Investigation of the Iron Age cliff castle.
- * Develop interpretative facilities.
- * Develop a round-headland walk.
- * Expand the car park around the leisure centre, close and regrass the Hornworks car park, and provide a new car park for the castle.
- * Take Half Moon Battery into the castle chargeable area to facilitate development of the battery.
- * Carry out a substantial vegetation clearance programme to expose defensive works.

The survey report, *Pendennis Headland - The Defences 1540-1956* by Charles Johns *et al* 1992 is available from CAU for £10 incl. P+P.

Charles Johns

Littlejohns Barrow

In late July and early August 1992 CAU staff recorded the remains of an Early Bronze Age round barrow 600m west of Hensbarrow and near to the entrance of Littlejohns China Clay works (Grid Ref. SW 9910 5745). Although the barrow is a Scheduled Monument it had never been surveyed by the Ordnance Survey and was severely damaged during the construction of a haul road and excavation of an electric cable trench by English China Clays International Ltd who agreed to fund a programme of archaeological recording and restoration of the monument. The hardcore of the haul road was carefully removed by machine together with other dumped material. The exposed surface of the truncated barrow could then be recorded.

The damaged barrow shared a number of features in common with the group of six barrows on the St Austell granite excavated by Henrietta Quinnell in the early 1970s. These features included a possible stone ring-bank as a first phase, a central pit for ritual offerings or burial, a turf mound and distinctive yellow clay capping. The work undertaken at Littlejohns reinforces the concept of the barrows on the St Austell granite as a ritual group sharing certain features from a combination of structural elements yet each with its own complex history and individual characteristics. The turf mound was analysed for fossil pollens by Vanessa Straker and Keith Crabtree of Bristol University; this revealed an open environment of grasses and heather when the barrow was built.

When recording had taken place the barrow was re-profiled to form a circular mound 17m in diameter and 1m high. Because of the volume of soil involved this was done mechanically, under close supervision. The objectives of the re-profiling were to preserve the damaged remains by burial and to recreate the mound as a landscape feature which would make further damage in the future less likely.

Charles Johns

Isles of Scilly

1 Conservation Works

During 1992 CAU expanded its programme of conservation work in the Islands.

- * The impressive Civil War battery and Napoleonic watch house on Mount Todden, on the east side of St Mary's, were cleared of the dense brambles, bracken and gorse which were completely obscuring them.
- * At King Charles' Castle on Castle Down, Tresco, repairs were carried out to the Civil War earthwork lying on the landward side of the mid-16th century castle.
- * Repairs to the Bronze Age burial monuments on North Hill, Samson were also completed during 1992.

This work was funded by English Heritage, with materials for King Charles' Castle being supplied by Tresco Estate. The Isles of Scilly Environmental Trust loaned equipment for work at the other sites. The work was carried out by British Trust for Conservation Volunteers under the close supervision of CAU field officers, who made detailed records (black and white photographs, plans, profile and elevation drawings) of each monument prior to repair work taking place (or in the case of Mount Todden battery, after vegetation had been cleared). A photographic and written record was also made of the repair work itself.

Both the rampart at King Charles' Castle and the cairns and entrance graves on North Hill, Samson, had become eroded as a result of footpaths crossing over the top of them. Continuous trampling by human feet had resulted in the protective cover of heather turf becoming worn away and hollows and cavities forming in the underlying earthwork material. CAU's response to this problem was to close off or redirect the footpaths using knee-high wooden signs and reform the profile of each earthwork by infilling the eroded area(s) using natural materials. One problem which had to be overcome before any infilling could take place was what to use as topsoil. Both Castle Down and North Hill are Sites of Special Scientific Interest and because of this normal agricultural topsoil could not be used as it would introduce "foreign" plant species. It was decided that the only viable option was to buy in a sterile growing medium. Peat was, of course, out of the question for wider environmental reasons, but a substitute was found. Produced in Ireland by a company called "Earthcare Products", its main ingredients are Guinness and barley and its brand name, *Danu*, derives appropriately from a Celtic Irish goddess!

Where eroded areas were relatively shallow the profile of the earthwork could be reformed using *Danu* alone, but where deeper scarring had occurred, beach stones, *Danu*-filled hessian sacks and (in a few cases) stepped timber revetments were used beneath a top covering of *Danu*. Heather seed litter and cuttings were scattered over and planted into the *Danu* to encourage regrowth over the repair areas and jute netting was used to hold the whole repair in place.

At two points along the King Charles' earthwork it was thought impractical to redirect the footpath crossing it at right angles. These two paths represented strong "desire lines" (that is, visitors would most probably continue to use these routes even if requested not to do so because they were the most direct way of getting from A to B). In these two cases it was decided to retain the existing footpath but take measures to protect the fabric of the earthwork. This was achieved by the construction of timber revetted steps infilled with beach stones and an upper layer of compacted *ram* (the local subsoil). The steps served the dual purpose of repairing the eroded area

(the profile of the steps reflected that of the uneroded rampart on either side) and protecting the earthwork from further erosion. In addition, it is hoped the steps will encourage visitors to enter and leave via these two points, so reducing pressure on the rest of the monument.

To inform and explain conservation work on Samson and Tresco to members of the public, information leaflets were produced for handing out while work was in progress and temporary information signs have been erected at the two sites.

2 Recording and Monitoring Coastal Sites

Since 1989, with English Heritage funding, CAU has been recording and monitoring prehistoric (and later) remains in the cliff and intertidal areas around Scilly's present coast.

Though some intertidal sites, such as medieval quays, were deliberately constructed on the foreshore, most consist of earlier structures and deposits originally located on dry land but subsequently submerged by a gradual rise in sea level. According to the current model for sea level change (produced by Professor Charles Thomas), at the end of the last Ice Age ten thousand years ago Scilly was possibly one large island. As the ice sheet melted, sea level rose and by around 3000 BC a number of separate islands had formed - the main one encompassing the modern islands of St Mary's, Bryher, Tresco and St Martin's, with St Agnes, Annet and the Western Rocks constituting three smaller tracts of land. It was probably not until the end of the Roman period that today's islands began to appear and even as late as the 11th century AD most of these would have been joined at low water.

Submerged stone remains (such as field walls, round houses and cist graves) have been documented since as early as the 18th century. However, in recent years, in conjunction with English Heritage's Ancient Monuments Laboratory, CAU has pioneered new work in the intertidal zone by recording and sampling submerged 'peat' deposits. These peaty soils are extremely important because they can be radiocarbon dated and can thus reveal when the locations at which they have been found were areas of boggy land rather than foreshore. In addition, they contain pollen which provides evidence of the vegetation that surrounded these bogs. With this valuable information it should be possible to check and refine the present model for sea level change and add to our existing knowledge of Scilly's vegetational history.

Between 1990 and 1992 a total of nine intertidal 'peat' deposits were sampled at three locations in Scilly - on Higher Town Beach (St Martin's), at Crab's Ledge (Tresco) and in Porth Mellon (St Mary's). Some deposits were exposed on the surface of the beach, while others were revealed by augering down through the sand. Pollen analysis has yet to be carried out on the samples, but some interesting radiocarbon results have already been obtained. For example, the following calibrated age ranges indicated when 'peats' sampled towards the bottom, middle and top of Higher Town Beach first began forming: 4229-3823 BC (Early Neolithic), 3370-2934 BC (Middle Neolithic) and AD 390-600 (end of the Romano-British or beginning of the early medieval period). At Crab's Ledge radiocarbon dating has shown that the exposed 'peat' began forming during the late Iron Age or early Romano-British period, after the laying out of a field system, the boulder-walled remains of which extend further down the beach. On both beaches augering has revealed two earlier deposits (not as yet satisfactorily dated), making a total of five recorded 'peat' phases on Higher Town Beach and three at Crab's Ledge. What is unclear at this stage is whether the inter-peat phases are the result of periodic inundation by the sea or some other natural event or process. Examination of all the samples taken for the microscopic marine organisms (known as diatoms and foraminifera) may help us to understand how far the sea affected these early peat bogs.

Sea level is still rising and erosion around the edges of Scilly's existing islands continually exposes archaeological structures and layers in the low cliff face. Most of these are the settlement (and burial) remains of Scilly's earliest inhabitants (prehistoric to Romano-British) - sites which were located on the lower hillslopes of a much larger land mass or, even if originally coastal, were certainly further inland than they are today! However, some cliff-face sites are of more recent date

and were deliberately located close to the cliff edge, for example post-medieval defences (such as Civil War breastworks and batteries).

CAU has carried out detailed recording work at thirteen cliff face sites since 1989. In each case the cliff face has been drawn in the same way as a section through an excavated archaeological site, with the exposed layers and features being allocated excavation context numbers and described on context sheets. Artefacts collected have been marked on the section drawing, allocated discrete find numbers (which incorporate the site code) and described on find forms. Where feasible a plan has been made of the cliff edge and at two sites geophysical survey and augering have been used to determine the extent of underground remains inland. At earlier sites samples have been taken (by English Heritage Regional Environmental Archaeologist, Vanessa Straker) for radiocarbon dating and environmental analysis (the identification of pollen, charred and mineralised seeds and grains, bones and shells).

Such environmental sampling can greatly increase our knowledge of Scilly's early settlement sites, throwing new light on the diet and economy of their inhabitants, the nature of the surrounding vegetation, the overall character of the landscape and general climatic conditions. Combined with the structural remains recorded in the cliff sections and the artefacts collected, the environmental evidence can give us a good idea of what everyday life was like at these settlements and in Scilly as a whole during the periods they represent. So, for example, though it was already known that in the Bronze Age (2500-600 BC) Scillonians lived in stone round houses and practised a mixed subsistence economy, we now have much more information about the type of crops they grew (emmer wheat, naked and hulled barley, oats and celtic beans), the domestic animals they raised (oxen, sheep and goats) and the wild ones they hunted (deer, pig, seal and a wide variety of bird and fish species). From the range of weeds and wild plants identified we know that as well as cultivated land the Bronze Age landscape included areas of heathland and grassland, sandy dunes and boggy pools.

In 1992 detailed cliff-face recording took place at three sites: below Bonfire Carn (Bryher) where a 12 metre long cliff section contained the floor and occupation layer of a house (probably Iron Age); in East Porth (Tean) where a Romano-British limpet midden (rubbish heap) exposed in the extremely low (0.6 metre high) cliff face is part of a multi-phased site partially excavated by Charles Thomas in 1956; at Block House Point (Tresco), where post-medieval walling high up in the dune face may represent the remains of a line of defence in front of the 16th century blockhouse.

In addition to detailed recording and sampling of Scilly's cliff and intertidal sites, the Unit also carried out regular monitoring of these sites so that the degree of erosion can be assessed, any newly exposed features recorded (photographically) and artefacts systematically collected. In 1992 this work was restricted to a dozen key sites, but after severe winter storms (such as in 1990) a rapid examination is made of all the most vulnerable and archaeologically rich stretches of coast.

The general results of CAU's coastal recording and monitoring are presented in its annual Isles of Scilly fieldwork reports. A detailed report pulling together evidence for the ancient environment - pollens and peats, plant remains and animal bones - will be published in 1994.

3 Watching Briefs

Four developer-funded watching briefs took place in the Islands during 1992/3 as a result of trenching operations by the Council of the Isles of Scilly, British Telecom, South Western Electricity plc (SWEB) and the St Martin's Hotel.

During June 1992 the Council laid water pipes across Mount Todden on the east side of St Mary's to connect their new desalination plant with the coast. Their trench cut through a prehistoric field boundary on the north east side of the hill and a CAU field officer was present to record this feature and to monitor the trenching in general.

SWEB's operation in March 1993 involved the laying of a low voltage cable on St Mary's, from the Garrison Gate to Star Castle, the 16th century artillery fort. As well as artefacts of post-

medieval date from the castle moat, this trench revealed some interesting features beneath the surface of the curtain wall - such as the cobbled roof of a blocked-off room and what appeared to be rubble make-up for the paved gun platforms. A surprising find was a single piece of Romano-British pottery from a field east of the castle.

Also in March, a trench was dug above Lower Town, St Martin's, connecting the hotel water storage tanks with a borehole to the east. Despite running just south of a group of Bronze Age entrance graves, this trench threw up only a handful of prehistoric artefacts. Nevertheless, the potsherds amongst these are of considerable interest because they date to 1000-500 BC, making this one of only two sites known in Scilly which has yielded unmixed first millennium BC pottery. In addition one of the sherds appears to contain inclusions of grog (broken pottery), an unusual feature not noted before in early Scillonian pottery.

However, without doubt the most exciting and intriguing finds of 1992 were revealed during August by a British Telecom trench dug through the centre of Lower Town. This trench was part of an operation to install new ducts on St Martin's, which began at Higher Town (towards the east end of the island) and passed through Middle Town to Lower Town at its western end. Finds of medieval pottery from the west side of Higher Town were significant but to an extent expected, confirming previous evidence for an earlier settlement in the vicinity of the present church (itself on the site of a medieval chapel and cemetery). Trenching either side of Middle Town uncovered only a few post-medieval artefacts. In contrast, when the mechanical digger began working its way along the roadside at Lower Town, it cut through not only the remains of a human skeleton, but also a well-sealed early medieval midden (or rubbish pit).

The skeleton lay in a shallow grave and was clearly a Christian burial, being orientated east to west, with the head at the west end and the hands placed together at the waist. As is correct procedure when a human skeleton is uncovered, the police were immediately informed. However, though their involvement prompted a rush of public interest and press and radio coverage, it came to an abrupt end when the pathologist (discovering extensive wear on the teeth and no cavities) proclaimed the remains more than a hundred years old. The skeleton was subsequently examined by a human bones specialist who found it to be that of a male about 1.72 metres (5 ft 7½ inches) tall and 33-45 years old. Radiocarbon dating of the skeleton's right leg revealed that burial took place some time between **AD 1020 and 1260**. This early date range is very exciting because it provides evidence for the existence of a second medieval cemetery on St Martin's.

Attracting much less publicity, but just as important, was the very rich early medieval midden which was exposed in the side of the trench a short distance to the east of the skeleton. As well as pieces of locally made pottery and corroded metalwork, it contained a dense concentration of animal bones (particularly bird and fish), shells and crab claws. Charred plant remains were also present, including grains of cultivated plants (wheat and barley) and seeds of arable weeds.

The importance of this midden is threefold. Firstly, it provides evidence for an early medieval settlement at Lower Town, associated with the cemetery (and a chapel?). Secondly, it allows us to reconstruct details of the diet of the early medieval community on St Martin's and the nature of the subsistence economy being practised (fishing, farming, hunting/trapping and collecting). Thirdly, it has provided the first opportunity in Cornwall and Scilly to closely date early medieval artefacts of this type - radiocarbon dating of sheep/goat bone and shell from the midden has produced age ranges of AD 968-1170 and AD 1020-1270. A full report of the archaeological results from the British Telecom trenching operation will be published in 1993-4.

Jeanette Ratcliffe

Lanlivery Church

A watching brief was held during 1992 on internal alterations and external excavations being carried out at Lanlivery Church. A drainage trench was dug along the north side of the church, and around the north transept, reputedly the oldest part of the structure, and internally, Victorian

suspended floors were being replaced and benches rearranged.

Apart from numerous recent graves disturbed by the trenching, the main result of the work was the discovery of the footings of two massive stone walls at the base of the trench along the north wall of the north transept. (See Warwick Rodwell's discussion of these discoveries, pp76-111 above).

Steve Hartgroves

Burraton-Liskeard Gas Main

In January 1992 British Gas commissioned Cornwall Archaeological Unit to investigate the archaeological implications of a new gas main from Burraton to Liskeard, in east Cornwall. Some 11.5 miles long (18.5 km), crossing the parishes of St Stephen by Saltash, Botus Fleming, Landrake, Quethiock, St Germans, Menheniot and Liskeard, the pipeline corridor provided an opportunity to sample a large area of predominantly rural landscape. An initial desk-based study was undertaken by CAU; the SMR indicated a few prehistoric finds, particularly at the eastern end of the pipeline route. This part of east Cornwall is also characterised by farmsteads with place-names recorded in the medieval period. A few new discoveries were made, including a possible Iron Age/Romano British defended farmstead (a round), which was identified from an air photograph. The line of the works corridor was diverted after the discovery of this feature and CAU acknowledges the co-operation of British Gas and the farmer.

When installation of the pipeline commenced in the summer months, a watching brief was carried out by CAU, comprising a search of the pipeline corridor for buried archaeological features and artefacts. A major component of the archaeological work was the investigation of the 'modern' field banks. Many of Cornwall's hedges are likely to perpetuate the line of medieval boundaries. Hedges are perhaps the commonest historic feature in the countryside and yet we know very little about their history, age and development. Some 162 boundaries were breached by the pipeline. In 31 cases there was evidence of an earlier phase, usually a smaller bank which had been enlarged. Most of the boundaries appear to be simple earth banks, with a hedge on top. Where the banks have stone faces these were mostly found to have been added at a later date (perhaps the last two or three hundred years); this has also been seen elsewhere in the county. Soils sealed under the banks were sampled to look for fossil pollens which would reveal the nature of the environment when the hedges were built. Preservation was poor but analysis (by Vanessa Straker of Bristol University) indicated open vegetation in disturbed ground, some grassland and occasional arable; the area has been farmland for hundreds if not thousands of years. No dating evidence was found in the hedges and finds were generally few and far between, suggesting that the pipeline had succeeded in avoiding early settlement sites. It is likely that in this part of Cornwall, the present day farms probably occupy the sites of their medieval and prehistoric antecedents, a pattern certainly strengthened by the topographical relationship of the farms and field systems, where many of the traditional landholdings are separated by stream valleys.

Nigel Thomas

Foage lynchet

Responding to CAU recommendations for the treatment of Zennor's extremely important prehistoric field boundaries, most of which are still used by modern farmers, the National Trust commissioned the recording of two JCB-cut trenches through a collapsed hedge on their farm at Foage, in advance of its repair in July 1992 by the Acorn Volunteers. (See pp17-28 for a fuller report.)

Peter Herring.

Bodmin Burgage Plots

In March 1992 CAU carried out an archaeological assessment for North Cornwall District Council of ancient burgage plots on land to the south of Fore Street, Bodmin, the proposed site of a new car park.

The burgage plots are long strips of land, gardens, allotments and meadows, divided by walls, fences and earthen banks, extending back from the houses fronting onto Fore Street. Most of the plots are now overgrown and in a state of neglect. The term *burgage* describes a very old system of land tenure whereby parcels of land in a borough were rented from the king or some other landowner. In Bodmin, until the dissolution of the monasteries, this was usually the local Prior. The burgage plots are archaeologically significant because part of the original layout of medieval Bodmin is preserved in them, their boundaries having remained relatively unchanged since the Middle Ages.

The archaeological assessment consisted of a brief search of old maps and documentary sources, an archaeological survey of the site and the excavation of a number of test pits and trial sections through the boundary banks. Mostly they are simple earth banks with hedges on top, and this probably reflects their original character, though some had been enlarged or strengthened.

Because of their archaeological interest CAU recommended that the burgage plots should be preserved from development as a car park and incorporated into a recreational or amenity area. In the event of the development proceeding CAU recommended that adequate provision should be made for archaeological recording of the site.

Charles Johns

DERELICT LAND

In 1992 CAU became involved as archaeological consultants for Kerrier District Council's Derelict Land schemes. There are two distinct types of Derelict Land scheme designed and overseen by Kerrier Services Department:

The Kerrier Derelict Land Reclamation Programme involves the purchase of land which is designated as "derelict" (usually sites of abandoned metal mines), the formulation of a scheme designed to return the land to beneficial use, obtaining approval for Derelict Land Grant (DLG) aid from the Department of the Environment (DOE), and the completion of the works by various contractors. The works involved may include shaft-capping, dump regrading, the removal of toxic waste deposits, top-soil cloaking, and re-planting. End-use objectives may be for housing, industrial units, forestry, or amenity areas.

The Kerrier Mineshaft Capping Programme does not involve land purchase or the treatment of large areas, but instead targets individual shafts or groups of shafts for safety works. These may be isolated examples or part of a mine complex. The shaft is excavated to find firm rock, plugged with a concrete raft, and back-filled.

Because many of the sites involved form part of abandoned mines, they have the potential for great archaeological and historic significance. As the reclamation and safety works planned are necessarily often extremely destructive to buried and surface archaeological features, CAU felt strongly that archaeologists should be closely involved in all DLG projects from an early stage. The purpose of this would be to advise on the significance of the site, recommend measures and modifications to the schemes which would minimise or reduce damage, or failing this, to make a proper archaeological record of features which could not be retained as part of the site.

A procedure was agreed with Kerrier and DOE which involved a three-stage programme of archaeological work for each site or minecapping scheme:

The first stage is *Appraisal*, a rapid desk-based exercise which examines the sites to be affected by the proposed schemes and identifies those which are of archaeological significance and should be the subject of further work.

The second is *Assessment*, a study of each site identified at the Appraisal stage. This normally

involves documentary and map research, a field visit to each site, and the production of a report including a gazetteer of all features with recommendations for appropriate treatment during the DLG works.

Some sites may require a further stage, involving *Evaluation* or *Mitigation* works. Evaluation would normally only be recommended on very complex or large sites where the archaeological potential is still unclear after the assessment, and may involve ground survey or trial excavation. Mitigation (recording) works would be recommended where safety works will damage or destroy important historic features, or may indeed reveal them by ground disturbance. They normally would include watching briefs during shaft-capping, sketch survey, and photography.

The range of sites dealt with during the first year was a wide one, mostly from the Camborne-Redruth mining field but including others to the north, west and south. They ranged from small sites with a single shaft or one engine house to large mine complexes covering many hectares. Many were already known to be of great historical importance; others proved to have greater archaeological significance than had previously been realised.

The sites included several which had been part of Dolcoath Mine, including the central area around New Sump Shaft and the late, new vertical shaft at William's; large areas of the Great Flat Lode including Marriott's Shaft and the Basset Stamps to the south of Carn Brea; a coastal mine at Wheal Tye; Taylor's Shaft at East Pool (managed by the National Trust); a large area including the old Cook's Kitchen Mine; and the remains of Cornwall's last tin smelter at Seleggan. Not all were mining areas; one site assessed near Portreath was a World War II WAAF camp. Many other important mining sites and five shaft-capping contracts (each involving a wide range of individual shafts) were dealt with during this period by CAU.

The central area of Dolcoath proved to be particularly demanding. The site had been greatly disturbed during the mid 1980s, when most of the dump material was removed; those areas which were undisturbed were covered in debris and fly-tipped refuse. Within the area were the Compressor House, New East engine-house, and the exposed footings of the New Sump engine house. There were also several open (and very dangerous) shafts, and an unknown number of other shafts which had been choked and obscured. Underground workings here extend to a depth of 3000 feet, and come close to surface within the site boundaries. The purpose of the DLG Reclamation Scheme was to make the area safe and reclaim part of it for housing development.

Although the site has few aesthetic qualities, it is nonetheless of great historic importance in a national and international context. The challenge for the archaeologists was to identify the essential features of the site, and produce conservation and management recommendations which would incorporate and preserve the best of the old within the proposed scheme. The CAU assessment sets out the options for management which includes the conservation of several buildings, and defines boundaries for archaeological constraint areas within the site. The central area around New Sump Shaft has now been given Scheduled Monument status after a visit by English Heritage.

The Flat Lode Mines

The Flat Lode mines to the south of Carn Brea probably make up the most complete late 19th century mining landscape in Cornwall. From Church Coombe in the east to Troon in the west are to be found some of the biggest "names" in mid-Cornish copper and tin mining - East and West Basset, South and West Frances, Grenville United, South and Great Condrurrow, and some of its most famous landmarks - West Basset, East Basset and Grenville United dressing floors, the Marriott's Shaft complex, Pascoe's and Fortescue's pumping and winding engine houses and King Edward Mine. Standing at Marriott's Shaft and looking to east and west one can see more engine houses than from any other point in Cornwall. On the skyline of Carn Brea is the monument to the Basset family who so dominated mining in this district, whilst spread along the valley bottom and sides are the former mining hamlets, with their terraces, pubs, chapels and schools, whose

inhabitants worked at surface and underground - Carnkie, Piece, Treskillard, Beacon, and Troon.

Derelict Land Grants have made possible the purchase and management of much of this complex landscape so that it can be developed as a unique public amenity. The archaeological surveys undertaken as part of the preliminary assessment of this area have, for the first time, revealed the extent of survival on these sites, highlighted the need for conservation works, and identified the means by which they can be made accessible and safe, yet retain their historical integrity. Kerrier Groundwork Trust have now begun a programme of engine house consolidation, and in partnership with the District Council will be designing landscape management schemes to ensure that this superb landscape and its buildings continue to be appreciated in years to come.

Wheal Uny

Wheal Uny, its pumping and winding engine houses prominent local landmarks on the heathy hillside to the east of Carn Brea, is a valuable island of relatively unspoilt mining landscape stranded in the rapidly changing Kerrier countryside and in its overgrown state is an important refuge for Redruth's ramblers, dog-walkers and horse-riders. Early surface works along the northern edge, exploiting the Great Flat Lode, are perforated by some of the 19th century mine's shafts. Among these and the others which dot the area are the remains of at least six more engine houses, a count house with the usual workshops, a magazine, extensive dressing floors with leats, a calciner and many other features. The CAU assessment survey enabled detailed recommendations to be made which will minimise damage to this sensitive landscape during Kerrier District Council's forthcoming amenity enhancing shaft-capping and other safety works.

Shaft-capping schemes

In 1992 the programme of shaft-capping (Contracts 3 and 4) involved 15 mines throughout the Council area, from St Day to Kehelland to Rinsey Head. Work was largely confined to watching briefs during shaft-head clearance but visiting all 28 shafts enabled studies of both the impact of Kerrier District Council's capping methods and the extent and variety of historically important features likely to be revealed and, unfortunately, damaged or destroyed by such schemes to be undertaken.

Six shafts had remains of pumping engine houses and one, Woolf's Shaft at Crenver and Wheal Abraham in Crowan parish, had two very early houses - a 1780s Boulton and Watt and Arthur Woolf's famous 1814 compound. Other features revealed in the programme included angle-bob plinths, balance-bob pits, flat-rod tunnels, headgear timbers, a horse engine platform and several examples of pre-shaft surface mining. Of the 28 shafts, 14 had significant archaeological remains exposed by clearance, many not suspected from surface inspection or historical research. The results of this relatively early DLG survey considerably coloured subsequent CAU responses to and involvement in DLG schemes.

John Smith, Peter Herring and Adam Sharpe

EXCAVATION:

Duckpool

During August 1992 a small-scale excavation took place at Duckpool, a small cove north of Bude. Here archaeological remains were visible in the surface of the National Trust carpark at the top of the beach. A combination of wave action and manoeuvring vehicles had exposed two hearths (fire pits) and a spread of burnt material. The site had been recorded since 1983 by local amateur archaeologist (and Cornwall Archaeological Society member), Richard Heard, and by 1992 some features had already been destroyed by the sea - a square hearth with a flue, a rectangular stone-lined pit, a shell midden (rubbish dump) and a pot-lined oven constructed out of a storage jar laid on its side. The 1992 excavation was jointly funded by English Heritage and the National Trust. Its aim was to determine the depth and degree to which remains survived and to investigate

the character, function and date of the features exposed in the car park surface and threatened by further coastal erosion.

Prior to excavation, the Duckpool site had been tentatively interpreted as the result of small-scale industrial activity during the Romano-British period. Metal working was suggested by the presence of lead waste and the hearth remains. Cordoned-ware and other types of Romano-British pottery provided the dating evidence. A Romano-British date was confirmed by the pottery found during the excavation. Industrial activity was also confirmed. All three excavated hearths had very burnt surrounds, indicating the generation of considerable heat, and one of them (hearth 2) had a flue and was 0.5 metres deep with steep sides and traces of an upper structure which had subsequently collapsed inwards. An ash-lined pit was also found and a mound of ash, charcoal and burnt clay, apparently resulting from periodic clearing out of the hearths. As to the nature of the industrial activity carried out at Duckpool, the discovery of lead waste (runs and dribbles) suggested a small amount of lead and pewter working, and a single crucible fragment found was probably used in copper-alloy melting (prior to casting). However, most of the high-temperature debris found during the excavations was unexplained, as was the presence of burnt and unburnt animal bone and shell, spread throughout most of the excavated layers rather than forming a distinct midden. Another mystery was the discovery of the mandible (jawbone) of a human female!

Duckpool is an important and interesting site. It is also unusual since it does not fit into the general pattern of settlement in Cornwall during the Roman period. At this time most people were living in defended (or undefended) farmsteads amongst gently sloping farmland, whereas Duckpool lies at the bottom of a steep-sided valley, close to the sea. It is also unclear whether Duckpool was actually a permanent settlement or just a seasonal metal working site. The results of the 1992 excavation at Duckpool have yet to be written up in full, but in due course will be published in this journal.

Jeanette Ratcliffe

TINTAGEL; ARTHUR AND ARCHAEOLOGY by Charles Thomas. B T Batsford Ltd/
English Heritage, London 1993. 144 pages, 110 illustrations, 9 colour plates.
ISBN 0 7134 6689 8 (cased) £25; ISBN 0 7134 6690 1 (limp) £14.99

Tintagel is one of English Heritage's most impressive Ancient Monuments, both for its natural beauty and for its archaeology. Generations of visitors have found inspiration there, for the mind and body; and for painting, literature and music. This reviewer has known and loved it, as schoolboy and as archaeologist, for over 60 years. It is satisfying that at last there is a book about it which does justice to its splendour and archaeological importance.

The book is one of the latest in a successful series which has attempted to combine scholarship with general popular appeal, and Tintagel must rank as one of the most satisfying. This is a book which only one person could have written; it is yet another classic in Thomas's list. He has been closely involved in the work there in recent years; and although there have been several fine interim presentations, this is far more than a collation of them; it puts the entire site — its history, archaeology, folklore and sociology — into definitive focus: unlikely to be superseded in his lifetime.

Since the twelfth century the 'island' has been famous for its castle ruins and for their mythical association with Arthur, and this is still the magnet which draws thousands of tourists to the area and to the ruins. The castle, as such, is of relatively minor interest to archaeologists; of much more significance is the discovery in the 1930s of evidence of much earlier occupation, principally in the sixth century AD. The pottery of this phase, from the Eastern Mediterranean and North Africa, and possibly from Gaul, is astonishing in its quantity, more than that from all other Dark Age sites in Britain put together.

In the past four decades, there have been attempts to explain the presence of so much material in what, at first sight, might seem to be a remote and wind-swept spot. C A Ralegh Radford, the director of the pre-war excavations, interpreted structures that he found as those of a 'Celtic' monastery, the pottery illustrating the Mediterranean and West Atlantic contacts of the Early Western British Church. And thus was the site labelled in subsequent decades, to the confusion of those who came to look for Arthur.

Work on other sites of the period in recent years made it clear that this interpretation was untenable. Thomas recalls the 1973 symposium at Edinburgh when, in the presence of Radford, Ian Burrow tactfully challenged the monastic model, and innocently asked what was the stratigraphic relationship of the imported pottery to the 'monastic' structures. Thomas does not, however, quote Radford's reply on that occasion: 'as to the association of the pottery with the structures, of that there can be no doubt: there was imported pottery *in* the walls, *on* the walls, *in* the floor, *on* the floor, and all round the buildings' exterior'. This made it clear that the pottery was wholly residual from earlier occupation, incorporated into the later (medieval) structures.

Thus began what Thomas calls the 'deconstruction' of the monastery, and the replacing of this model with a secular one, of high-status personages able to command wealth and participate in the international network of trade and exchange: wine, olive oil, ?silk, ?spices, etc. These commanded a high value to western potentates who were addicted to 'Romanitas' and who would have liked to have become accustomed to such things. We do not know what went out of Cornwall in exchange: tin and other metals are obvious candidates.

It is this secular model which Thomas develops, oddly restoring, if not Arthur, then an Arthur-type figure. King Mark and Constantine of Dumnonia float here in the background. The implications of all this for tourism in the village have yet to sink in; most residents and tourists had

not noticed that 'Arthur' had been on temporary leave of absence. The publishers of this book have taken full advantage of such obsessive public interest by their sub-title 'Arthur and Archaeology', which I'm sure was forced on the author only after a struggle: for very little of the book concerns this non-subject.

We begin with 'Space, time and discoveries' — topography and history of the manor, village and 'island', including the mainland cliff-top church of St Materiana. A firm framework of periods is set out — the prehistoric and Roman finds, the all-important post-Roman period II, the Late Pre-Conquest and Early Norman III, the castle of IV, and the more recent V. 'Magical conceptions, modern misconceptions' skilfully traces the development of the Arthur myth, from Geoffrey of Monmouth down to this century, and the successive attempts to find hard evidence by archaeology.

Chapter 3 provides an invaluable detailed description of the Island, as it was in the past and now; this is a splendid guide even to those who think they know the place well. Thomas tells us where to find the various features, and how they have been variously interpreted in the past.

Then we have a detailed account of the 1930s excavations on the Island; and of Arundell's wartime dig in the churchyard on the mainland. Thomas is kind but firm concerning Radford's misinterpretation of the remains encountered, attributing it largely to the appalling way such work on 'ancient monuments' was carried out in those days, with largely unsupervised workmen, poor records, only occasional visits by the director, and the lack of assistant staff who could have engaged in on-site debate. Full acknowledgment is, however, given to Radford's crucial recognition of the Mediterranean origin of the pottery and its highly exotic presence in Western Britain, in his classic paper in E T Leeds' 1956 *Festschrift*.

There follows a description of this material — principally amphorae and fine red table-ware — and how it got to Britain, and a discussion of its distribution. This leads us on to the astonishing events of 1983, when a grass fire and subsequent erosion revealed a whole new area of what really were post-Roman buildings, with visible sherds being trodden underfoot by visitors. These structures were surveyed by RCHME before the area was buried and re-seeded, to ensure their preservation under new soil and turf. The discoveries gave a new dimension to Tintagel; so too did the results of deep trenches dug by the CAU in the Castle area in advance of English Heritage engineering to improve drainage and stabilise medieval walling. These excavations revealed deeply stratified layers of post-Roman occupation in the most sheltered part of the Island.

Equally dramatic in their implications were new excavations in the churchyard of St Materiana (sponsored by Mobil to mark their launch of a new oil platform named 'Camelot'!). Re-opening Arundell's holes of 1942, a complex cemetery was revealed, with yet more Mediterranean pottery on early ground surfaces by graves. This established at a stroke the relationship between Church and Island in the sixth century, and illustrated the role played by Christianity in the development of the Western British kingdoms.

Thus far Thomas provides us with a resumé of the evidence from all sources. In Chapter 7 comes the interpretation: 'Models for the moment'. In this the Island is seen as a 'secular citadel based on a natural stronghold, with direct access to the sea, and a landward defence-work' 'so large as to possess tones of ostentation, and outward emphasis upon status and power'. (This work was Radford's *vallum monasterii*).

It was not a place of permanent occupation. It was 'a stronghold for the post-Roman kings of Dumnonia, used only seasonally or periodically, as part of an irregular sequence of visitations, and/or in connection with particular dynastic happenings'. ('King Arthur's footprint' is given credence as a place in which the new king 'put his foot' in inauguration ceremonies). Such rulers were powerful, 'controlling human labour and the lives of many'; their subjects provided the goods required for foreign trade.

A bold new plan of all the structures known (illustration 68) tentatively identifies the strong point in what is now the Upper Ward; the main nucleus of high-status occupation in the Lower Ward; the sea-landing (the Iron Gate); further high-status occupation along the sheltered eastern

slopes; ? specialised occupation along the South Terrace; the area of a permanent caretaker; and the turf-walled bivouacs of a retinue or warband (the last two in the burnt area).

To this secular complex must, of course, be added the mainland church as the centre of Christian worship and burials, marked by inscribed pillars; the two places are a site of extreme importance, most of the evidence for which is still under the grass, but (on the Island) in danger from the sea.

Finally, Thomas provides a new discussion on the medieval origins of the chapel on the Island, of predecessors to St Materiana, and the castle itself.

The last chapter is on 'other, future Tintagels'. Thomas is gently humorous but not condescending to the exponents of 'Alternative Archaeology' — lines of force inextricably Arthur-mixed. He does, however, express considerable respect for Frederick Glasscock and his Hall of Chivalry, with its noble and philanthropic aims.

The future of Tintagel has to reconcile the needs of visitors, who need and deserve better explanation of the monument, and conservation of its fragile archaeology. The site belongs to the 'Duchy of Cornwall; to the Cornish people; to unified Great Britain, with its amalgam of the English and the older Celtic-speaking peoples; and finally to Europe'. Thomas pleads also for further research with modern techniques, including sub-aqua exploration of the Haven.

A splendid book in content, and well-produced to the high standards of this series; with good monochrome and excellent colour illustrations, including a colour plan of the structures. My only wish is that the author had taken advantage of the expertise of English Heritage's draftspersons to provide reconstruction pictures of sixth century Tintagel, to set alongside that of Thomas Hardy of 1923.

Philip Rahtz
Harome

CORNWALL'S ARCHAEOLOGICAL HERITAGE by Nicholas Johnson and Peter Rose, Twelveheads Press, Truro, 1990, ISBN 0 906294 21 5, 48 pp, £2-50

CORNWALL'S CHINA CLAY HERITAGE by John R Smith, Twelveheads Press, Truro, 1992, ISBN 0 906294 25 8, 48 pp, £2-50

SCILLY'S ARCHAEOLOGICAL HERITAGE by Jeanette Ratcliffe, Twelveheads Press, Truro, 1992, ISBN 0 906294 28 2, 52 pp, £2-95

These three booklets are published under the auspices of the Cornwall Archaeological Unit in the Twelveheads Heritage series, which also includes titles on Cornwall's Mining, Railway, Maritime, Lighthouse and Geological 'Heritage' as well as more diverse topics: so far the Lepidoptera and the literary associations of the county. They all conform to a distinctive format: about 50 pages of close-packed text and illustrations, with an authoritative introduction to the subject followed by a gazetteer or catalogue. They are neat and attractive in appearance and offer a portable summary of each subject, no doubt aimed at the tourist market. In this role they are much to be welcomed, to set against the slovenly and inaccurate pamphlets usually offered to those visitors curious about what they are seeing. The standard of information is so high that one wishes that the authors had not been so much constrained by the format of the series.

Inevitably the booklet which deals with the whole of Cornwall's archaeology suffers most from these constraints: much has had to be omitted and the entries for the chosen sites are tantalisingly brief. It is to be hoped that future titles can be devoted to individual aspects treated in more detail: perhaps dealing with single periods or types of site? The booklet on Scilly has a more manageable content and makes an excellent successor to Bryan O' Neil's Ancient Monuments guidebook, including much that is new since he wrote. Especially welcome is its treatment of whole landscapes as well as individual sites. The introduction provides a good summary of recent work and speculation in Scillonian archaeology.

The China Clay booklet has a more restricted and much less studied field to cover and thus is

more original than the other two. It is the best treatment yet available for the general reader of the visible remains of what is coming to be recognised as a fascinating and important episode in Cornwall's history. (The Unit's report on *The archaeology of the St Austell China-Clay area*, by Peter Herring and John Smith (Cornwall County Council, 1991), describes the industry's processes but not individual sites; this, and several other detailed reports recently published by the Unit, deserves full review, which it is hoped to provide in future volumes).

Sarnia Butcher

Florence Nankivell

D. G. HARRIS

With the death of Florence Nankivell last summer (1993) the Cornwall Archaeological Society has lost one of its staunchest and most valued friends. Florence (Nanky to her fellow-diggers in the early days) joined the West Cornwall Field Club in the mid-fifties, and by 1956 had become its honorary secretary — though she was known to refer to herself as the Honourable Secretary; her Dutch origins led her to occasional malapropisms which always gave great delight. By then she had contributed to the Proceedings a note on a bronze triangular razor found in the Riviere Towans near Hayle (*PWCFC* 2, 1). She took part in excavations at Bodrifty, Sperris Croft and Gold Herring with energy and enthusiasm, never forgetting the necessary formal administration of the Club; many a committee meeting, or even annual general meeting, was superbly organised in a wet brown tent on site at Gold Herring.

In 1961 it was decided that archaeological exploration should no longer be confined to West



Florence Nankivell at The Rumps, August 1965 Photo: J Greenham

Penwith, and the West Cornwall Field Club was transmuted into the Cornwall Archaeological Society, which covered the whole of the county. Florence was one of the most active authors of this change. She continued as secretary of the new body, and within a year her tireless efforts had increased the membership five-fold. Committees owed a great deal to her good sense and generalship. Excavations at Castilly henge, the Rumps cliff castle and Carn Brea hillfort derived much of their attraction from her quarter-masterly skills. She remained as secretary until 1970 when she retired, although she still served the Society as Group XIII representative on the executive committee of the Council for British Archaeology in London. In recognition of all she had done for archaeology in Cornwall she was elected an honorary member of the Society, and in 1984 she became a Vice-President. Although she was not then living in the county her interest in it never diminished, and she often made the long journey from Sussex to attend meetings.

In a tribute to Florence Nankivell on her retirement in 1970 the editor of *Cornish Archaeology* testified that 'to our body, both before and since the 1961 transformation, she has always brought all her abundant energies as administrator, recruiting sergeant, public relations officer, camp commandant, and peacemaker'. In all these roles, and others too, Florence probably did as much as anyone to promote and enliven archaeology in Cornwall. This Society, from its inception onwards, owes her a tremendous debt of gratitude.

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CONTENTS

The Men an Tol reconsidered ANN PRESTON-JONES	5
Examining a Romano-British boundary at Foage, Zennor PETER HERRING, with K. CRABTREE, V. STRAKER and S. WEST	17
A sense of identity: distinctive Cornish stone artefacts in the Roman and post-Roman periods HENRIETTA QUINNELL	29
Tintagel Castle: archaeological investigation of the Steps area 1989 and 1990 COLLEEN BATEY, ADAM SHARPE and CARL THORPE	47
Interrogating Anglo-Saxons in St Dennis PETER HERRING and DELLA HOOKE	67
Lanlivery church, its archaeology and architectural history WARWICK RODWELL	76
Stowe: the country house and garden of the Grenville family W.R. WILSON-NORTH	112
Granite towers on St Mary's, Isles of Scilly JOHN GOODWIN	128
Notes	
The Hendra adze STEVE HARTGROVES	140
Recent archaeological acquisitions at the Royal Cornwall Museum ANNA TYACKE	142
Archaeology along the hard shoulder - the Indian Queens project JACQUELINE A. NOWAKOWSKI	146
St Michael's Mount: recent and future work PETER HERRING	153
A note on the Excavation Index for Cornwall and the Isles of Scilly HELEN ASHWORTH	160
An underground passage rediscovered G.F. WALFORD	164
Recent work CORNWALL ARCHAEOLOGICAL UNIT	167
Reviews: Thomas, Charles, <i>Tintagel; Arthur and archaeology</i> , 1993, by Philip Rahtz; Twelveheads Heritage series: Johnson, N., and Rose, P., <i>Cornwall's Archaeological Heritage</i> , 1990; Smith, J.R., <i>Cornwall's China Clay Heritage</i> , 1992; Ratcliffe, J., <i>Scilly's Archaeological Heritage</i> , 1992; by Sarnia Butcher	178
Obituary: Florence Nankivell	181